



Water and
Environment Centre



Achievements of Water and Environment Centre (WEC) and the suggested support from ESCWA Technology Center

**6th ESCWA Technology Center's Technical Committee meeting
2-3 October 2018**

**Prof. Fadhl Ali Al-Nozaily - Deputy Director
Sana'a, Yemen**





Water and
Environment

PRESENTATION CONTENTS



- WEC VISSION
- WEC MISSION
- WEC CAPACITY
- PARTNERSHIP AND NETWORKING
- PRESENTATION CONTENTS
- IWRM DEPLOMA/MSC PROGRAM
- SDG UNDER CONCERN BY ETC AND WEC
- WEC EXPERIENCE / REFLECTING SDGs
- POSSIBLE NEEDED SUPPORT AND ACTION PLAN

Founded in 1999 with the
support of the Dutch
Government





Water and
Environment Centre



WEC VISSION

TO BECOME A THINK TANK AND CENTRE OF EXCELLENCE, for a DEMAND DRIVEN RESEARCH, TRAINING and CONSULTANCY FOR THE YEMEN WATER AND ENVIRONMENTS SECTOR AND COMMUNITY



WEC MISSION

As a center for water management & environmental sciences:

To make the applied research of Sana'a University relevant to major challenges in the country and beyond;

To provide consultancy services to donor agencies and non-governmental organizations;

To furnish the water sector with needed expertise and practical solutions, technical assistance and building capacity **IN ORDER TO support/acheive achieving SDGs, local and regional committments**



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**MSc.
Diploma
program**

**Research
unit
grant**

**Training
Unit**

**Three PhD
scholarship in
Netherlands**

**WEC
Consultancy
Services**

**WEC capacity to
achieve its mission
and vision**

**Water
partnership
Unit**

**Update WEC
Website**

**IDPU to improve
electronic library**

**Implement of
sanitary lab**

**Create
GIS/RS Lab**



Partnership and Networking

WEC National Yemen Water Network

Water sector (ministry of water and environment and Ministry of Agriculture and irrigation;

Water related authorities;

NGOs & INGOs



Partnership and Networking

Local Partnerships

Metrological Authority

NWRA (Natural water resources Authority)
NWRA - Sana'a Branch

NWSA (natural water supply and Sanitation Authority)
HRDC (Human resources development Center)

TDA + Wadi Zabid Irrigation council

WUAs Union +
Hand by Hand association

GDRSC (Gender Development Research and study Center)
+ RS (Remote Sensing center)

INTENDED- MOU with ESCWA Technology Center



Partnership and Networking

WEC Academic Partnerships

- Wageningen University, **The Netherlands**
- UNESCO IHE, Institute for water education, **The Netherlands**
- Technical University Delft, **The Netherlands**
- Cairo University, **Egypt**
- Mekelle University, **Ethiopia**
- The Hague Institute for Global Justice, **The Netherlands**
- Norwegian University of Life Sciences, **Norway**
- International Center for Biosaline Agriculture, **UAE**
- **ESCWA TECHNOLOGY CENTRE, Amman/LEBANON**

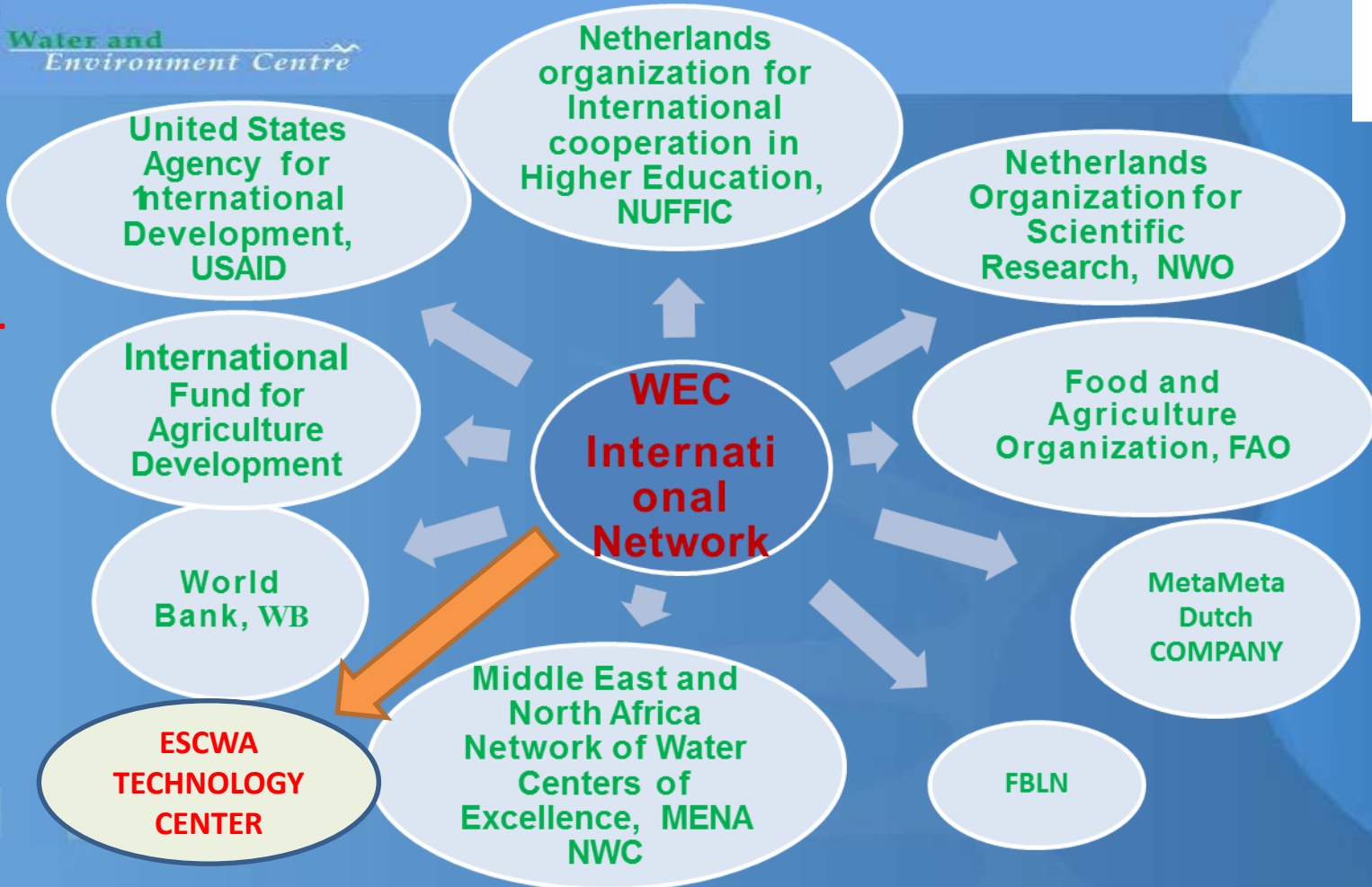


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Partnership and Networking



international
Partnerships





IWRM Diploma/Master Program Research Topics

- Water treatment and usage
- Water harvesting from roads
- Spate irrigation network, allocation and equity of distribution
- Sustainable agricultural techniques for groundwater conservation
- Flood hazard and its environmental impact
- Seawater desalination plant to cover municipal demand
- Integrated disposal water management oil production
- Integrated watershed management for small catchments
- Groundwater recharge potential in Wadis
- Crop productivity methods to improve livelihoods and save water



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SDG UNDER CONCERN by ETC and WEC



| SDG# ZOOMING BY ESCWA TC | | Considered BY WEC | |
|---|--|--|--|
| <div>٢</div> <div>القضاء التام على الجوع</div> <div></div> | <div>١٣</div> <div>العمل المناخي</div> <div></div> | <div>٢</div> <div>القضاء التام على الجوع</div> <div></div> | <div>١٧</div> <div>عقد الشراكات لتحقيق الأهداف</div> <div></div> |
| <div>٦</div> <div>المياه النظيفة والنظافة الصحية</div> <div></div> | <div>١٤</div> <div>الحياة تحت الماء</div> <div></div> | <div>٦</div> <div>المياه النظيفة والنظافة الصحية</div> <div></div> | |
| <div>٧</div> <div>طاقة نظيفة وبأسعار معقولة</div> <div></div> | <div>١٥</div> <div>الحياة في البر</div> <div></div> | <div>٧</div> <div>طاقة نظيفة وبأسعار معقولة</div> <div></div> | |
| <div>١٢</div> <div>الاستهلاك والإنتاج المسؤولان</div> <div></div> | <div>١٧</div> <div>عقد الشراكات لتحقيق الأهداف</div> <div></div> | <div>١٣</div> <div>العمل المناخي</div> <div></div> | |





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SDG zoomed at ETC

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

SDG zoomed at WEC

Goal 2: Eng. Hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 6: Ensure availability and sustainable management of water and Sanitation for all

Goal 7: Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 13: Take urgent action to combat climate change and its impacts

Goal 17: strengthen the means of implementation and revitalize the global partnership for sustainable development

WEC Experience/ Reflecting zoomed SDGs

- | | | |
|---|---|------------|
| 1. Seawater desalination plant, lifting stations and pipe network ----- | → | SDG 6 |
| 2. Evaluation of groundwater and soil conservation project (GSCP)----- | → | SDG 2 |
| 3. Evaluation of global agriculture and food security program (GAFSP) – ----- | → | SDG 2 |
| 4. The political economy of water conflicts ----- | → | SDG 17 |
| 5. Potential rainwater harvesting to provide drinking water for rural areas – ----- | → | SDG 2 |
| 6. Initial value chain analysis for private water tankers in Yemen war impact on WASH- -- | → | SDG 6 |
| 7. War impact in food security in Tehama Region- ----- | → | SDG 2 |
| 8. Solar energy/ digester biogas for operation of Sana'a WWTP as alternative energy systems | → | SDG 6 & 13 |
| 9. Investigation of cholera cause in Yemen during the WAR----- | → | SDG 6 |
| 10. Fog water harvesting----- | → | SDG 6 |
| 11. Flood EARLY WARNING SYSTEM in Wadi sailah sana'a----- | → | SDG 2 |
| 12. Global (national/international) partnership----- | → | SDG 17 |



IWRM MSc researches

Related SDG

- Water treatment and re-use -----> SDG 6
- Water harvesting from roads-----> SDG 7
- Spate irrigation network, allocation and equity of distribution-----> SDG 2
- Sustainable agricultural techniques for groundwater conservation -----> SDG 2
- Flood hazard and its environmental impact-----> SDG 13
- Seawater desalination plant to cover municipal demand-----> SDG 6
- Integrated disposal water management oil production-----> SDG 6
- Integrated watershed management for small catchments -----> SDG 6
- Groundwater recharge potential in Wadis-----> SDG 6
- Crop productivity methods to improve livelihoods and save water-----> SDG 2



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Possible support by ESCWA Technical Center



Applied Technologies

**Joint work to support IWRM / MSc. Program
IWRM- NATIONAL/ REGIONAL/ INTERNATIONAL**

Ground water treatment / exploration/ rehabilitation / analysis

**Climate change- biogas production/ solar energy/ modern
irrigation/ wastewater treatment- sludge compost for biogas and
fertilizer- urban indicators**

**Desalination of saline and brackish water
Water harvesting /treatment/ saving techniques**

Waste water reuse / small bore sanitation systems

Agriculture production / drought resistance crops

**Gender participation/ awareness campaign in water saving and greywater
reuse/ gardening/ hygiene**

**Re habilitation of infrastructures of WASH (latrine, handwashing,
awareness to stop open defecation,**



ACTION PLAN to prioritize the needed ”TECHNOLOGY ADOPTION” توطين التكنولوجيا

- Support IWRM/ MSC PROGRAM AT WEC;
- Connecting with CTCN for training on carbon emission calculation from digesters
- TECH TO alleviate CLIMATE CHANGE and support IDBs
- BIOGAS THROUGH:
 - ANAEROBIC TREATMENT;
 - DIGESTERS; AND
 - COMPOSTING
- CLEAN TECH THROUGH:
 - WIND energy; AND
 - SOLAR ENERGIES
- Water harvesting and treatment through:
 - Storm water harvesting and treatment using Silver filter



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WECare For Water & Environment



نشكر لكم حسن
الاستماع



Thank you for your
attentions

