Water Productivity: Challenges Facing Agricultural development

Changing Paradigm of water use

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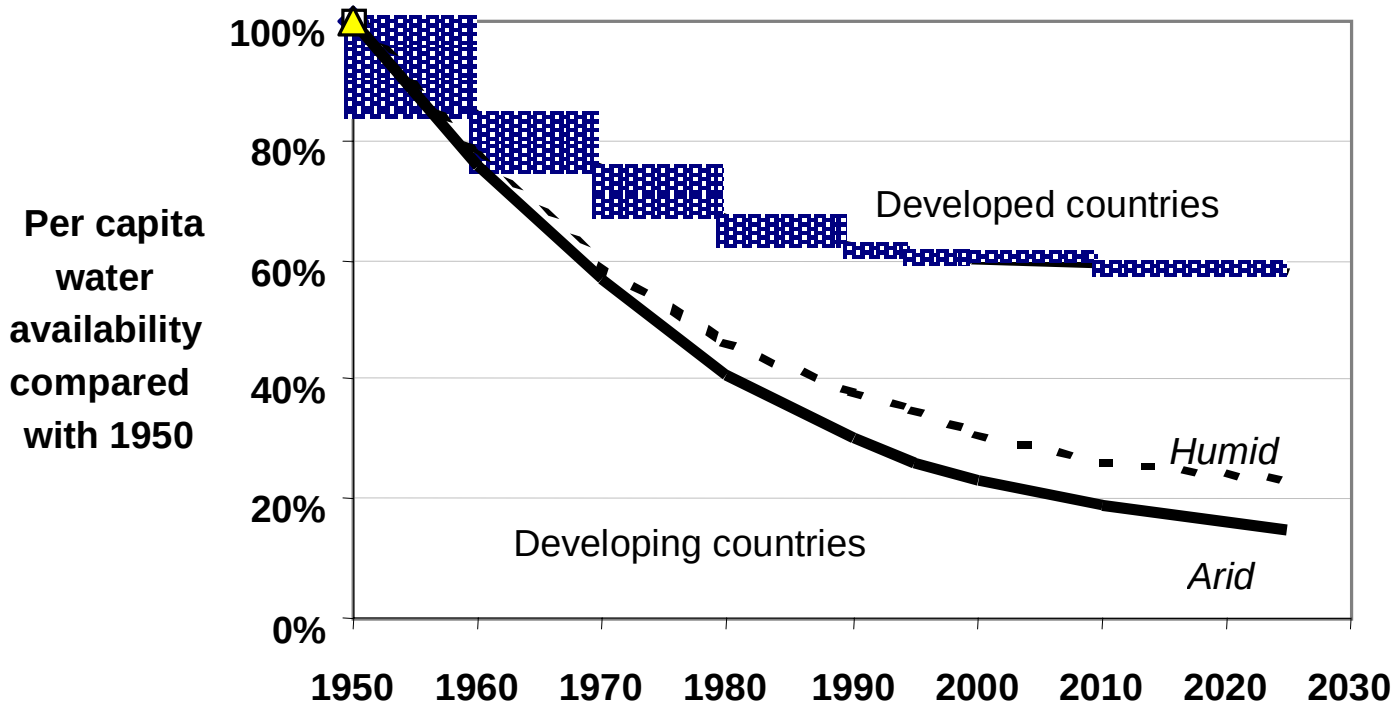
From the Abstract:
“The declining water quality and quantity requires that new paradigm of irrigation technology be developed. The new approach should be based on assessing the efficient utilization of low water quality including treated waste water, saline water, and polluted water for environmental protection, agriculture, forests, and landscape”.

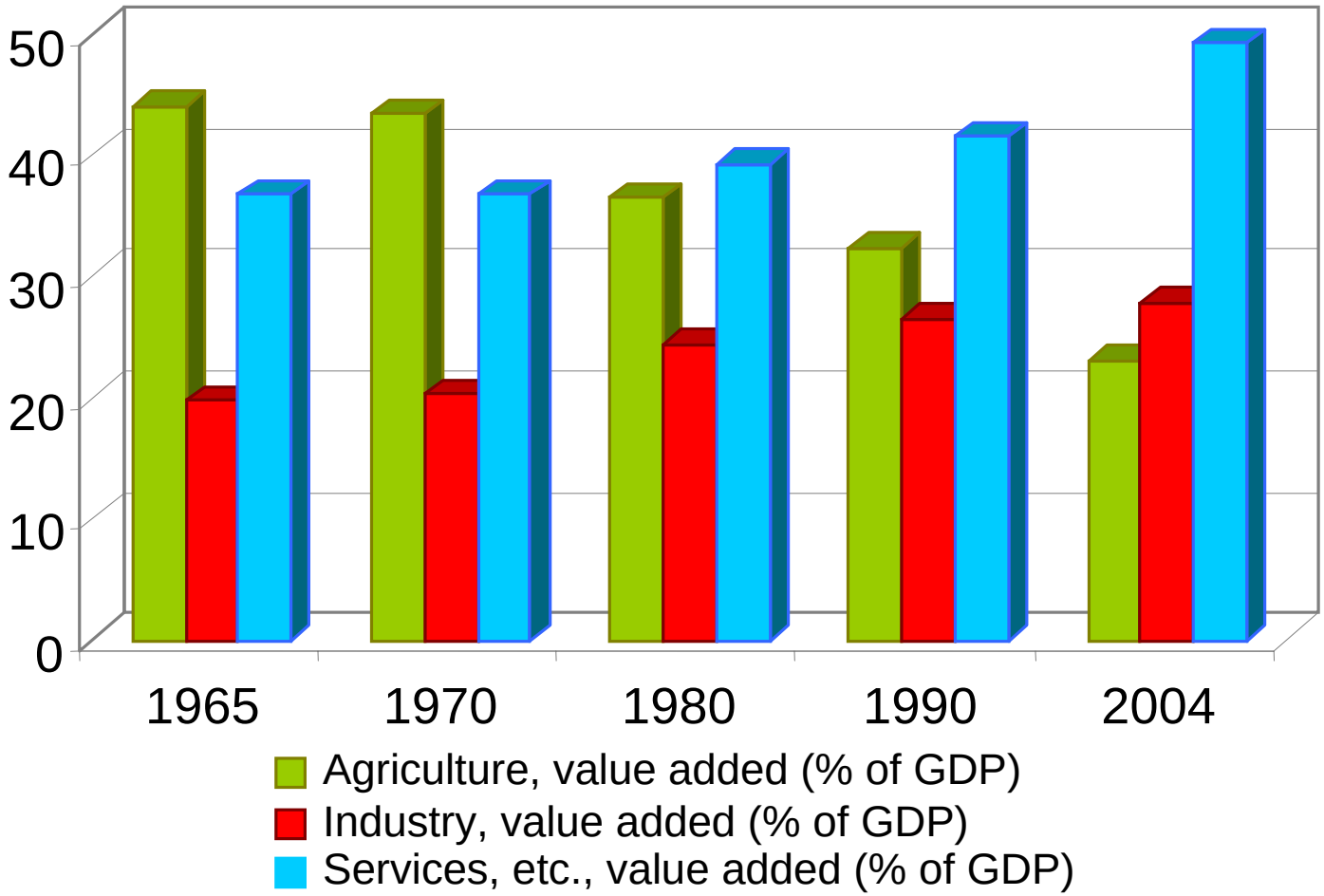
CONTENT:

- Water can produce more food, but not at the expense of the environment
- Geographical analyses: the situation in the Middle East, in Asia, in Sub-Saharan Africa.
- Factors affecting water productivity: new sources of water, salinity and groundwater pollution, agricultural trade and virtual water.
- Increasing the utilization of marginal quality water

Figure 1: Water Availability Continues to Decline in Developing Countries



GDP Shares: Low-Income Countries



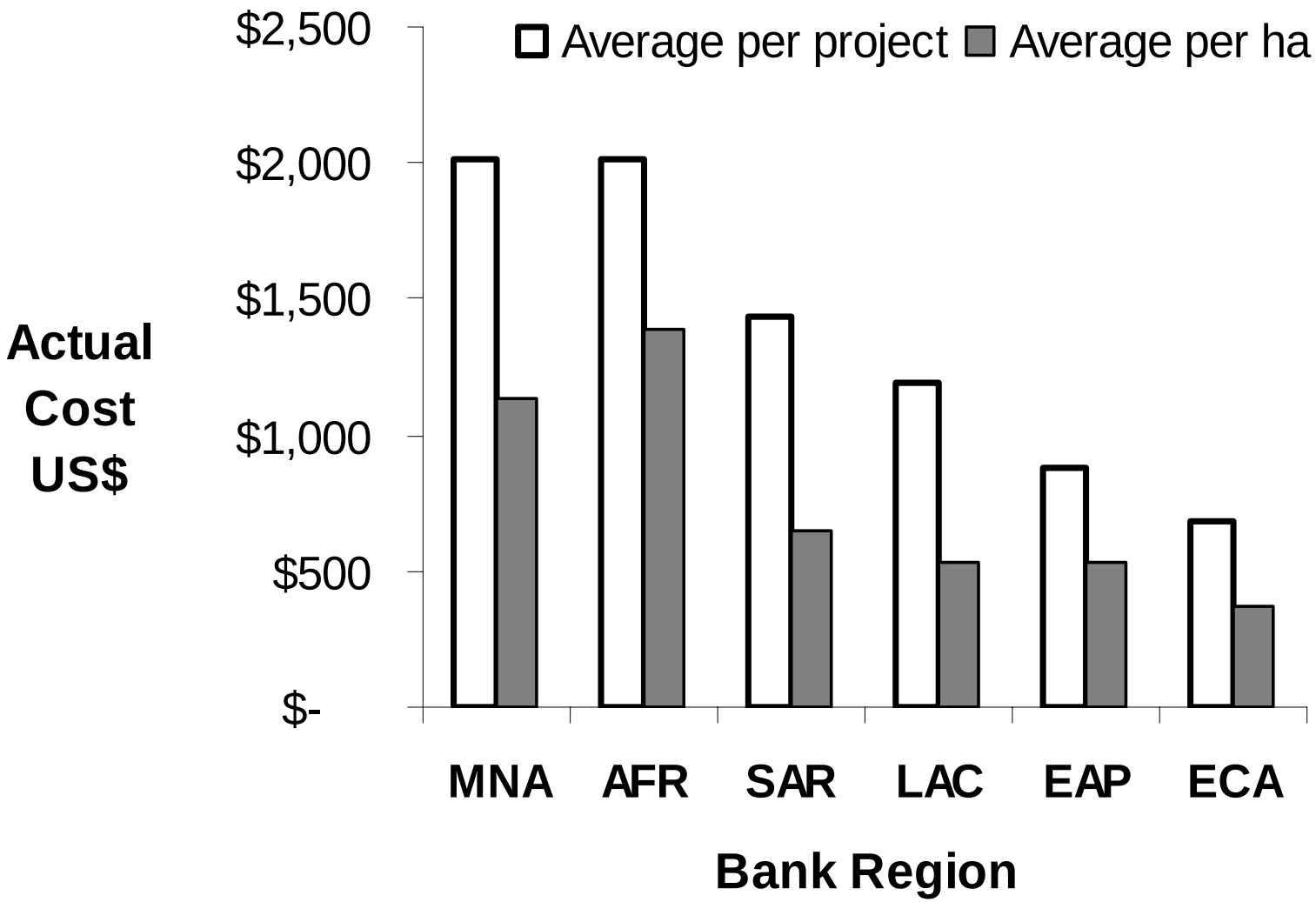

$2,500
$2,000
$1,500
$1,000
$500
$-
Average per project
Average per ha
Actual Cost US$
MNA
AFR
SAR
LAC
EAP
ECA
Bank Region

Table 5: **Imported cereals by regions in year 2000/2001 in virtual water**

Region	Cereal Imported * 000 tons	Equivalent in virtual water** Million cubic meters
West Asia	32, 368	64,736***
North Africa	26, 687	53, 374****
East and Southern Africa	1,645	3,290
West Africa	5,382	10,764
Central Asia	794	1,588
South Asia	2,625	5,250
South East Asia	9,795	19590

**Assume that one ton of cereal requires 2000 cubic meters of water.

New-Paradigm for increasing water productivity: Increase the utilization of marginal quality water

- **MUNICIPAL WATERS**
- **TREATED WASTEWATER**
- **REUSE OF MUNICIPAL WASTEWATER FOR AGRICULTURE**
- **SALINITY FROM AN AGRICULTURAL WASTEWATER PERSPECTIVE**
- **RESEARCH IN PARTNERSHIP WITH USERS**