Introduction

In 2009, the Fisheries Technology and New Opportunities Program (FTNOP) provided assistance to Harbour Grace Shrimp Co. Ltd. (HGS) to conduct a feasibility study for the recovery and processing of fish by-products from the Newfoundland and Labrador fish processing industry.

Background

During a trade mission to Asia, HGS management met with business representatives from pharmaceutical and food product companies in China. At that time, several businesses expressed an interest in developing specialized processing opportunities for fish by-products from Newfoundland.

Following the meeting, HGS maintained communications with an investor from China. This investor proposed a partnership with HGS to develop a new value-added processing plant in this province to extract valuable food, pharmaceutical and health products from fish by-products. The Chinese company owns a business which uses proprietary technology to process fish by-products. This company was seeking an alternative supply of suitable materials.

In consideration of this potential business opportunity, HGS required a feasibility study for the development of a fish by-product recovery operation at their Fermeuse facility.

Methodology

HGS assembled a team of experienced procurement, processing, business management and marketing personnel to oversee this fisheries development project. The focus of this project was to gather detailed information relating to available fish species, by-products, volumes, supply location, product transportation, pricing, quality control and applied regulations.
As a first step, HGS initiated an industry survey and review of fisheries by-product production data. The research identified the availability of offal resources and the need for alternative disposition of these by-products. As a part of the research, by-product samples were sent to China to undergo process evaluation and suitability testing.

A by-product cost analysis was conducted and other factors requiring additional evaluation were identified, including the cost of labour, processed yield, pre- and post-processing storage, collection transportation, shipment to marketing, processing overheads, and initial investment into facility and equipment.

During the completion of this project, a delegation from China twice met with HGS personnel, Department of Fisheries and Aquaculture officials and industry representatives. Tours were also arranged of the HGS Fermeuse facility, the Marine Institute by-product facility, an aquaculture processing plant and a shrimp processing operation.

**Results**

This FTNOP project focused on assessing the potential for developing a by-product (discards) recovery industry to provide value-added products to China. It was concluded there are usable fish by-products being discarded in large volumes within this province’s shellfish (shrimp, crab and whelk) and finfish aquaculture (salmon and trout) industry. However, it was also determined that for some species and locations, by-products are currently being processed and marketed to pet food and fur farming industries.

Feedback regarding the samples sent to China for process evaluation was positive as it was determined the raw materials were suitable for development in terms of their recovery process and quality. The information gathered during this study provided HGS with an overview of the opportunities and challenges associated with developing a waste by-product industry. This initial analysis outlined the recommended next steps to move this development project forward, including areas requiring further analysis, associated regulations, and potential funding resources. The market demand, potential investment and use of similar raw materials in other countries supported continued investigation into by-product recovery business opportunities.
Conclusion

HGS continues to maintain communications with the Chinese company experienced with fishery by-product utilization and secondary processing. As the need for materials to supply international health and pharmaceutical markets is growing, the potential is improving to supply products to China. In consideration of this potential market, HGS will continue to assess the available product supply, cost factors, environmental benefits, and processing locations to determine the feasibility of establishing a facility dedicated to by-product recovery for value-added processing.