A map of the Mekong River Basin in Southeast Asia. The map shows the river's course from its source in China, through Myanmar, Thailand, Laos, Vietnam, and Cambodia, to the Gulf of Thailand. The basin is divided into an Upper Mekong Basin (indicated by a light purple outline) and a Lower Mekong Basin (indicated by a darker purple outline). National boundaries are shown as thin black lines. The map includes a legend in the top right corner, a scale bar (100 0 100 200 km), and a north arrow in the bottom right. The text 'MAINTAINING THE NATURAL CAPITAL OF THE MEKONG RIVER BASIN' is overlaid in large white capital letters. Below it, the text 'CHIANG RAI, 28 – 29 NOVEMBER 2005' is overlaid in yellow capital letters. The map is framed by a blue vertical bar on the left and a dark blue vertical bar on the right, with a blue diagonal bar at the bottom right.

# MAINTAINING THE NATURAL CAPITAL OF THE MEKONG RIVER BASIN

**CHIANG RAI, 28 – 29 NOVEMBER 2005**

# CONTENTS

Aiming to answer the following questions:

- How can the development needs of the Mekong's riparian countries be reconciled with environmental protection?
- What roles can the MRC play?
- What are the key environmental factors that need to be considered ?

# WHAT IS NATURAL CAPITAL ?

Natural capital is the Natural Resources, Ecosystem services and all the complex web of eco-systems that make possible the Economic activity of our every day lives



# WHAT ARE THE DEVELOPMENT NEEDS OF THE MEKONG BASIN?

- Sustainable population growth
- Poverty alleviation
- Improvement in health and well-being
- Improvement in livelihoods/lifestyles
- Improvement of education and employment
- Improvement of infrastructure and access to services
- Ensuring equity in benefits and environmental sustainability



# CONFLICT BETWEEN DEVELOPMENT AND ENVIRONMENTAL PROTECTION

- Development activities often harness the Natural Capital to improve livelihoods and achieve socio-economic development
- Results is depletion of the Natural Capital and consequently reducing the capacity of people to maintain their livelihoods and improve their well-being



*What is she thinking?*

# WHAT IS IWRM?

- IWRM is not product but the process of promoting co-ordination and cooperation to develop and manage Water, Land and related Resources in order to maximize the overall benefits to the economy and society's welfare through equitable distribution of resources and ensuring sustainability of ecosystems
- IWRM is based on the perception of water as an integral part of the ecosystem, a natural resource and a social and economic good

## WHAT IS IWRM? (cont)

- Water is one of the vital elements, sustainable management of this finite resource must take into account a broad spectrum of social, economic, and ecological factors.
- IWRM is the essential processes through which all factors are linked. It allows decision making at all levels within the framework of overall planning and coordination among all sectors of society.

# NATURAL CAPITAL IN THE PROCESS OF IWRM

- Water is seen as an integral part of the eco-system and it is recognized that the eco-systems which sustain water resources must be protected in order to satisfy and reconcile the needs for water in human activities
- Maintaining the Natural Capital of the basin should be considered as a core aspect in the process of Integrated Water Resource Management (IWRM).



# WHAT WE NEED FOR SUSTAINING NATURAL CAPITAL?

- Human capital – labor, intelligence, culture, organization
- Understand the key environmental factors.
- Financial capital – cash, investments, monetary instruments

## **CHALLENGES FOR THE MRC AND MEMBER COUNTRIES IN MAINTAINING NATURAL CAPITAL**

- Consistency of approaches, within each country and between the stakeholders
- Institutional and regulatory frameworks and implementation strength in levels
- Integration of water resource initiatives and policies with other initiatives in country – e.g. land-use planning, reforestation, agricultural management, construction
- Involvement of all stakeholders/communities and education at the lowest level
- Knowledge, understanding and data, particularly regarding eco-system health
- Funding short-falls

## **CHALLENGES FOR THE MRC AND MEMBER COUNTRIES IN MAINTAINING NATURAL CAPITAL**

- Balancing the environmental protection with the economic development and sustainability of resources into the future
- Clear delineation between responsibilities
- Information/ guidelines/ programmes overload and overlapping
- Accuracy, applicability and extent of available data
- Perceived benefits of environmental protection – incentives for environmental improvement/maintenance.
- Quantifying the benefits of environmental protection
- Extent of watershed / catchment management in upstream catchments

# WHAT ROLES CAN THE MRC PLAY?

- Knowledge management
- Co-ordination and co-operation
- Direction and guidance
- Collective capacity
- Capacity building

# KNOWLEDGE MANAGEMENT

- Data collection and collation, monitoring and assessment
- Benchmarking, consistency and quality
- Access to latest reports, research etc
- Networking and scientific communities of interest
- Research and development (particularly of targets / environmental indicators)



# CO-ORDINATION AND COOPERATION

- Platform for riparian countries to raise issues and share information
- Forum for co-ordinating actions between member countries
- Forum for liaising with dialogue partners
- Conflict resolution / negotiation
- Forum for negotiating and developing agreements

## **DIRECTION AND GUIDANCE**

- Prepare and issue guidelines, directions, standards
- Provide guidance on implementation

## **COLLECTIVE CAPACITY**

- Use collective capacity to mobilize experts on environmental issues to ensure holistic assessment
- Use collective capacity to seek funds/donors and donor co-operation
- Use collective capacity to develop holistic / strategic projects / programmes

# CAPACITY BUILDING

- Capacity building from MRC to member countries
- Develop training material for member countries to capacity build in-country
- Training of staff
- Encourage participation
- Education and awareness programmes – grass roots training of environmental awareness

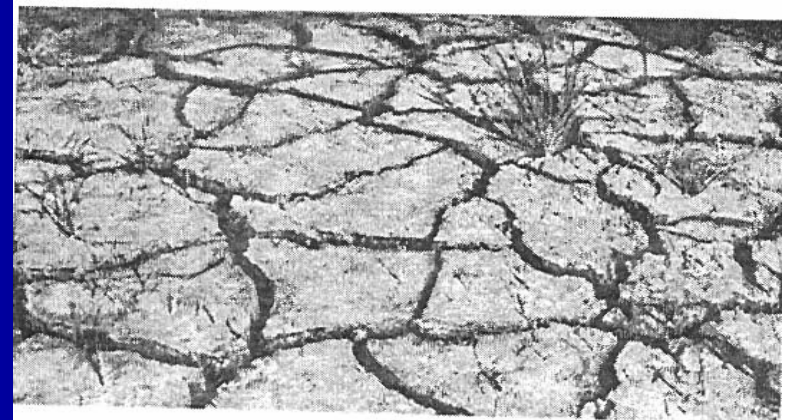
## **KEY ENVIRONMENTAL FACTORS IN SCALING UP IWRM TO THE BASIN LEVEL**

- Maintaining the natural capital of the basin can only be achieved hand-in-hand with social and environmental sustainability.
- Many factors are required consideration which will have an environmental impact.

# PHYSICAL AND CHEMICAL FACTORS

## 1. Water quantity

- Seasonal flow patterns and flow regulation
- Shortage of fresh water during the dry season
- Flood and inundation



## 2. Water quality

- Saline intrusion
- Water pollution and run-off
- Chemicals, fertilizer and pesticide application
- Water use efficiency



# PHYSICAL AND CHEMICAL FACTORS

- Urban run-off and point source pollution (eg wastewater)
- Industrial wastewater – toxins and metals
- Land use
- Generation of acidity in the acidity area
- Sedimentation and river bank erosion
- River morphology
- River depth, barriers, bottom material, shelter for aquatic habitat
- Groundwater quality and protection

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# BIOLOGICAL / ECOLOGICAL FACTORS

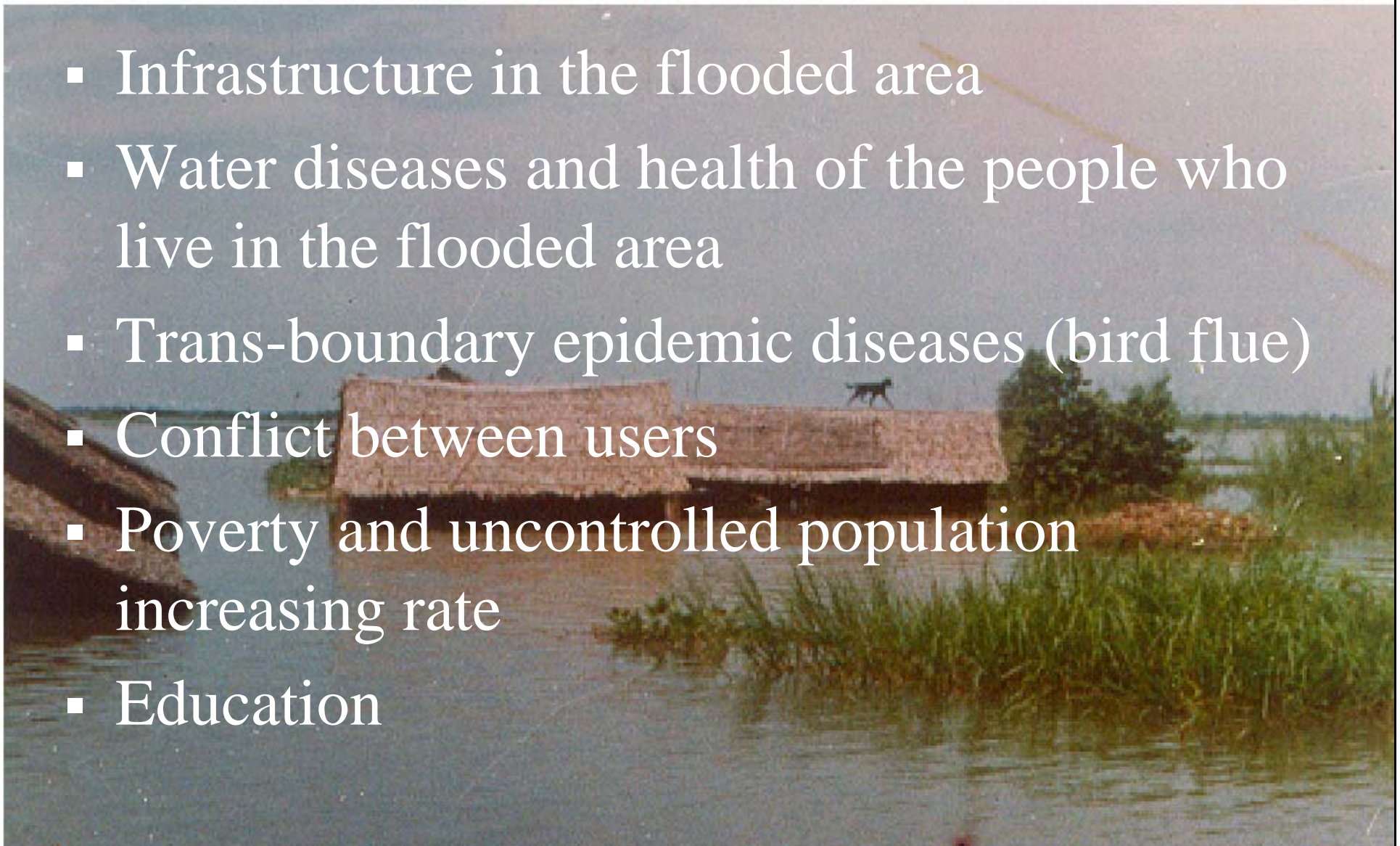
- Wetland conservation
- Mangrove forest
- Forest fire
- Rare species (red crane) protection
- Fishery production (reduce habitat)
- Shellfish in the River mouth areas
- Biodiversity of species

*Sarus cranes in the Plain of Reeds*



# SOCIAL FACTORS

- Infrastructure in the flooded area
- Water diseases and health of the people who live in the flooded area
- Trans-boundary epidemic diseases (bird flue)
- Conflict between users
- Poverty and uncontrolled population increasing rate
- Education





# ECONOMIC FACTORS

- Lost agricultural, fishery production caused by flooding and flooding control system
- Infrastructure damaged by flooding
- Reduce value of wetland





**MRC?**



For sustainable  
Development we should  
harmonize objectives on  
socio-economic  
development and  
environmental protection.  
But, Who, What, How and  
When???

**DONORS**



**NMRC?**



To achieve this, it is critical  
that we have close co-  
ordination and co-  
operation of all  
stakeholders

**COMMUNITY  
?**





# CONCLUSIONS AND RECOMMENDATIONS

- Natural Capital is a limited resource
- We are living and sharing with each other the Natural Capital of the MKB, hence development activities in each country will have impacts not only for that country but for all.
- Potential environmental impacts must be assessed through an EIA in the process of undertaking projects
- EIA of large projects in one country should be examined by MRC and delivered to riparian countries (Framework, factors and standards, criterion prepared/issued by MRC and used in the EIA should be agreed by riparian countries)
- Efforts should be invested in research and education

Thanks for your  
attention!

