

Application of AI in extensive Shrimp Farming Clusters:

A business case for monitoring and management along with the e-traceability system in Bangladesh

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More than 99% of shrimp farmers are smallholders, practicing extensive farming in Bangladesh. Most of cases small holder shrimp farmers fail to meet global market standard for food safety and traceability. Eventually, the extensive farmers getting less production due to lack of quality inputs (feed, seed, probiotic etc.) and management. Moreover, adverse effect of climate change and frequent disease outbreak are equally responsible for less production of extensive shrimp farms. Therefore, Development and implementation of AI-based and data-driven shrimp farming could be an effective solution.

2. Model of AI-based data-driven shrimp farming



Figure 01: Illustration of the schematic diagram of the proposed solution

3. Expected outcomes

- Development of early warning system for the shrimp farming clusters.
- Able to analyze the patterns of production and inabilities.
- Standalone solution to address reliable and transparent low-cost traceability system.
- Identification of the causality and correlation between input factors and final output in terms of production.
- Feedback support to the farmers for selecting effective measures following early warnings.
- Finally, development of a business model by standardizing the production systems.

Environment Measurement For Pond

environment measurement



Figure 2: Dashboard of the developed central database management system to monitor temporal variables

AI will assist shrimp farming clusters to take right measures and thus, increase productivity. Gain in production and profitability will be capitalized to minimize the implementation cost of the solution. Thereby, cluster farmers will get access to premium market through improved transparency of the supply chain.