

THE WAY FORWARD.....



C O N T E N T

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1. INTRODUCTION

Aquaculture versus Wildcatch

Total fish consumption: **140** million MT of whole fish
farm raised fish: **45** million MT (25 million MT: China)
wild catch: **95** million MT (15 million MT: China)

**Growth 9.2%
per year!
(since 1970)**
China: 11.5%

Estimation total year production at this moment:

Panga **400,000 MT whole fish** (target 2010: 800,000+ MT)
Salmon 1,200,000 MT whole fish !!
Tilapia **2,500.000 MT whole fish**

Source: Infofish 2006

1. INTRODUCTION

- Retailers/ wholesalers demand increasing accountability from suppliers
- Can supply MEET AND ANSWER demand?



TESCO

METRO



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2. WHAT IS SUSTAINABLE AQUACULTURE FISH?

(definition from the market)

Aquaculture is a sustainable activity when 4 basic criteria are met:

1. Mastery of the life-cycle
2. Control of the growing process
3. Respecting the environment
4. Marketing the final product

(source: aquamedia.org/environment/sustainability)



2. WHAT IS SUSTAINABLE AQUACULTURE FISH?

Market stakeholders with their applicable standards,
Globally very divers: not standardized and structurized yet!



1
Maintaining healthy target fish populations



1
Reducing risks

2
Continuous improvement

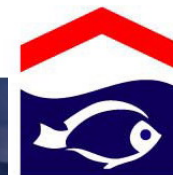
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2
Ecosystem Impact

3
Effective fishery management systems and feeding



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INTERNATIONAL



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2. WHAT IS SUSTAINABLE FISH?

according to Greenpeace

VIS-A-CARD

Vis kopen? Maak de juiste keuze en help de zee gezond te houden!

Voor elke vissoort is beoordeeld hoeveel er nog zijn, het effect van de vangstmethode op de zeebodem én de bijvangst van andere dieren.

- **GROEN** = prima vis
- **ORANJE** = twijfelachtig
- **ROOD** = niet kopen!

●●●	MEERVAL (NL KWEEK)
●	HARING
●	TILAPIA (NL KWEEK)
●	SPROT
●	MAKREEL
●●	MOSSEL (NL KWEEK)
●●	KOOLVIS/POLLAK
●●	NOORSE (STEUR) GARNAAL

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VIS-A-CARD

●●	REGENBOOGFOREL
●●	SARDINE
●●	ALASKA KOOLVIS
●●	POON EN MUL
●●	NOORDZEE-GARNAAL
●●	SCHELVIS
●●	OCTOPUS, PIJLINKTVIS
●●	DORADE
●●	SCHAR
●●●	NOORDZEE-WIJTING
●●●	ZALM
●●●	TARBOT
●●●	TONIJN
●●●	GAMBA (KWEEK EN WILD)
●●●	HEEK
●●●	PALING (KWEEK EN WILD)
●●●	KABELJAUW
●●●	ZEEWOLF
●●●	TONG
●●●	ROODBAARS
●●●	SCHOL
●●●	ZWAARDVIS
●●●	ZEEDUIVEL

Aquaculture

Green:
perfect
choice



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ET TA MIER T'Y PENSES?



guide à l'usage
du consommateur responsable



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Greenpeace France

Quelques alternatives :

Il n'est plus possible de citer aujourd'hui des espèces à consommer sans modération car plusieurs paramètres entrent en ligne de compte (état des stocks, méthodes de pêche utilisées, pollutions diverses,...). Consommez des espèces herbivores d'élevage comme le Tilapia ou le Pangasius ou des espèces comme le bar de ligne (attention à bien retrouver l'étiquette au niveau de l'ouïe). Ce dernier est vendu généralement à un prix plus élevé que celui du bar de chalut ou d'élevage, mais en l'achetant vous favorisez une méthode de pêche plus respectueuse de l'environnement, moins consommatrice en énergie (pêche de proximité), qui constitue un important moteur de développement local.



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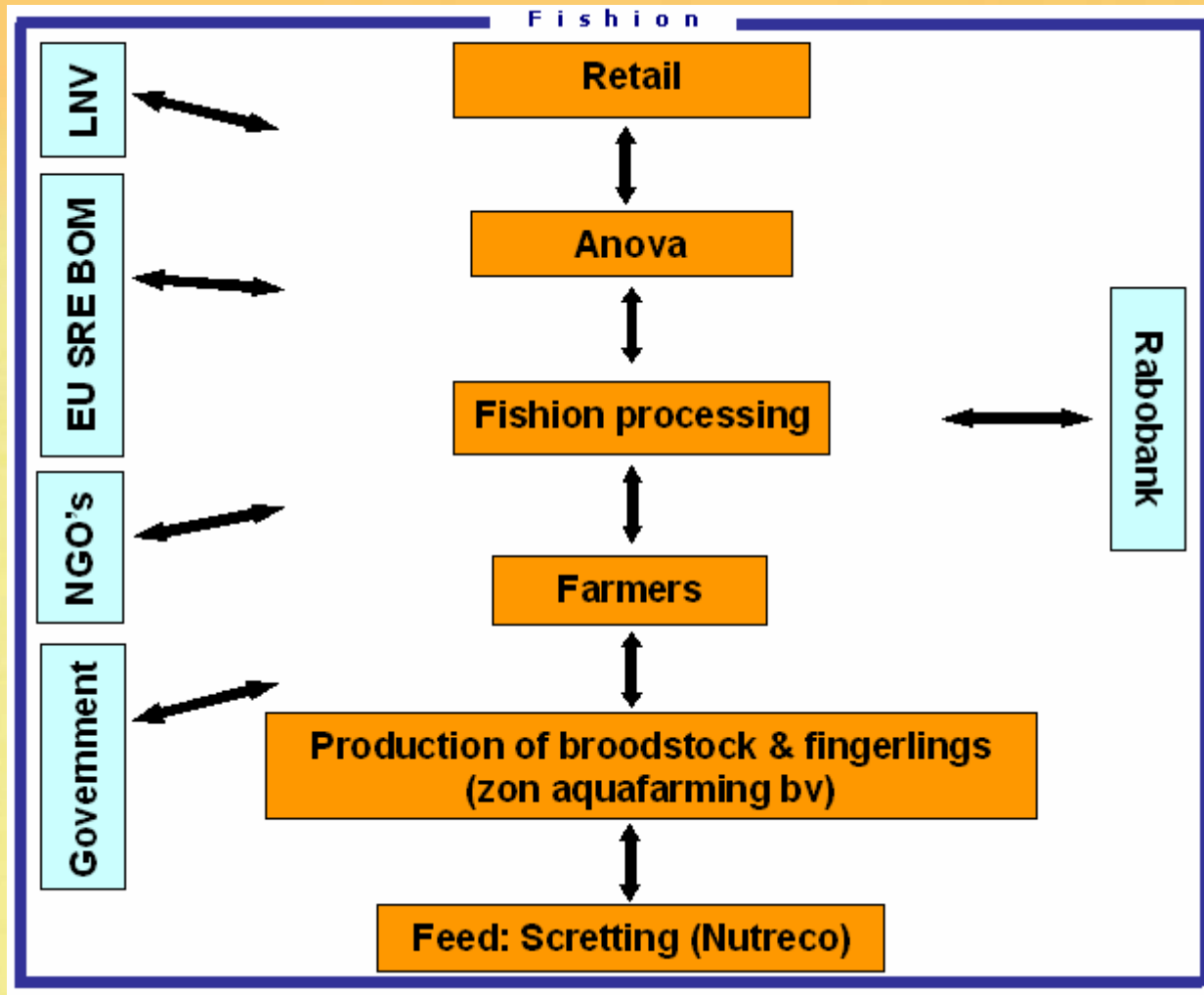
3. THE FISHION PROJECT

What is the Fishion chain?

An initiative of a chain of Dutch entrepreneurs, who are dedicated to produce a market orientated sustainable aquaculture fish.



3. THE FISHION PROJECT



Partners in the Fishion chain

3. THE FISHION PROJECT

The project objectives:

People



Let consumers enjoy sustainable fish!

Planet



Farming of fish in a sustainable environment

Profit



Let entrepreneurs invest in sustainable fish to earn an honest income.

3. THE FISHION PROJECT

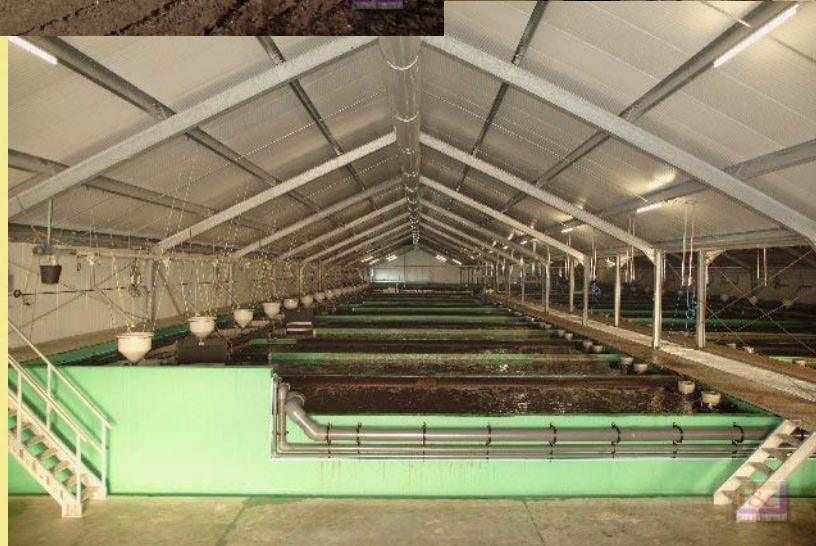


History

Start: Pioneer phase



3. THE FISHION PROJECT



Today

Investment of
€2.5 million
per farm!!

3. THE FISHION PROJECT

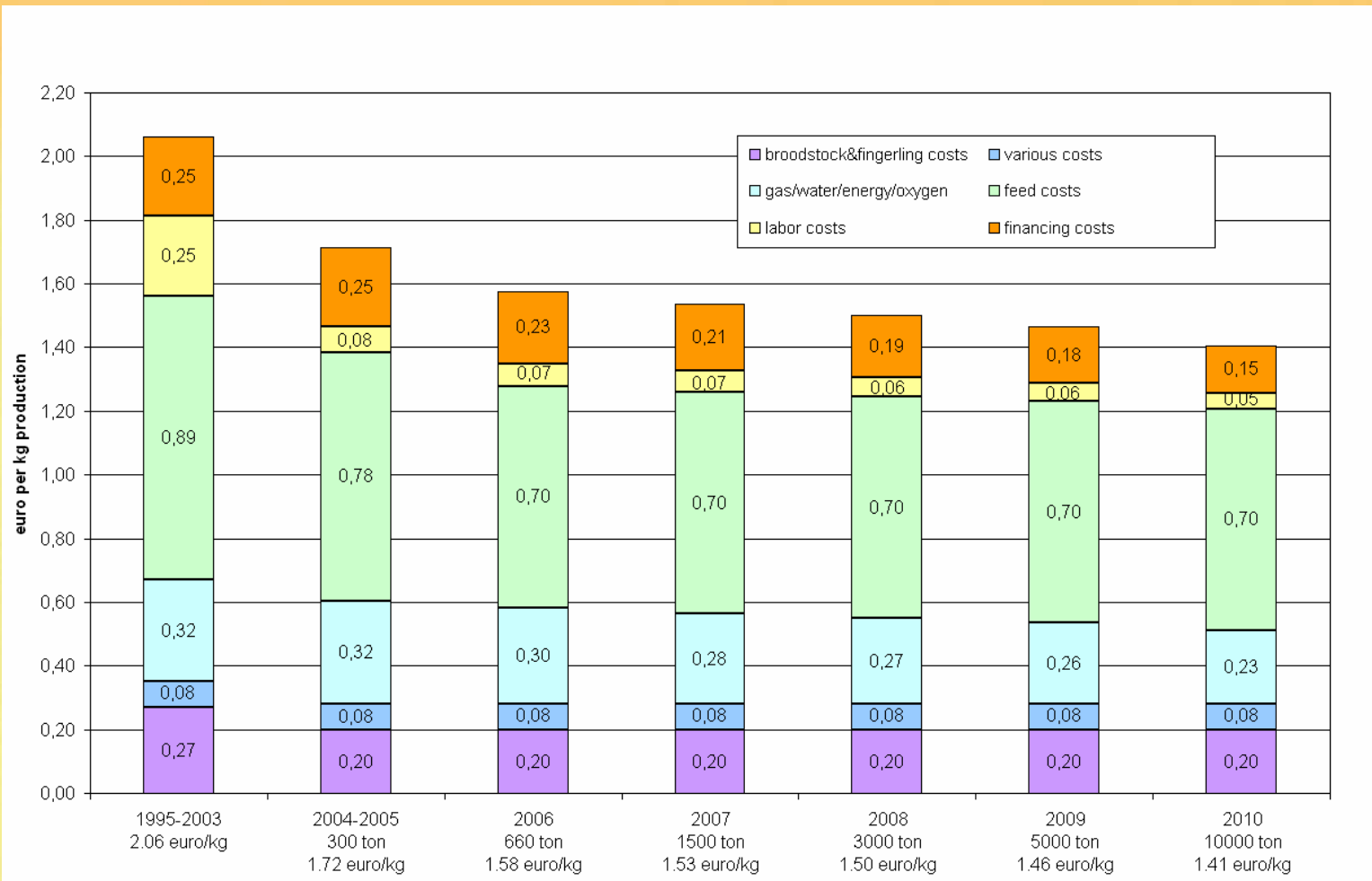
Planning Tilapia to market requirements

Year	Production capacity	Diversification
September 2005 - 2006	11 MT/ wk	8 MT whole round 3 MT for filleting (1 MT filets)
September 2006 – 2007	30 MT/ wk	8 MT whole round 22 MT for filleting (7 MT filets)
September 2007 - 2008	58 MT/ wk	8 MT whole round 50 MT for filleting (15,5 MT filets)
September 2008 - 2009	86 MT/ wk	8 MT whole round 80 MT for filleting (24 MT filets)

Current production needs to be scaled up to enlarge the capacity and to fulfill the increasing demand.

3. THE FISHION PROJECT

Costprice development



Cost price development of tilapia (euro/kg) in 600 tons farmingsystem (whole round ex farm)



4. WHAT DOES FISHION OFFER YOU?

Fair and reliable information about: environment and ecology, product, foodsafety and health

Full transparency of the chain: from origin of the product to processing and packaging

An environment friendly product: sustainable, healthy, super fresh, EU-based (local) produced and varied, no foodmiles

Positive news and positive stories and proof that it can be done differently!



5. FISHION STATEMENTS

Transparant

Fully documented traceability system. Through well managed internal and external controls.

Education and Health

Educate the consumer and inform it is a sustainable fish with no impact on the environment (develop special label?!)

Super fresh

After harvesting, the fish is within 2 hours processed to a filet.
Delivery to the customer within 24-36 hours after catch

EU-based (local) and Innovative

Local product without foodmiles
Closed recirculation system developed



5. FISHION STATEMENTS

Varied

- Catfish (*Clarias gariepinus*) filets
- Tilapia (*Oreochromis niloticus*) filets
- new species

Environmental friendly use of settings and sources:

Within the Fishion chain farms are under strictly control of aquaculture specialized veterinaries. Use of preventive medicines is restricted and controlled throughout the chain.

Project certified by Stichting Milieukeur



5. FISHION STATEMENTS

Fishfeed

↻ Continuous striving for a high as possible vegetable feed content

	Catfish Feed	Tilapia Feed
Protein in %	47	38
Fat in %	14	10
N6/N3 ratio	0,83	0,96
Fish meal in %	27	14
Fish oil in %	5,3	4,2
Vegetable Oil Mix in % (= Mix of Soya and Rapeseed oil)	4	3
Vitamin/Mineral premix in %	0,6	0,6
Soya "48%" in %	25	41
Concentrated Soya in %	7,5	0
Other Vegetable Raw materials	30,6 (Wheat, Wheat Gluten, Fava Beans)	37,2 (Wheat, Corn, Gluten, Fava Beans)

⇒ All raw materials are GMO free (Nutreco- Skretting)

Due to possible GMO-contamination of Vitamin carriers the feeds are declared to be GMO < 0,9 %



5. FISHION STATEMENTS

Water and Energy friendly:

- ❏ Water consumption is minimal, through a specific recirculation system
- ❏ Water consumption only 25 liter/kg feed or fish (compared to 300-500 liter/kg feed in traditional recirculation systems and 3.000-30.000 liter/kg feed in open aquaculture systems)
- ❏ After watertreatment filtered rest product is used as manure for agriculture land
- ❏ Energy consumption is 2-2,5 kwh/kg fish, further reduction possible to <2 kwh/kg fish. And is now even lower than to catch 1 kg of fish from the sea!



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5. FISHION STATEMENTS

Eco-system: No pressure on the wild biomass

- With the farming of tilapia and catfish the entire process cycle is closed.

No sex reversal in our ponds (98% of farms use hormones!)

Eco-system: No impact on the environment

- With closed recirculation system optimal efficiency per m²
(see model: “Waste production by aquaculture in recirculation farms”)
- Through complete denitrification: no NH₃ (ammonia) and NO₃ (nitrate) emission
(see model: “Complete Nitrogen Cycle by Closed water Recirculation System”)



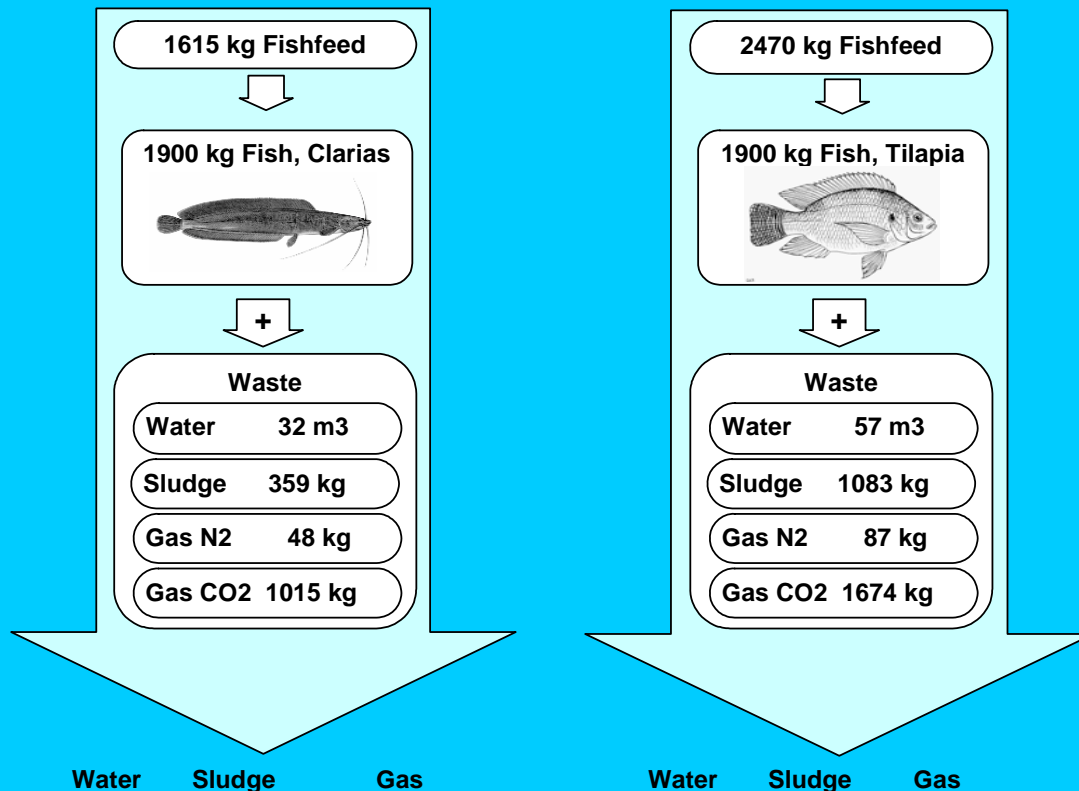
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5. FISHION STATEMENTS

Waste production by aquaculture in recirculation farms

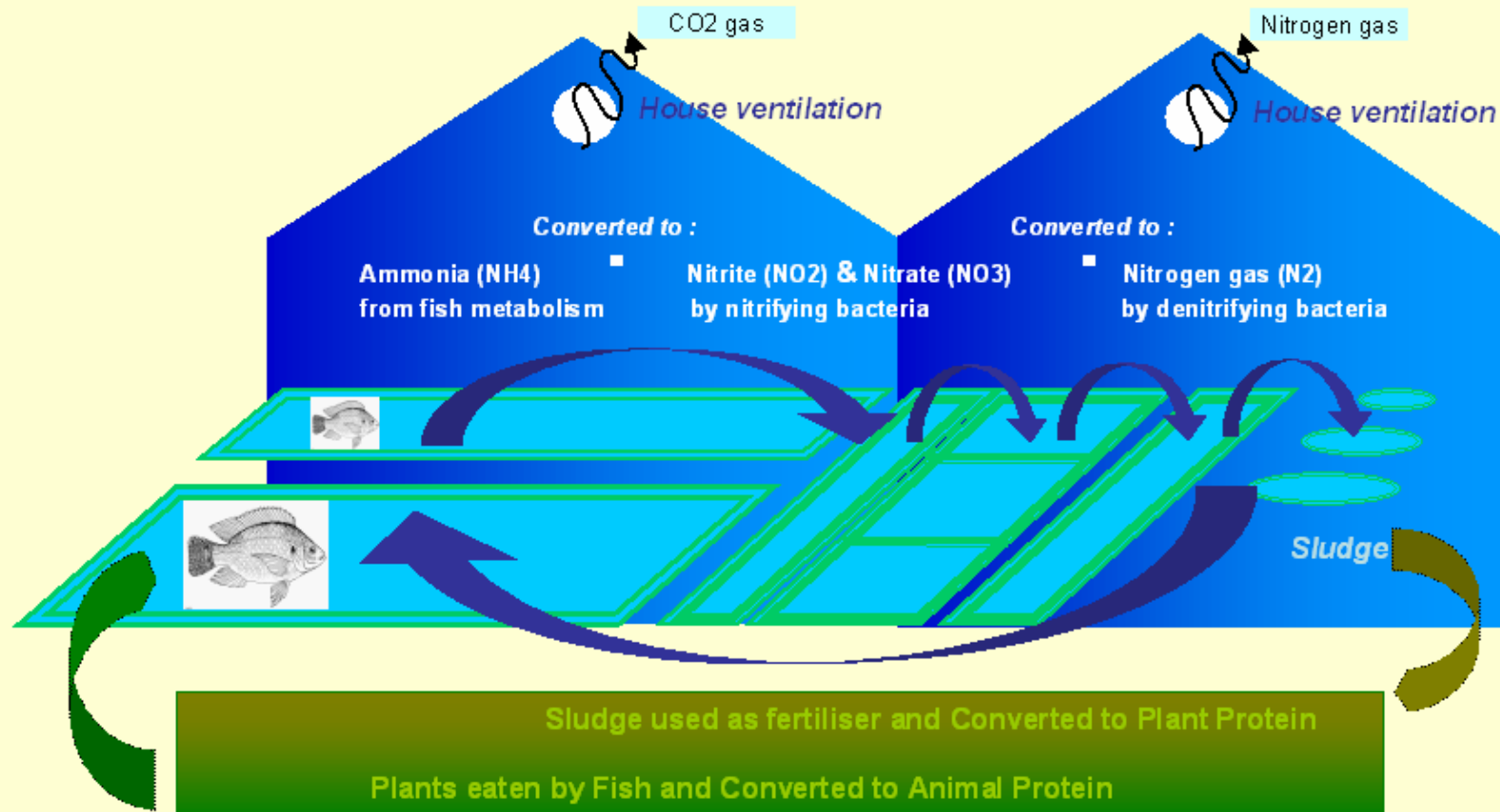
Per kilo fish (Clarias or Tilapia) production a certain amount of waste is produced.

- 1) the effluent water from the farm
- 2) the effluent of sludge containing manure, minerals and excess biomass bacteria
- 3) off-gas from biodegradation of organic material



5. FISHION STATEMENTS

Complete Nitrogen Cycle by Closed water Recirculation System



Note :

By the system: NH_3 (ammonia) complete converted to Air-Nitrogen. This means No Acidification of the environment.

Contrast:

1.500.000 ton aquaculture production in open cage culture means a yearly load of 60-80.000 ton NH_3 in open water. This equals a similar amount as the total NH_3 excretion of the Dutch pig production.

5. FISHION STATEMENTS

Management

- The Dutch farmed tilapia and catfish are 24 hours per day looked after by well educated and committed farmers
- The fish swim in animal friendly bassins

Animal welfare

- Optimal circumstances and well-being are guaranteed for the Tilapia and Catfish at the farms
- The fish has the disposal to sufficient feed, swims in water of excellent quality, is free of disease and fractures, free of fear and stress and not hampered in its natural behaviour
- Optimal density control (average 80kg/m³)



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6. FISHION'S TO DO LIST

Statements to which we are very committed to deliver:

- Development of equipment for improved slaughter of farmed fish (Project “StunFish” in co-operation with the Dutch Fisheries Research Institute)
- Further reduction of the animal raw material content in fishfeed (in co-operation with Skretting)
- Optimize valorisation of the rest material
- State of the art processing
- Production: 10.000 MT in 2010
- Eco-labeling: **Naturland, ??**



7. LONG TERM THINKING

- Anticipate on welfare concerns
- Economic viable growth
- Greenpeace proof!

8. NO BETTER ALTERNATIVE...

...than marketing Tilapia and Catfish from FISHION!!

because:

- Tilapia and Catfish are qualified as the best sustainable species
- The FISHION project is easy to communicate

