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Market-Based Development Approach to Introduce Efficient Irrigation Water Technologies

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IWMI
International Water Management Institute

Water System challenges

- **Water & Food Security complexity**
- **Climate change impact**
- **Geopolitical and supply chains uncertainties**

Source: www.thecairoreview.com/

Rice agriculture in Egypt - Photo by Hussein Tallal

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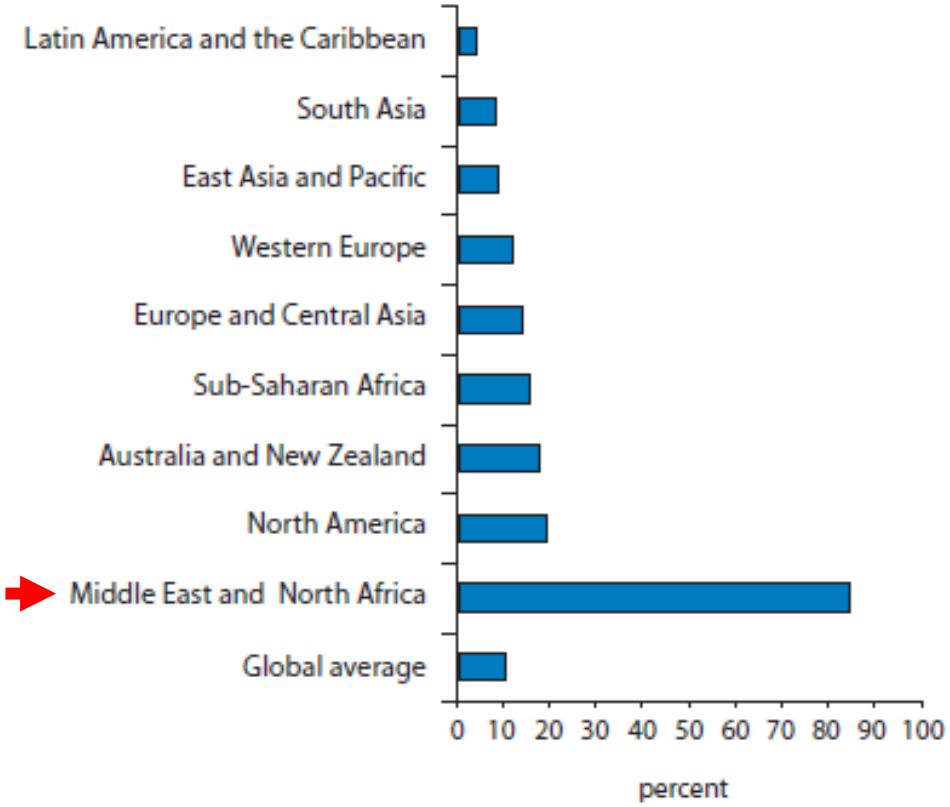
Water System challenges

Proportion of Regional Surface Freshwater Resources Stored in Reservoirs



Sources: FAO AQUASTAT; UHD 2005; ICOLD 2003.

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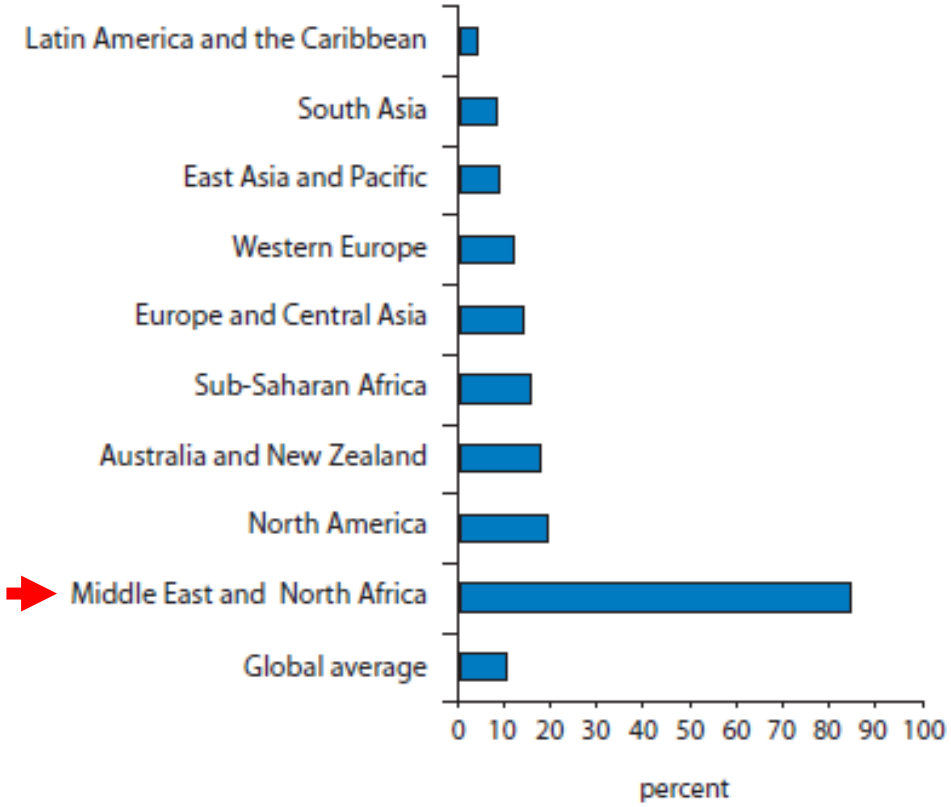
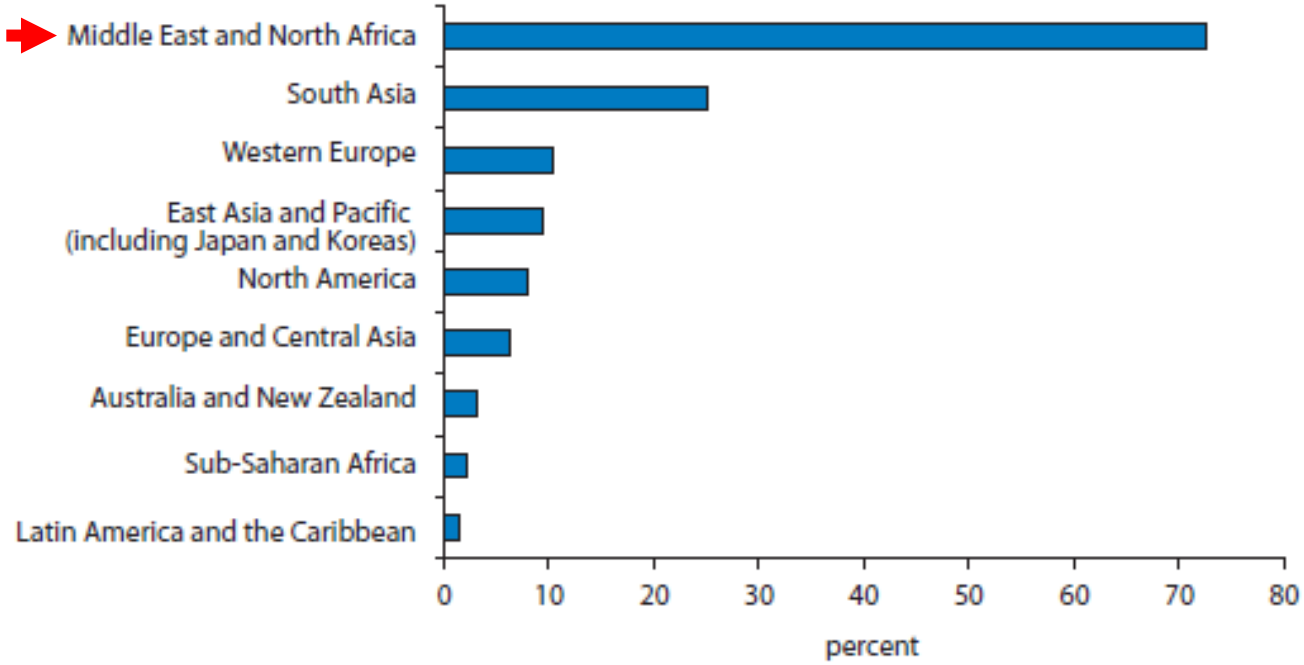
Water System challenges

Proportion of Regional Surface Freshwater Resources Stored in Reservoirs



Sources: FAO AQUASTAT; UHD 2005; ICOLD 2003.

Percentage of Total Renewable Water Resources Withdrawn, by Region



Source: Compiled from FAO AQUASTAT data for 1998–2002.

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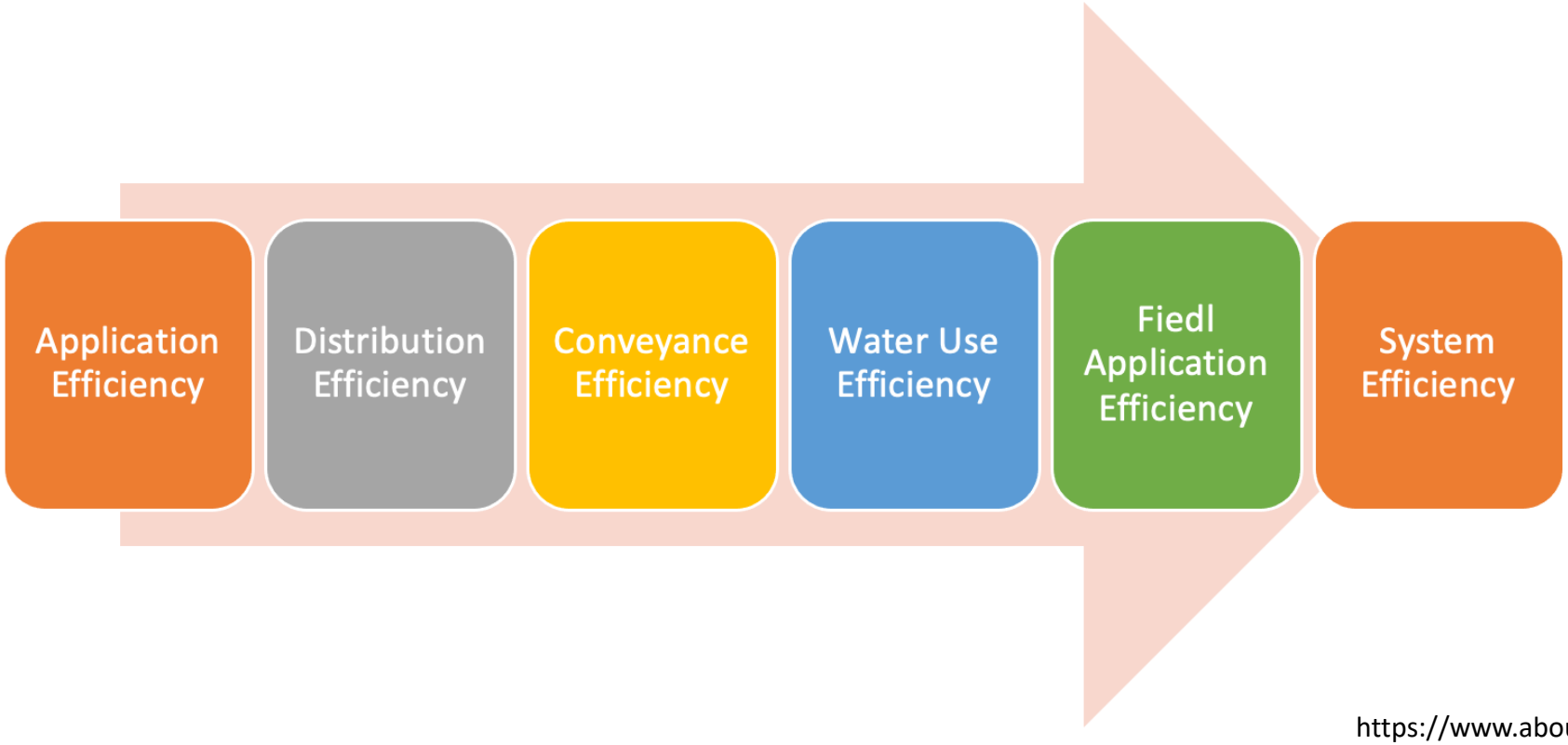
SUPPLY
DEMAND


SUPPLY
DEMAND


low
med
high
EFFICIENCY

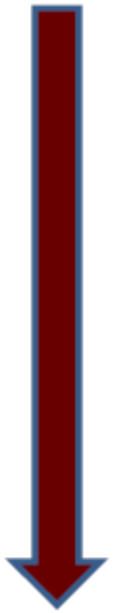
Types of Irrigation Efficiency



https://www.aboutcivil.org/irrigation-efficiency-types

Types of Irrigation Efficiency

- Water
- Energy
- Labor
- Fertilizer
- Pesticide



The Best Irrigation Method

- Income
- Quantity
- Quality

How to increase efficiency?

Failure factors of the introduction Efficient Irrigation Tech Projects

- Inappropriate problem or partnership
- Inappropriate tools and mechanisms
- Inclusivity: stakeholders, small-farmers, value chains…
- Viability: finance, parts, After-sale service…

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Market Systems Development (MSD) Approach

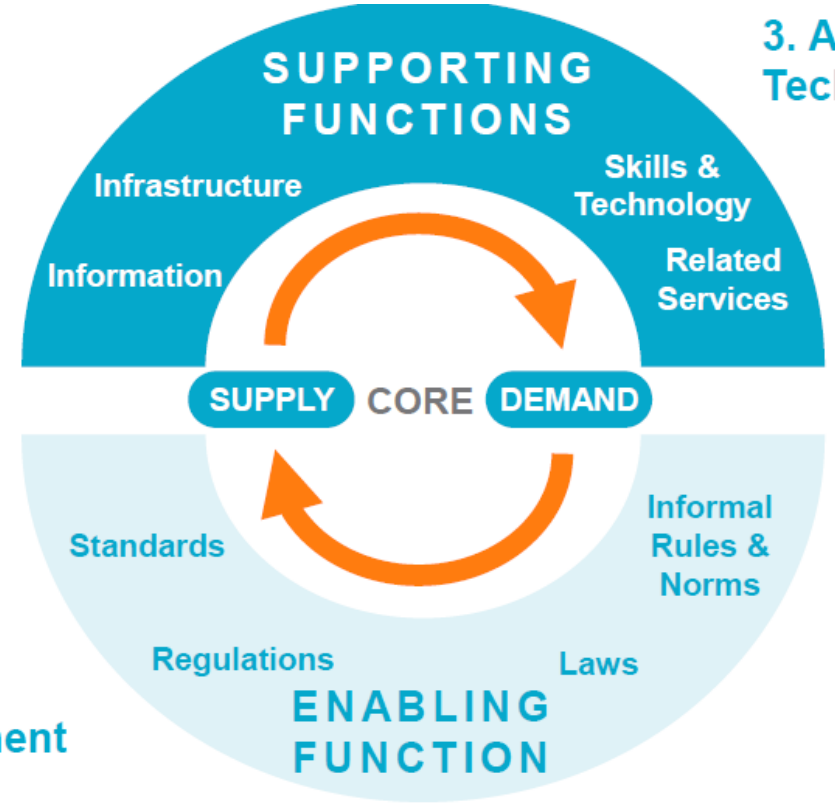
Systems thinking

Facilitation

Inclusion

Adaptive management

Market Systems Development (MSD) Approach



3. Activate Technical Services

4. Facilitate Financial Services

2. Activate Supply

1. Activate Demand

5. Strengthen Enabling Environment

Source: Adapted from The Springfield Centre's M4P Operational Guide, funded by SDC and DFID

Avoiding simplistic thinking

We often try to address challenges as though they are *simple*

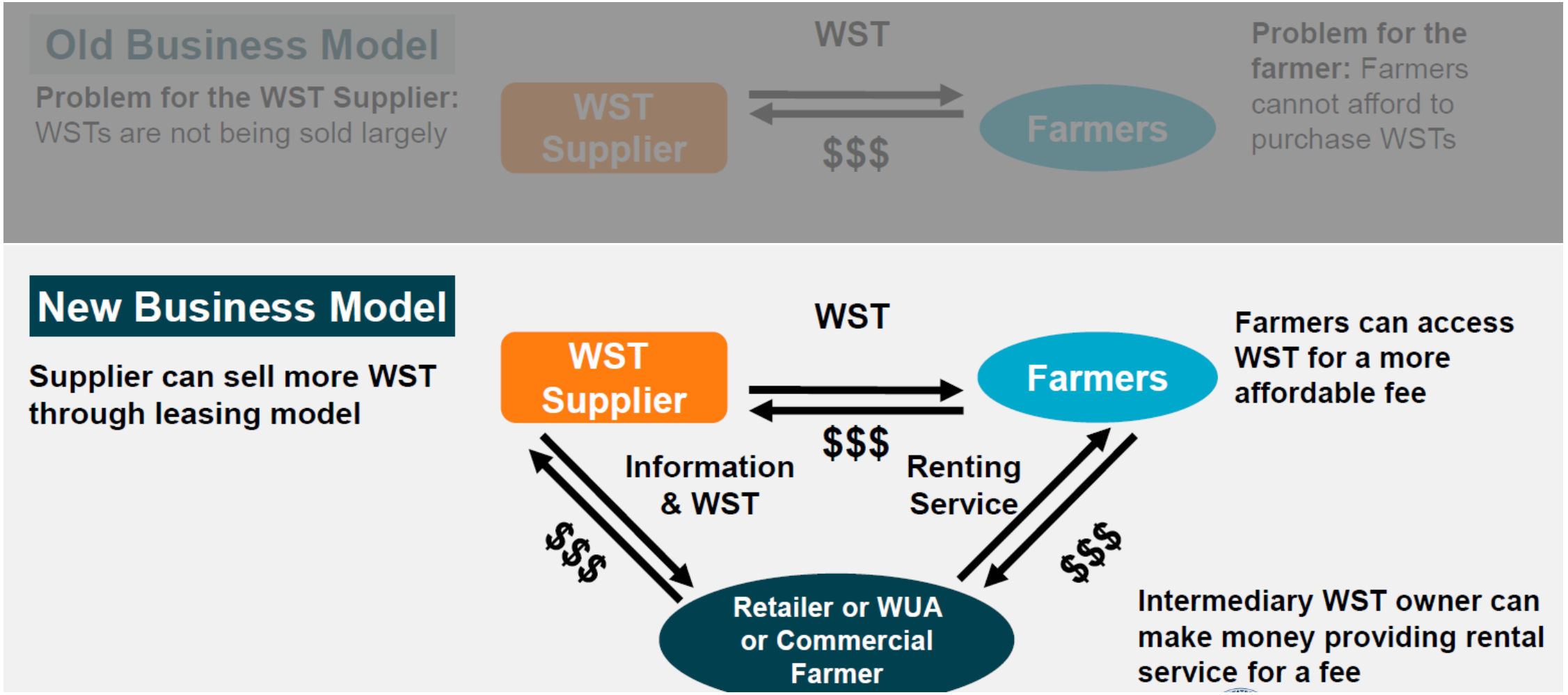
For example, we might assume that a farmer isn't using water saving technologies **only because of** a lack of information

The reality is usually **much more complex**

Ways to acquire technologies

- **Direct purchase:** the water user pays for the WST and its installation with their own money
- **Loan:** the water user gets money from the bank (or MFI) to buy the WST and install it
- **Hire-purchase:** the supplier (or retailer, or the WUA or Utility?) installs the WST and charges you a rent for it. After X months, when you paid the whole costs (+ some margin) the ownership is transferred to the user
- **Leasing (aka as WST-as-a-service):** basically the same, but the water user never becomes owner of the WST and continues to pay a monthly fee
- **Built-in:** The WST is included in the building when delivered. Its price is incorporated in the overall price

Business model to adopt:



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Water Innovation Technologies

Project

USAID FROM THE AMERICAN PEOPLE

IWMI International Water Management Institute

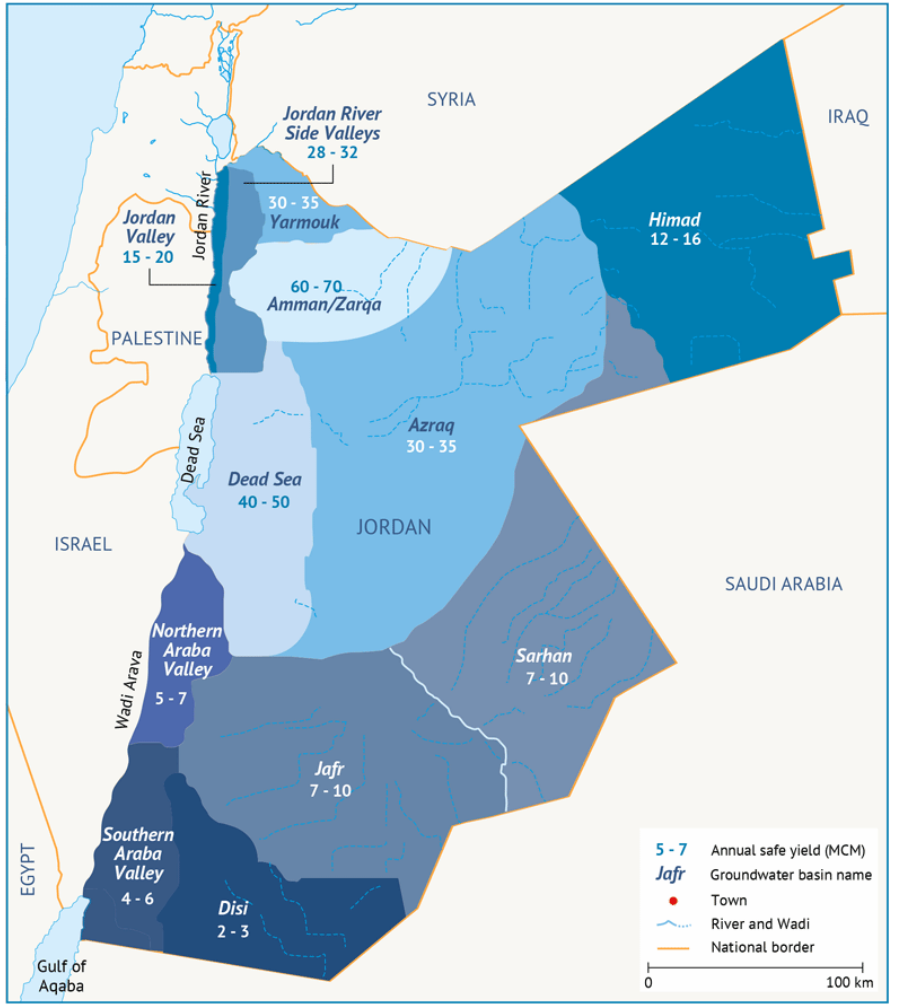
MERCY CORPS

ICBA AGRICULTURE FOR TOMORROW

Project Background

The Water Innovation Technologies (WIT) Project

- A five year project funded by USAID and led by Mercy Corps with a target of saving water from groundwater resources by introducing water saving technologies and practices in the agriculture sector in Jordan following a market system approach (MSD)



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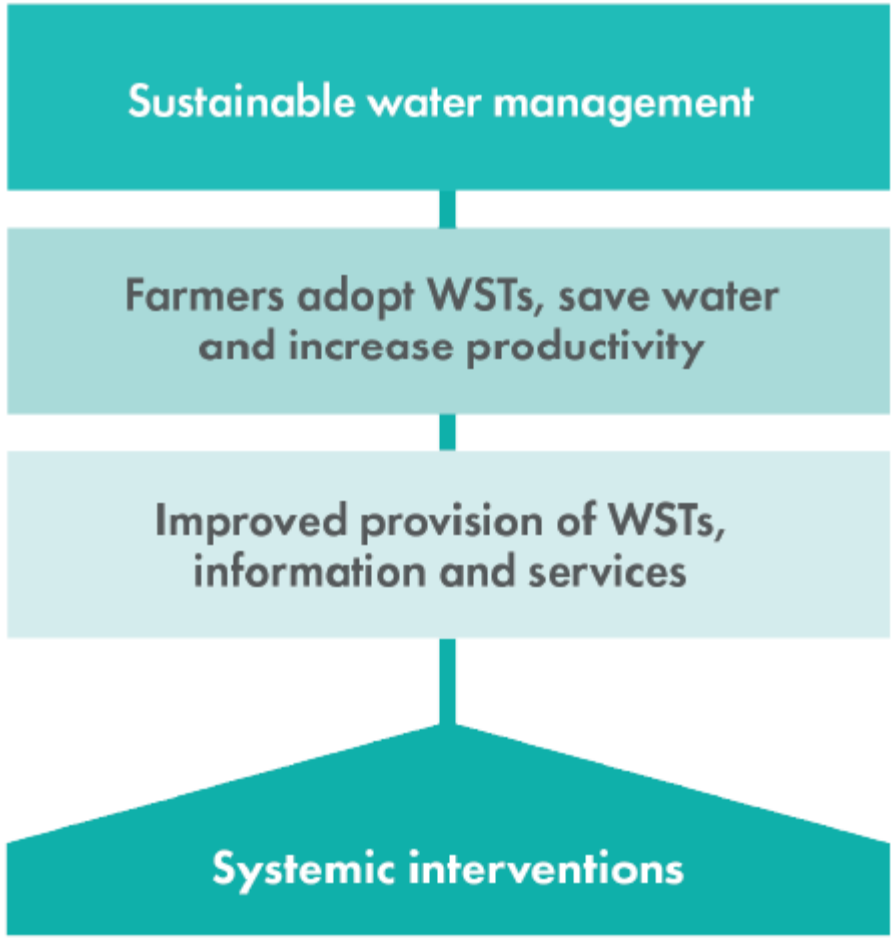
Project Background

The Water Innovation Technologies (WIT) Project

WIT's strategies and interventions led to total **savings of 28 MCM of water** in the agricultural sector and at household level.

These savings exceeded the original target of 18.5 MCM by 51% and are equivalent to 11,000 Olympic pools.



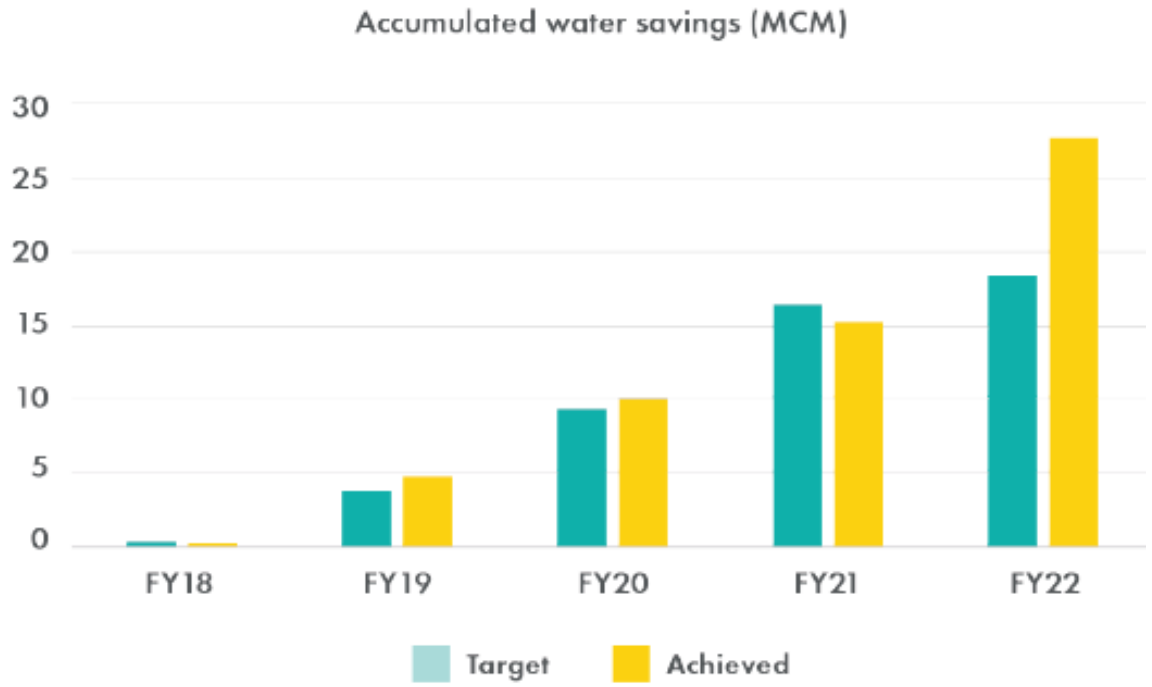
WIT's overall theory of change

Main areas of intervention

- Access to information on benefits and availability of WSTs
- Building capacity for engagement between key market actors
- Access to finance to enable investments in WSTs
- Creation of spaces for interaction and learning

Main impacts

Water saved



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Learnings

- Water Saving & irrigation efficiency Technology **Market still lack a dialogue** between key players, sensible policy and incentives to boost technology up scaling and to encourage farmers adoption.
- The **importance of research and development**, in facilitating effective market mechanisms.
- The importance of addressing **water and energy nexus** to facilitate the adoption of innovative water and energy saving technologies.
- The effect of **monitoring and evaluation** end-users' **behavior** towards water and energy saving.
- Water savings at the field scale **can translate to water for reallocation** to the basin scale when policies on irrigation expansion and intensifications are enforced, along with setting water withdrawals caps

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Thank you for your attention