



COMMON WATER BODY MODELING MEETING: SEEKING THE OPTIMUM

Novotel Ploenchit
Bangkok, Thailand
June 11-12, 2013





INTRODUCTION TO THE USSEC SOUTHEAST ASIA AQUACULTURE PROGRAM

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Different name – same
organization!

RECENTLY REBRANDED TO USSEC



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Why US Soy?

UNITED STATES SOYBEAN EXPORT COUNCIL



USSEC SEA Regional Team

- Formerly known as American Soybean Association International Marketing (ASA-IM)
- USSEC is the international marketing arm of the US soybean industry and represents that industry worldwide
- Funded by US soybean farmers through a “check-off” program where 0.5% of all soybean sales are placed into a marketing fund
- Also receives funding from the United States Government through the United States Department of Agriculture Foreign Agriculture Service (USDA/FAS)
- This is purely a marketing organization, products are not bought or sold by USSEC
- The USSEC Southeast Asia Regional office is based in Singapore with national offices in Indonesia, Philippines, Thailand and Vietnam

Why aquaculture?

ASIA IS THE CENTER OF WORLD AQUACULTURE PRODUCTION



Mark Newman, Feed Specialist
(left) and Lukas Manomaitis,
Technical Director (right)

- Asia in general produces about 90% of the world's aquaculture output
- SEA specifically produces almost 20% of the world's aquaculture output
- Aquaculture is growing rapidly and is increasingly a feed-based industry, and high quality protein sources, such as soy, are important for aquafeeds
- SEA has a dynamic aquaculture sector that has a lot of potential to continue growth – and a lot of opportunities to improve production approaches to improve sustainability and profitability

What do we do?

USSEC SOUTHEAST ASIAN AQUACULTURE PROGRAM



USSEC SEA Aqua Team

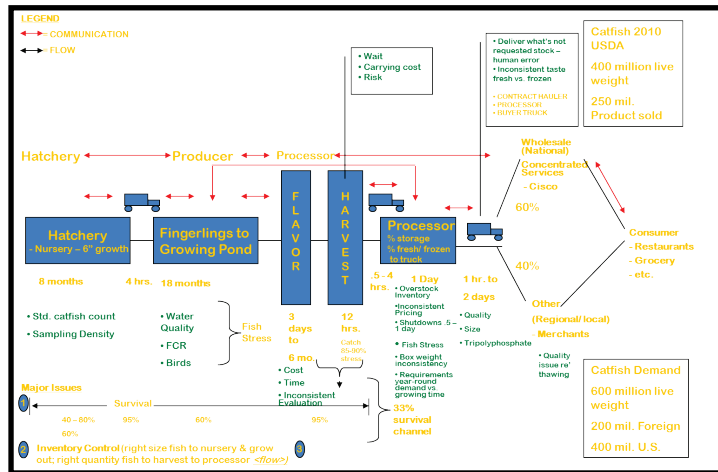
- USSEC works with a wide variety of soy related issues such as animal and human nutrition, industrial use and trade issues related to US soy.
- The aquaculture program focuses on the commodity use of soy in aquaculture and to show the value of US soy in particular
- Primary objective – to promote a sustainable, *profitable*, soy-optimized feed-based aquaculture industry
- We are a knowledge transfer service that works with key stakeholders to improve the aquaculture industry
- Based on over 30 years of work with the aquaculture industry

VALUE CHAIN APPROACH TO AQUACULTURE

- Though many people don't think of it that way, aquaculture can be thought of as a value chain, starting from broodstock and ending on a plate in front of the final consumer
- USSEC works to identify and address issues that prevent the smooth functioning of this “chain”
- Because USSEC is not directly involved with sales of soy and have had a long history of technical cooperation with industry throughout SEA, we are able to work closely with stakeholders on an intimate basis to learn what is holding the greater industry back – and can then create programs to address those issues

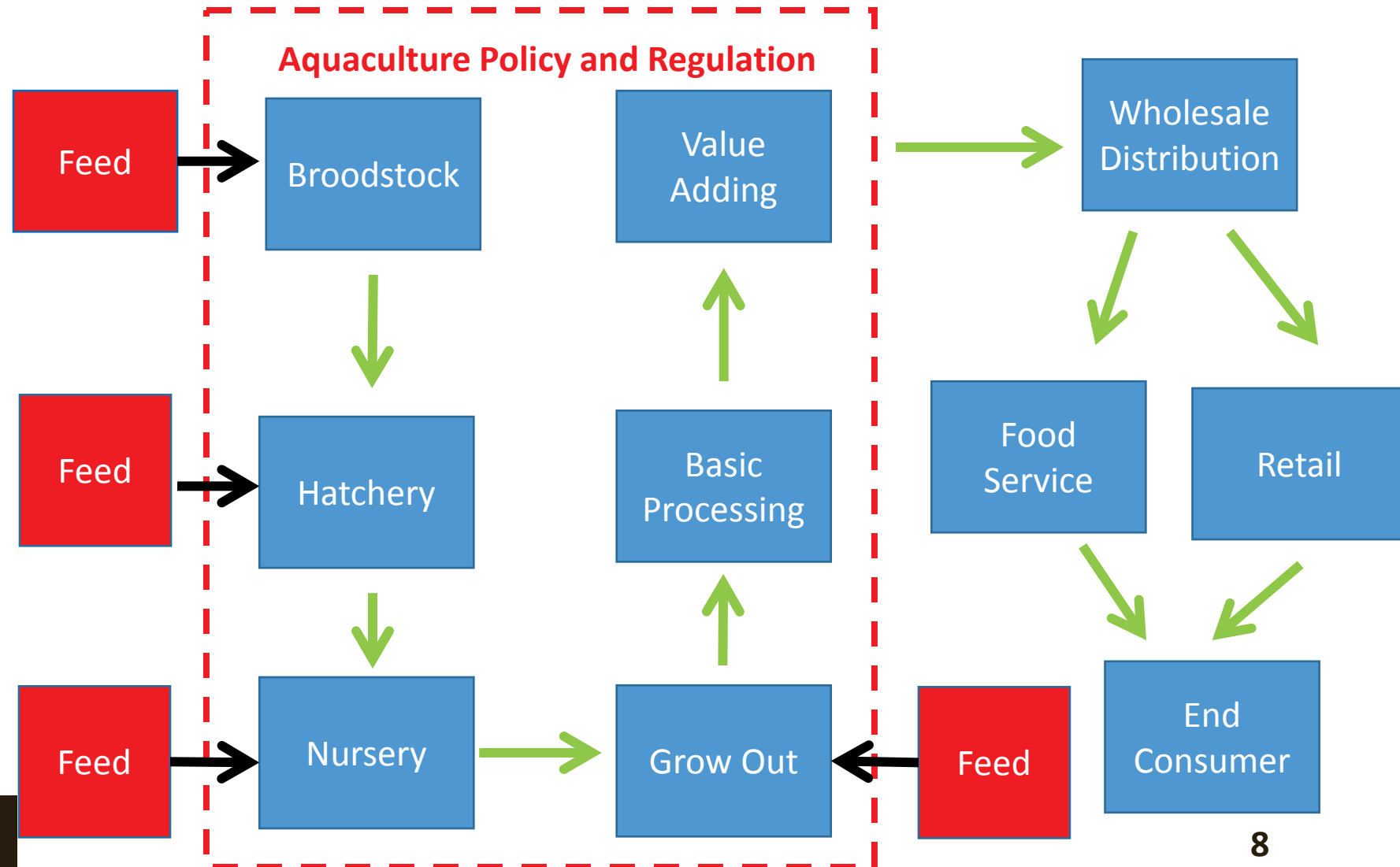
Economics and Profit

SIMPLIFIED VALUE CHAIN FOR AQUACULTURE



(above) Example of a detailed value chain in catfish

U.S. SOY for a growing world



USSEC AND COMMON WATER BODIES



USSEC EARLY THOUGHT PROCESS FOR SUSTAINABLE AQUACULTURE IN COMMON WATER BODIES



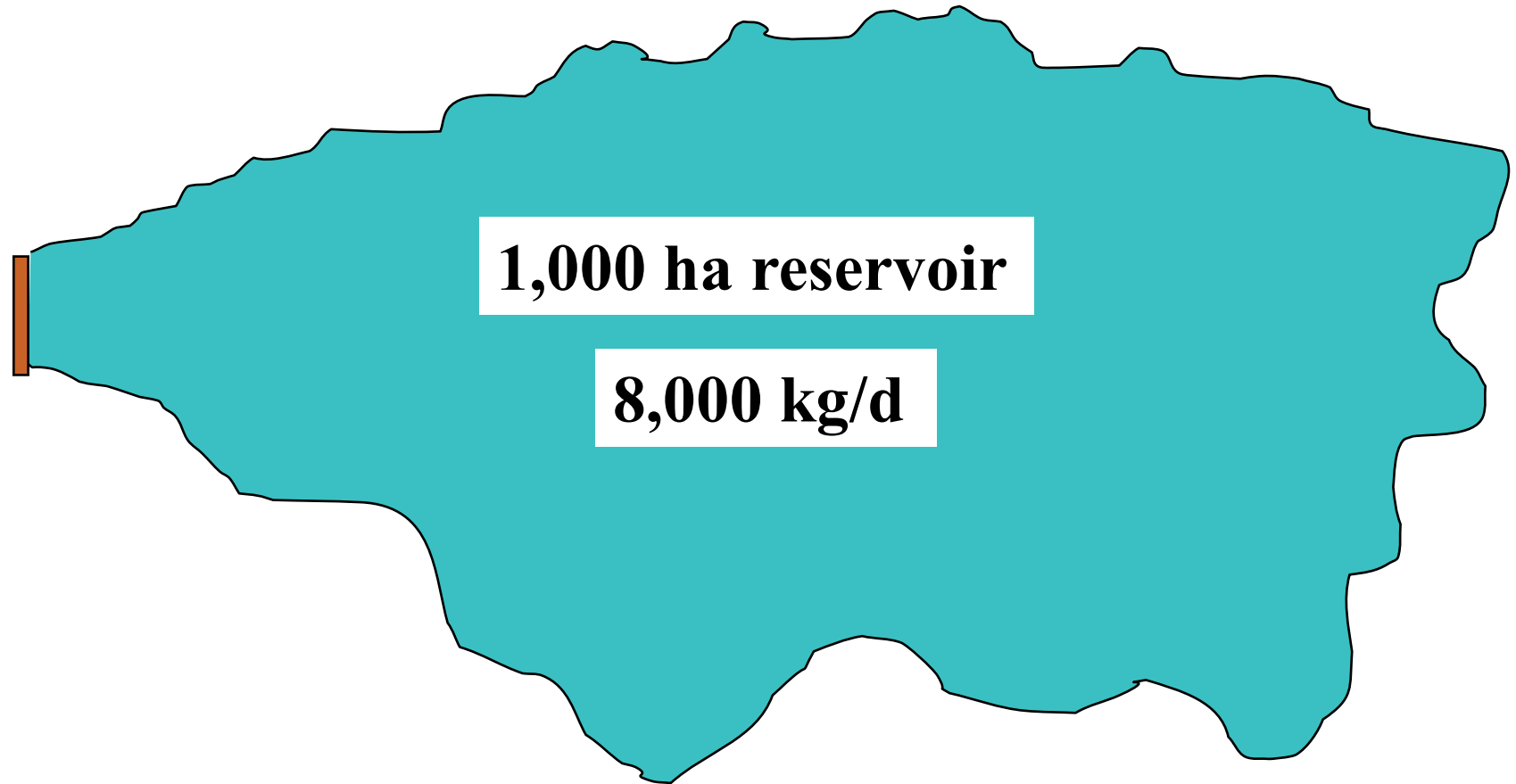
Farmer using formulated feeds in China

- Right from the very beginning of the USSEC aquaculture program our goal was to promote sustainable, long term aquaculture.
- Working in China, we set an arbitrary limit that was used to guide those using common water bodies, and this was also linked to better cage culture methodologies.
- We now have better tools to guide us in setting “maximum” limits for common waters, but the thought process for setting a limit was always there in USSEC’s approach.



The amount of feed that can be given to cultured fish per unit of ecosystem per day is limited by the effect of feed metabolism on water quality in the ecosystem

SAFE FEEDING LEVELS* = 8 KG/HA/DAY



**of course this number may be less depending on water quality or other considerations*



An 8 kg/ha/d limit is the average for the collective sum of feeds used over a multiple-hectare area and not an amount for each specific hectare

SETTING LOADING LIMITS BY FEEDING

Amount of feed per day:

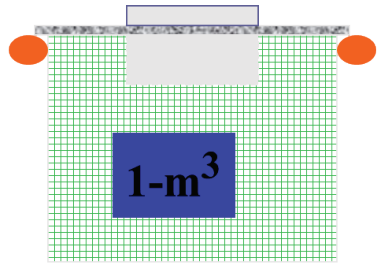
- **500 kg/d for a 1-ha cage area**
- **1500 kg/d for a 10-ha cage area**

These feeding rates are equivalent to the following cage fish carrying capacities:

- **20 mt in a 1-ha designated area**
- **60 mt in a 10-ha designated area**

CALCULATING LOADING

20 mt in a 1-ha designated area is equivalent to 125 m³ of cages:

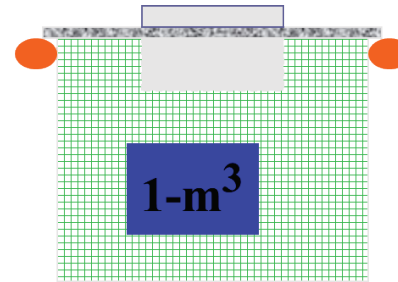


X 125

160 kg/m³ fish
4 kg/m³/d feed

Total carrying capacity = 20,000 kg/1 ha

60 mt in a 10-hectare designated area is equivalent to 375 m³ of cages:



X 375

160 kg/m³ fish
4 kg/m³/d feed

Total carrying capacity = 60,000 kg/10 ha

CAUTION! These loading rates are for specific cage culture sites. At no time should the feeding rate for all combined designated cage areas exceed the maximum recommended rate of 8 kg/ha/d for the entire water body.



Who are we?

WE SUPPORT BETTER AQUACULTURE APPROACHES AND SUSTAINABILITY

Soybeans
Nebraska Soybean Board

SOYBEAN
SOUTH DAKOTA
RESEARCH & PROMOTION COUNCIL

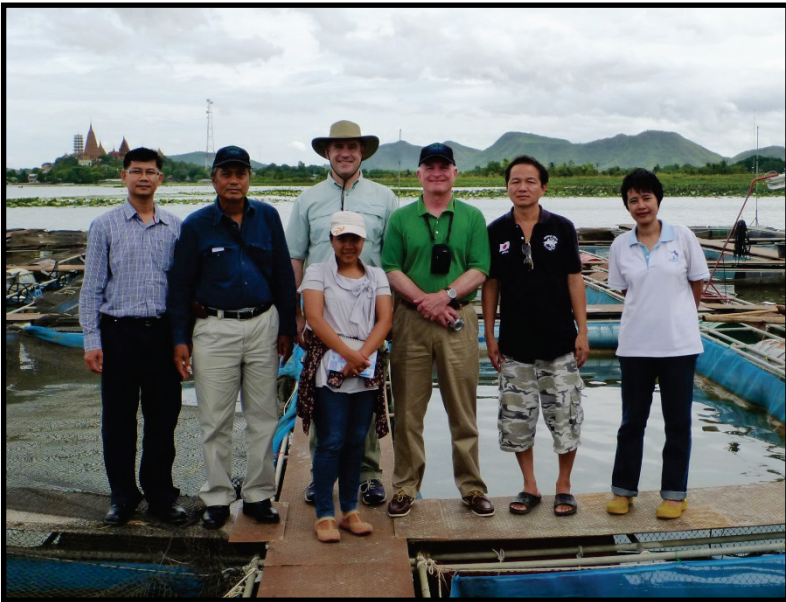
tn
soybean
promotion board



FY13 QSSB Supporters

Low cost LVHD cage approach in China

FINAL THOUGHTS



Dr. Bengtson visits a Thai reservoir in 2012

- **ALL NATURAL ECOSYSTEMS HAVE LIMITS – this is a biological fact and one that is often ignored.**
- **USSEC believes that a short term view of aquaculture development is unsustainable, industry needs to think short, medium and long term.**
- **Well-developed regulations and enforceable limits are important to sustainable development.**
- **Private/Commercial industry has an important part to play in this process as a partner.**
- **As an industry we need to move to approaches that will both be profitable and sustainable .**

USSEC SEA AQUA TEAM THANKS YOU!

USSEC is committed to assisting the aquaculture industry of the world to be profitable, environmentally friendly and sustainable

Our aqua team in SEA is here to support you in your efforts to achieve these objectives

Learn more at:

www.soyaqua.org

www.seasia.ussec.org

