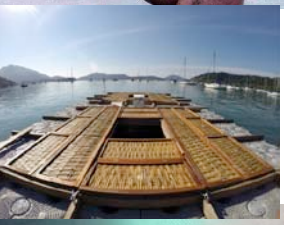
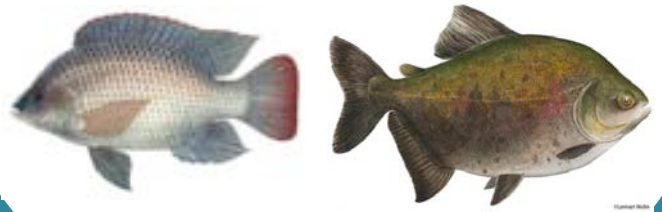


Aquicultura: Desafios e Oportunidades na Revolução Azul Brasileira

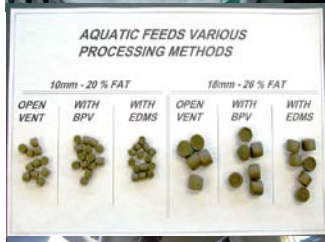
Plataforma USP Aquicultura

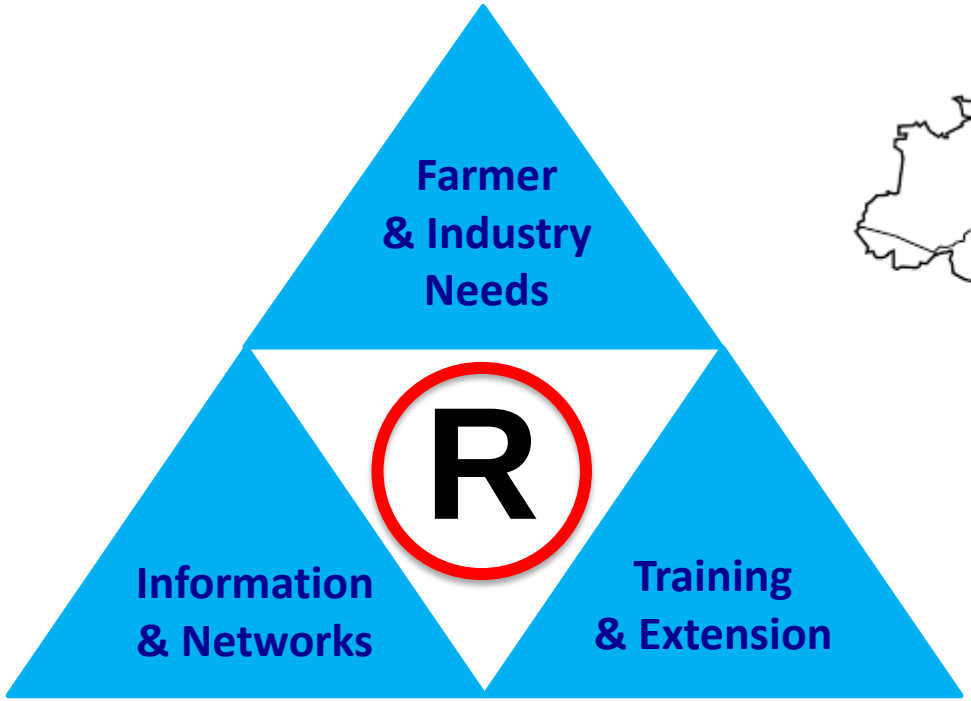


USP

Albert Tacon, Daniel Lemos
Fanny Yasumaru & Thiago Raggi
University of São Paulo

Ideas for discussion





USP Aquaculture Research Platform

Farmer & Industry Needs

R

Information & Networks

Training & Extension

USP Aquaculture Research Platform

AQUAHANA - No Task is too big when done together

Farmer & Industry Needs

Information & Networks

R

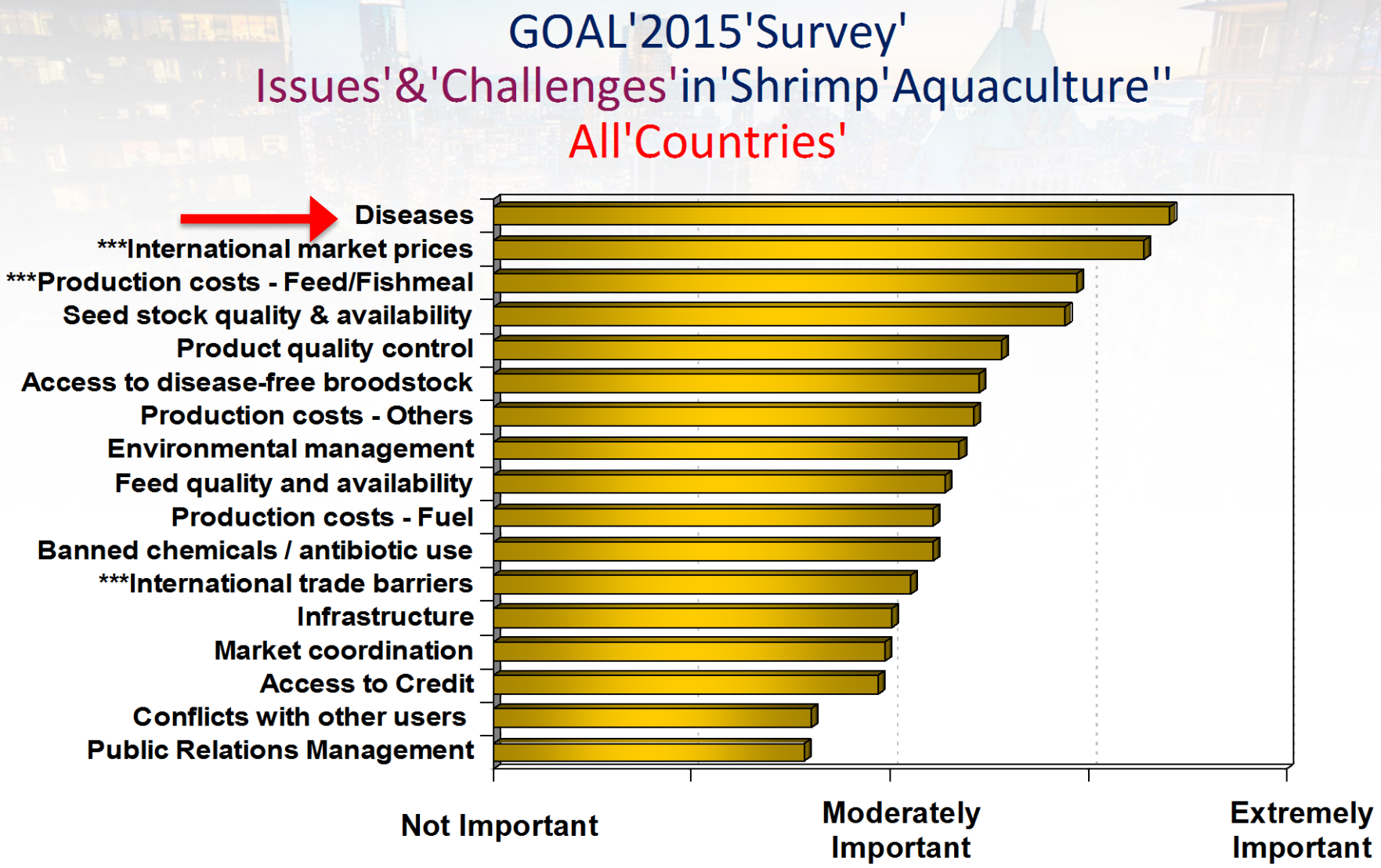
Training & Extension

USP Aquaculture Research Platform

AQUAHANA - No Task is too big when done together

Need for improved communication & cooperation between USP researchers & local industry

Needs based: major issues & challenges in shrimp aquaculture as reported by GOAL 2015 Survey (Anderson, Valderrama & Jory (2015)



Asterisk indicates a Top 3 issue in GOAL 2007 Survey

Key issues:

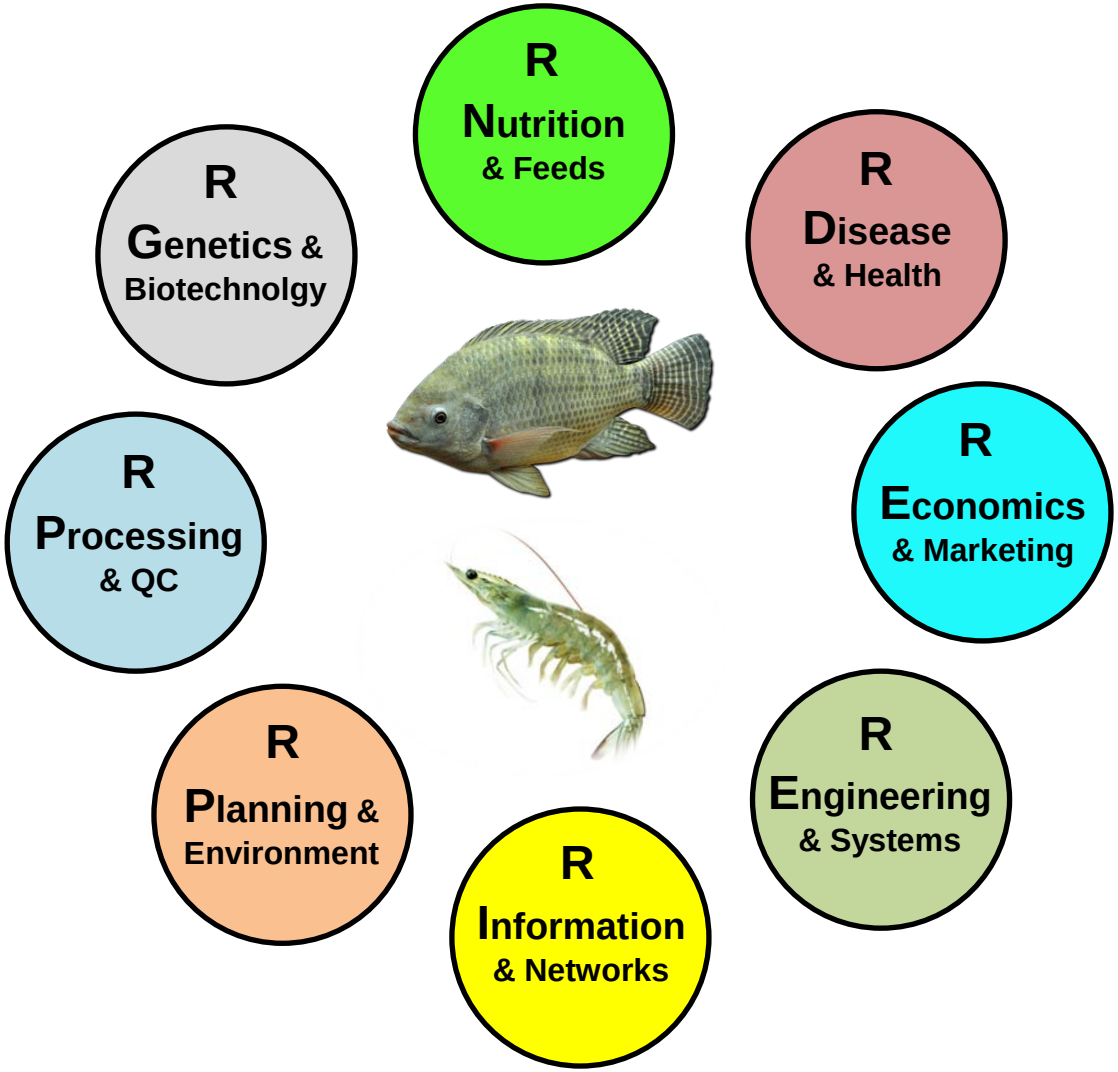
- **Need for a New Cutting Edge & Innovative Aquaculture Research & Coordination Program at USP – at present most researchers work independently**

- **Need to improve Communication & Collaboration between Researchers & the Private Sector, including Farmers**

- **Need to tailor USP Research Programs to the Existing Needs & Bottle Necks of the Aquaculture Sector, including Feed Manufacturers & Service Providers**

- **Need to Transform USP into a World-Class Aquaculture Research & Training Institution through Strengthening scientific research ties & collaboration with other Internationally recognized Institutions within the Americas, Asia & Europe**

USP Aquaculture Research Expertise



Potential options for improved USP cooperation & action – by research theme

- Aquatic nutrition, feed manufacture & feed management
- Aquatic diseases, biosecurity & health improvement
- Aquatic genetic resources, genomics & genetic improvement
- Aquatic production systems, sustainability & environment interactions
- Aquatic post-harvest processing & quality control improvement

Potential options for improved USP cooperation & action – by research group

- Aquaculture Feeds & Nutrition Research Group
- Aquatic Diseases & Health Research Group
- Aquaculture Genetics & Biotechnology Research Group
- Aquaculture Economics & Marketing Research Group
- Aquaculture Engineering & Design Research Group
- Aquaculture Policy & Planning Research Group
- Aquatic Post-Harvest Processing & Quality Control Research Group
- Aquaculture Farming Systems & Environment Research Group
- Aquatic Energy & Biofuels Research Group
- Aquaculture Information & Networking Research Group

Options by specific USP research topic (based on the expertise at workshop):

- **The development of improved cost-effective sustainable feeds based on the use of local agricultural feed resources and consequent reduced dependence upon fishmeal and imports: *Target species: Tilapia, Colossoma, Cobia, Shrimp***

- **The development of improved cost-effective environmentally friendly feeds and feeding regimes for use within freshwater bodies with limited water exchange: *Target species: Tilapia, Colossoma, Common carp***

- **The development of improved cost-effective larval feeds and feeding regimes for use with marine fish species: *Target species: Cobia, Grouper, Snook, Mullet***

- **The development of low trophic level production systems based on aquatic plants and filter feeding molluscs either alone or through integration**

- **The development of biosecure shrimp feeds and feeding regimes for hatchery, nursery and broodstock operations: *Target species: Shrimp***

- **The development of an interactive aquaculture network within the State for the benefit of the sector, including farmers, researchers, and policy makers**

Start with something very practical & useful for the aquaculture research community and aquaculture sector within the State

1. **Aquaculture directory & source book on who is doing what & where within the State of São Paulo (& Brasil):**

User-friendly database, network & source book on -

- Public sector aquaculture researchers & research themes, including publications: USP, UNESP, Instituto de Pesca, EMPRAPA, UNIFESP, APTA etc ….
- Private sector aquaculture support: banking & finance, equipment & processing, feeds & feed ingredients, chemicals & drugs, veterinary services, analytical & diagnostic laboratories, transportation & marketing, seed producers, construction & engineering, bioremediation & environmental pollution ….
- Government agencies & support services;
- Farmers & aquaculture associations

Aquatic Feeds & Nutrition Research Group

2. Development of improved cost-effective environmentally sustainable fish feeds for use within inland water bodies

- Ingredient screening & digestibility studies
- Fermentation & enzyme studies
- Feed manufacturing & processing studies
- Fishmeal & fish oil grow-out replacer studies
- Histology & biochemical studies (includes health)
- Fish processing & QC studies
- Economic & marketing studies

- Specific research tasks to be assigned to different institutes and/or researchers depending upon their expertise, infrastructure & species interest (tilapia, catfish, colossoma etc)

- Interested private sector participants

Aquatic Feeds & Nutrition Research Group

3. Development of sustainable cost-effective marine fish feeds

- Ingredient screening & digestibility studies
- Fermentation & enzyme studies
- Feed manufacturing & processing studies
- Fishmeal & fish oil grow-out replacer studies
- Histology & biochemical studies (includes health)
- Fish processing & QC studies
- Economic & marketing studies

- Specific research tasks to be assigned to different institutes and/or researchers depending upon their expertise, infrastructure & species interest (cobia, grouper, snook, mullet etc)

- Interested private sector participants

Aquatic Feeds & Nutrition Research Group

4. Development of biosecure shrimp feeds & feeding practices

- Live food (Algae, Artemia) replacement trials
- Nursery live feed (Artemia) replacement trials
- Grow-out marine protein replacement trials
- Histology & health indicator studies
- Zero-exchange floc-based production studies
- Better on-farm feed management practices
- Economic & performance indicators

- Specific research tasks to be assigned to different institutes and/or researchers depending upon their expertise, infrastructure & species interest

- Interested private sector participants

Aquatic Feeds & Nutrition Research Group

5. Development of cost-effective feeds and feeding practices for the production of marine fish species

- Optimized live food production techniques
- Larval feed manufacturing & processing
- Development of histological & health indicators
- Development & use of floc-based culture techniques
- Development of optimum larval feeding practices
- Development of optimum of tank rearing conditions
- Development of economic & performance indicators

- Specific research tasks to be assigned to different institutes and/or researchers depending upon their expertise, infrastructure & species interest

- Interested private sector participants