Sustainability and Global Seafood ECONOMICS
Martin D. Smith, 1,2 et al.

Food Security
Aquaculture Production Systems – Advances in Water, Genetics, Health, and Nutrition

Jeffrey Silverstein
USDA/ARS Animal Production and Protection
National Program Leader, Aquaculture
Jeff.silverstein@ars.usda.gov

http://www.ars.usda.gov/research/programs/programs.htm?NP_CODE=106

Aquaculture Innovation Workshop - Shepherdstown, WV-January 17-18, 2011
Agricultural Research Service
U.S. Department of Agriculture
Aquaculture
National Program 106

- 25 projects
- 60 scientists
- 15 laboratory sites
- Budget: $35 Million
- Freshwater and Marine Systems
Aquaculture Research Components

- Catfish, Atlantic Salmon, Rainbow Trout, Hybrid Striped Bass, Oysters, Yellow Perch

- Genetic Improvement
- Control of Growth, Stress, Reproduction
- Nutrition and Feeds
- Health
- Production systems and products
Domestic Aquaculture
Systems Approach

"I'm sure glad the hole isn't in our end..."
Aquaculture Value Chain-primary activities

- Hatchery
- Farmers, Producers
- Value Added
- Output handling, Processing
- Distribution, Marketing, Service
- Consumer
- Input supply
- Feeds, Fertilizers
- Production
- Harvesting, Seining, Processing, Packaging
- AGRIBUSINESS
- Transport, Wholesale, Retail, Supermarket, Restaurant
What a dollar spent on food paid for in 2006

- Farm Value
- Marketing Bill

Source: USDA’s Economic Research Service.
Improvement through research

- 1970 broilers ~7.7 billion pounds annual production in US,
  - pre-value added,
  - pre-health claims
BROILERS

ACRBC (1957) Males – 2001 Feed

Havenstein and Qureshi, 2004

Ross Males (2001) – 2001 Feed

Day 43  Day 57  Day 71  Day 85
Critical Questions/Challenges

• Maximize production efficiency
  – Better genetics
  – Better nutrition
  – Better health
• Control over more of the system
  – Cost of water/control of water quality
  – Control of waste
  – Biosecurity (incoming and outgoing)
• Integration with the value chain
• Benchmark against other industries (Poultry)
Thank you!