

Processing cultured tropical sea cucumbers into export product: issues and opportunities



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Presentation overview

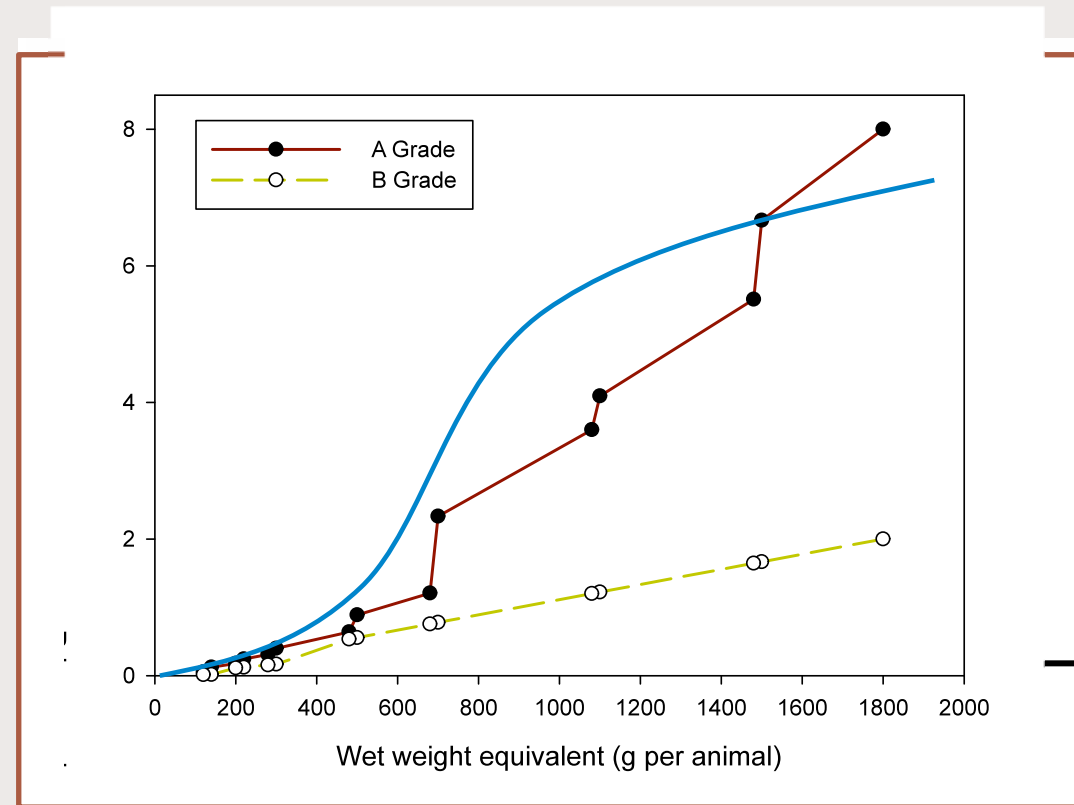
- The value of processed sea cucumbers
- Stages in processing - issues
- Pond-reared sea cucumbers vs wild sea cucumbers ?
- Preferences of importers and dealers
- Fuel use for boiling sea cucumbers - issues
- New markets for creative processing - opportunities
- Training in processing sea cucumbers - opportunities

The value of processed sea cucumbers

- Value depends on:
 - Size of the animal
 - Condition of the animal (damage to body wall)
 - Quality of processing
- Value of sandfish is about US\$5 to US\$200+ per kg in Asian dried seafood markets



Price Variation: size and processing quality



Data source: Brown et al. (2010)

Source: Purcell & Kirby (2006)

Researchable questions:

- When is it best to harvest sea cucumbers from ponds or sea ranching?
- In what situations could it be better to get experienced processors to transform the sea cucumbers into beche-de-mer?

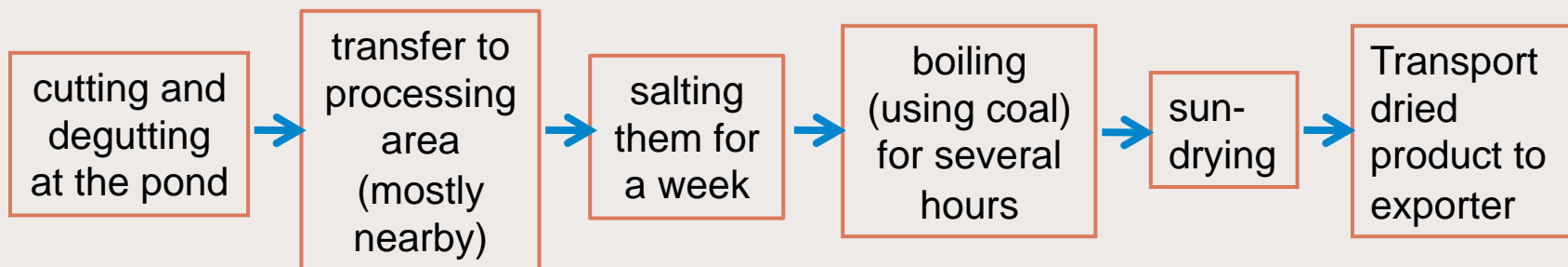


Potential Stages in Processing

- Gutting
 - Blanche first then squeeze out guts
 - Cut across mouth
 - Small slit on underside of animal
- Salting (1 week)
- Boiling
- Removal of spicules from body wall
 - Soak in seawater vs Bury in sand overnight vs Pack in a wood box overnight vs Mix with Papaya leaves for 1 h
 - Brush off vs Remove by a automated mechanical process (industrial processing)
- Drying
- Re-boiling
- Re-drying

Case study – Vietnam: pros and cons of two approaches

Traditional approach



- Some buyers do salting at the pond if it takes several hours of transport.
- The buyers are often processors.

Pros:

- low cost at transport
- gives value-adding to community or farmer
- can apply with small and medium volume

Cons:

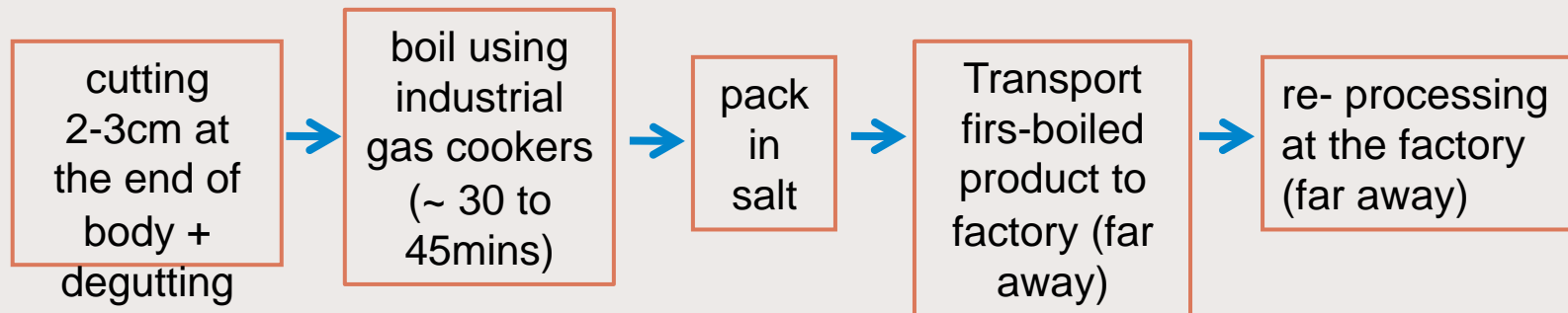
- low quality product





Case study – Vietnam: pros and cons of two approaches

Industrial approach:



Pros:

- high quality product

Cons:

- high cost of transport,
- removes value-adding from community or farmer,
- only worthwhile with big volume of sea cucumbers





Pond-reared sea cucumbers vs wild sea cucumbers ?

Disadvantages of cultured sea cucumbers

- Body wall is considered by some to be thinner in pond-reared animals
 - In Vietnam, this is only for smaller animals – not a problem for larger ones

Advantages of cultured sea cucumbers

- Similar body size
- Big volume at one time – economy of scale for processing
- Can be processed quickly once removed from ponds – no deterioration in boats



Preferences of importers and dealers

- Some importers do not want smoked smell
- Some importers may prefer a different placement of the cut in the animals
- Salting (problem with too much)





Fuel use for boiling sea cucumbers – issues

- Wood as fuel may be an socio-ecological issue
- Mangrove wood is used in some places for boiling sea cucumbers
- Leads to deforestation of mangroves and loss of services that ecosystems offer to coastal livelihoods



Photo: J.P. Kinch

- Issue: What fuel is best to promote to farmers/processors – which is socio-economically and ecologically compatible ?

New markets for creative processing - opportunities

- Beche-de-mer is the dried form - easy for shipment and storage in markets
- Other processed forms are becoming more popular and easier to export
 - Boiled and canned whole sea cucumbers
 - Frozen
 - Boiled but undried sandfish – kept frozen (Japanese consumers)
- Some body parts of sea cucumbers are a delicacy and it may be more lucrative to process them separately and export as a separate product
 - Muscle bands
 - Epipharyngeal bulb ('Flower')
 - Intestine and gonads (e.g. Pacific Islands)





Processing sea cucumbers - opportunities

- When is it most economically effective to harvest pond-cultured or sea-ranched sea cucumbers?
- Which processing methods are most favoured by importers?
 - Cutting position, boiling time, smoking, salting
 - Voiding guts (in cage in pond) prior to processing to recover intestines and gonads (sandfish)
- Which processing methods are most cost-effective and environmentally responsible?



Opportunities for upgrading supply chains and value chains

- Determining the most cost-effective chain for processing and exporting sea cucumbers?
 - Is it better for the farmers or sea ranchers to just sell the fresh or salted sea cucumbers to an experienced processor who can process to a much better standard?
- Reducing the number of 'middlemen' in the supply chain.
 - How to link sea cucumber farmers and ranchers directly to exporters to shorten the supply chains and provide better prices.
- Reducing 'information asymmetry' in the supply chain – education to producers about markets and fair prices