

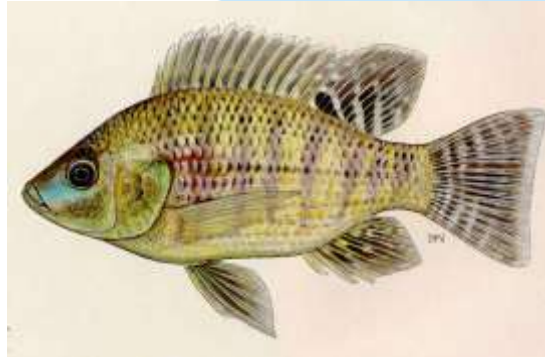
E.C.E.X.A Aquaculture Industry



Its not only salmon !



Barramundi: 0,3 mill t/y



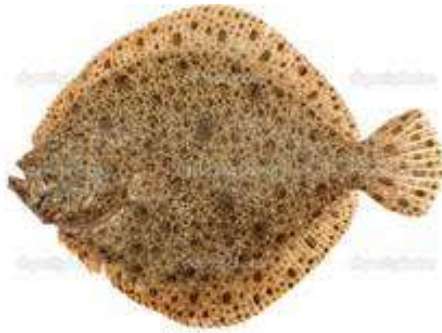
Tilapia: 3,0 mill t/y



Carps, barbels and others: 22 mill t/y



Salmonids: 2,5 mill t/y



Flounders: 0,17 mill t/y



Shrimp: 3,5 mill t/y

PBFK for eel farming in Japan



References

Optima-Foods, Japan Tiger Puffer Fish

Nursery and Grow-out
department

1-2 % exchange of water per day



Aquabella Group Plc, UK

Barramundi, 400 tons/year

Nursery and Grow-out department
5 % exchange of water per day

In operation since October 2005



References

VuAS - Cod hatchery and fingerlings



The biggest one so far – Lerøy Belsvik – 14 mill/ year



Applications – aquaculture ECEXA Partner

1. Land based smolt farms – end of pipe treatment
2. Land based smolt farms – recirculation systems
3. Land based grow out farms - recirculation systems
4. Well boats – lice filtration
5. Slaughter houses – lice filtration, and end of pipe treatment
6. Net washers – on/off shore
7. Fish processing
8. Future applications



Recirculation and «end of pipe» plants



2. Recirc. Projects



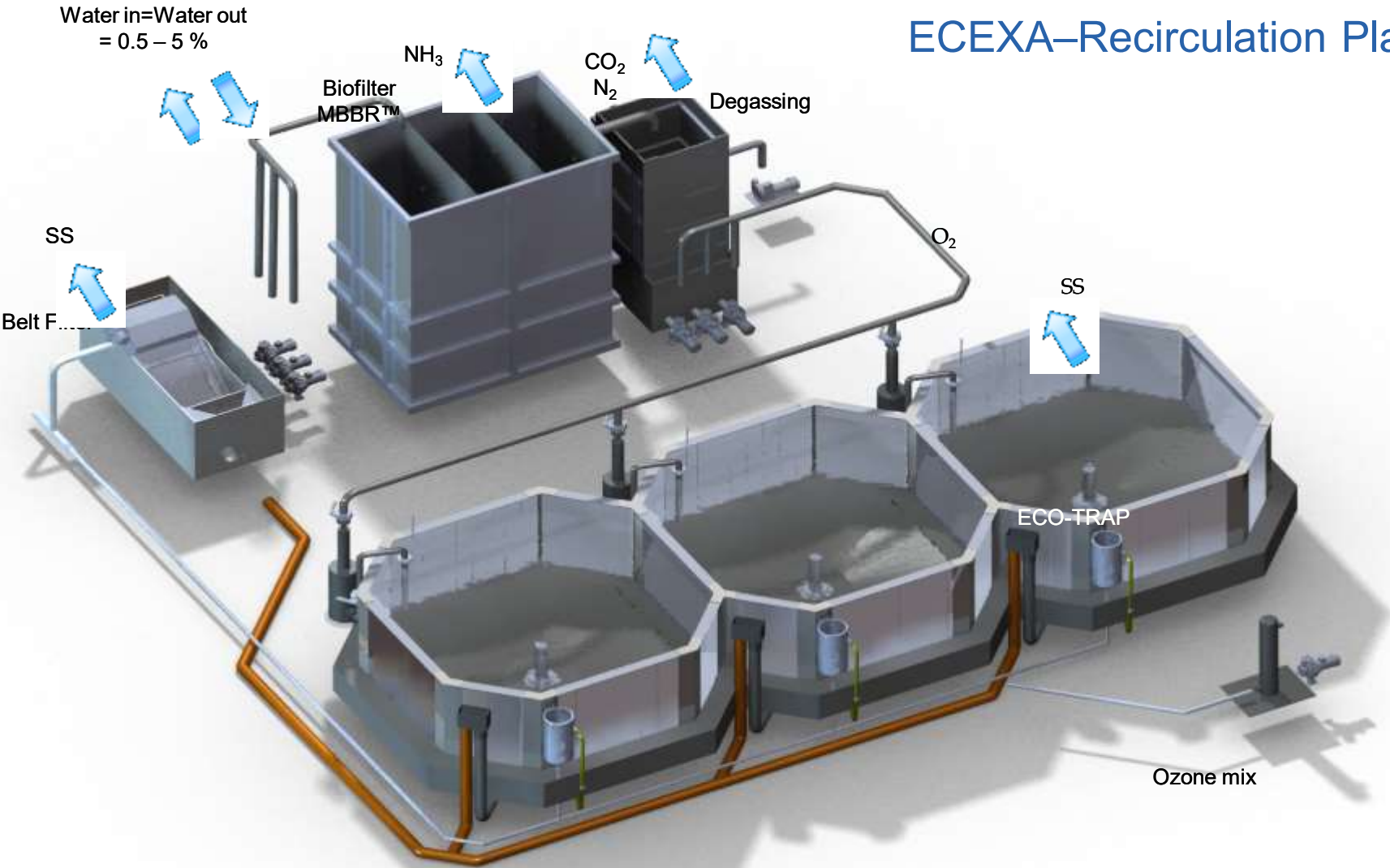
In recirc system



By – pass clarifier



ECEXA-Recirculation Plant



131 micron- the optimal filter mesh for recirc system



1. End of pipe - projects



+ Vacuum



25 – 80 % DM



Typical size : 2 – 3 mill smolts / year



- From egg to 100 grams juvenile
- Fresh water phase – 90 % flow through – 10 % recirc
- About 200 farms in Europe
- 500 farms globally ?

Fjord Seafood, Salsbruket - Salmon
2006 - ECO-TRAP in 14 pcs 300 m³ tanks



Important with clear water, less biofilter, less blowers, less O₂ consumption, better growth

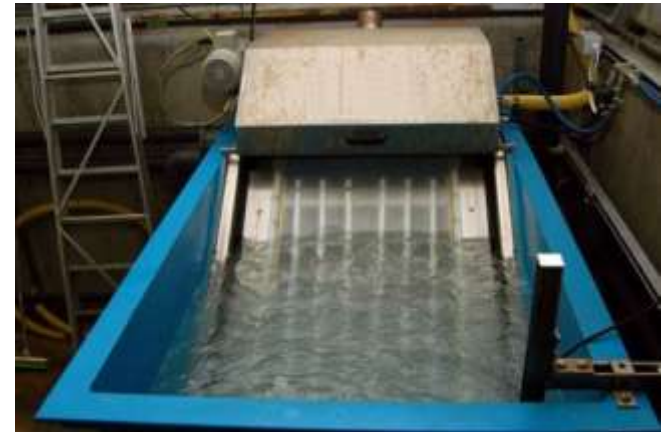


Channel Filters in operation

At New Forest Barramundi Fish farm (UK)
60 – 100 μm mesh opening



PBFK in fiber glass tank



Sludge handling



1 kg feed = 1 kg fish = 1,5 L sludge



Sludge from aquaculture - processing

0,2 % TS



25 % TS



75 % TS



Potential for using sludge as fertilizer in agriculture purposes, or in bioreactors



1. Pellets, storage friendly
2. Biogas potential
3. May be burned locally



1. Good test results
2. Effective plant growth

Well boats



Boats of all sizes

MS Brudanes 650 m³



MS Viktoria Lady 1000 m³



MS øydrott 1200 m³



MS Dønnland 1500 m³



M/S FS Stormy 3250 m³



M/S Ro Fjell 4500 m³



Filter applications – well boats

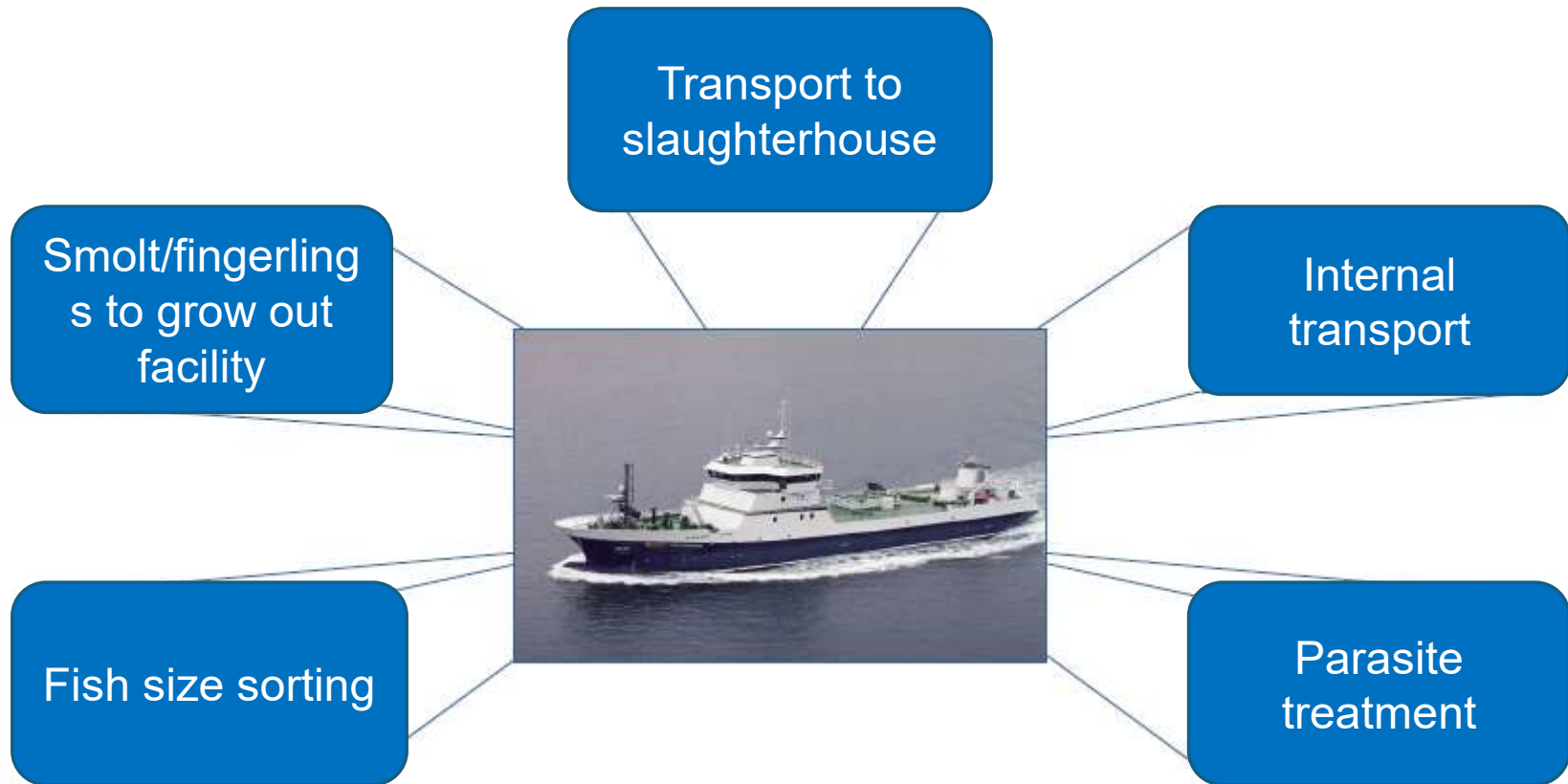


- Filtration of process water in removal of salmon lice, and similar
- Disinfection system in – and out

Application 3. Well boats



What they use boats



Filtration of transport water

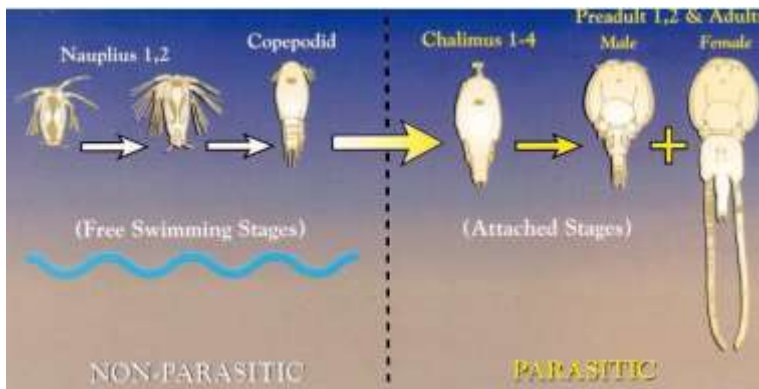


Disease control from floating hospitals (well boats)



AGD

- To be reduced by filtration of net cleaners
- UV/Ozone disinfection end of pipe water ?
- UV/Ozone disinfection, inlet water



Salmon Lice

- Filtration of well boat water
- Filtration of transport water
- Filtration of bath treatment water



Shrimp farming, Asia



Big challenges with disease and use of antibiotics in shrimp farming



Application 4. Slaughter houses



- Transport water, from cage to slaughter house
- Process water from slaughtering line



CONTACT AND CO-OPERATION OPPORTUNITIES

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