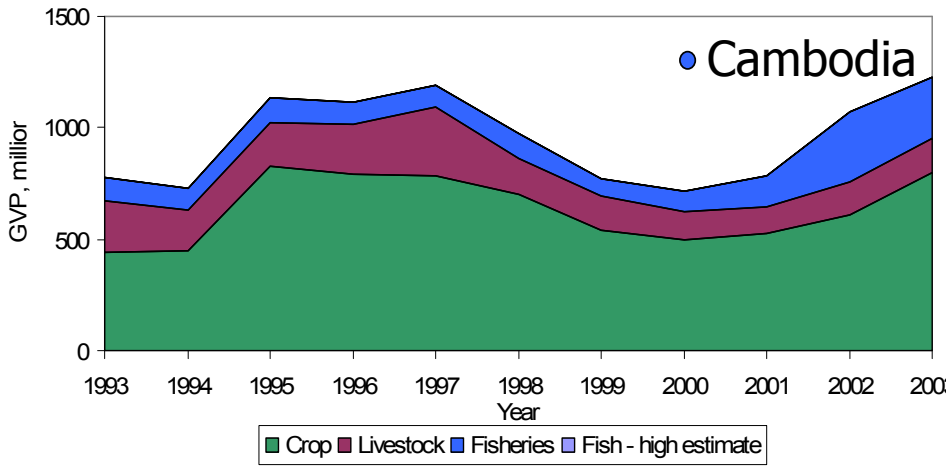
# Fish water productivity

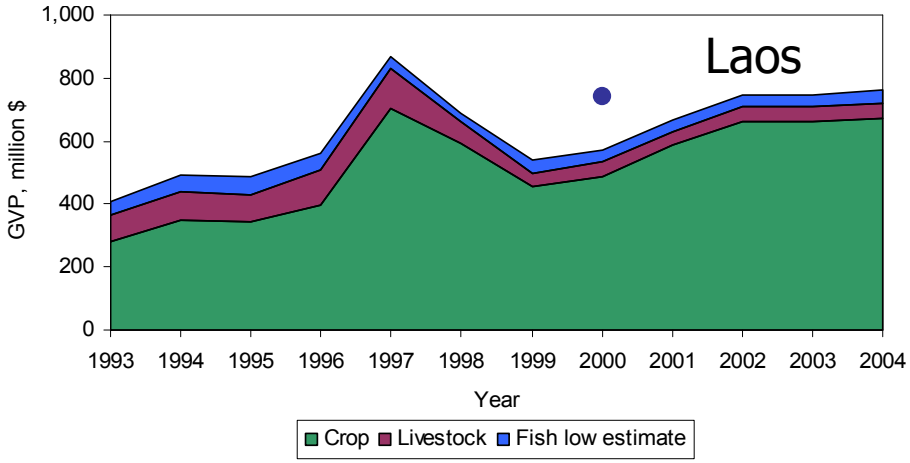
## A sinner's view

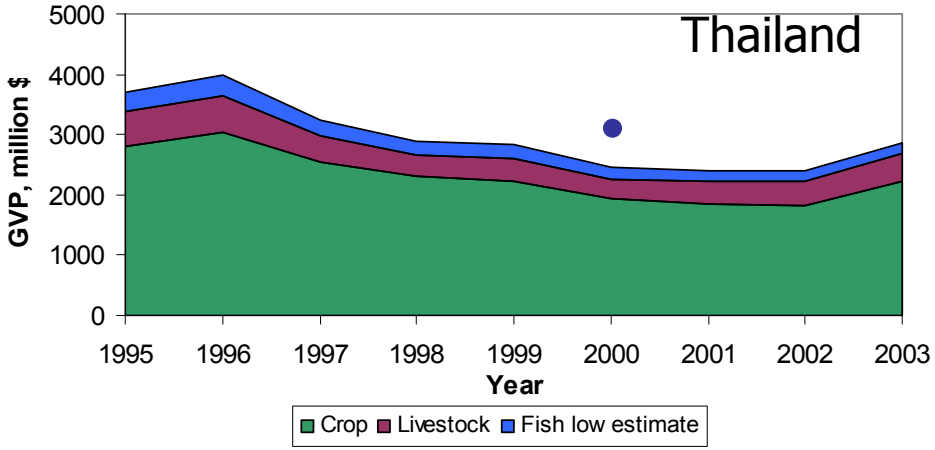
CGIAR Challenge Program on
WATER & FOOD

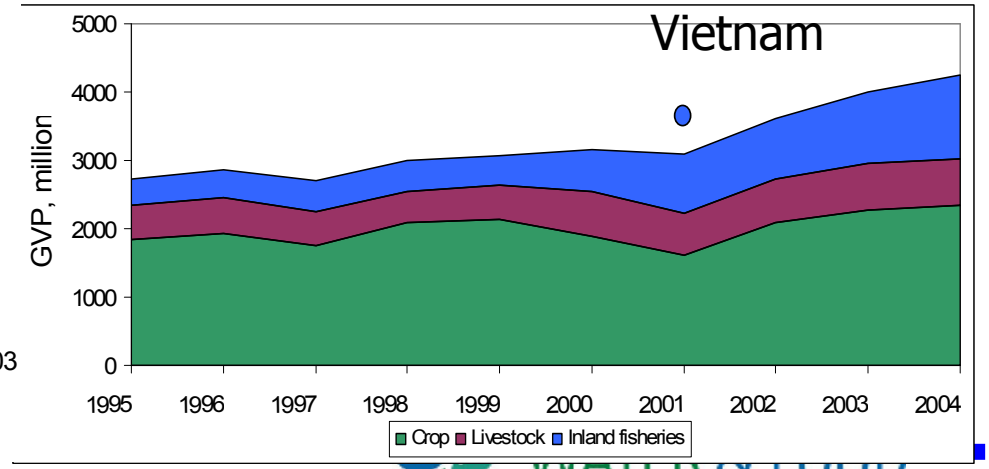
# Some observations

# Fish stocks almost certainly under-estimated – even in Mekong



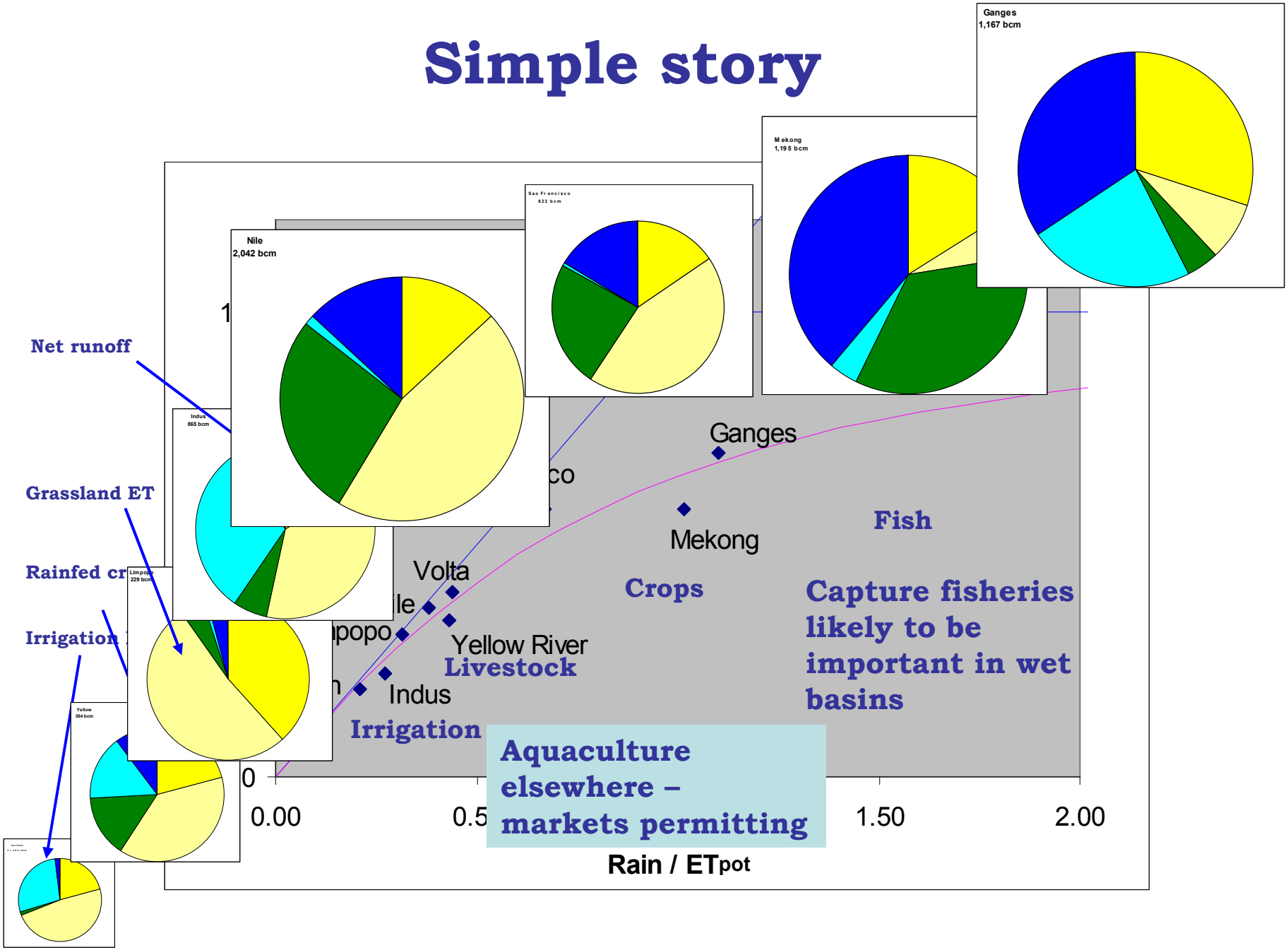



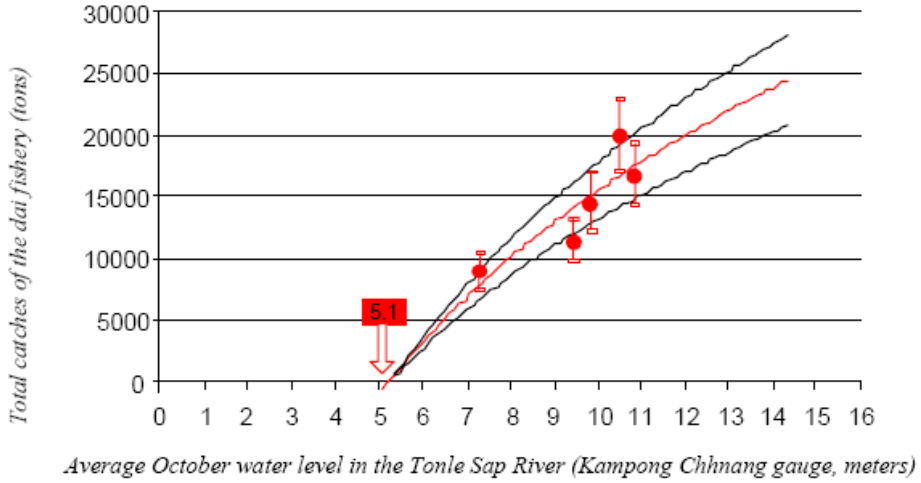

Total Thai fish , Mekong agriculture

# Simple story



# Threats to fish stocks

- **More flow more fish - Dai fishery in Tonle Sap river**
- **Expect flow changes (dams) to lead to decline in yield**



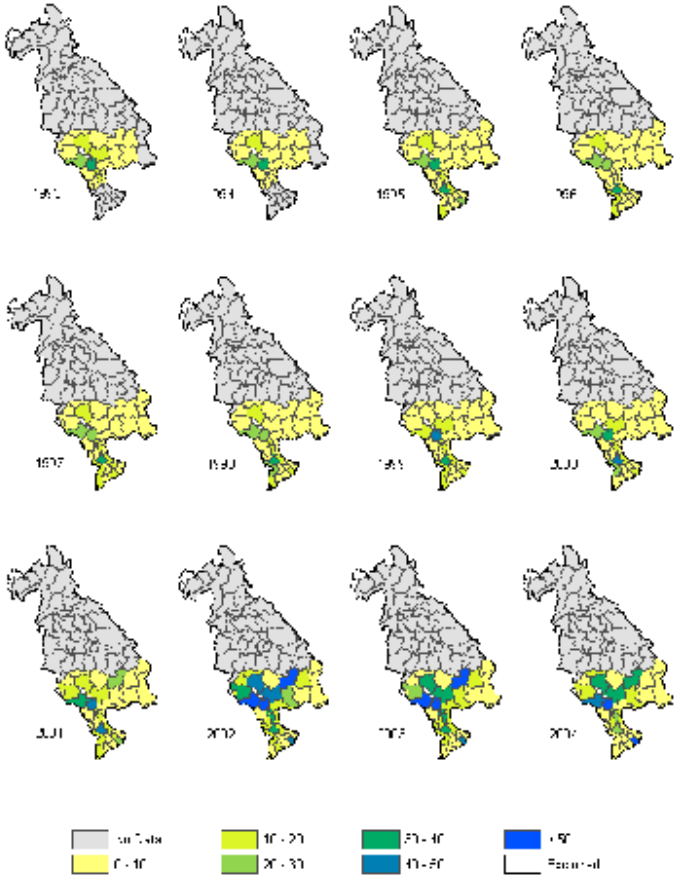

CGIAR Challenge Program on WATER & FOOD

**Smoking fish, a women activity**

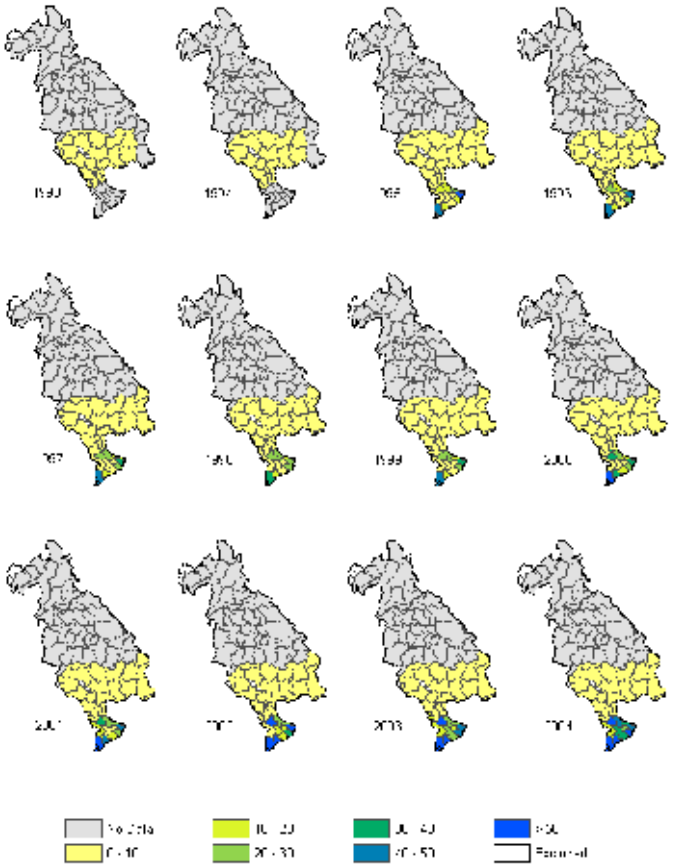
Valued-adding

# Aquaculture more likely to meet expanding demand

## Capture



## Aquaculture



CGIAR Challenge Program on WATER & FOOD

# ‘water productivity’

- What we know
- What we don’t know

CGIAR Challenge Program on WATER & FOOD

# we know…

- …case studies showing fish CAN be important
- Where present, fish provide special support. Triple systems in Africa
  - Fish, crops, cattle
- Fish under-reported in statistics
- 84%of global catch from 20 countries
  - 10 Asia, 7 Africa
- Top 20 countries per capita fish catch
  - 4 in Asia (but includes Cambodia), 13 in Africa

CGIAR Challenge Program on WATER & FOOD

# We don't know

- If the concept of Wprod is useful for fish
  - More akin to livestock
- Basic data on fish stocks
  - Consumption data vs recorded catch
- How many people depend on fish
- What happens to fish stocks if hydrology changes
- What alternatives exist if fish stock is damaged

CGIAR Challenge Program on WATER & FOOD

# Are fish likely to be important?

Table 1. Perceived importance of capture fisheries, ecosystem services and aquaculture by basin - BFP Fisheries Workshop, Cali, 06-07 Feb. 2008

| Basin | Capture | Ecosystem | Aquaculture |
|---|---|---|---|
| Andes | No | Important | Somewhat |
| Ganges | Important | Very Important | Important |
| Indo-Gangetic | | | |
| Indus | Moderate | Important | Important |
| Karkeh | No | Moderately | No |
| Limpopo | Moderately (delta) | Very Important | No (potential) |
| Mekong | Very important | Very important | Very important |
| Niger | Important | Very important | Somewhat |
| Nile | Very important | Very important | Very important |
| São Francisco | No | Moderately | Somewhat |
| Volta | Important (locally) | Important | No |
| Yellow | No | Important | Somewhat |

CGIAR Challenge Program on WATER & FOOD

# Suggested structure

- **To evaluate 'water productivity'**
  - **Aquaculture that uses water abstracted**
    - The most straightforward
  - **Aquaculture integrated into livestock / cropping systems**
    - More complex trade-offs
  - **Capture fisheries**
    - Mainly about evaluating the over-looked

# Some sources

- **Some papers**
  - Martin van Brakel et al. 2008. Water Productivity of fisheries.
  - Maya Rajasekharan 2008. Towards an understanding of fisheries water productivity
  - David Blake. 2006.The Songkhram River wetlands - A critical floodplain ecosystem of the Lower Mekong Basin
  - Chris Bene and Richard Friend. 2008. Water, poverty and inland fisheries: Some lessons from Africa and Asia.

CGIAR Challenge Program on WATER & FOOD