The Mekong Delta Plan

Utilization of an Integrated River Basin Management Approach for the Mekong Delta Plan

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Vietnam – Netherlands Partnership

Drivers Vietnam

- Climate Change
- Upstream Developments
- Socio-economic Developments

Dutch Delta Plan
The Mekong Delta

3.9 million hectares
17 million people

Ho Chi Minh
Climate Change

Rainfall
+20% in wet season
-20% in dry season

Sea Level Rise 50 – 150 cm

Average rainfall 2000 mm
Average Elevation + 0.8 MSL

Mekong Basin Runoff
Reality of living in the Mekong Delta

During flood season...

What we call dike in the Mekong

And after..
The Mekong Delta is the rice bowl of Vietnam

16 million tons rice x Euro 400/ton is 6.4 billion Euros
1.9 million hectares is Euro 3.200/hectare
17 million people is Euro 390 / capita

Vietnam GDP 2010 Average
GDP Euro 2,500 / capita

Mekong Delta sustainable
3 million people
Upstream Developments

TAMING A RIVER
Chinese dams along the upper Mekong River have enabled countries downstream to plan for a series of power-generating dams. Xayaburi in Laos is the first one to near construction.

China
Hydro power

Food security

RoyalHaskoningDHV / Wageningen University Research / Deltares / Rebel Group / Unesco IHE
Mekong Delta Plan

The Road to 2100 in

*Policy Recommendations*

*Short Term Actions*

A Long Term Development Strategy
A Climate Adaptation Strategy

Preliminary Findings
The Mekong Delta is unique

**Because of its natural resource base**
- Fertile lands
- Fresh water availability

**Because of its production and achievements**
- Granary and agricultural export base
- Rice, fish, fruits, horticulture

**Because of its open waterways**
- 4000 km of navigable waterways
- 70% of all goods over water

**Because of its people and cultures**
- Living with water
But increasingly vulnerable

**Because of its dense rural population:**
- 17 million people

**Because of its natural conditions:**
- Low elevation
- Seasonal flooding
- Drought and salinization

**Because of impacts of upstream developments**
- Dry season flow
- Sediment influx, fish migration

Climate change

Salt Water Intrusion
Mekong Delta Development Scenarios

Industrialisation of Delta lags behind other regions
- Limited transportation infrastructure
- Competition with other regions in Vietnam
- Flood prone environment

jobs for 30 million people industrialisation, urbanisation

Agro Business Specialisation
Policy Recommendation…

Agro-business as a strategic choice for socio-economic development

- Fits the unique natural resources
- Fits the human resources
- Basis for sustainable development
- Economic growth through specialised industrial and service sector
- From food availability to food quality (= added value)
- Suited to adapt to climate change through targeted developments
- Industrialisation in other sectors still possible but in limited and selected areas
Effects of Climate Change, Upstream Developments

- **Uncertainty requires a flexible approach**
  - Climate change minor or major impact? (floods, droughts/fresh water shortage, salt)

- **All economic and climate scenarios require**
  - better land use planning;
  - change of agro- and aquaculture systems
  - structural measures for flood protection and fresh water supply

- **International coordination required**
  - Mitigate effects from upstream dam construction and address extreme climate change

Extreme climate scenario threatens the very existence of the Delta
Recommendations for an Adaptive Approach

Regional Division based on main impacts and integrated solutions

Upper Delta
Middle Delta
Coastal Area

Flood Control Line
Fresh Water Control Line
Sea Defense Control Line
Upper Delta

Controlled Flooding
Reduce downstream flooding risk

Urban Flood Protection
Increase Safety and Sanitation

Diversion Canals
Limit downstream investments

Now – 2050
Reinstate retention areas
Reconsider triple rice growing
Land use planning
Diversification of crops/fish

Now - 2050
Flood & Inundation protection
Ring dikes
2050 -2100
Urban Polders
Pumped drainage

Now
Research and Planning
Space reservation

2050 - 2100
Construction
Additional discharge capacity
Middle Delta

Fresh water in dry season

Water Management
Fresh Water Supply

**Bassac Link Canal**
Assure fresh water West Delta

**Closing River Branches**
Assure fresh water East Delta

Now - 2050
Upgrade existing systems

2050 - 2100
- Polders
- Pumped drainage

Now
- Monitor
- Research and planning

2050 - 2100
- Secure flow division
- Bassac-Mekong; Construction of Link Canal

Now
- Research and planning

2050 – 2100
Construction of Tidal Barriers
Coastal Area

Salinization and Coastal Flooding

Dual Zone Management

Go for Brackish Economy

Now - 2050
From shrimp farming to sustainable aquaculture including mangrove restoration

30% - 80% production loss

Water Management

Mitigate groundwater usage
Local rain harvesting and storage
Surface water supply

2050 – 2100
Fresh water shortage
Saline agriculture

Coastal Defense

Better Protection

Now - 2050
Upgrade existing sea dikes
Restore mangroves
Unlink road and dike system

2050 – 2100
Closed Sea Defense, except Bassac

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A view into the future …………………………………………2100

Agro-business as a strategic choice for socio-economic development

Implementation of Climate Change Adaptation Strategy

Towards a prosperous and sustainable future for the Delta