

# Global food crisis, future prospects of food supply and demand and the role of irrigated agriculture in LMB

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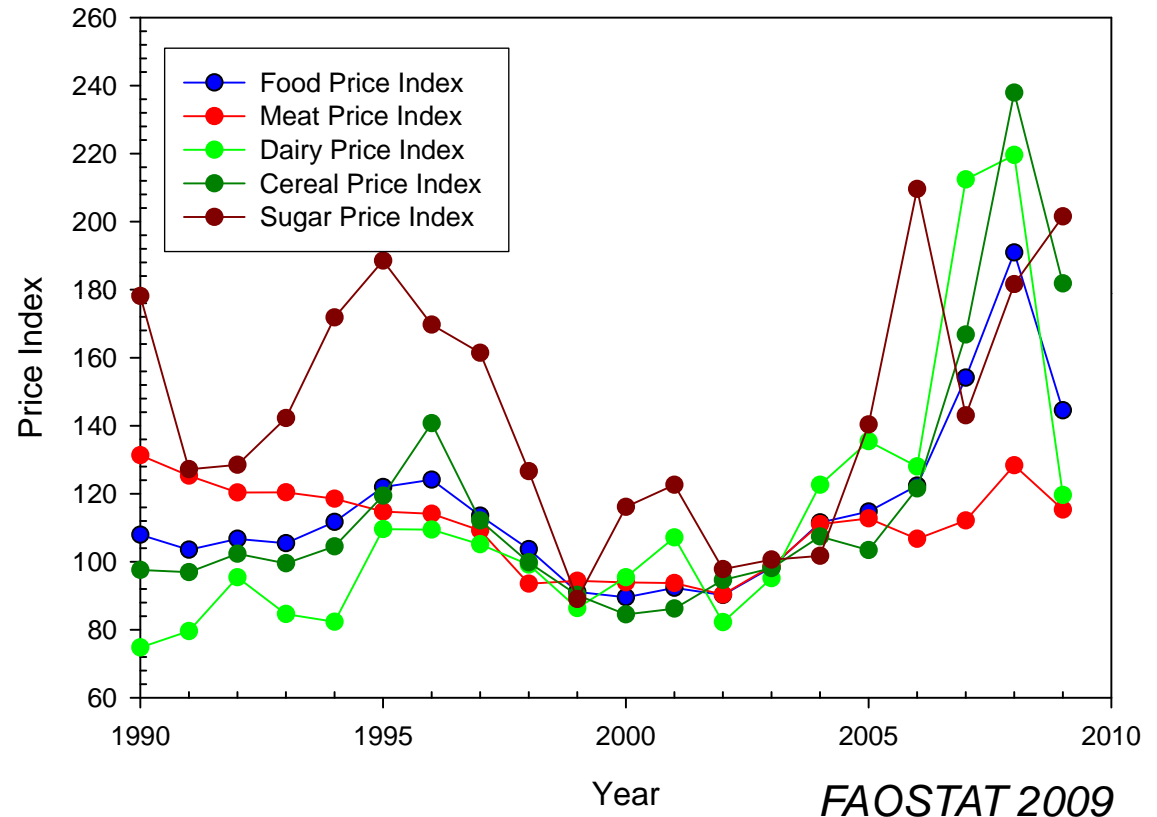
# Outline

- The food crisis.
- Growth in agricultural output in the region.
- Role of irrigation in meeting future food demands.



# 1. The food crisis

- Factors contributing to the crisis:
  - Conversion of cropland to Biofuels;
  - Higher oil prices;
  - Low grain reserves;
  - Market speculation;
  - Extreme weather events;
  - Population growth.



# 1. Changing in diets

- **Great income changes diets and demand on water**
- Between 2,000 and 5,000 liters per person per day – depending on type and amount of food eaten and how it is produced

*Developed*



*Developing*



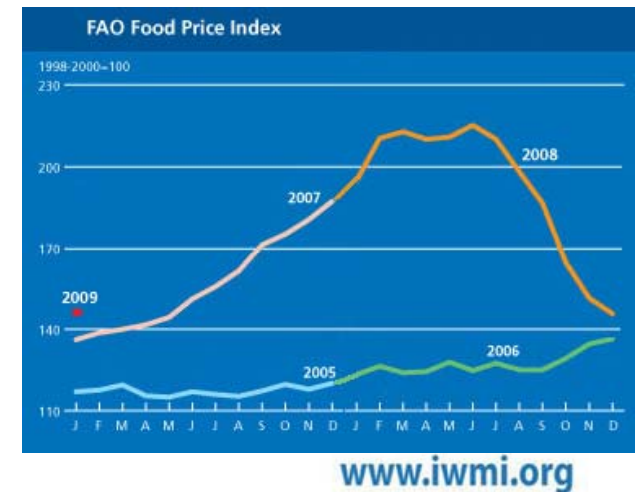
# 1. Impact of the food crisis

- Restrictions on grain exports by key countries.
- Dramatic increases in food prices - lower access to food.
- A further 110 million people into poverty and 44 million into the category of malnourished.



# 1. The future: drivers, risks

- Population growth and demographic change
- Global economic conditions
  - Decreased investment for 5-10 years
  - Return of urban workers to rural areas
  - Slowing export growth
  - Political instability
- Climate change
- Water resource development

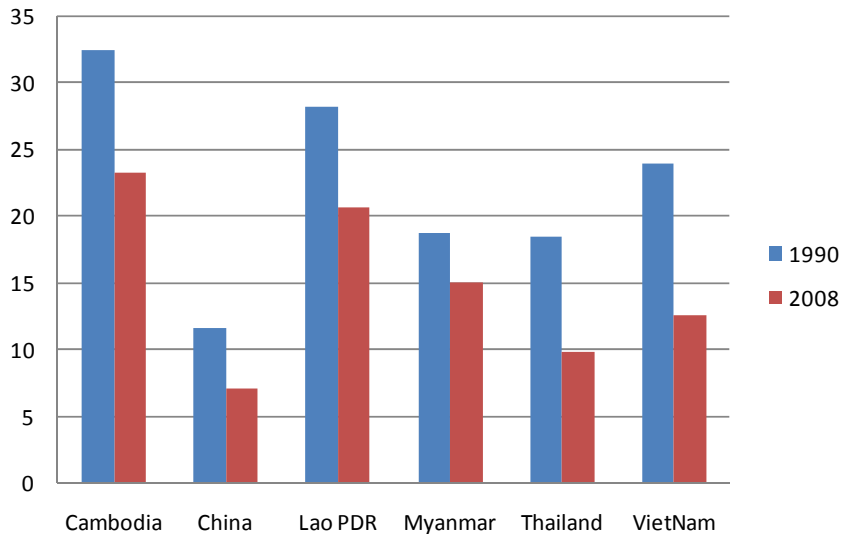


## 2. Agriculture in the region.

- Food production has more than kept pace with population growth
  - Diversification to meet changed demands
  - Food poverty decreasing
  - Export growth
- Flexible production systems with rapid uptake of new crops and technologies, responsive to market signals
- Expansion of agricultural areas is slowing – production gains from increased yields, intensification
- Contribution to GDP
  - livelihood for poor
  - growth in agriculture benefits poorest half of population

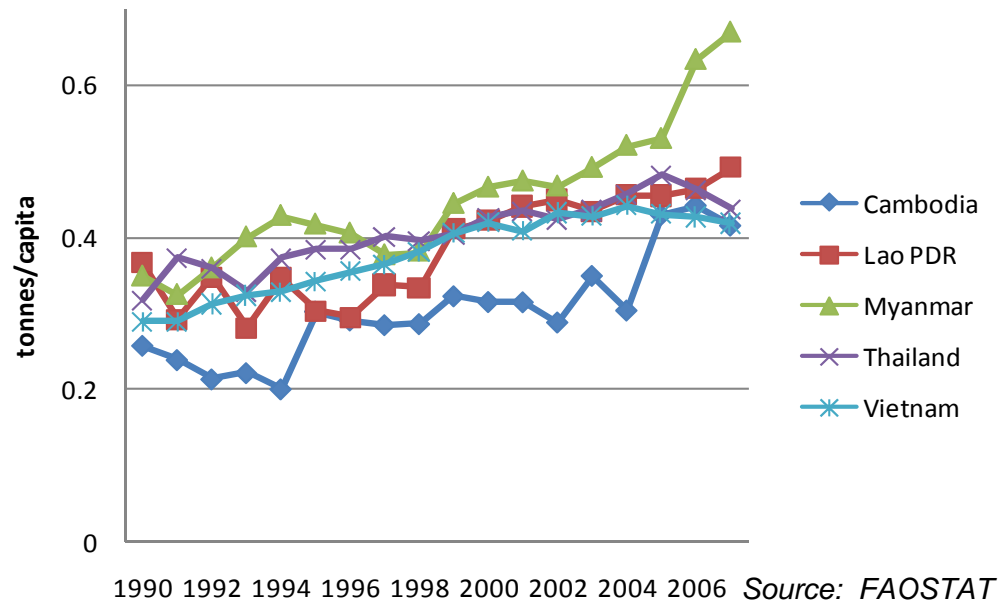
## 2. Increased food security

**Global Hunger Index**

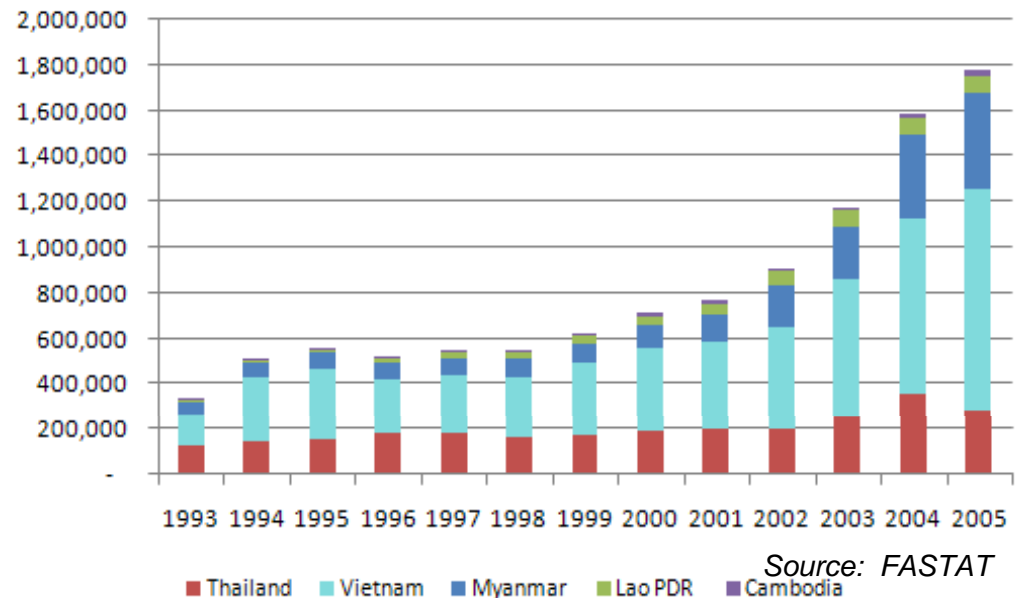


Improving water and land resource

**Rice production per capita**



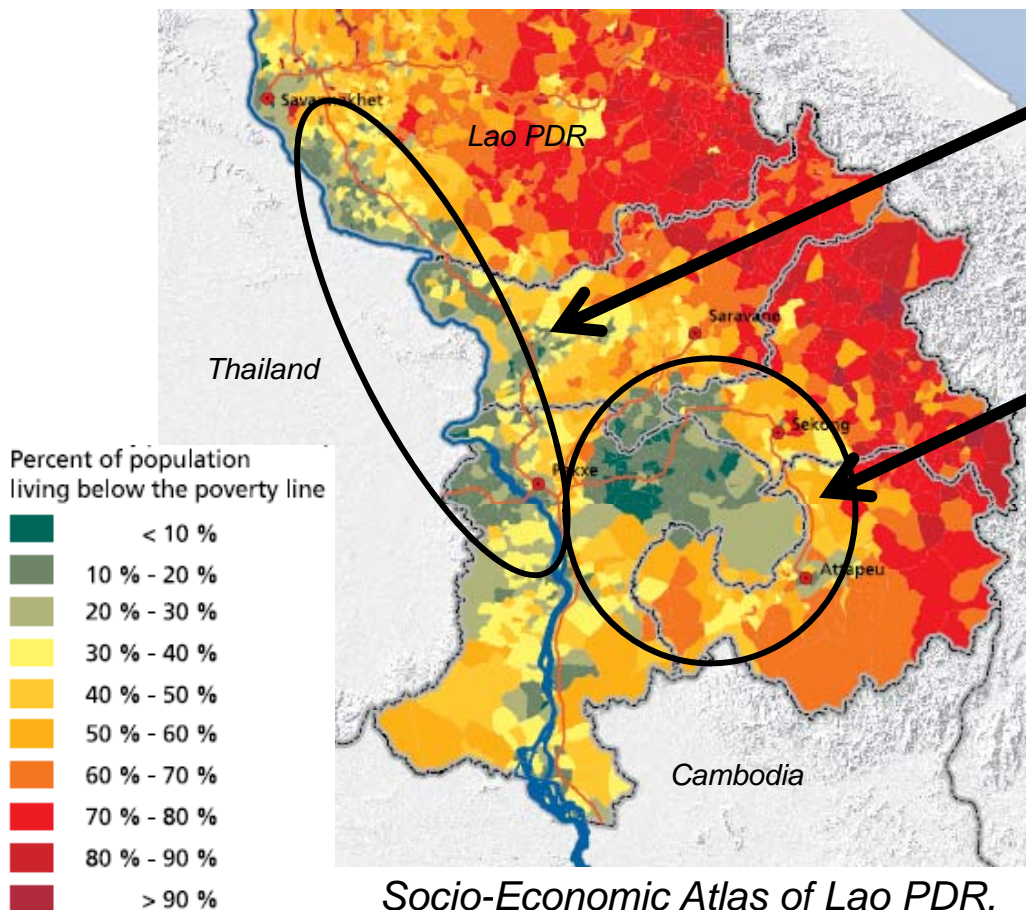
**Freshwater aquaculture production, tonne**





## 2. Agriculture's role in poverty alleviation

Incidence of poverty: Southern Lao PDR

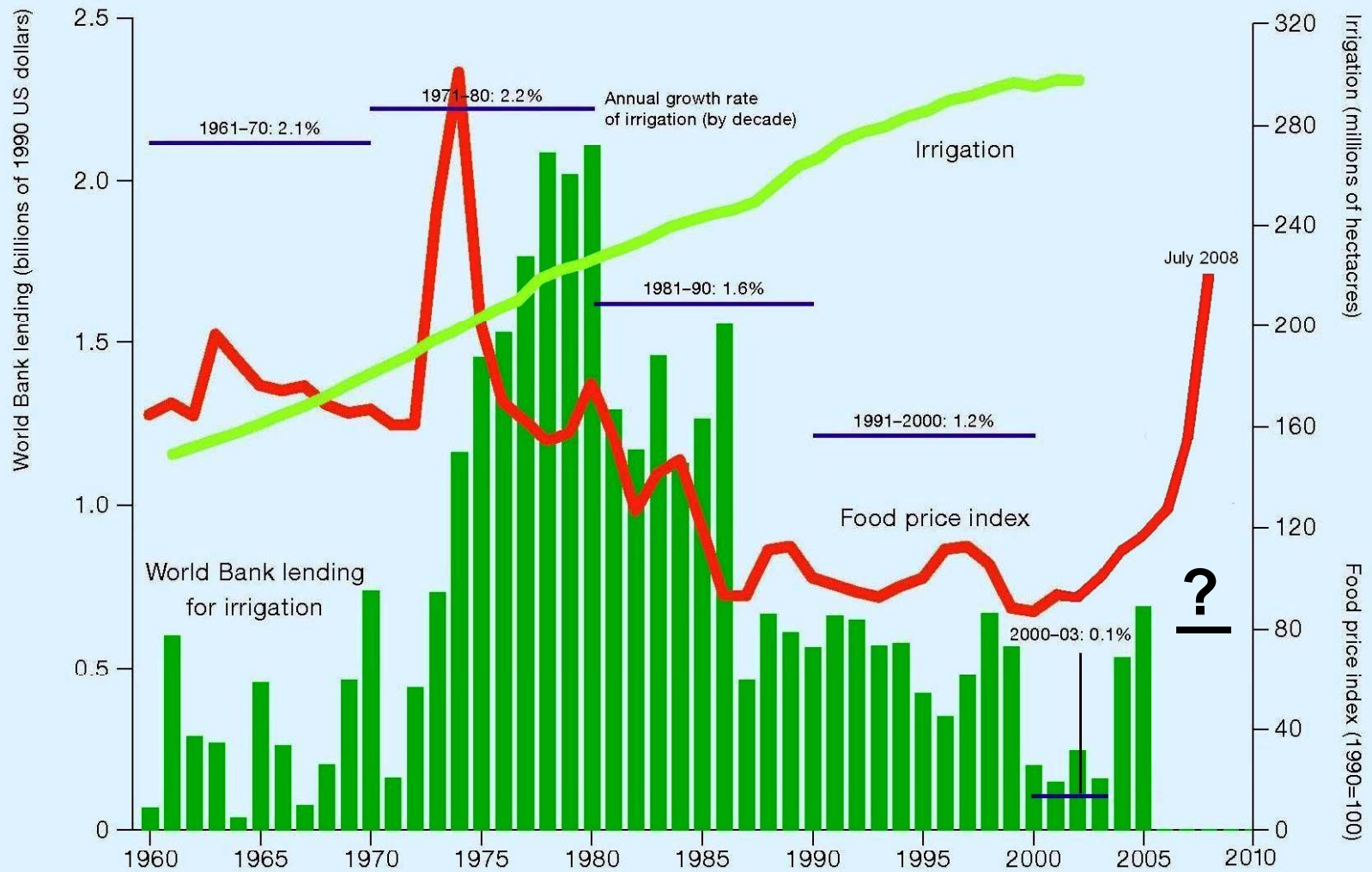


*Socio-Economic Atlas of Lao PDR, 2008*

**Mekong corridor** –  
access to irrigation

**Bolovens Plateau** –  
diverse cropping,  
commercial crops –  
coffee

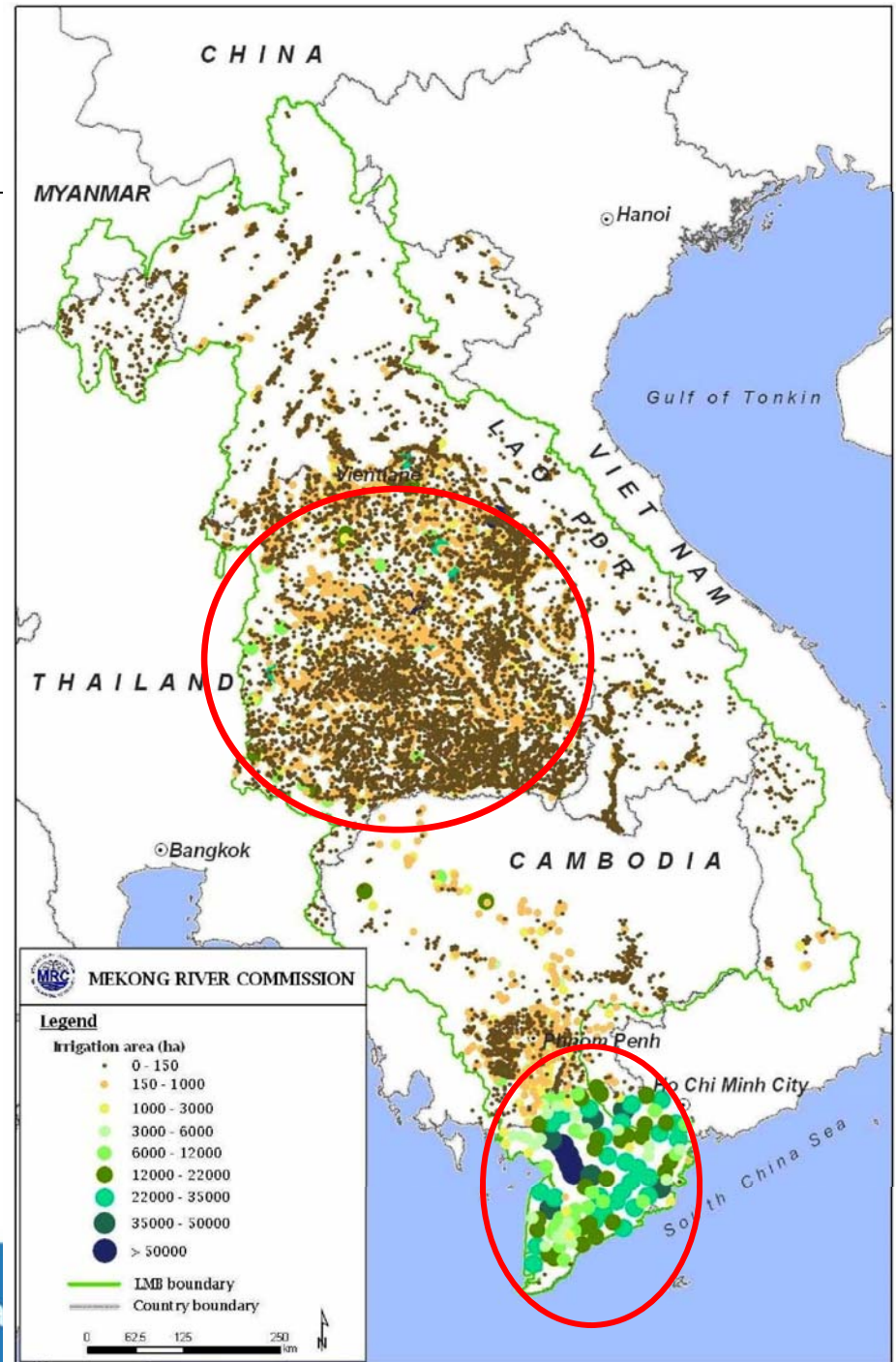
### 3. Global irrigation expansion 1960-2008



Source: Based on World Bank and Food and Agriculture Organization data.

### 3. Irrigation Projects LMB

- Irrigation development in Northeast Thailand dominated by small systems.
- Little if any room for expansion in Northeast Thailand.
- Vietnam delta region fully developed.
- Irrigation expansion possible in Lao PDR and Cambodia.



## 3. Irrigation in the Delta

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- Deltas of the region are the rice bowls of the region.
- 90% of Mekong delta rice destined for global markets.
- The deltas are under stress:
  - Urbanization
  - Seawater intrusion and sea level rise.
  - Ecosystem degradation
  - Over abstraction of groundwater.
  - Sediment deposition.
- There is a need to produce 8 to 10 million tons rice annually over the next 20 years to meet increased demand.



## 3. Revitalizing irrigation

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- Modernize yesteryear's schemes for tomorrow's needs.
  - Redesign, operate and manage large schemes for a range of uses.
- Support farmer initiatives.
  - Local adapted irrigation technologies i.e. wastewater, groundwater and scavenging surface water.
- Look beyond conventional PIM/IMT recipes
  - Create public/private partnerships in the delivery of water services.
- Expand capacity and knowledge

## 3. Key Messages on Irrigation



- ✓ Water is the key to addressing food security (FS).
- ✓ Diversification of production systems is essential to meeting FS.
- ✓ Potential role of ‘new’ water for dry season irrigation in Lao PDR and Cambodia.

## 4. Key Messages on Irrigation



- ✓ Groundwater may be essential in meeting future FS – potential is unknown.
- ✓ On-farm storage or tube wells offer greater flexibility for farmers.
- ✓ Increase water use efficiency through multiple use systems.

**THANK YOU**



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