



REQUEST FOR CONSULTANT PROPOSAL

RFP #: MAT 2024 – CONSULTANT 03

International Aquaculture Automation Expert

ISSUANCE DATE: Feb 12, 2024

LAST APPLICATION RECEIPT DATE: March 1, 2024, 5:00 PM EST USA

Components of this solicitation are as follows:

Appendix A: Terms of Reference and Requirements

Appendix B: Instructions for Application and Review Process

APPENDIX A:

Terms of Reference / Consultancy

Timeline and Reporting:

Title or proposed position/work: **International Aquaculture Automation Expert**

Location: Simara, Bara District, Nepal (remote and field work to be decided at contracting stage)

Reporting to: DCoP

Anticipated Start Date: March 2024

Anticipated End Date: June 2024

Consultancy Type: Individual or Firm

Contract type – initial contract of 40 days LOE with the possibility to extend.

Background

Nepal is a landlocked country ripe for investment in its growing aquaculture sector, with 5% of its total area occupied by different freshwater aquatic habitats, including rivers, lakes, reservoirs, swamps, ponds and irrigated paddy fields.¹ Only 2% of the available water resources are utilized for aquaculture production, but the environment is suitable for producing warm, temperate, and cold-water fish species across the country, offering many opportunities to increase both aquaculture production across the value chain and economic benefits for Nepalis.² Aquaculture appeared in Nepal in the 1950s, while capture fishing has existed for much longer. Nepal has 236 indigenous fish species and 16 exotic fish species, but aquaculture activities focus on seven types of carp, tilapia, pangasius catfish (pangas), and rainbow trout.³

¹ Jha, D.K. 2022. "Status of Fisheries and Aquaculture in Nepal." In: T. S. Pathan; A.R. Chourpagar; S.V. Rankhamb; R.S. Shaikh (eds.), *Fisheries, Ecology and Environment*, pp. 45- 68.

² Alok Dhakal et al. 2022. Hindawi, *Advances in Agriculture*, Volume 2022. Article ID 4206401

³ Jha, D.K. 2022. "Status of Fisheries and Aquaculture in Nepal."

⁴ Alok Dhakal et al. 2022. Hindawi, *Advances in Agriculture*.

⁵ OECD-FAO Agricultural Outlook 2020-2029 & FAO. 2022. *The State of World Fisheries and Aquaculture 2022*.



Aquaculture and fisheries production continues to grow at a rate of 17.1% and contributes to 2.47% of the nation's agricultural gross domestic product.⁴ Average fish consumption per person in Nepal is approximately 2 kg per person (2020), much lower than the global average of 20.2 kg per person⁵. While fish consumption provides a nutritious protein source, the low average purchasing power of low contributing to low fish sales and production. Many farmers participate in the aquaculture sector, offering employment and business opportunities across genders, age segments, and social groups.

The anticipated United States Department of Agriculture (USDA) Food for Progress (FFPr) project in Nepal will leverage local, regional, and international technical expertise in aquaculture and extensive stakeholder engagement to make lasting change in Nepal aquaculture productivity, food safety, aquaculture marketability, nutritional awareness, enabling environment, and ultimately, trade.

Under Lutheran World Relief (LWR)'s leadership, the project will support direct and indirect individuals by working with aquaculture farmers, farmer groups, cooperatives, associations, hatcheries, nurseries, transporters, buyers/traders, institutions, equipment providers, and government bodies across sixteen districts in five provinces of Koshi, Madhesh, Bagmati, Gandaki, and Lumbini.

The project focuses on two USDA FFPr's strategic objectives:

- To increase agricultural productivity of fish farmers through improving producer access to improved inputs, services, financing, and end-market linkages.
- To expand trade of aquaculture products locally including aquaculture inputs, services, live fingerlings, and processed fish through improving access to finance, quality inputs, and end markets.

The project will carry out five activities, in capacity building, training, inputs, financial services and market access.

Consultant Opportunity:

The automated intensive and super intensive aquaculture systems [e.g. Recirculating Aquaculture Systems (RAS), Biofloc Technology (BFT), Indoor Vertical Aquaponics (IVA), Automated Feeding and Monitoring, Integrated Multi-Trophic Aquaculture (IMTA), In pond Race way (IPRS), Bottom Clean Aquaculture System (BCAS)] have been viewed as one of the solutions to climate change impacts on aquaculture. Nepal produces aquaculture products belonging to warm and cold-water regions. Often aquaculture ponds have been reported to be inundated with flood water during heavy monsoon Teral in one hand, while in others in cold water areas. Avalanches have been found to cause huge loss to cold water aquaculture. In general, among the rapidly developing aquaculture technologies, the above systems have been viewed as smart and promising aquacultures in the world. The expert consultant will develop intensive systems suitable for farm and on station conditions i.e. from Fisheries Research Stations to large commercial scale private sector. The expert will provide a short-term training course to government officials, researchers, academia, and selected farmers. The expert will visit a suitable location to design the systems on farms. Prepare financial expenses to install suitable systems in some locations.

LWR is seeking a highly qualified and experienced Expert. The main objective of this consultancy is to prepare, design and set up the potential automated systems for research and high value aquaculture production purposes in some private farms. The expert will work closely with Fisheries Research Stations scientists of Nepal Agricultural Research Council, governments officials and in academic institutions such as Agriculture and Forestry University, Kathmandu University and Deputy Chief of Party.



Detailed Tasks

During the consultancy the expert will be responsible for the following tasks together with a national consultant as a team-

- a) Research and analyze global best practices in automated aquaculture.
- b) Develop and design simple and economically viable automated aquaculture systems for research, production, and academic purposes.
- c) Develop a detailed automation plan tailored to project's specific needs and objectives.
- d) Assist in the selection and procurement of automated systems and equipment.
- e) Oversee the installation and integration of automated technologies.
- f) Deliver training courses for trainers and staff focusing on intensive and super-intensive aquaculture systems, which encompass topics like the design and operation of such systems. Collaborate with NARC research scientists, private farms and extension agents.
- g) Develop booklets and guidebooks on the design of intensive and super-intensive systems.

Deliverables

The following deliverables are expected from the consultant:

- a) Feasibility report and recommendation on how automated technologies could be intervened as climate change adaptation tool in aquaculture and how academia, researcher and extension should prioritize with special reference to increase aquaculture production.
- b) Designing automated systems that are economically suitable for research and commercial types for growing high value aquaculture species.
- c) A detailed plan outlining the proposed automated systems, their integration, and anticipated benefits.
- d) A training course delivered 'Training for Trainers on intensive and super intensive automated systems.
- e) Develop booklets and guidebooks on aspects of automated systems in Nepalese socio-economic situation.
- f) Development and publication of different types of systems and indoor production of high values aquaculture products.
- g) A comprehensive final report containing findings, recommendations, and performance assessments.
- h) A presentation summarizing key findings and recommendations for the project.

Level of Effort and Timeline

The ToR is expected to be completed by both remote and field work. Field visits will be required to Simara and the implementation regions through the course of the consultancy. The perspective timeline for the selected consultant to start March 2024 and submit deliverables by end of June 2024 for a total of 40 days level of effort. All terms will be agreed upon in the consultant contract.

Qualification and Experience

The Expert should possess the following qualifications:

- a) Advanced degree in aquaculture engineering with special reference and experience to design intensive and super intensive aquaculture systems.
- b) Proven experience in designing, construction, and operation of such systems.
- c) Experience working with international development organizations and knowledge of donor-funded projects is advantageous.
- d) Strong verbal and written communication, and writing and technical skills.
- e) Ability to communicate technical matters effectively to a wide audience.
- f) Microsoft package: Word, Excel; PowerPoint, required.



- g) English language, fluency in Nepali/Hindi/local languages is a plus.
- h) Willing to travel to Nepal, including to remote districts.

**APPENDIX B:
APPLICATION INSTRUCTIONS AND REVIEW PROCESS**

LANGUAGE REQUIREMENTS – All documents submitted in response to this solicitation, as well as all correspondence in connection with the solicitation, shall be in the English language.

EVALUATION – Evaluation of responsive and technically acceptable applications submitted pursuant to this solicitation will be carried out by LWR in accordance with the evaluation factors in, “Instructions for Application and Review Process.”

QUESTIONS – Questions should be addressed to the email address below 5 business days prior to the submission deadline.

APPLICATIONS – Applications are to be submitted electronically via email no later than the Last Application Receipt Date, which is defined as **March 1, 2024, 5:00 PM EST USA**. Electronic applications must be addressed and delivered to:

Attention: MATSYA Procurement - **Aquaculture Automation expert**
Email: Matsyaprocurement@lwr.org, CC: rbhandari@lwr.org
Last Proposal Receipt Date: **March 1, 2024, 5:00 PM EST USA**

EVALUATION CRITERIA

The selection process will be based on the following criteria:

- a) Documented success in previous aquaculture automation projects.
- b) References showcasing effective implementation and positive outcomes of aquaculture automation projects.
- c) Examples of creative approaches that improved efficiency, productivity, or sustainability in past projects
- d) Knowledge of relevant regulations and compliance requirements in aquaculture
- e) Relevant qualifications and experience in BMP or GMP related approaches
- f) Communication and presentation skills
- g) Daily rate

Note: LWR will not accept responsibility for delays with transmission or receipt of applications/ proposals. Applicants are solely responsible for ensuring the timely receipt of their applications/ proposals. Applications/ proposals received after the date and time required will generally not be considered unless no other proposals are received.

Submissions shall be in accordance with the instructions provided in this solicitation, at the place and time specified. If submitting a proposal as a firm, please share the CVs of the proposed consultants and include a breakdown of tasks outlined in the ToR in the cover letter. Interested applicants are requested to submit:

1. **A recent CV or resume.** The CV/resume must include sufficient relevant information to evaluate the application in accordance with the stated evaluation criteria and must contain the following information:
 - Personal Information: Full name, mailing address, email address, phone number.
 - Education: School/ university name, type of any degrees received.



- Work and Consultancy Experience: Job/consultancy title, duties, and accomplishments, starting and ending dates (month and year).
 - Other Qualifications: Other pertinent information related to the qualifications required for the position, as noted above, including job-related training courses (title and year), job-related skills, and notable accomplishments.
2. **A Cover Letter.** The cover letter must outline how you expect to use previous experience and expertise to complete the ToR. Include a proposed daily rate for services in the cover letter. Only include daily rate for services and not any other expenses.

Applicants that best fit the criteria may be invited for interview.