



Water Economics and Financing

FINANCIAL SOLUTIONS FOR EMERGING COUNTRIES

Economic and financial aspects—water demand management

Saul Arlosoroff

Zaragoza, 1st August 2008

Main Water Supply System

Lebanon

Syria

Tel Aviv

Sea of Galilee

Palestinians

Jerusalem

Egypt

H.K. Jordan



ragoza, 1 August 2008

Economic and financial aspects - Water Demand management

Main instruments and policies:

- *Comprehensive national metering law and system
- National water law and it's related paragraphs to water conservation

- *Annual water allocations and permits

- *Progressive block water rates

- *Abstraction fees –"shadow value of water"

- *macro economic policies leading to "virtual water" decision.

- *Financial support to Agronomic research and technological R&D

- *sanction rates to fit "marginal costs" of new resources

- *Development of resources based on it's marginal costs

- *Water markets –fresh water allocations for waste water effluents.

- *Water allocations markets-via the national water carrier

Zaragoza, 1 August 2008

Economic and financial aspects - Water Demand management

Water Demand Management-“10 – Commandments” Strategy

*** “The cheapest un-utilized water resources-globally”**

1. National Assessment of water resources, master planning. Transfers of water/integrating resources. Nation wide ground water development, and control.
2. Legal basis, water code and regulations, institutional responsibility, options to promote efficient water use.
3. Comprehensive water metering of all water producers & consumers.

cont.

Zaragoza, 1 August 2008

Economic and financial aspects - Water Demand management

4. Research & Development of optimal water use Norms, allocations, technology development.
5. Water pricing structures – progressive block rates. Sanction rates.
6. Wide scale introduction of pressure irrigation systems, drip irrigation and automation mainly Horticulture, cotton, parks, gardens.
7. Completion of total sewerage systems, secondary & tertiary treatment of wastes.
8. Water exchanges/trading policy. Farmers are receiving treated effluents in exchange for fresh water allocations. Govt. executed effluents transfer network.

“Virtual water policy” – import of grains”

Zaragoza, 1 August 2008

Economic and financial aspects - Water Demand management

9. Establishment of special funds. Retrofitting of most irrigation systems and industrial processes, and selected urban consumers.

10. Following comprehensive development and efficient use of most water resources – present program calls for Nation wide reuse of advanced treatment of waste water. Large scale integration of Brackish and Sea Water Reverse Osmosis Desalination plants. (SWROD)

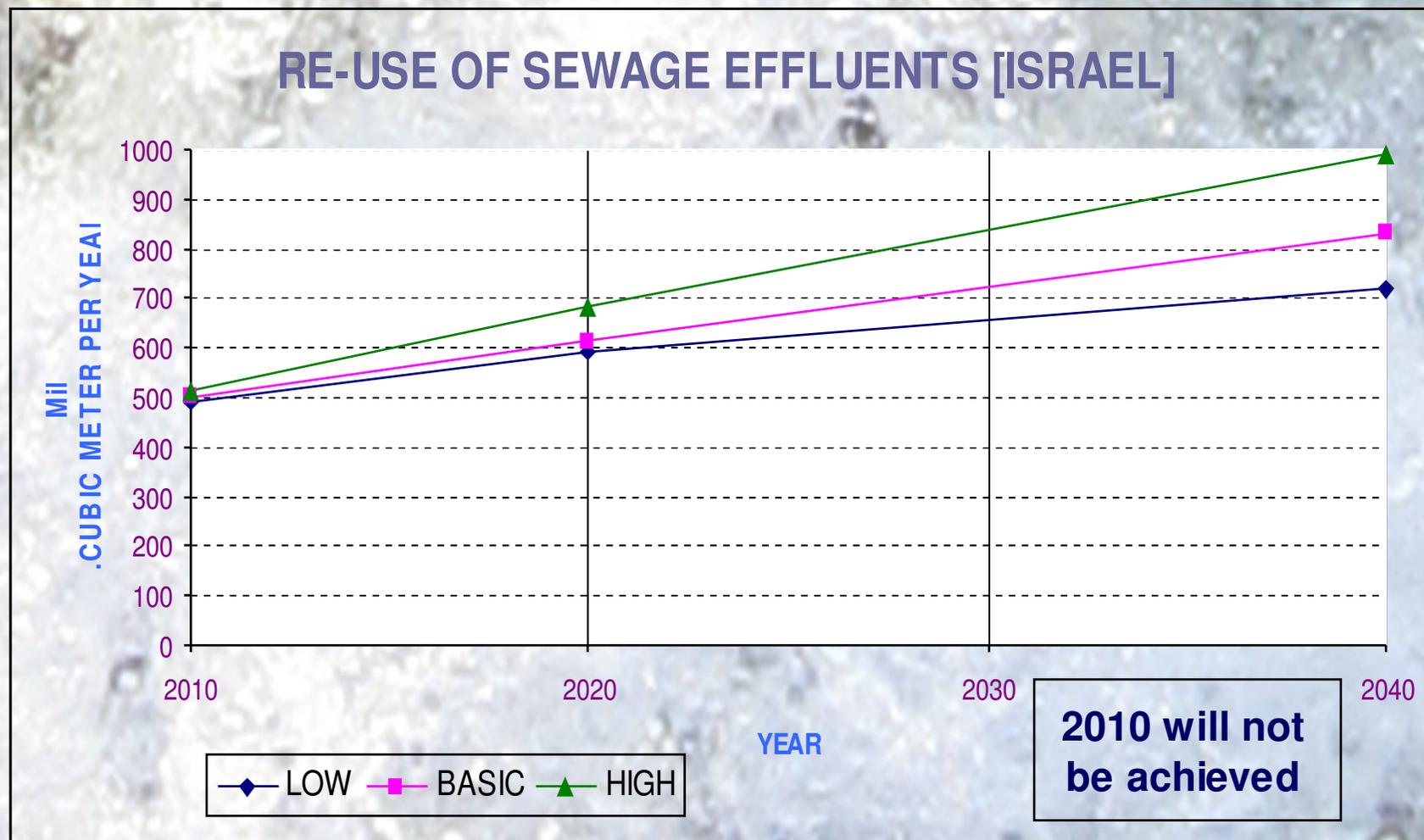
Economic and financial aspects - Water Demand management

Typical Desert land Under drip
Irrigation – Savings of 40%



Zaragoza, 1 August 2008

Economic and financial aspects - Water Demand management

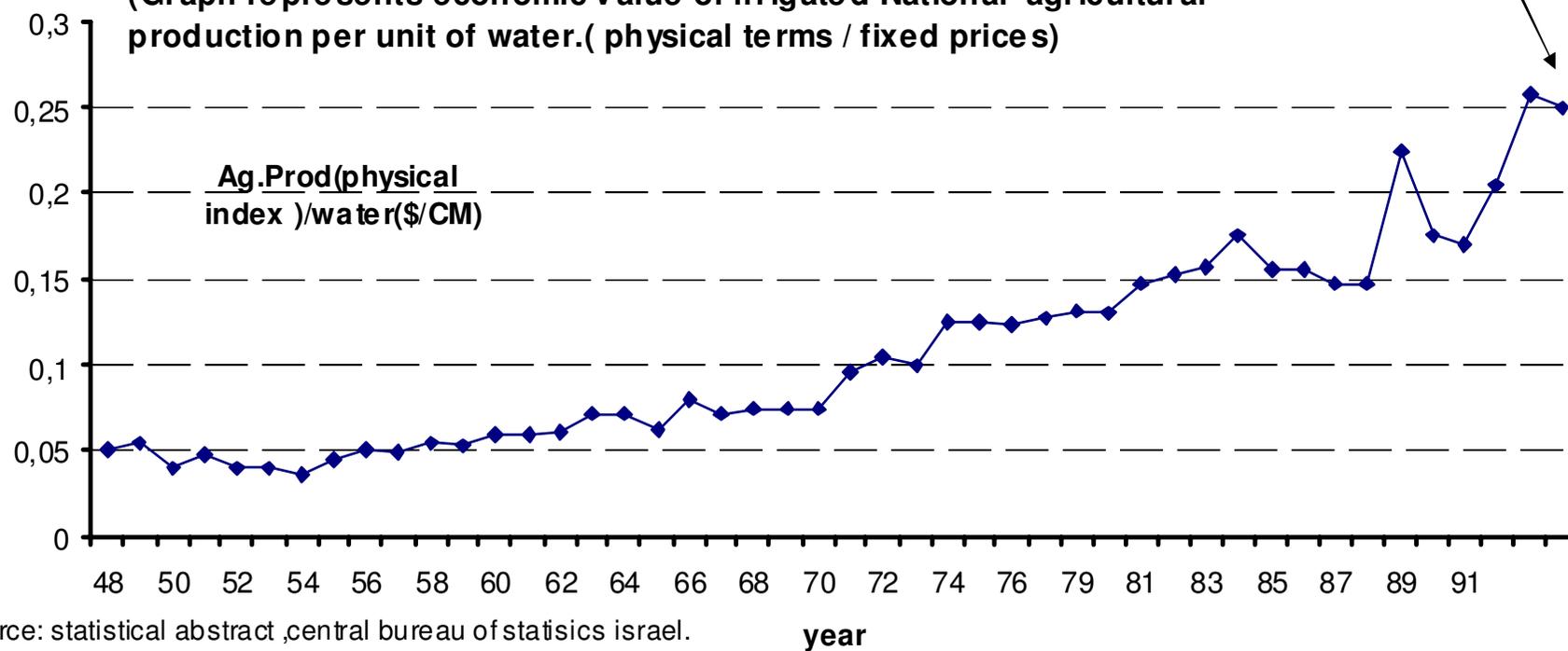


Zaragoza, 1 August 2008

Economic and financial aspects - Water Demand management

The Agricultural Sector - ISRAEL

(Graph represents economic value of irrigated National agricultural production per unit of water.(physical terms / fixed prices)

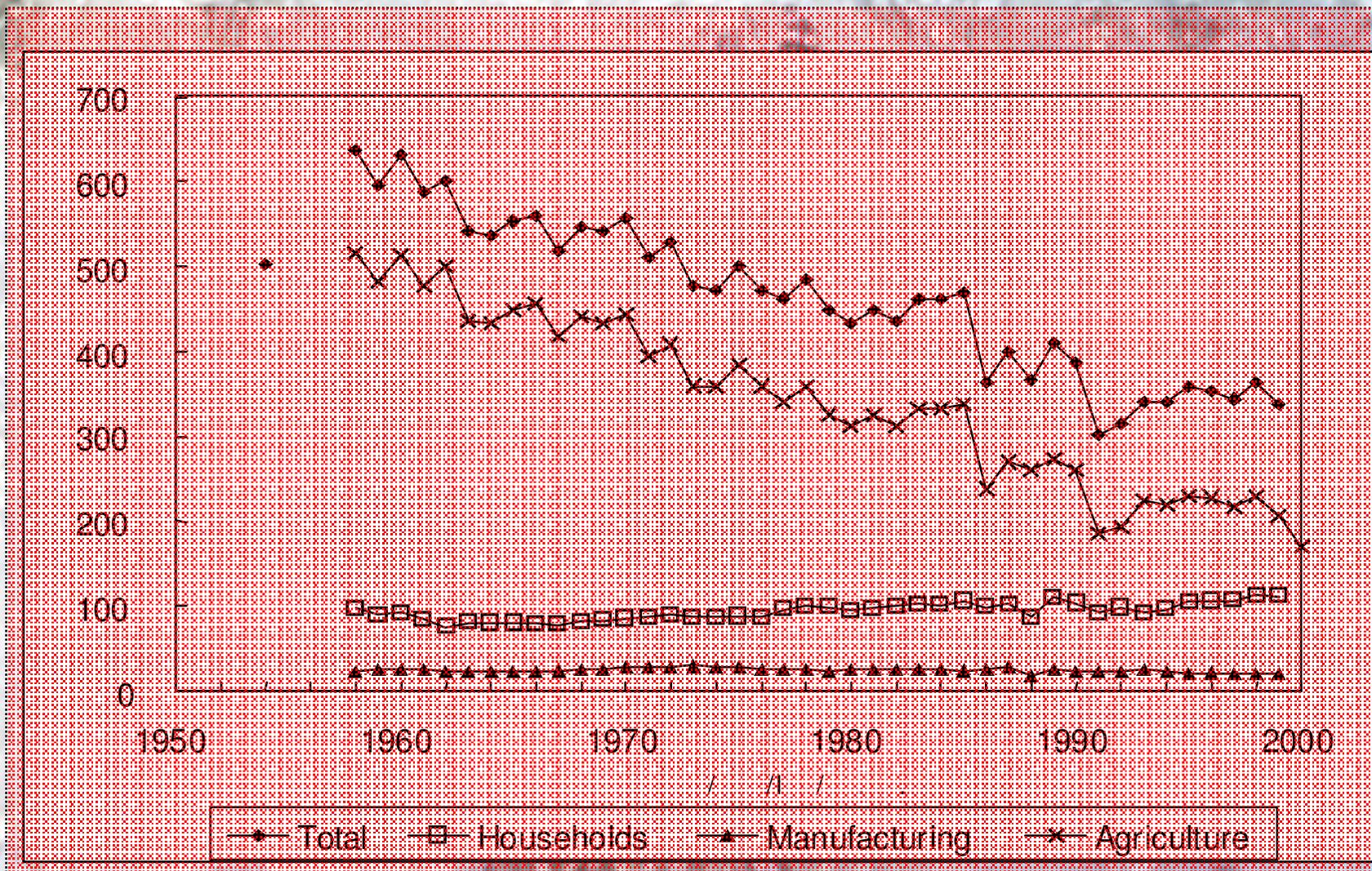


Zaragoza, 1 August 2008

Economic and financial aspects - Water Demand management

Per-capita Water Utilization

(Water use divided by the population in Israel)



Economic and financial aspects - Water Demand management

Dear All

Thank you for your attention

Saul (Shaul) Arlosoroff

Zaragoza, 1 August 2008