Fisheries value chain in Mali

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Outline

- Introduction

- Fisheries value chain analysis
- Analysis of donor programmes
- Analysis of fish feeds

- Suggested interventions

Introduction - Context and study area

Mali: 15 Mio people

Inner Niger Delta:

1.5 Mio people

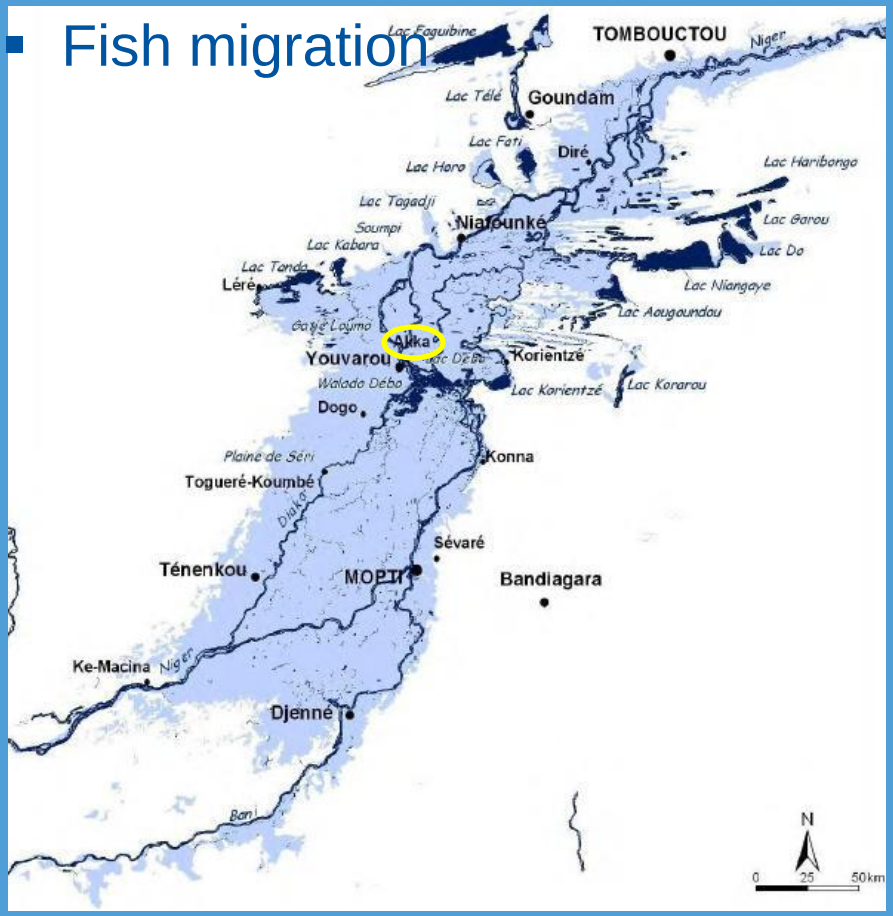
0.5 Mio in fisheries

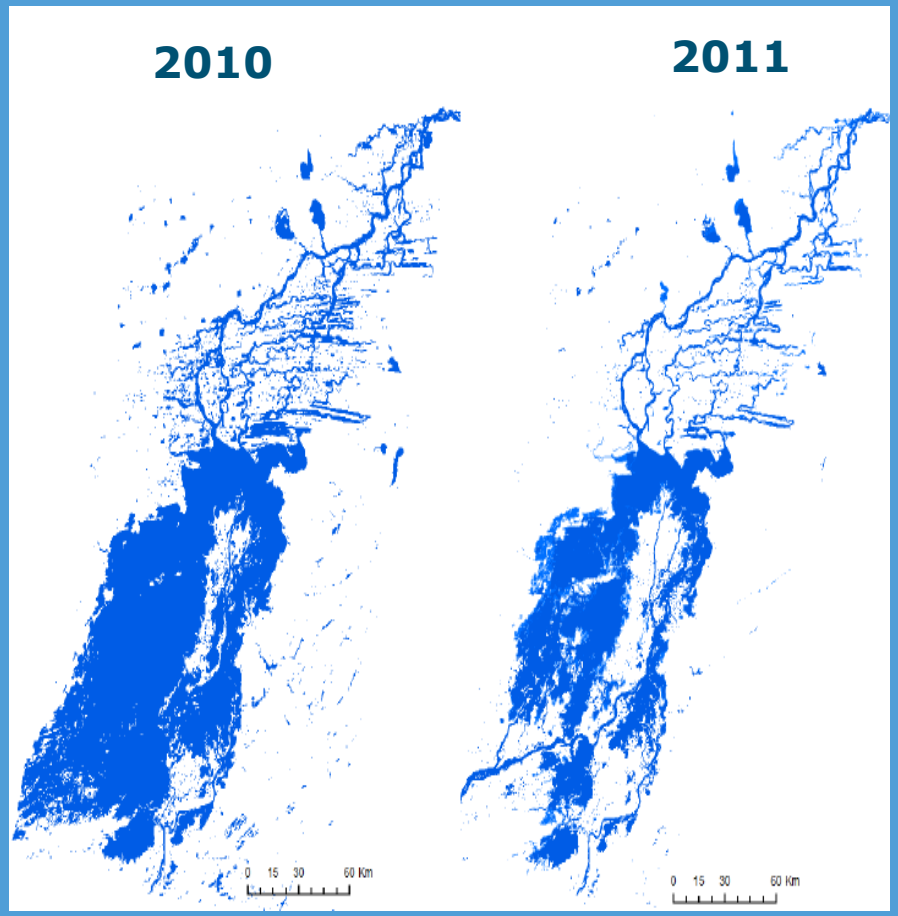
80.000 fishermen

84% of production

Introduction - Niger Inner Delta (NID)

- Permanent water bodies (dark blue)
- Floodplain at max. inundation (light blue)
- Fish migration
- Between year variation





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Niger Inner Delta (NID)

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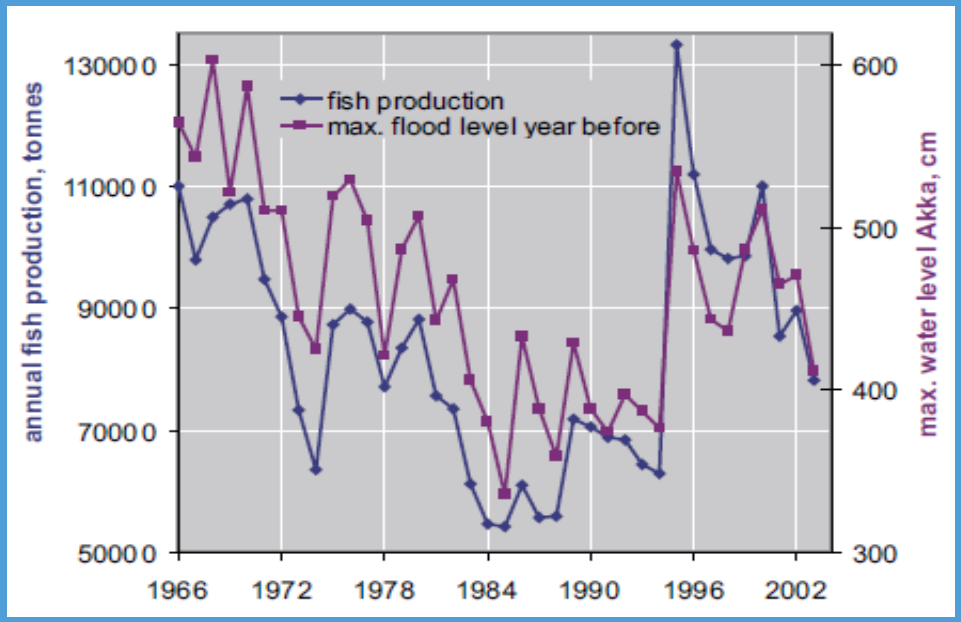
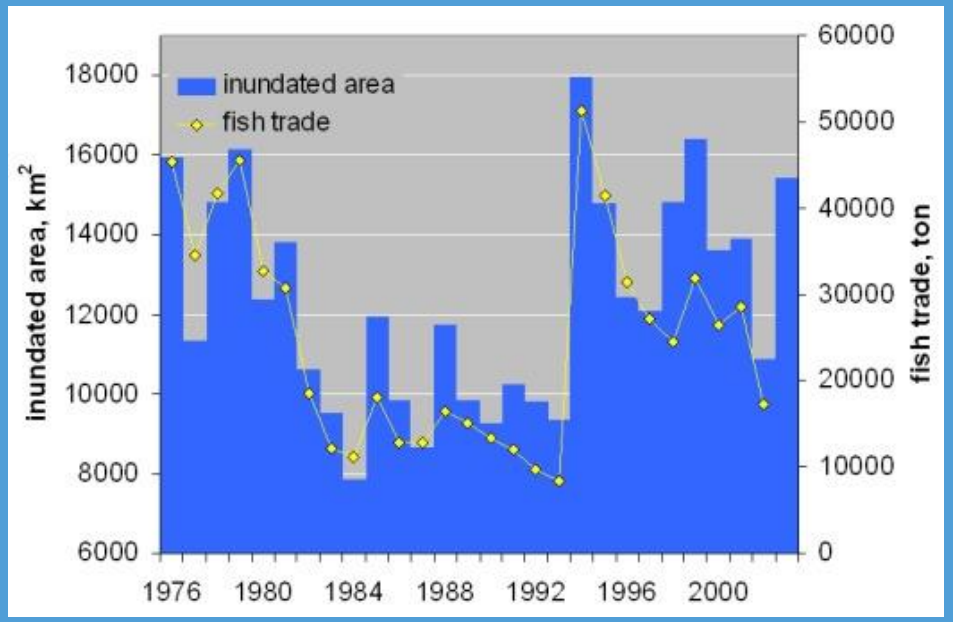
Flooding and Capture Fisheries in NID

- Fish production/trade from capture fisheries is **flood dependent**
- Flooded area mean: 12.000 km^2 (up to 36.000 km^2, '70s)
- Annual fisheries production: 55.000 MT (1985); 130.000 MT (1995); stabilized at 100.000 MT after 2003





Between year fluctuations in fish production and flood level (left), inundated surface and fish trade (right)

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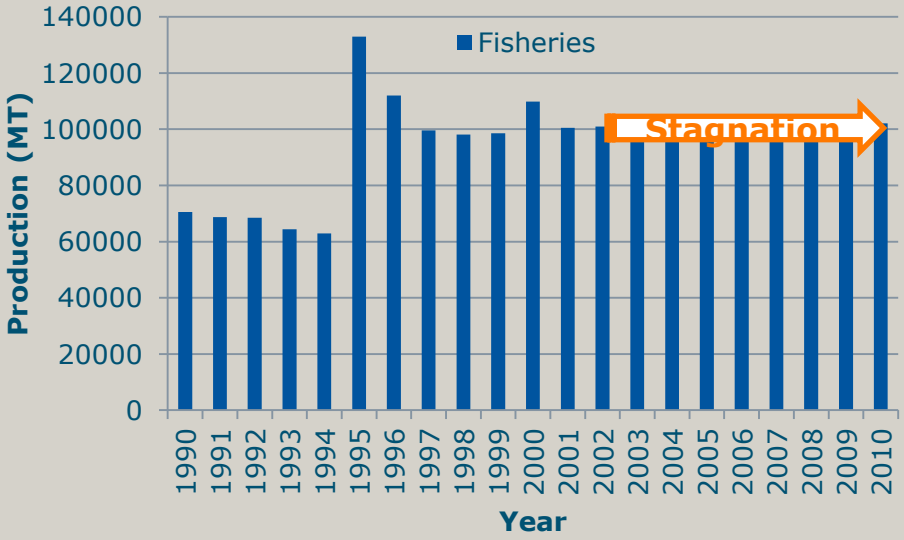
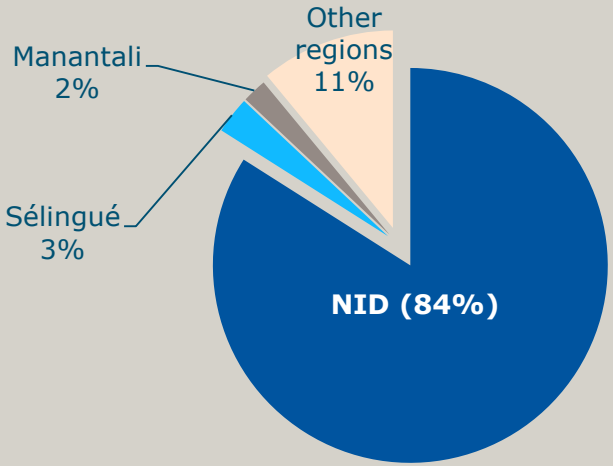
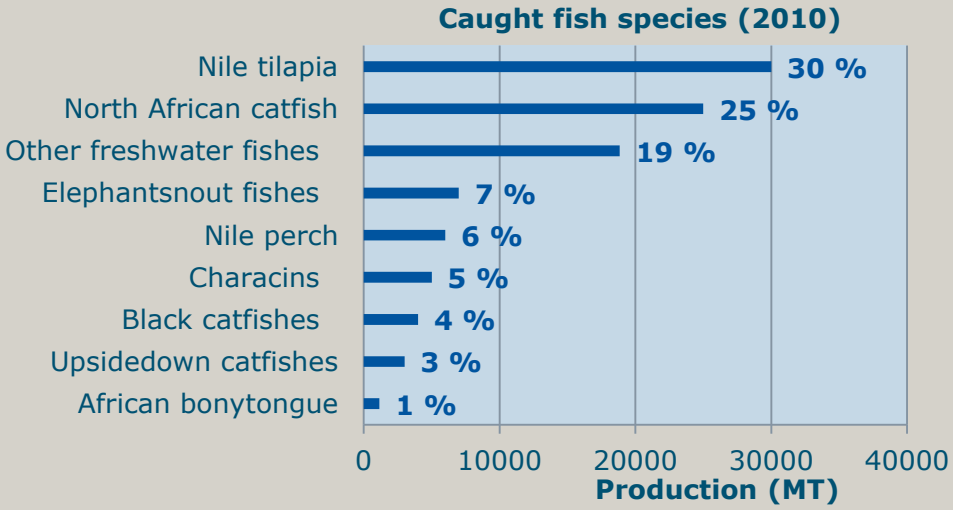
Fish Production in Mali - Capture Fisheries

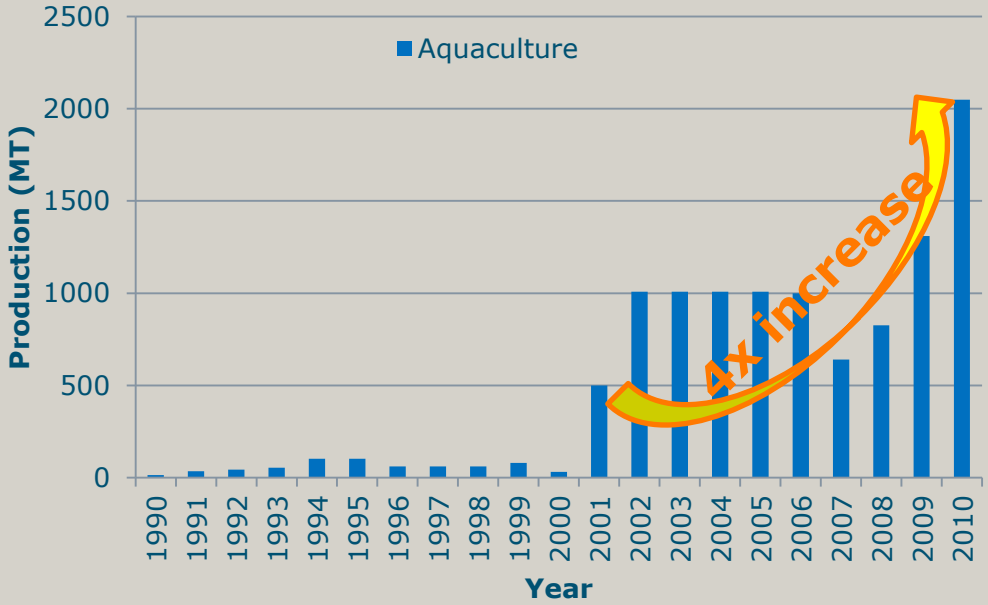






Source: FAO, 2012

Fish Production in Mali - Aquaculture



Nile tilapia
African catfish

Source: FAO, 2012

- Bancotières
- Emprunts

Extensive

Semi-intensive

Intensive

Fisheries value chain – Actors and Products

- Complex
- Dynamic

Fishermen
Fish processors
↓
Traders
↓
Wholesale traders
↓
Retailers
↓
Consumer

↓ Exporters

↑ Importers

Fisheries value chain – Actors and Products

Many actors and different products

- Fishermen
  - 3 ethnic groups: Bozo, Somono, Marka
  - Sedentary and nomadic fishermen
  - Up to 225.000 (average: 80.000)

- Fish processors (mostly female family members)

- Products:
  - 10%: Fresh (traded only during fishing period, Jan-May)
  - 90%: Transformed:
    - 60% smoked
    - 17% dried
    - 15% burned/roasted
    - 8% fish meal or fish oil

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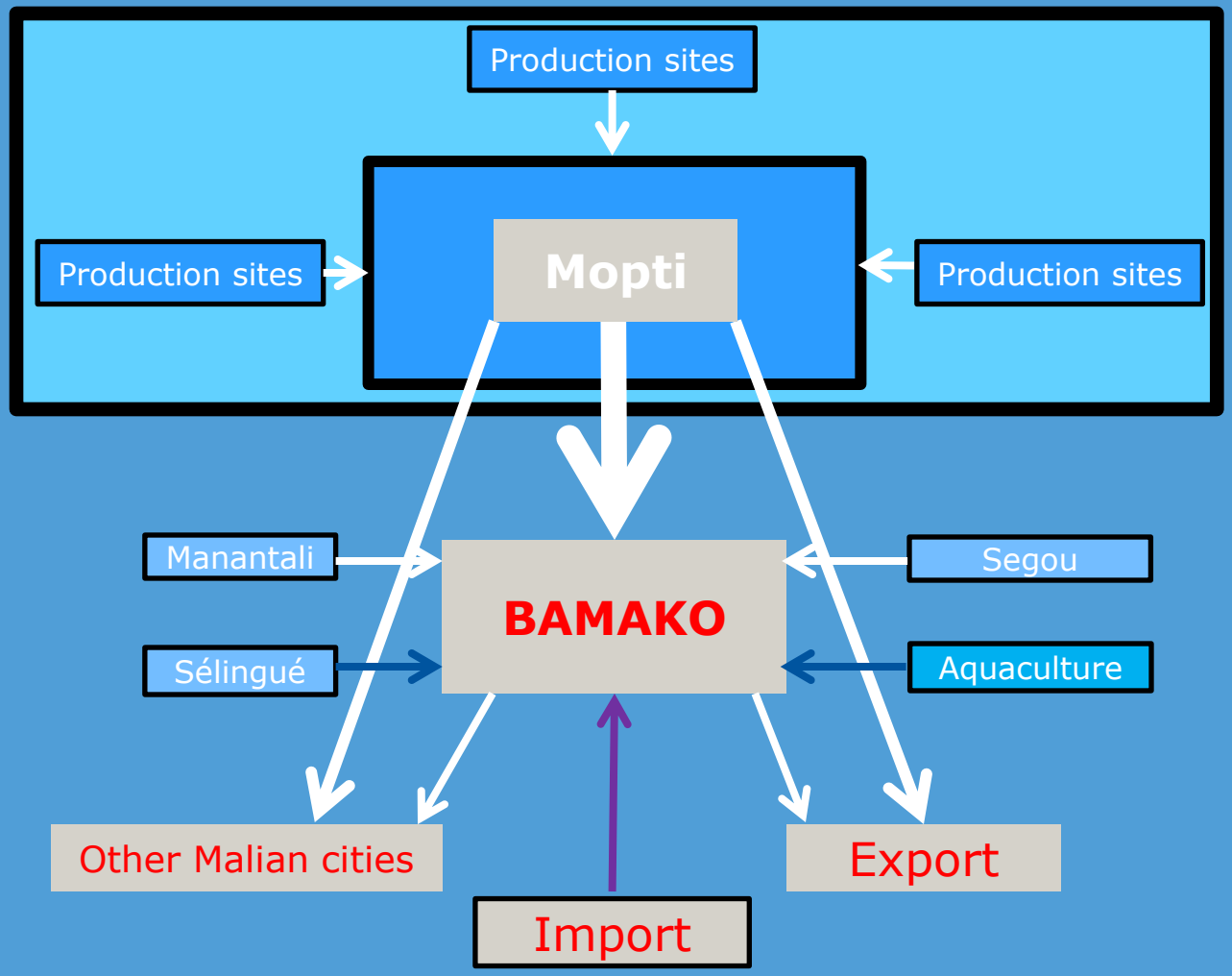
Fisheries value chain - Market Organisation



Niger Inner DELTA

Fisheries value chain – Prices & Shares

- Prices depend on season, fish species and size, product type, market location
- Prices higher in Bamako > Mopti > Segou

Example of shares in added value between actors in the supply chain of dried Nile perch (in FCFA/kg dried fish)

Actor	Buying price	Selling price	Added value	Added value share
Fishermen		2000	2000	33%
Processors	2000	2250	250	4%
Large traders	2250	3000	750	13%
Wholesalers	3000	4500	1500	25%
Retailers	4500	6000	1500	25%

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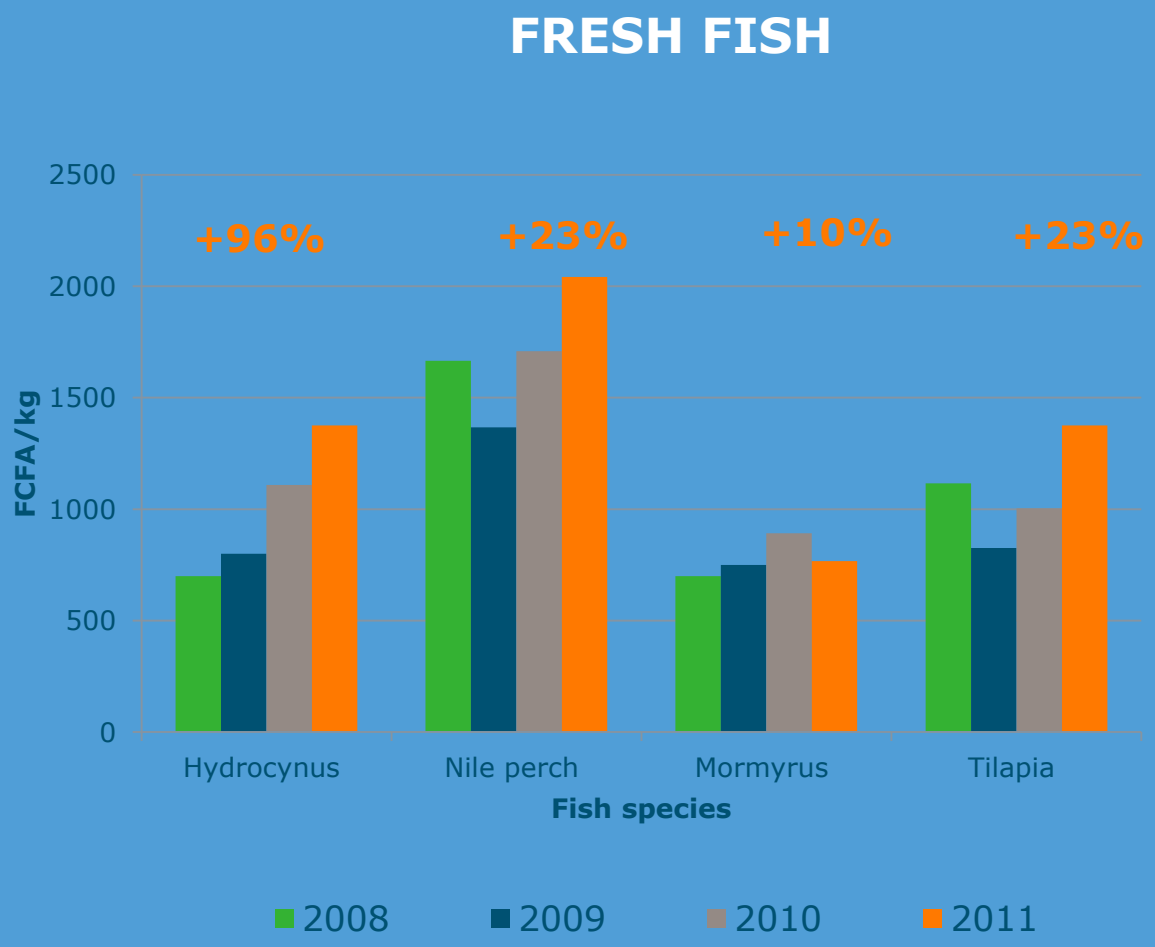
Fisheries value chain – Market Prices



- Segou (2008-2011): Increased prices of fresh fish (all species)

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Fisheries value chain – Market Prices

Product	Species	2008	2011	Change
		Price (F CFA/kg)		%
Dried	Alestes	833	517	-38
	Hydrocynus	1,083	2,000	+85
	Nile perch	2,500	2,042	-18
	Tilapia	1,500	1,008	-33
Smoked	Clarias	700	1,750	+150
	Nile perch	2,166	1,500	-31
	Tilapia	1,500	1,008	-33
Roasted	Schylbé (Ngari)	600	517	-14
	Tilapia	1,100	517	-53

- Segou (2008-2011): Other products, price decrease (except for dried Hydrocynus & smoked catfish)

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Fisheries value chain – **Intermediate conclusions**

- **Almost impossible to obtain more fish from fisheries**
  - Overfishing
  - Flooding-dependent
  - Climate change
  - ➢ No scope for enhanced fisheries
- **Good circumstances to develop aquaculture**
  - Increasing demand of fresh fish
  - Increasing prices of fresh fish
  - Whole year round availability
  - Urban market proximity

Fisheries value chain – Major Issues

Level	Issues	Required capacity
Producer	Reduced fish production	Water efficient agriculture technology, mitigation of climate changes, alternative livelihoods, capacity building, law enforcement and aquaculture development
Processors	Poor conservation, handling and processing	Capacity building and technological support
Traders	Lack of investment	Development of cold chain transport, improve efficiency in trade routing
Wholesaler traders and retailers	Lack of attention on quality	Capacity building on quality and food safety

Analysis of past donor programmes

- 2 fisheries projects:
  - Inland Fisheries Development Support Project (PADEPECHE)
  - Fisheries Development Project of the Sélingué Barrage (PDRHS)
- 1 aquaculture project:
  - Aquatic Resource Use and Conservation for Sustainable Freshwater Aquaculture and Fisheries (AquaFish CRSP)

Analysis of donor programmes - Fisheries

- **Intervention areas:**
  - infrastructure development (roads, landing sites, harbors, cold storage, fish processing equipment,...)
  - development of fishery management plans
  - capacity building
  - credit supply

Analysis of donor programmes - Fisheries

- **Main conclusions:**
  - ➢ Fishery management is complicated to put into practice
  - Lack of involvement of fishermen
  - Lack of government reinforcement capacity
  - State imposed legislation in contradiction with traditional rights & practices
  - Conflicts between migrating & sedentary fishermen
  - Illegal fishing gears on market, fishing pressure
  - Limited access to land for migrating fishermen, less alternative activities

Analysis of donor programmes - Aquaculture

- **Intervention areas of AquaFish CRSP:**
  - Pond culture
  - Integrated rice-fish culture
  - Fisheries planning on Sélingué barrage
- **Main observations**
  - Training, on-farm trials, demonstrations, workshops successful
  - Improved fish farming management practices
  - Efficient: fish pond production increased 12-fold
  - Formation of fish farmers associations (APAM: >200 members)
  - Formation of rice-fish farmers cooperatives
  - Fisheries management plans developed but not implemented

Analysis of donor programmes - Aquaculture

- **Main conclusions:**

  - Benefits of fish farming and rice-fish farming widely acknowledged, but

  - Bottlenecks:
    - Fingerlings (cost & quality)
    - Fish feeds (cost, quality)
    - Insufficient technical support

Analysis of fish feeds

- 2 pond production systems (intensive, semi-intensive)
- 2 fish species (Nile tilapia, African catfish)

- **Main observations:**

  - Fish feed ingredients (cost, quality, seasonality, availability)
  - Fish feed ingredients imported/taxed
  - Price for fish feed relatively high

Analysis of fish feeds

- **Main conclusions:**

  - **Least cost feed formulation**
  - Major ingredients: Low quality fish meal, maize bran
  - Feed price: 228-373 FCFA/kg (based on ingredient cost)
  - Feed selling price: 342-560 FCFA/kg (estimation)

  - **Economic feasibility**
  - **Semi-intensive**: feasible for tilapia, not for catfish
  - **Intensive**: feasible for both tilapia and catfish

Suggested intervention strategy

- **Fisheries**
- No direct intervention in fisheries
- Focus on provision of alternative livelihoods for fishermen
- Capacity building and technological support:
  - Post-harvest loss reduction, storage and transport

- **Aquaculture**
- Support partnerships in Mali:
  - Between farmers, between scientists
  - Innovation through knowledge institutes (Malian, International)
  - Matchmaking with Dutch private sector
- Support to improve the quality of stocking material

Suggested intervention areas

- **Fisheries**
  - Post-harvest handling, processing and transport: Mopti
  - Processing (focus on women)
  - Provision of alternative livelihood activities to fishermen

- **Aquaculture**
  - Semi-intensive aquaculture systems near urban areas
  - Integrated extensive systems (i.e. rice-fish farming)
  - Low-cost breeding programs involving farmers, researchers

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