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Business name : Shrimp Canada (Legal name 2541260 Ontario Inc.) Corresponding address: 65 Periwinkle Way, Guelph, Ontario, N1L 1J2 Operation Address: 67 Watson Rd. S., Unit 2, Guelph, Ontario Ph. +1 226 500 5514, Website: www.shrimpcanada.ca , e.mail: ranjan@shrimpcanada.ca

The proposed business strives to make Ontario self-sustainable for inland shrimp production by generating critical import substitute for local farmers to conveniently operate a grow-out phase of shrimp using our post larvae (PL) of 1.3g minimum size. The globally standardized techniques for shrimp (L. vannamei sp.) hatchery is being developed and adopted in a rented facility at 67 Watson Rd. S., Guelph with the help of seed funding from Bioenterprise - Guelph. The major gains are local products with superior food safety and biosecurity stopping the need of lengthy cross border livestock procurements. Additionally, the initiation of local employment generation, ready technology for newer livelihood for rural Ontario are the significant outcomes.

Project Description

L. vannamei (shrimp) has proven to be a suitable species for intensive cultivation in Ontario using pathogen free seeds. The major issues in its production are consistent supply of seed, maintenance of bio-security, quality (pesticide and antibiotic free) to achieve better production in sustainable manner. Highlights of the proposed cultivation system are: it is based on complete water recycle techniques, organic waste management systems at site and optimal application of renewable energy resources.

The shrimp-production involves a hatchery, nursery, and grow-out phases. There are currently no hatcheries in Canada now, but with initiation of our own seed production facilities in-progress, the establishment of commercial scale grow-out facility is a prerequisite for the industry to flourish. Therefore, there is an imminent need to establish our modular cultivation systems that are fit for the local conditions. We envision application of sustainable energy technologies to develop demonstrate the production facility and encourage new farmers with technology and product support.

Major deliverables of project:

1. Modular production units to produce 10,000 kg of fresh produce to be extended to 50,000 kg at the proposed location in wellington county (\$ 500,000 – 750,000 product sale)

2. Monitoring of efficiency productivity, quality and proactive infection management and establish technology baseline

- 3. Continued market development and demonstration and technology transfer for new farmers
- 4. Employment generation: 3 5 full time employees

The Project will be led by Dr. Ranjan Rashmi Pradhan (PhD).

Dr. Pradhan have reduced his "Technical Consultancy and Technology Transfer" assignments globally, in order to support local shrimp aquaculture farms with a hatchery facility utilizing his expertise and technical skills. Dr. Pradhan completed his post-doctoral assignments in bioprocessing at University of Guelph (UoG) and had been an independent technology consultant in carbon sequestration adopting cultivation of microalgae. He is currently a visiting Professor at School of Engineering – UoG and ex adj. professor at University of Wisconsin. He will be extending his expertise in biotechnology approach of bioreactor based control mechanisms to juvenile development stages with proper control and manipulation bioflocs at highest level of biosecurity, biosafety and productivity of the acquired breeding pairs. Trained technicians will be hired and support staff will be employed for successful operation of the project.

Collaboration with University of Guelph is being established for continued developmental work.

With the growing Canadian market for shrimp, in part due to a growing Asian population and demographic changes (clients) who want a healthy product, the product demand is in rise. Capacity building in shrimp farming in Ontario has significantly enhanced after successful inclusion of the Pacific white shrimp in to the list of species to be farmed in Ontario.