

Enhanced Technology and Food Safety in Amazonian fish farming for Nordic market

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Oy FIC Fish Innovation Centre Ltd., Finland

- ❑ Project and R&D services to fisheries industry
- ❑ We can offer Peruvian trade and aquaculture companies opportunities to do business in Finland: sea-food export and Amazonian fish sales on specific markets



InnoFISH Office

9/29/2011

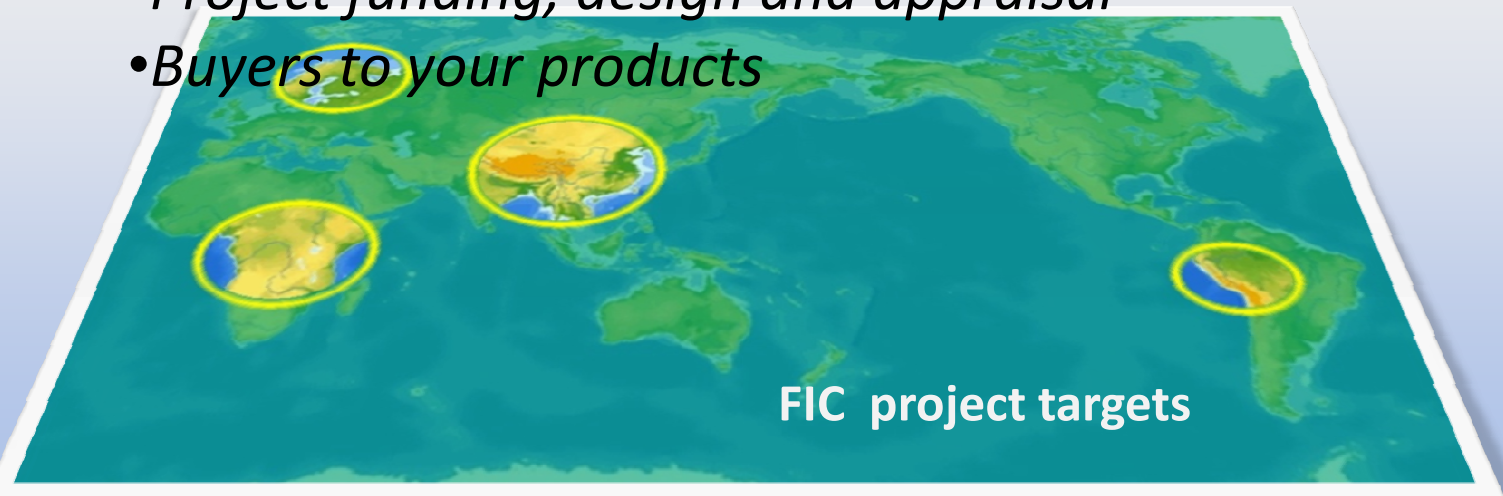


Linking your business with
our clients in Finland/EU

We promote aquaculture and fish industry development through

- ✓ ODA – Official Development Assistance of EU/Finland
- ✓ KIBS - Knowledge Intensive Business Services

- *Access to advanced scientific knowledge*
- *Private and public networks in 35 countries*
- *Project funding, design and appraisal*
- *Buyers to your products*





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Technology transfer and innovation services of Finnish Bio-Centres

- Applied Research in Biotechnology to develop value added by-products & biomaterials for medicine and pharmacy
- Expertise Clusters of Cleantech, Food Development and Bio-Health to support environmentally viable and safe fish industry



*FIC has partners in
Kuopio Science Park
and Finnish industry*

Finnish interventions on the sustainable use of the biodiversity resources in Amazonia aquaculture

- ▶ BIODAMAZ/IAA - Instituto de Investigaciones de la Amazonía Peruana (Proyecto Diversidad Biológica de la Amazonía Peruana, Perú-Finlandia 1999-2007) – extension methodology and small-holder business
- ▶ MFA-Institutional Capacity building/San Martín (2010-2013) - culture and R&D in paiche (*Arapaima gigas*) industry
- ▶ FINNPARTNERSHIP business delegations (2008-2012) – partner identification (*Polarfish Oy*, *Taimen Oy*/*Apetit Oy*, *Savon Taimen Oy*, *Aqua Care Oy*)
- ▶ BIOCAN – Regional Biodiversity Programme in Andean Community (MFA 2010-2013) – Biocommerce of Amazonian resources

Finnish support to Amazonian aquaculture



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- ▶ R&D on Amazonian fish farming technology
- ▶ Selective breeding and local fish feed manufacturing
- ▶ Aquaculture to protect biodiversity and avoid illegal, uncontrolled fishing
- ▶ Post-harvest processing and value chain enhancement
- ▶ Food safety management for international markets

Arapaima Farming in San Martín Region

Capacity building for the development of *paiche* farming in the San Martin Region – special focus on breeding strategy and feed development

- ❑ Institutional Development programme (ICI) between Regional Government of San Martín and Finnish Game and Fisheries Research Institute
- ❑ Research capacity and extension services to industry
- ❑ Duration 2010-2013
(324,600Eur ~ 1,168,500 Soles)



Strategic Plan for Arapaima Farming in San Martín Region

Focus on Breed, Seed and Feed

- Brood stock fish from diverse locations are obtained, individually marked and genetically analyzed
- Strain comparison trials to compare production performance of various arapaima stocks – high quality juveniles benchmarked at private farms
- A series of feeding trials are carried out to provide information for sustainable and efficient feed formulation
- Ahuashiyacu Fish Farm personnel are trained in brood stock management and feed development issues
- Environmental technologies, best practices and unit management



Ahuashiyacu Station facilities for brood-stock management and feed trials

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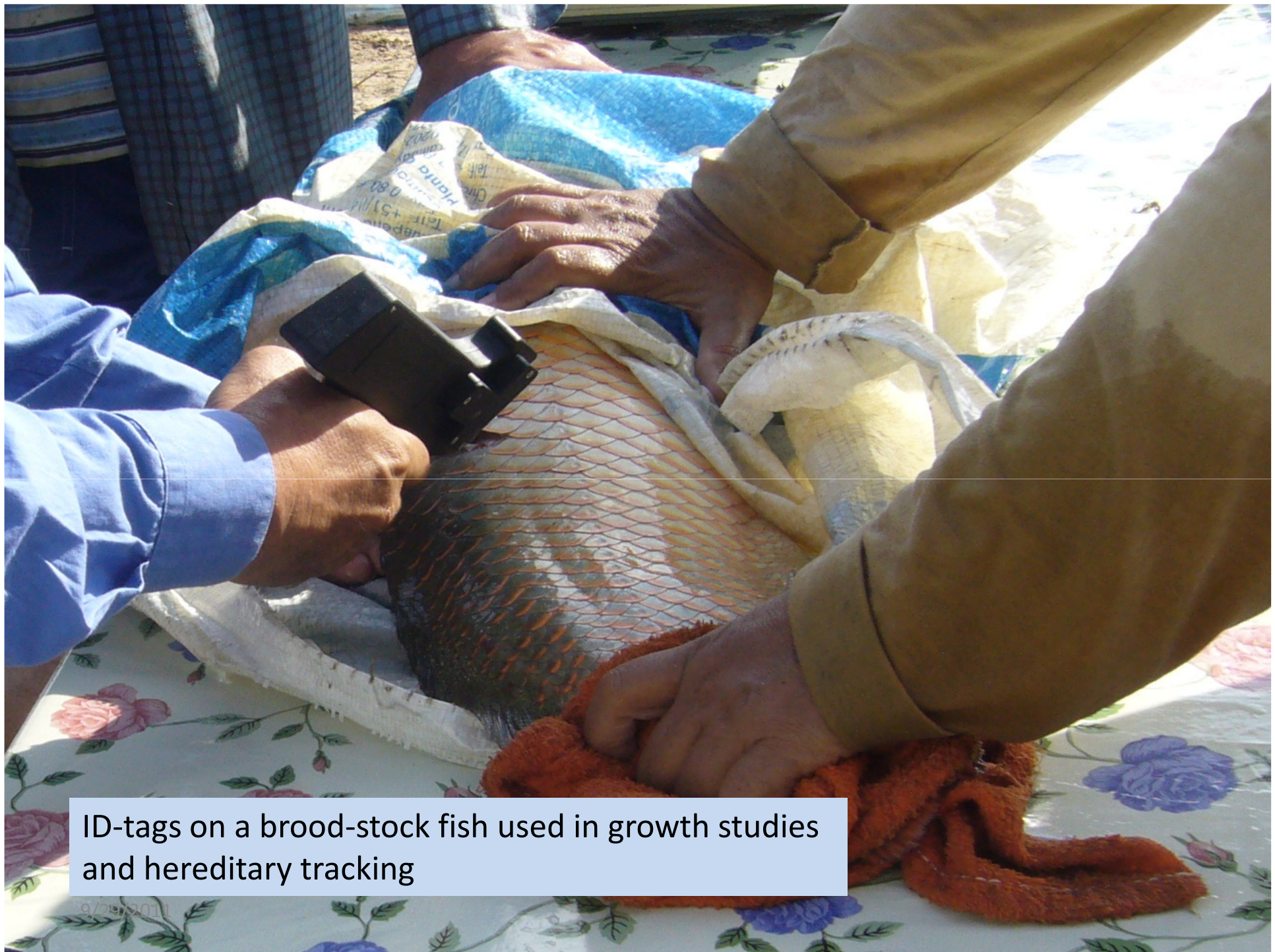
Genetically diversified brood fish

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Measuring growth rates and individual traits

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ID-tags on a brood-stock fish used in growth studies and hereditary tracking

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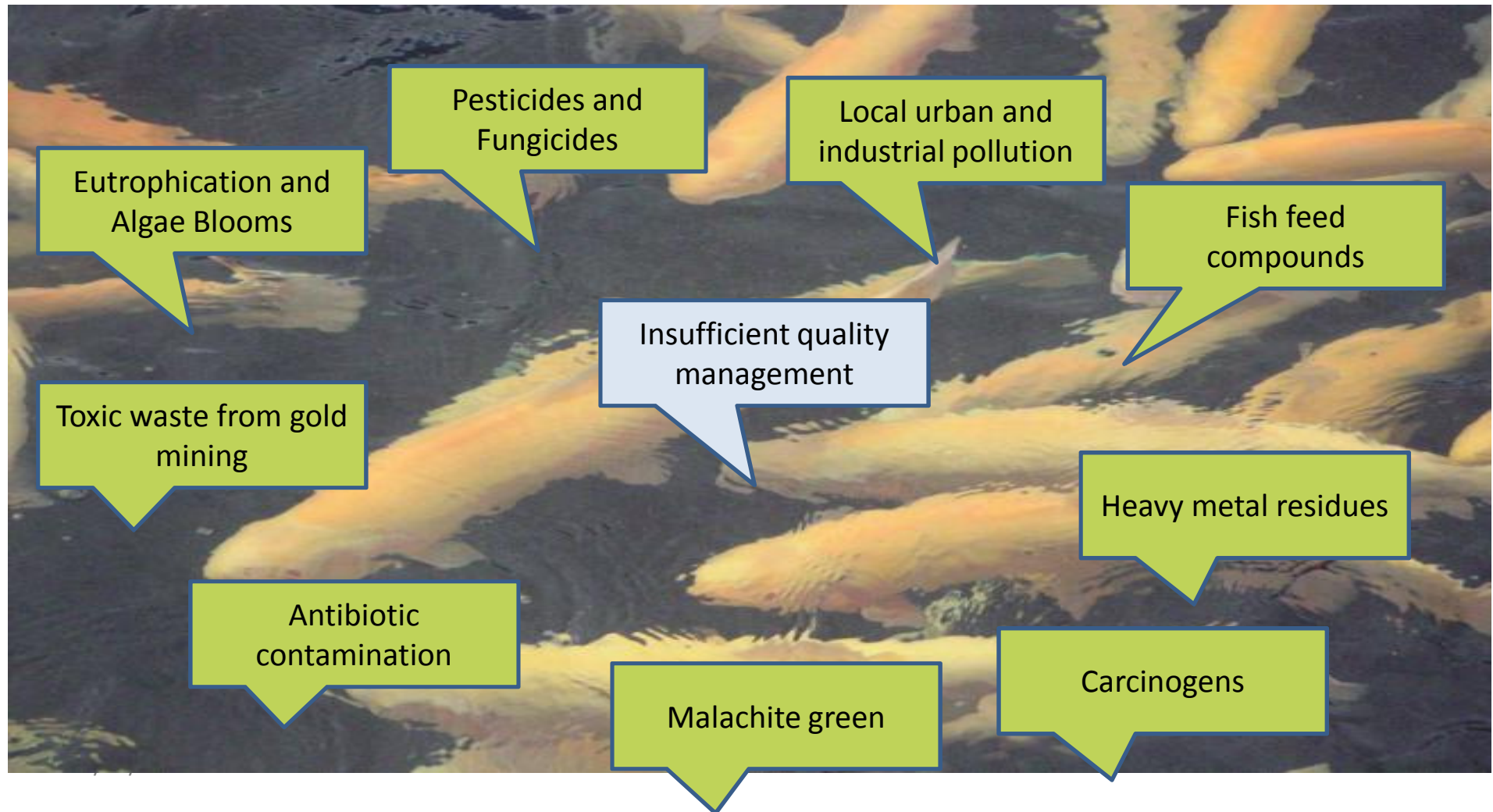
Sustainable use of the Amazonian biodiversity through commercial aquaculture

- Precautionary approach in resource management and protection of the gene pool
- Cleantech to reduce pollution
- Participatory management of bio-resources: local community engagement in making decisions & conservation ethics
- Added values to international trade – eco-labelled products & biodiversity recognition

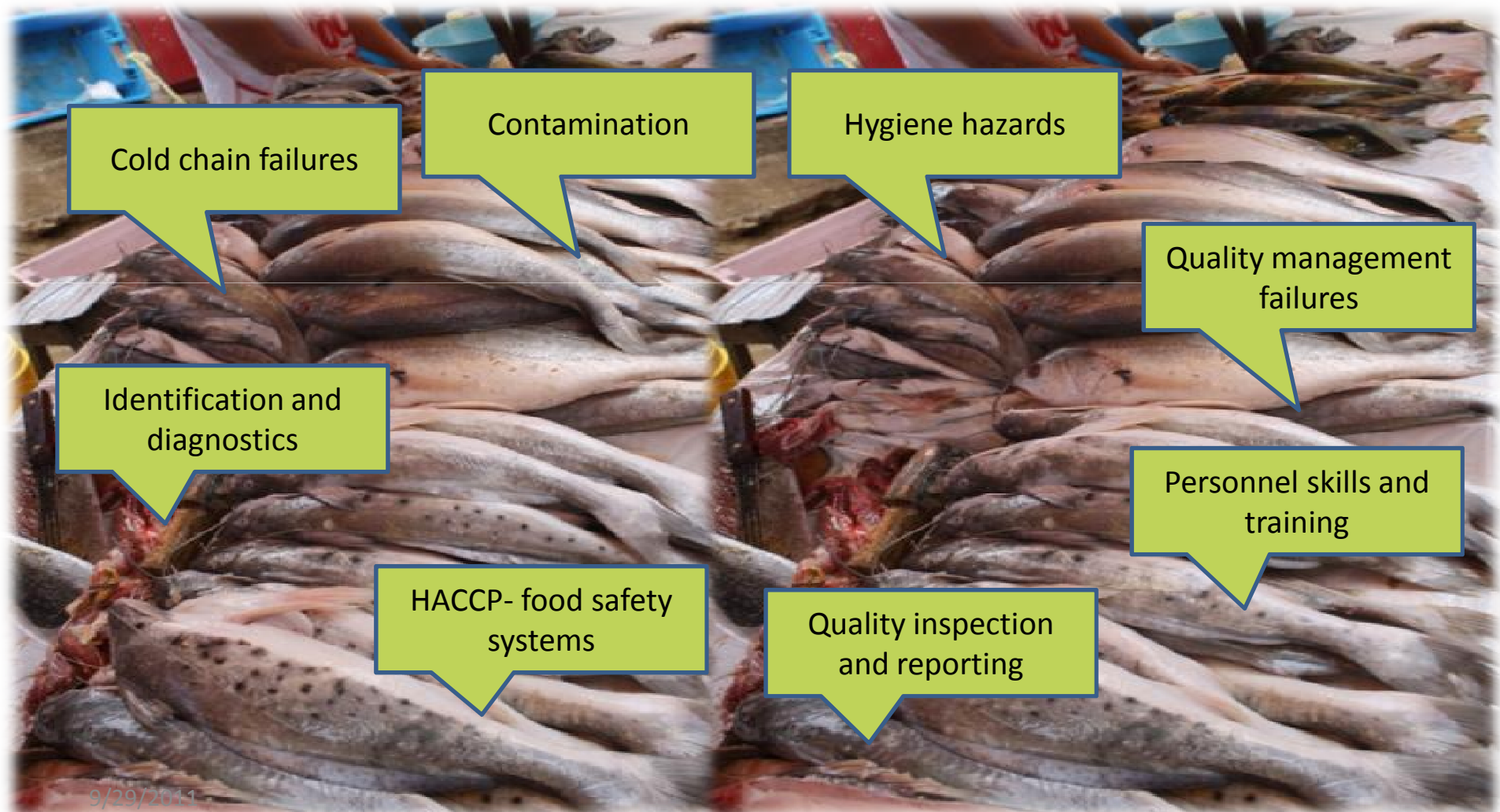


Food safety problems in Amazonian aquaculture

- causes and consequences



Intended and un-intended hazards in fish processing



Applying Finnish Food Safety solutions in the rural aquaculture and fish processing in Peru



Finnish Food Safety Forum
for fisheries products

- Good Aquaculture practices to maintain sustainable farm production
- Assessing internal and external risks in farming and product processing
- Cleantech solutions to mitigate pollution
- Food diagnostics – residue control of banned drugs, pharmaceutical substances
- Logistics, ware-houses and cold-chain
- Traceability and product tracking
- EU compliance and consumer safety

Added values of labelled Amazonian fish to Nordic markets

Niche markets in gourmet restaurants



- ▶ Social prestige to ethnic minorities and local customs
- ▶ Integration with energy and mining industry – cold water mountain concept

- ▶ Environmentally sustainable
- ▶ Socially viable
- ▶ Compliance with EU safety standards
- ▶ Traceable to consumers