



FACULTY OF ENGINEERING
CAIRO UNIVERSITY

Water Engineering & Environment (WEE Program)

Cairo University, Faculty of Engineering
Credit –Hour System

May, 2023

What is WEE ?



WEE are **Civil Engineers** !!!

with emphasis on the **water subjects**
& consciousness of the **Environment**



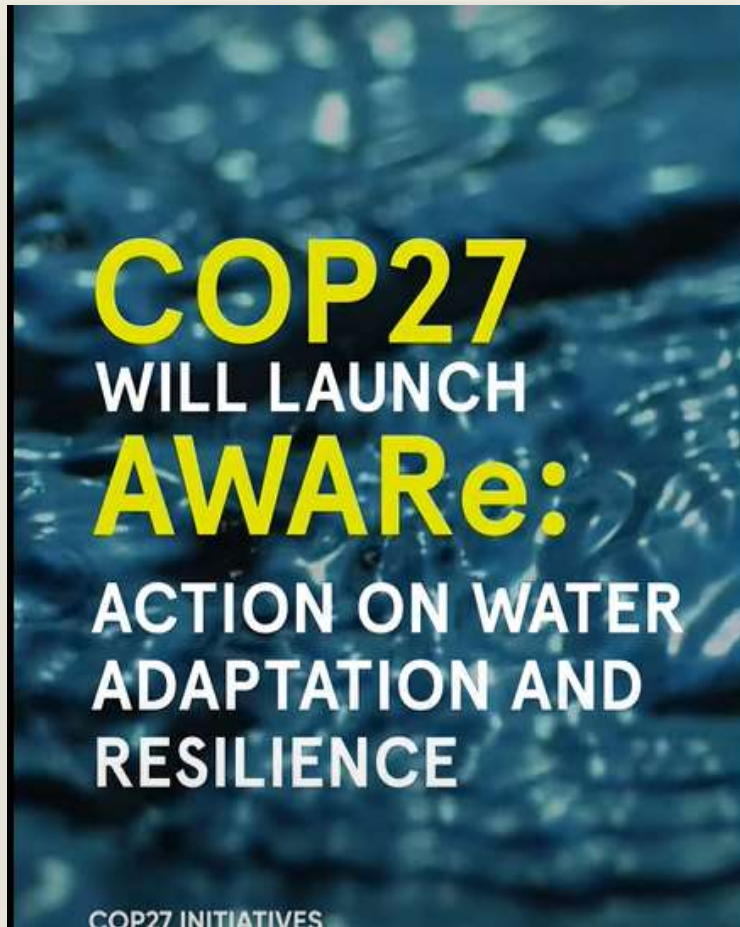
Water is the Heart of National & International Projects

The Sustainable Development Goals



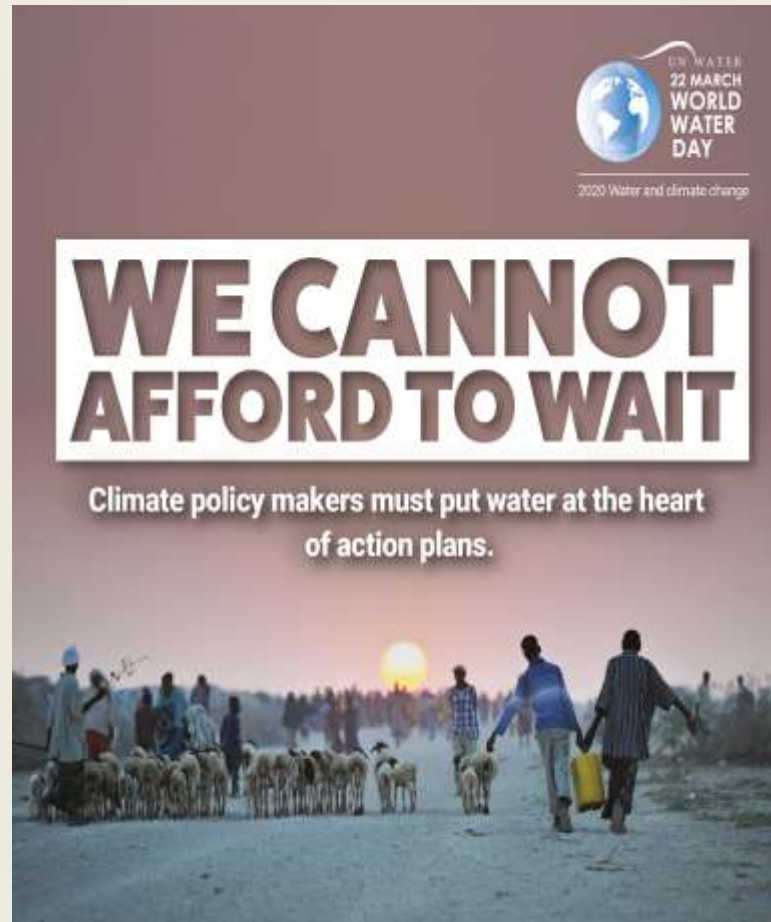
SDGs Related to Water

Water is the Heart of National & International Projects



COP27
WILL LAUNCH
AWARE:
ACTION ON WATER
ADAPTATION AND
RESILIENCE

COP27 INITIATIVES



22 MARCH
WORLD
WATER
DAY

2023 Water and climate change

**WE CANNOT
AFFORD TO WAIT**

Climate policy makers must put water at the heart
of action plans.



UN
2023 WATER
CONFERENCE

NEW YORK
22-24
MARCH
2023



Sustainable development
requires integrated
water, weather, and climate
solutions



Water action is the best answer to
climate change

Join the Coalition now!

Water is the Heart of National & International Projects



محطة معالجة مياه مصرف بحر البقر



مشروع الطيون ونصف فدان



المشروعات القومية في مصر



مشروع شبكة الطرق القومية



مشروع الدلتا الجديدة



قناة السويس الجديدة



المفاعلات النووية المصرية



شروع - أكبر حفل للشار الطبيعي



مشروع تنمية الساحل الشمالي الغربي

- Chapter One: The New Suez Canal
- Chapter Two: Suez Canal Corridor Development Project
- Chapter Three: 1.5 million Feddans Project
- Chapter Four: The National Project for Developing Sinai
- Chapter Five: National Roads Project
- Chapter Six: The National Project for Developing Upper Egypt Governorates
- Chapter Seven: Establishing New Generation of Inhabited Cities
- Chapter Eight: National Social Housing Project
- Chapter Nine: Other National Projects
- First: National Project for Electricity
- Second: Al-Galala Plateau Project
- Third: The Golden Triangle Project
- Fourth: The Northwest Coast Development Project
- Fifth: Logistics Center for Storage and Handling of Grains
- Sixth: Toshka project
- Seventh: Sharq al-Owaynat Project
- Eighth: The National Project for Fish Culture
- Ninth: National Program for Technological Incubators (Intilac)

European Investment Bank *The Old bank* #EIBinEgypt

€1 billion Investments in the Water sector

of which EUR 77 million for Kafr El Sheikh Waste Water Treatment covering 100 km of coast line on the Mediterranean Sea

the project helps **improve the**

- Health standards of **0.5 millions** residents
- Quality of irrigation water
- Environmental quality of the Nile, Lake Burullus and the Mediterranean Sea

it involves:

- Expansion of **3 WWTPs**
- Laying of **694 km** of sewers
- 2 new WWTPs**

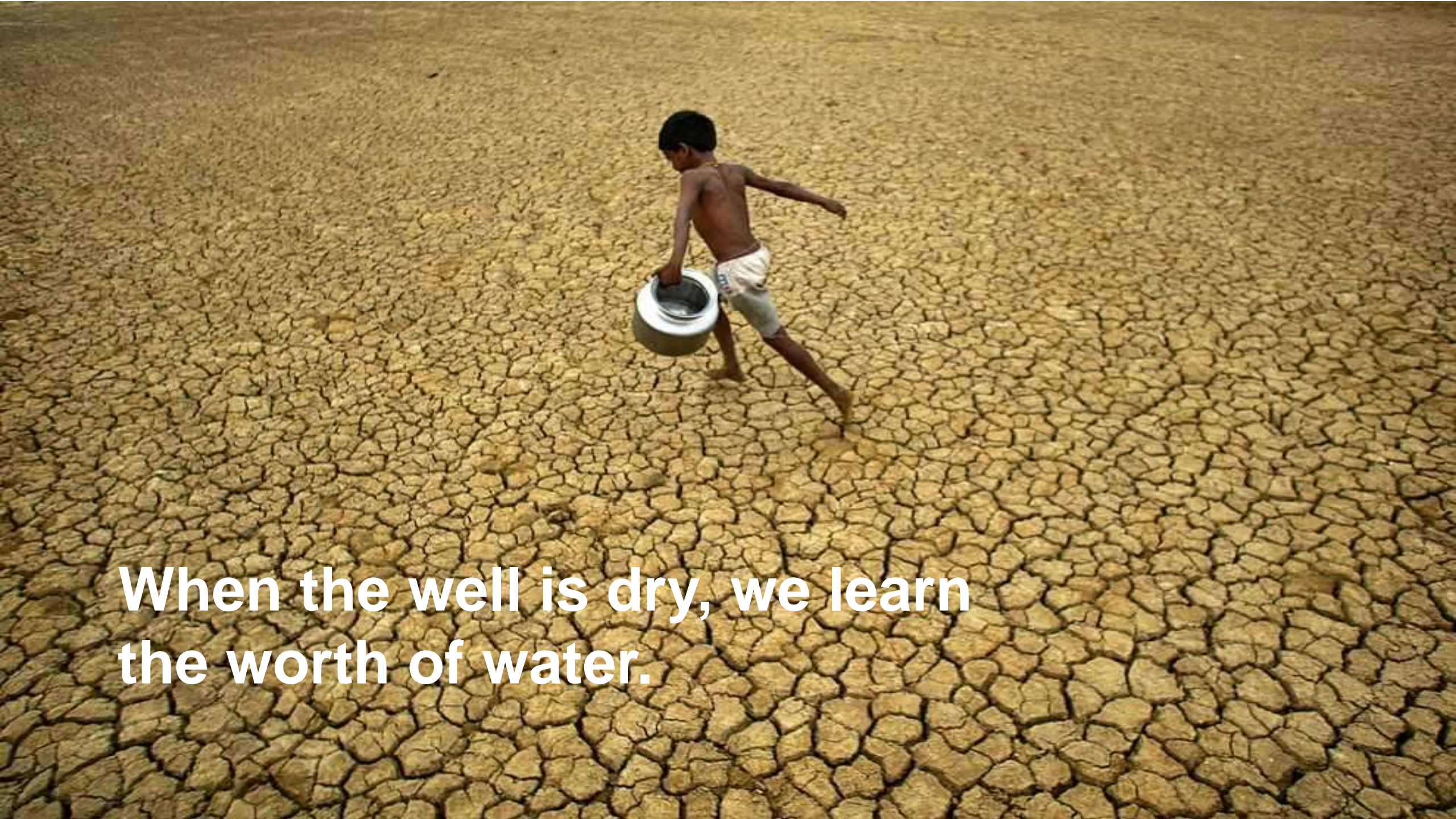
Egypt: Cairo Water Week - Team Europe highlights importance of sustainable water financing

رئيس الوزراء: 50 مليار دولار تكلفة الخطة القومية للمياه

الثلاثاء، 11 يناير 2022 10:39 ص



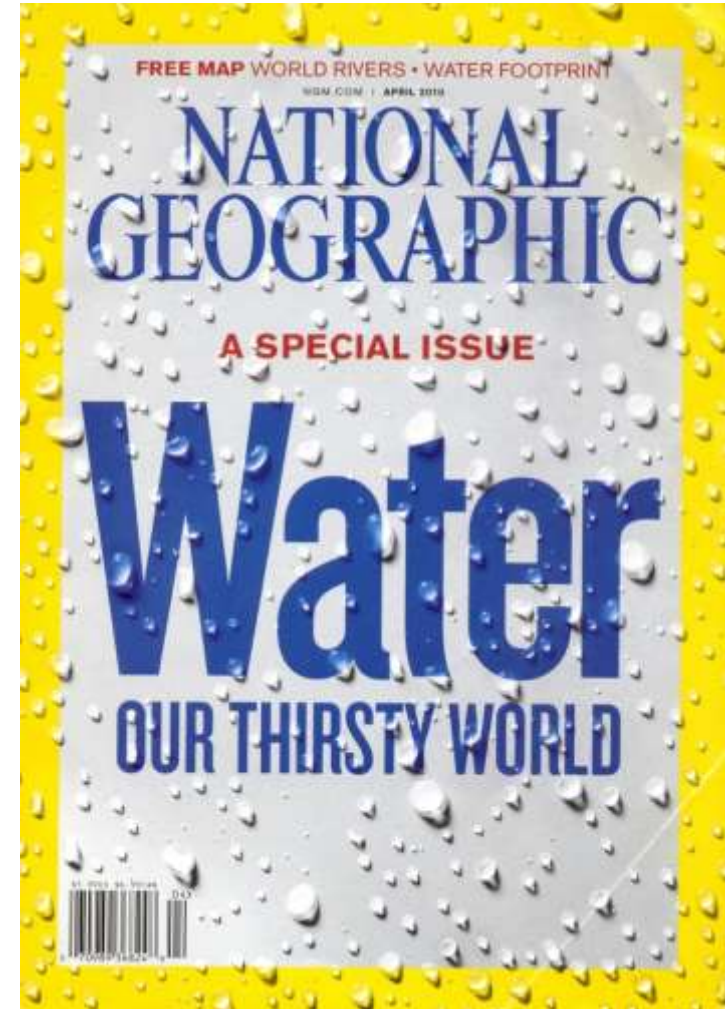
رئيس مجلس الوزراء



**When the well is dry, we learn
the worth of water.**

Water Challenges & Environmental Concerns

- **Water Scarcity**
(National, Regional and Global)
- Limited Freshwater Resources
- Increased Demands
 - Population Growth and Aspiration for better standards of Living
- Transboundary Issues
- Climate Change
- **Pollution of Resources**



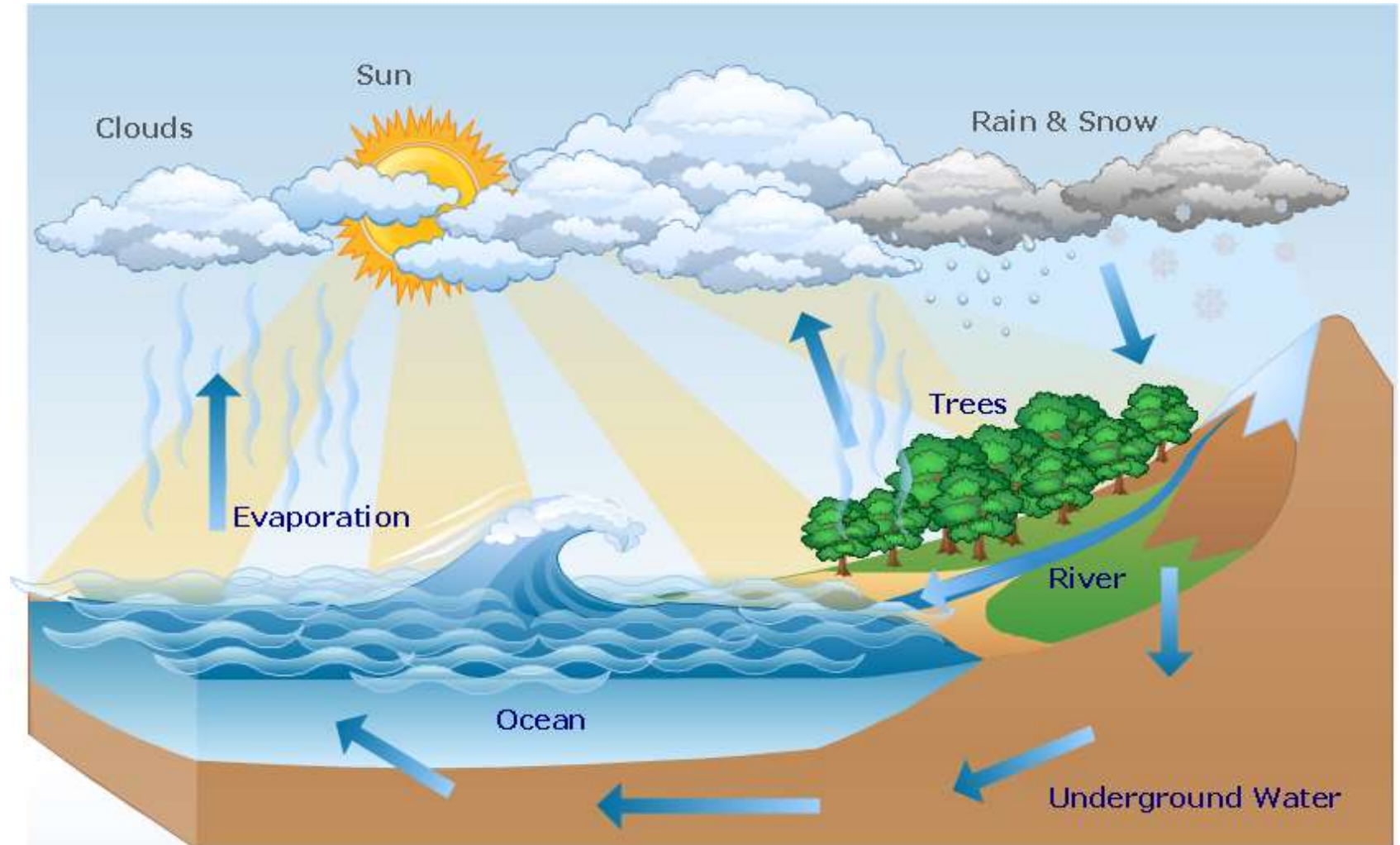
What Do Water Engineers Do ?

Rains
Rivers
Lakes
Oceans
Groundwater

Human
Animals
Plants

Quantity
Quality

Economics
Laws,
Regulations
Social Aspects



What Do Water Engineers Do ?

Wadi Studies, Flash Flood Protection



Yes it does happen!!
Egypt, Oman, Saudi Arabia, Jordan, Yemen,etc.

What Do Water Engineers Do ?

Hydraulic Structures (Dams)

Dam Site
Dam Type
Dam Size
Spillways

Hydropower
Generation

Environmental
Impacts



What Do Water Engineers Do ??

Water Conflicts !!



What Do Water Engineers Do ?

Water Conveyance

- Canals
- Pipelines
- Pumping Stations

For

- Domestic
- Industrial
- Agricultural Uses



What Do Water Engineers Do ?

Water Distribution Networks & Treatment Facilities
and Desalination Plants



What Do water Engineers Do ?

Coastal Management, Ports, Marinas & Inland Navigation



Alamein New Developments



What Do Water Engineers Do ?

Land Reclamation, Irrigation & Drainage



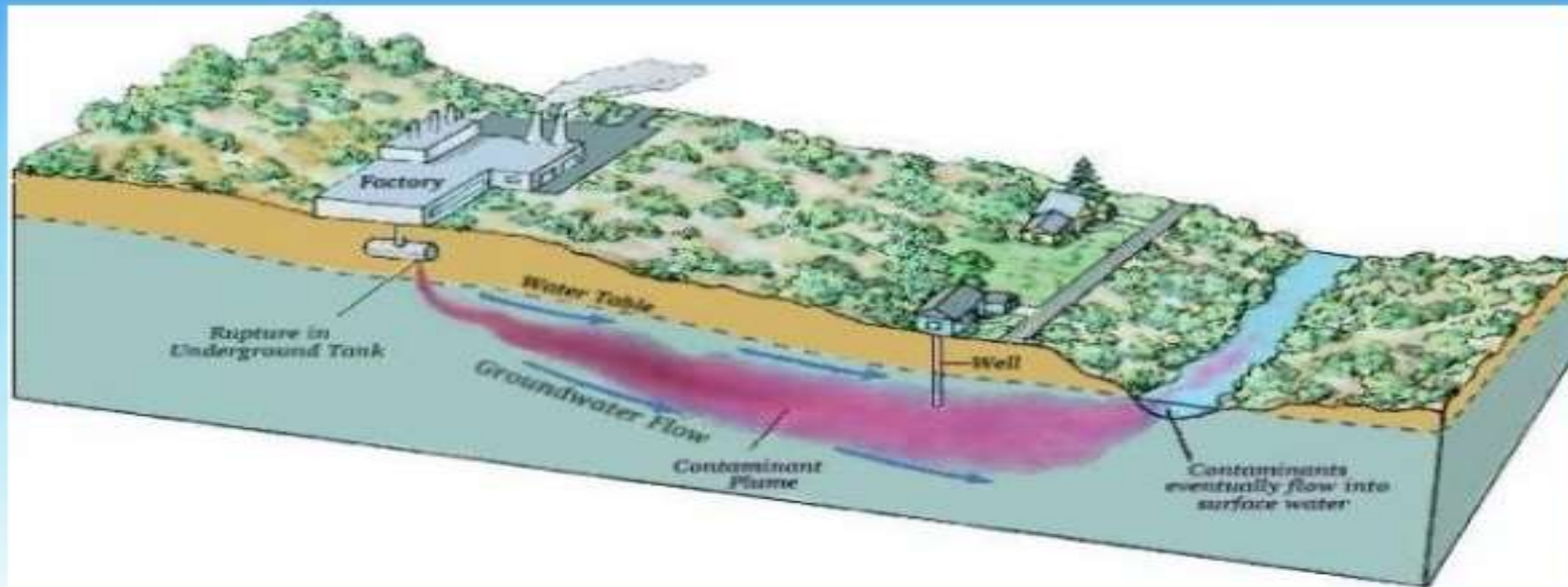
Water Requirements
Water Application

Is there enough water?

What Do Water Engineers Do ?

Contaminant Transport (Surface & Groundwater)

Typical Problem of Groundwater Contamination



What Do Water Engineers Do ?

Contaminant Transport (Oil Spills)



What Do Water Engineers Do ?

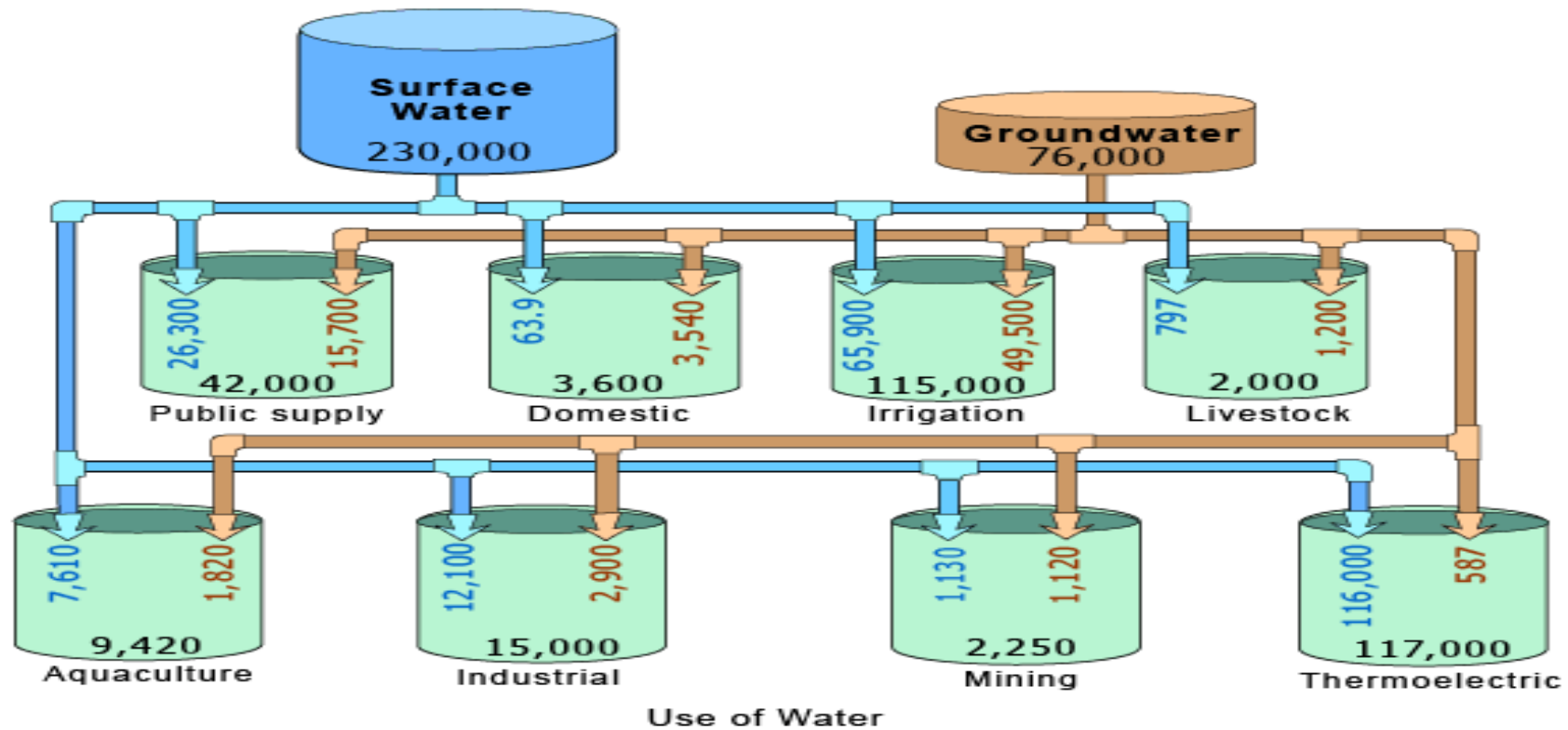
Waste Management, Pollution Control



What Do Water Engineers Do ?

Strategic Water Allocation

Source and use of freshwater in the United States, 2010



↘ 230,000 Surface water
↘ 76,000 Groundwater
 306,000 Total water use
 Data are in million gallons per day
 (Data are rounded)

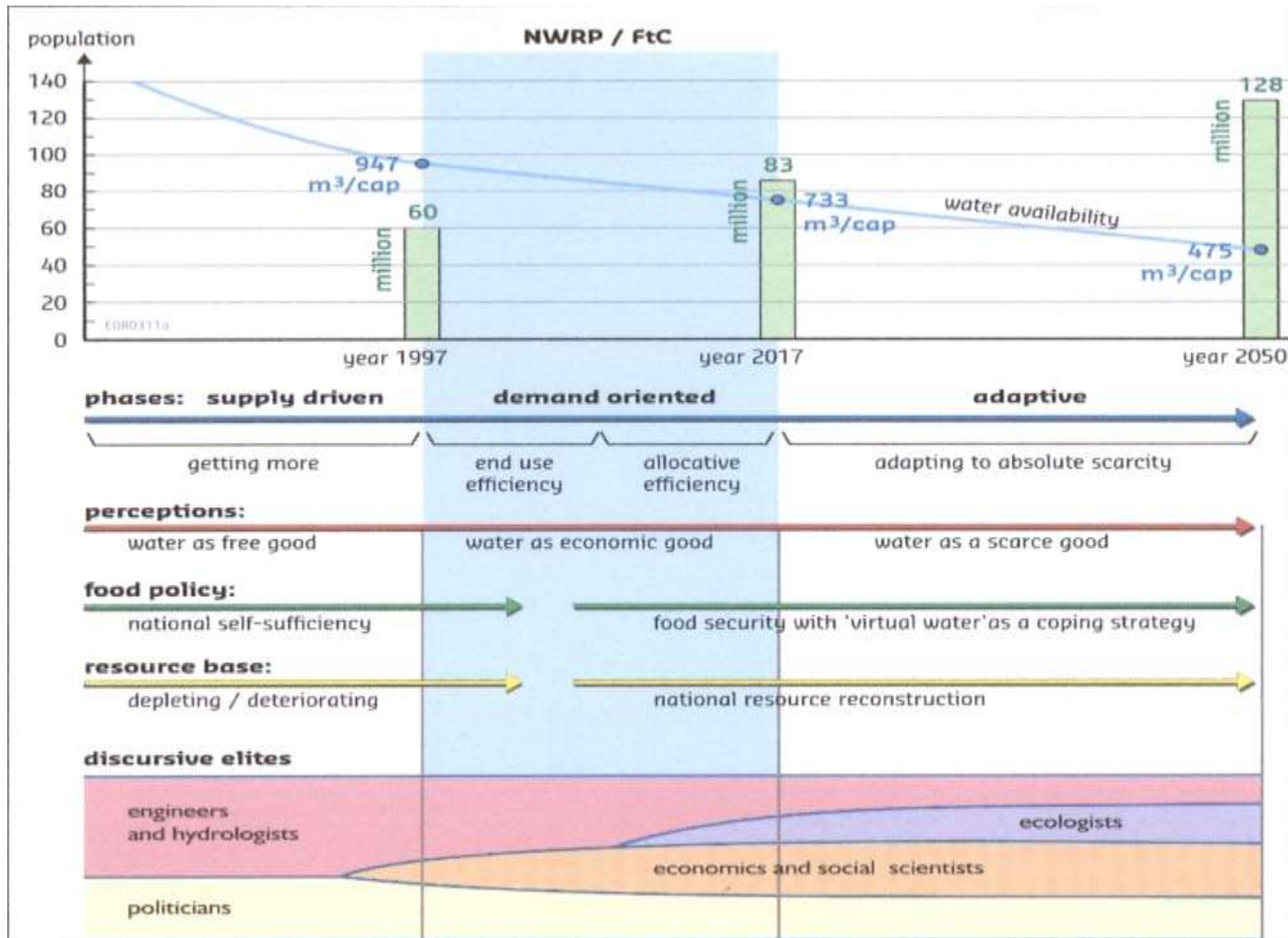
Preparation of WEE Students Curriculum

(70-75) % of the courses are shared with other **Civil Engineering** Programs

Univ. requirements are very much welcomed in the WEE program

Cr Hrs	Freshman	Sophomore	Junior	Senior I	Senior II							
1	University Requirement 6 cr hrs	University Requirement 4 cr hrs	University Requirement 8 cr hrs	University Requirement 6 cr hrs	College Requirement 6 cr hrs							
2												
3		College Requirement 30 cr hrs	College Requirement 13 cr hrs	College Requirement 10 cr hrs	College Requirement	Civil Engineering Requirement 6 cr hrs						
4												
5					Civil Engineering Requirement 16 cr hrs		Civil Engineering Requirement 13 cr hrs	Civil Engineering Requirement 13 cr hrs	Civil Engineering Requirement 6 cr hrs			
6												
7	Water Eng & Environment Requirement 5 cr hrs									Water Eng & Environment Requirement 5 cr hrs	Water Eng & Environment Requirement 14 cr hrs	Water Eng & Environment Requirement 25 cr hrs
8												
9												
10												
11	Water Eng & Environment Requirement 5 cr hrs		Water Eng & Environment Requirement 5 cr hrs	Water Eng & Environment Requirement 14 cr hrs		Water Eng & Environment Requirement 25 cr hrs						
12												
13												
14												
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17	Water Eng & Environment Requirement 5 cr hrs	Water Eng & Environment Requirement 5 cr hrs	Water Eng & Environment Requirement 14 cr hrs	Water Eng & Environment Requirement 25 cr hrs								
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27	Water Eng & Environment Requirement 5 cr hrs	Water Eng & Environment Requirement 5 cr hrs	Water Eng & Environment Requirement 14 cr hrs	Water Eng & Environment Requirement 25 cr hrs								
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36												

Preparation of WEE Students Curriculum



After Turton, 1999

Preparation of WEE Students Curriculum

Sample (Required Courses)

- Water Resources Engineering
- Integrated WR Management
- River Engineering
- Coastal/ Harbor Engineering
- Irrigation and Drainage
- Field Methods & Measurements
- Water Chemistry & Microbiology
- Environmental Hydraulics
- Environmental Impact assessment
- Water & WW Networks
- International Law (Water & Environment)

Sample (Elective Courses)

- Non-Conventional Water Resources
- Design of Pipelines & PS
- Water & WW Treatment Plants
- Remote Sensing & GIS
- Operations Research

Preparation of WEE Students Field & Laboratory Measurements



Preparation of WEE Students

Site Visits



Preparation of WEE Students National & International Training



Preparation of WEE Students National & International Training

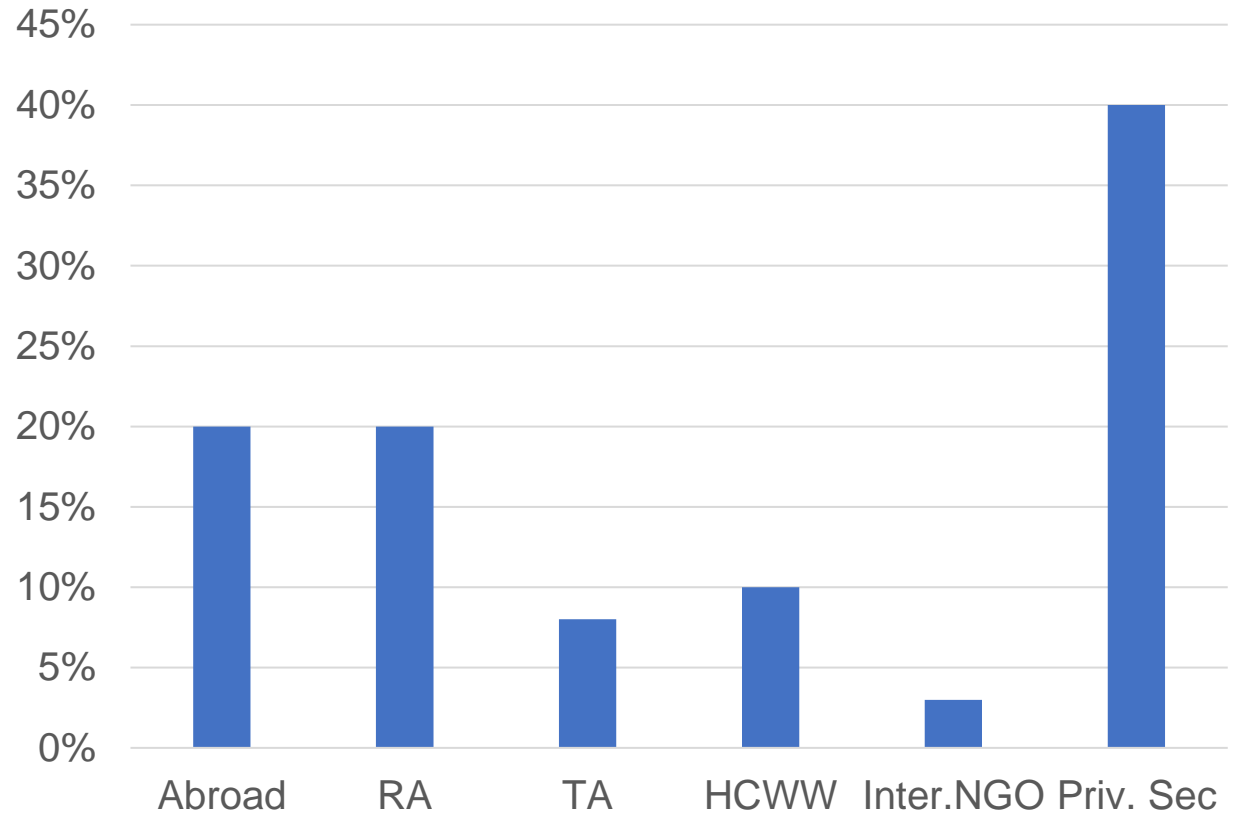


Preparation of WEE Students Seminars & Conferences



Job Opportunities (WEE Graduates)

- Consulting Firms
- Holding Company for Water and Wastewater
- MWRI (Research Institutes)
- Graduate Schools (Higher degrees)
- Teaching Assistants (National & Private Universities)
- Donors and International Organizations
- NGO's





WEE Ambassadors Abroad (PhD in Canada)

Why Should I Join the WEE Program ?

- Facing the Challenges (Water & Environment)
- Civil Engineering (Stable career)
- Balanced Curriculum (Deep and/ or Broad)
- Small Numbers (Close attention, Hands on)
- Surrounded by serious, motivated colleagues
- Job Opportunities (Secured)
- HCWW Scholarships (Available)



WEE are Civil Engineers !!!

With two ribbons of excellence

Water

Environment

For More Information



Water Engineering & Environment - Cairo University

378 likes • 475 followers



Scan me!



A Leading Bachelor in Civil Engineering with two ribbons of excellence: Water & Environment

Credit Hours System: International recognized standards

VISION

Excellence and leadership in civil, water, and environmental engineering education nationally, regionally, and internationally to better serve individuals, society, and environment.

MISSION

Providing professional engineers capable of guiding the water sectors towards integrated water resources perspective to resolve diversified water problems on different scales.

Why to be a WEEian?

International & National Trainings



Top Water Events & Prizes



Egypt Water Challenges & National Strategic Projects



Escalating Global Dilemmas & Environmental Concerns



Site Visits



Field Measurements & Lab works

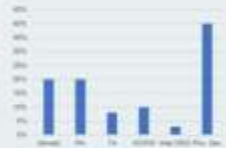
Prominent Staff & Family Environment



Limited Number of Students

Diverse, integrated, and advanced group Graduation Projects
Extensive tools and software

Job Opportunities (WEE Graduates)



Ask us! :

WEE-Facebook



WEE-Website



CUE-Website



Want to Join Us?

Scan the QR code above for up to 100% Tuition exemption Scholarships

What water engineers do?
What are the program courses?

For More Information

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