

Water for Food & Ecosystems



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First part: Water for food and ecosystems

Second part: FAO-Netherlands Conference

WHY? water for Food & Ecosystems



For 2 main reasons:

- 1) They are similar type of water users.
- 2) They are the 2 major water users.

Future belongs to their common roots

Agriculture and Ecosystems



**Part of the same natural biological and hydrological system
same resources – land and water
same biological process: photosynthesis and biomass production.**



History: common ancestry

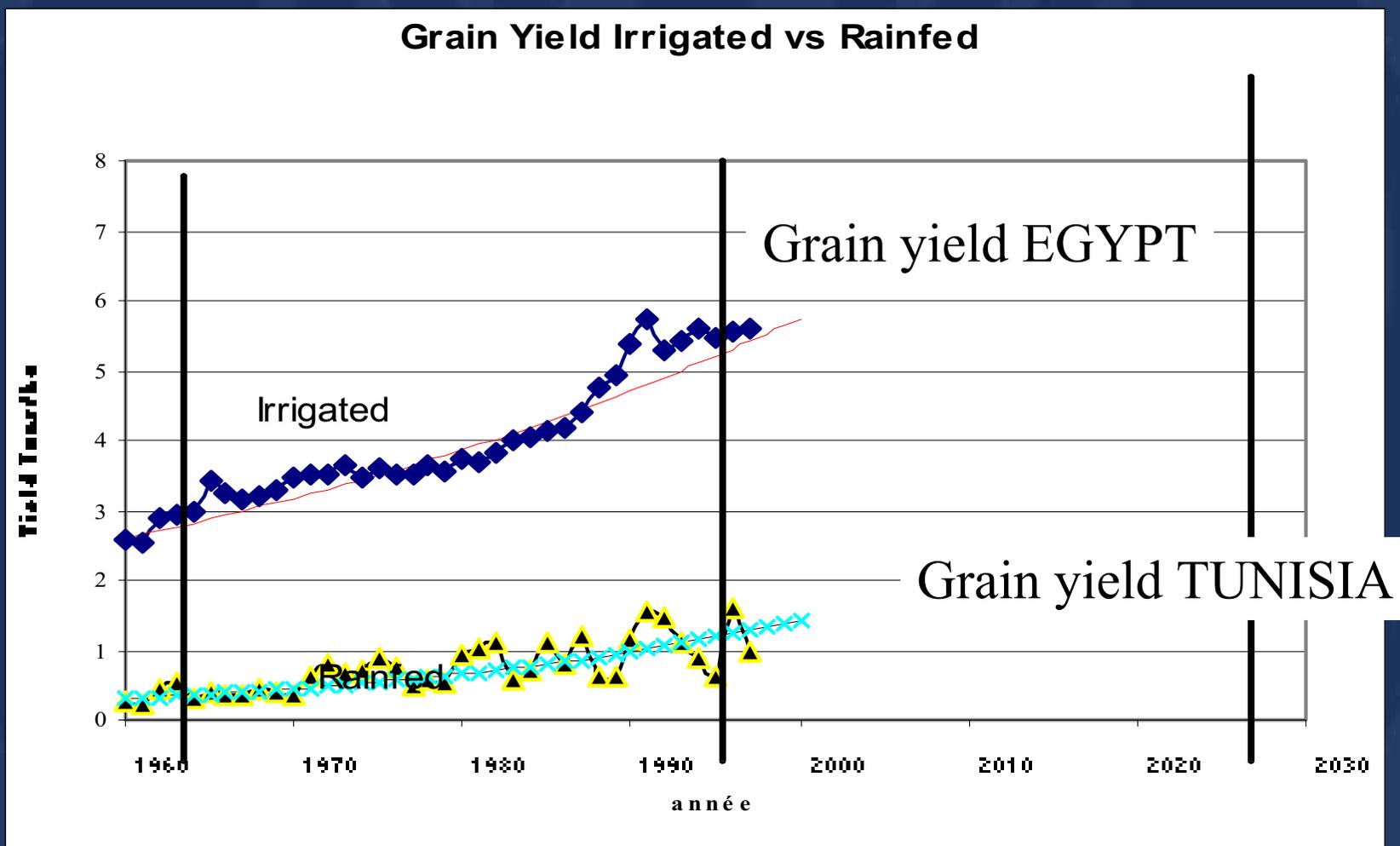


**Food system has then evolved from harvesting in natural resources to a progressively increasing specialisation
→ increased food production**

Agriculture can feed population



Productivity gain has allowed to cope with population increases.
Population doubled since 1961.



This success has a cost !



**Agriculture
encroached on
natural ecosystems**

**Pollution of natural
eco-systems**

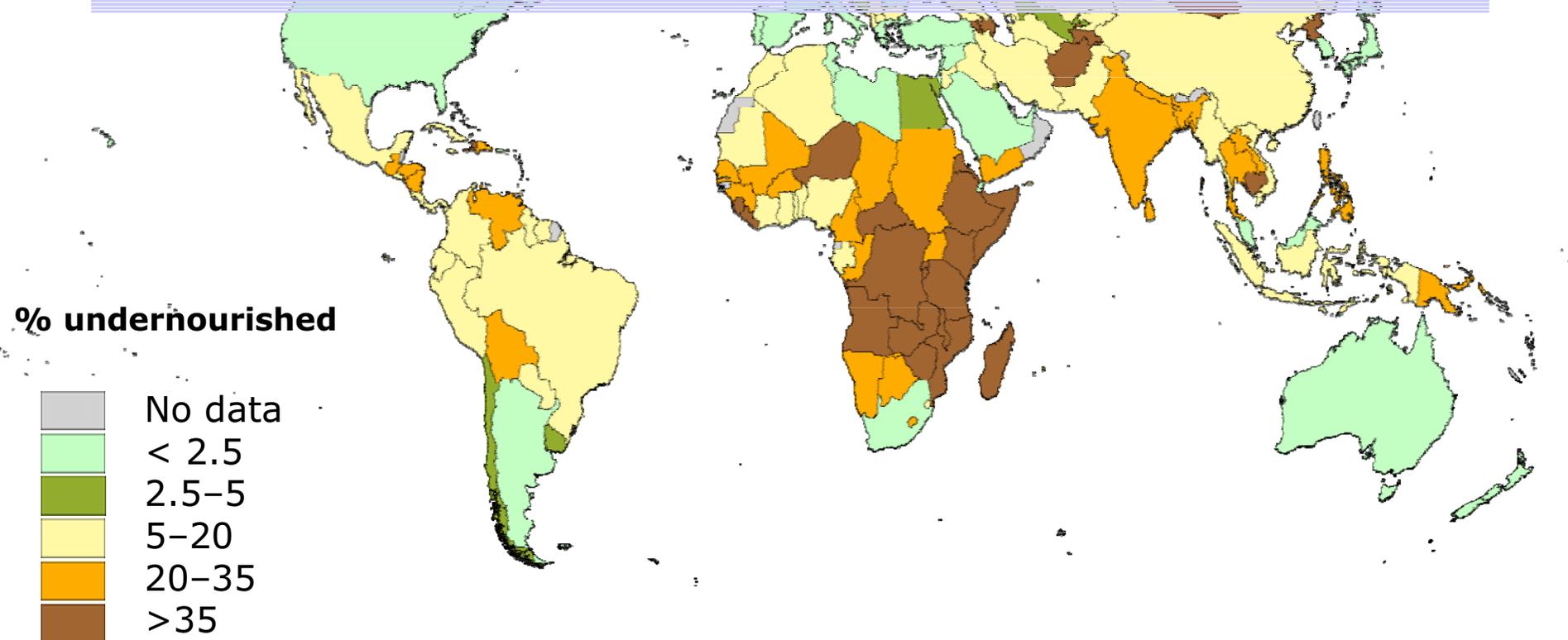
**Degradation of natural
resources (land &
Water)**



The success not yet complete !



800 Millions under-nourished people



Water uses - World



Annual Precipitation = 119 000 km³

Potential water resources = 45 000 km³

GREEN WATER (water evapotranspired) = 74 000 km³ shared between agriculture and ecosystems

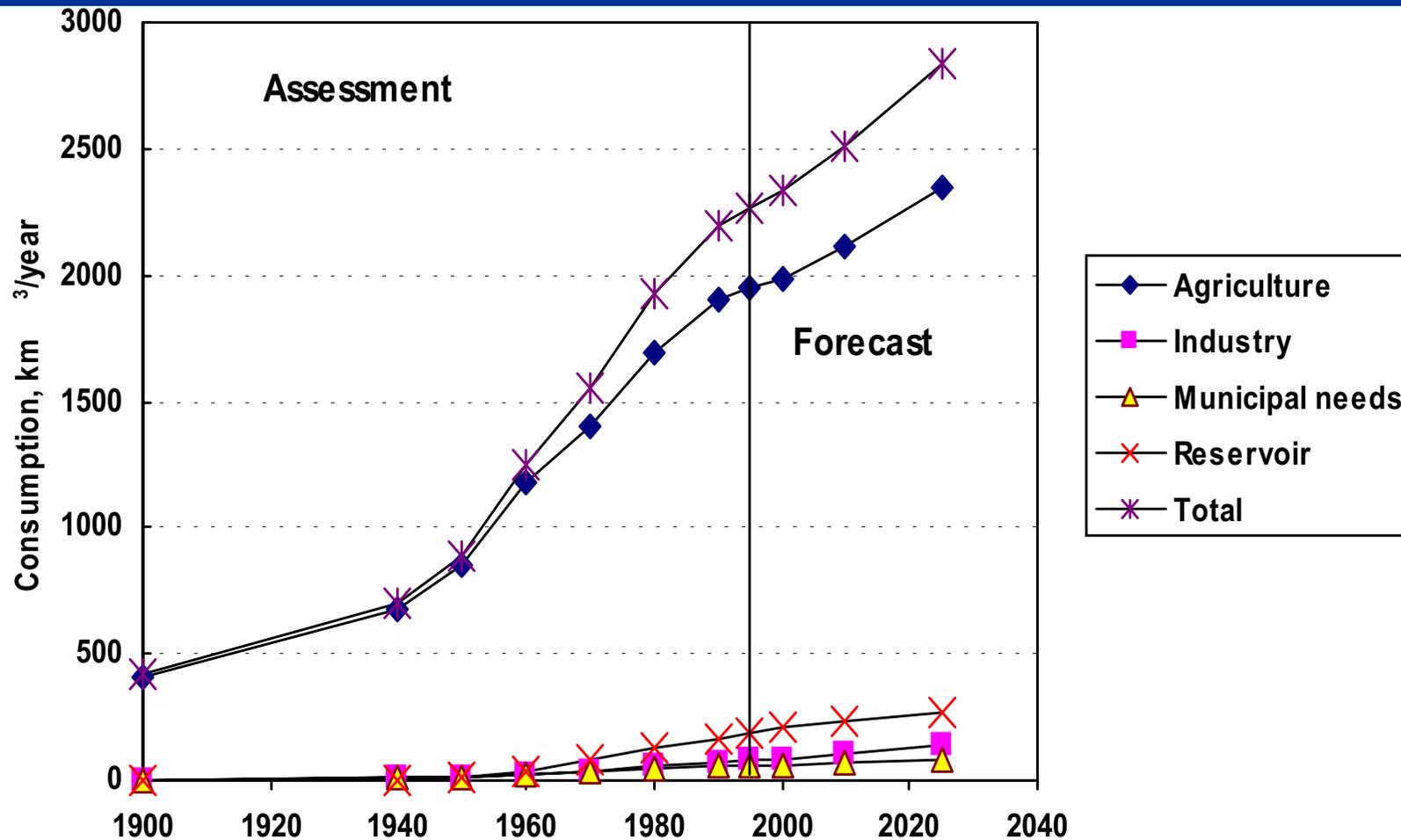
AGRICULTURE = 8 000 km³ [11 % of total water consumed by evapotranspiration]

ECOSYSTEMS = 66 000 km³

THE PARADOX



IRRIGATION with 2 000 km³ is by far the main use of BLUE WATER but represents only 1.66 % of total precipitation.



Agriculture and Ecosystems



Shift from “ecosystems as a reserve for agriculture”
to
the increasing recognition of the intrinsic value of
ecosystems:

Fiber production
Health
Biodiversity



Future: sustainable management



The need to harmonize future food production and ecosystems through sustainable water management

**WWF 2 The Hague and 3 Kyoto
Johannesburg meeting on sustainable development,
Convention on Biological Diversity & the RAMSAR convention.**

To retrieve a sense of unity and develop further IWRM for food and ecosystems

Future for WFE= back to the common roots



An ecosystem approach to agriculture

A productive service approach to ecosystems

An ecosystem approach to agriculture



to regard the agricultural sub-system as a part of the wider ecosystem

- 1) Better integration of biological material in the eco-system**
- 2) Better integration of services supported by the agro-eco-systems,**

**ex. NERICA rice varieties
→ improving yields
under upland and
rainfed rice growing
conditions
traditionally applied
in parts of Africa.**



**ex. FAO's LEAD programme on means and services of African
livestock keepers:**



**managing interdependencies between livestock keepers and wildlife
reserves;**

**sharing among stakeholders including holders the revenues of
tourism for their sound management services;**

**creating structural links among partners for marketing links
and/or water services.**



A productive service approach to ecosystem



to regard the eco-system as part of a socio-economical set-up and to establish a multi-services and multi purpose natural resources management system.

**Ex. FAO-IWMI-IUCN Inland Wetlands in Africa
Production services: Cultivation of rice, inland fishery, fibre and other resources , pasture**

Health services: medicinal plants, nutrition complements, air cooling.

**Environmental services: Conservation of biodiversity and wildlife
Water regulation and purification**

Agriculture and Ecosystems



**Our goals for the 21st
Century to provide
each human being
with:**

**Enough Food
Enough opportunity
for development
Enough
environmental
services**



The Local/Global issue



Food production can be used locally or be traded;

Environmental services benefit local people as well as the global environment.

The dual question of local versus global is a central issue to ensure that economic development is geared towards bringing opportunities to satisfy the basic needs of all people.

What about rice-based system



Rice production has a long tradition of being integrated into a balanced and diversified agro-ecosystem.

The international Year of Rice (UN 2004): *"So, rice is a food - but more than a food. It is society, culture, politics, business, the beauty of the landscape, people in their communities. In short, rice is life"*.

Rice-system is a multi-service system.



The long & diversified story...of Rice and Water



...based on the peculiarity that
rice can stand water submergence

→ agro-forestry-ecosystems





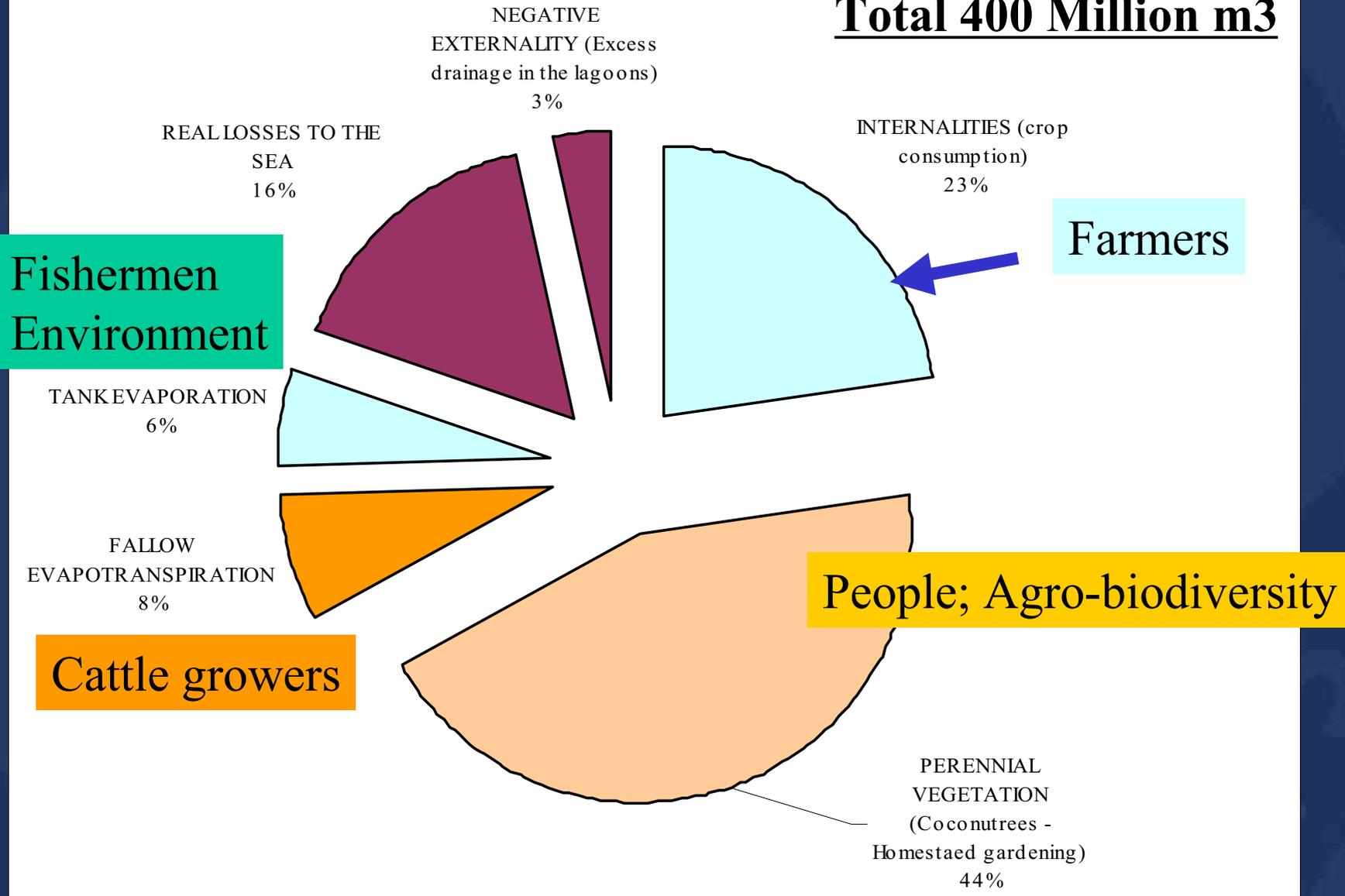
Tree of life

Beyond Crops: Households

Example of water balance in a rice based system in Sri Lanka, Annual water consumption per use



Total 400 Million m³



Rice and global issues



Positive and negative externalities

Methane emission





31 January to 4 February 2005

The Hague Netherlands

Participants \pm 300 - 500 by invitation

**Output \rightarrow Statement on Agenda for new role of
Agriculture in Water Management and
Ecosystems**

Follow-up \rightarrow CSD '05, FAO-Conf., EU, WWF4



Organization



**Pre-conference in Addis Abbeba 4-7 Nov.
2004**

E-forum October-December

Partner-meetings

**South Africa Loskop: Integrated Water
Management 7 to 11 November 04**

**Latin America (CONDESAN) 8-12
November 04**

**Asia: Rice based system [INWEPF
contribution].**

Central focus



Case studies and more particularly “on how local actors develop Good Practices in stakeholder management approach of WFES”,

The goal is to facilitate the implementation of the existing international commitments on sustainable water use in relation to food and ecosystems by local stakeholders.

[IWRM and Ecosystem Management principles]

3 major themes



Fostering Implementation: Know-how for Action: Knowledge and Methodologies for Assessing, Allocating and Regulating Water Resources in Quantity and Quality for the Sustenance of Agriculture and Eco-systems

A "New Economy" for Water for Food and Ecosystems. Valuing Food Production and Ecosystem Services in water management systems

The Enabling Environment. Crafting Institutions, Organisations and Policies for an Ecosystem Approach to IWRM

HOW TO PARTICIPATE



By sending case studies to WFE (started)

By debating on the proposals for recommendation (December & January)

Our specific objective for Asia is to develop through INWEPF a keynote paper on rice-based system approach in WFE to be presented at The Hague main conference.

HOW TO PARTICIPATE



www.fao.org/ag/wfe2005/

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THANK YOU VERY MUCH !

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