



Water Scarcity Initiative (WSI)

MECHANIZED RAISED-BED IRRIGATION PRODUCTION PACKAGE

BACKGROUND

Gaps in crop water-productivity and yield of small irrigated fields are estimated to be around 40 percent. To realize higher productivity gains, a package of interventions is required, not just a single one. The synergic combination of advances in affordable technology and optimal management of production factors has proven successful in increasing crop yields and associated farmers' incomes. Moreover, applied irrigation water amounts are reduced.

COUNTRY

Egypt

Assiut Governorate

Al Sharqiya Governorate



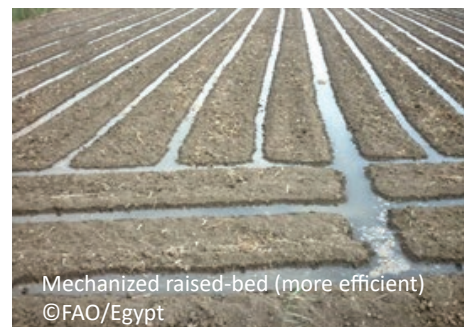
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Traditional farmer practices ©FAO/Egypt



Traditional surface irrigation systems ©FAO/Egypt



Mechanized raised-bed (more efficient) ©FAO/Egypt

ACTION

This project aimed at up-scaling the field-tested Mechanized Raised-Bed Irrigation (MRBI) production package in Egypt, focusing on small-scale farming systems (see Box for explanation of MRBI). The package included access to the MRBI machinery for wide raised-bed planting, high-yield disease-tolerant varieties, and extensive training for seed applications and fertilization regimes. Capacity-building activities for farmers included on-the-job training, demonstration fields, and farmer-to-farmer field visits.

RESULTS

60 Demonstration fields established



600 People trained including farmers and extension technicians



22% Wheat yield increased



Farmer incomes increased by more than 20%



25% Applied water reduced



30% Fertilizers use-efficiency increased



50% Seed-loss rate reduced



No lodging at harvest



More than 60% increase in applied-water productivity of wheat yields



Germination stage ©FAO/Egypt



Establishment stage ©FAO/Egypt



Large consolidated wheat MRB platform
©FAO/Egypt

BENEFICIARIES

- > Over 150 farmers benefitting directly from the MRBI production package
- > Ministry of Agriculture and Land Reclamation
- > Local governorates
- > Farmers' group associations
- > Local private enterprises developing the MRBI machinery

PARTNERS

- > Agriculture Research Center
- > Faculty of Agriculture, University of Zagazig
- > Governorates of Al Sharqiya and Assiut

NEXT

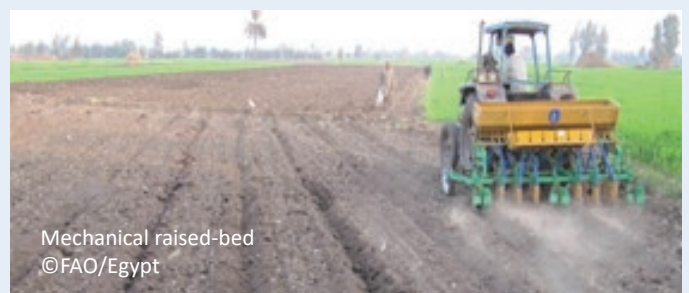
The Government of Egypt plans to adopt the MRBI production package to over 2 million feddan by 2020.

BOX: MECHANIZED RAISED-BED IRRIGATION (MRBI)

Raised-bed is a field configuration made by a mechanized plow to create widely spaced rows where irrigation water is applied in furrows with planting on strips in the beds.

The beds and furrows' dimensions are determined to ensure homogenous and adequate water distribution into the soil root zone.

An innovative adaptation of a seed-drill machine creates the beds and can plant different crops at the same time with adjustable seed rates. This mechanized raised-bed irrigation, along with the adoption of improved crop varieties and improved agronomic practices, represents the MRBI production package.



Mechanical raised-bed
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