



INITIATIVE ON  
**Aquatic Foods**

Photo credit: Gregor Schmitt/Woodfin Camp



## Establishing the WorldFish Nusatupe Research Station as an innovation hub for island food systems

### Key messages for our partners

- This document explains ongoing activities and preliminary plans for the establishment of a multipurpose innovation hub at the WorldFish Nusatupe Research Station in Western Province, Solomon Islands.
- The innovation hub concept responds to national demand for a facility to convene research, training and services with national and provincial partners.
- Current and planned activities are focusing broadly on demonstrations, skills training and co-creation of new knowledge with partners.
- The modules defined and developed so far focus on nourishing, sustainable and climate-resilient island food systems and aim to strengthen national research capacity and services in these areas.
- The concept and strategy for the innovation hub at Nusatupe is in early stages of implementation and will evolve in collaboration with partners.

### Overview of the initiative

The WorldFish Nusatupe Research Station, situated in Western Province of Solomon Islands, provides an opportunity to establish an innovation hub dedicated to showcasing nourishing, sustainable and climate-resilient island food systems. Together with national partners, WorldFish is transforming the station for this purpose in response to national demand for a facility to convene research, training and services. WorldFish's national program is aligned with the goals of the Solomon Islands National Fisheries Policy 2019–2029 of the Ministry of Fisheries and Marine Resources (MFMR), which places a strong emphasis on developing a sustainable fisheries sector that serves the socio-economic well-being of all Solomon Islanders. This commitment also aligns with the priority of the Western Provincial Government (WPG) of empowering its communities in the responsible management, livelihood options and protection of their marine resources.



**Kastom Gaden Association**  
food futures & nutritional health for Solomon Island communities  
training | food security assessment | supporting family nutrition



## Strengthening collaborative partnerships

The innovation hub will integrate with WorldFish's existing partnerships with key national stakeholders, including the MFMR, WPG, Solomon Islands National University (SINU), the Kastom Gaden Association (KGA), Rural Training Colleges (RTC) and island communities. The hub will serve as a focal point for harmonizing the efforts of these stakeholders and aligning their objectives towards the common goal of establishing sustainable and climate-resilient island food systems.

## Leveraging WorldFish's expertise

WorldFish's extensive experience in Solomon Islands – spanning over three decades – in collaborating with diverse communities in research, integrated learning and training activities positions the innovation hub for high impact. The hub will complement other initiatives and bridge the gaps between the key stakeholders. This synergy will enable the efficient creating and sharing of knowledge fostering a deeper understanding of actions that work for sustainable island food systems.

## Key knowledge transfer strategies:

- **Demonstrations** – the hub will showcase innovation and best practices in island food systems, enabling local communities to adopt more sustainable and resilient approaches.
- **Skills training** – by strengthening sustainable fisheries and agriculture, we aim to improve the socio-economic conditions of local communities, aligning with the Solomon Islands National Fisheries Policy.
- **Collaboration and knowledge co-production** – facilitating collaboration between WorldFish, MFMR, WPG, SINU, KGA, RTC and local communities will foster knowledge creation and the integration of academic research with traditional wisdom.

## Historical context

The International Centre for Living Aquatic Resources Management (ICLARM), now known as WorldFish, established a center in Solomon Islands in 1984 in Aruligo, north-western Guadalcanal. It made significant contributions to the advancement of aquaculture and the establishment of a giant clam land nursery. Unfortunately, in the early 2000s, the center suffered severe setbacks due to ethnic conflict, resulting in theft and vandalism leading to its closure. Compounding the challenges, all potential foreshore sites in Honiara were deemed unavailable for development following directives from the Solomon Islands Government at the time.

Fortunately, in 1996, the WPG had offered a site at the south-eastern end of Nusatupe Island, Gizo, Western Province, to continue the research work on clam farming and gradually transform it into what is now called WorldFish Nusatupe research station. The station offers a range of solar-powered amenities, including five houses, an office, a storage building, a conference room and a technical facility. The accommodation buildings are designed to ensure a comfortable and secure stay for staff, researchers and visitors. There is a reliable water supply, sourced both from rainwater and a well. Additionally, just in front of the station, there is a 14-hectare Marine Protected Area that features giant clams

and a thriving seascape. This area is conveniently accessible with just a short five-minute boat ride from Gizo town. Historically, researchers, fisheries officers, tourists and students often came here to snorkel and observe the clams and other marine resources within the park.

Over the past two decades, the Nusatupe WorldFish Research Station has hosted and engaged in numerous initiatives and research activities. These funded efforts have been carried out in collaboration with international researchers, nongovernmental organizations, government institutions (both national and provincial) and community members. The primary goal has been to improve fisheries and aquaculture practices while addressing concerns related to food security and livelihoods. While specific initiatives and projects in Solomon Islands may have evolved, WorldFish's steadfast dedication to promoting sustainable fisheries and enhancing the well-being of local communities continues to be at the core of its mission.

## Key focal areas

The proposed innovation hub at the Nusatupe Research Station will build upon seven major modules.

### 1. Community-based resource management (CBRM)

The hub will play a pivotal role in facilitating training related to the CBRM approach, which is the nationally adopted strategy for promoting sustainability and maximizing benefits from coastal fisheries. The primary emphasis is on supporting rural communities to manage their marine tenure systems effectively. In collaboration with the MFMR, WorldFish is actively working to enhance the implementation of CBRM



and to explore scaling models that can reach a broader range of communities, with the goal of improving their practices. It is crucial to acknowledge that a one-size-fits-all strategy is not viable when devising a scaling plan for CBRM. Given the diverse circumstances of various provinces, coastal fishers and coastal fishing communities, our approach will be based on continuous action research, particularly focusing on adaptations to the CBRM model being trialled in Malaita and Western Province. Provincial governments have a central role to play in CBRM given their mandates outlined in the 2015 Fisheries Management Act.

## 2. Traditional food garden

Under the guidance and expertise of the KGA, the innovation hub will play a central role in empowering communities using traditional agriculture. Here, people will learn to turn market waste into valuable compost on islands where it was once believed that growing greens, vegetables and fruits was impossible. In addition, a demonstration seaweed farm has recently been established at the hub with the goal of using seaweed to fertilize and condition the food garden's soil. The approach taken is comprehensive, focusing on the cultivation of indigenous foods and emphasizing a nutrition-sensitive philosophy. The choice of crops has been carefully selected to ensure they work together, enhancing their nutritional value in the local diet. These chosen plants aren't just nutritionally rich but also hold cultural significance, coming together to provide a balanced and wholesome source of nourishment for the community. In essence, the food garden will serve as a model for how purposeful cultivation practices can improve diets, strengthen cultural bonds and promote sustainability within local communities.

## 3. Integrated food aquaponics

At the innovation hub, we will be pioneering the development of integrated food aquaponics, a novel and eco-friendly agricultural system that seamlessly integrates two crucial components – aquaculture, or fish farming, and hydroponics, which entails growing plants without



soil. This harmonious partnership between fish and plants forms a mutually advantageous ecosystem that is both innovative and sustainable. It creates a closed-loop system that minimizes waste and maximizes resource efficiency. This not only conserves water but also reduces the need for external fertilizers and chemicals, making the system environmentally responsible and economically viable. Moreover, our integrated food aquaponics system will take a conservation-minded approach, seeking to experiment with the cultivation of indigenous fish species, such as the goldie river mullet. This deliberate choice supports the preservation of local biodiversity, ensuring the continued existence of these culturally significant fish species. In addition to benefiting the fish populations, our aquaponics system simultaneously seeks to promote the growth of a diverse range of plants, including leafy greens, herbs and legumes. This diversified plant cultivation will enrich the local diet by providing a consistent source of fresh, nutrient-rich produce.

## 4. Environmental restoration

Coral farming will have a central role within the hub, and its significance cannot be overstated. WPG Fisheries Officers, in close collaboration with WorldFish staff, bring with them a wealth of experience and expertise in the field of coral farming. Their knowledge and skills are invaluable resources that drive the efforts to restore and preserve our coral reefs. Within the hub's precinct, the established Marine Protected Area offer an immersive experience in the art and science of coral cultivation. This unique space will be accessible to teachers, trainers, fisheries officers, community groups and students alike, providing an exceptional opportunity for hands-on learning and active involvement in coral-farming practices. Through this immersive experience, participants will learn the intricacies of nurturing coral colonies, gaining insights into the ecological complexities of coral reef ecosystems. Participants will also acquire practical skills in coral propagation, maintenance and vital aspects of coral habitat conservation. This hands-on engagement will not only educate and empower individuals but also contribute to the broader mission of preserving and protecting our precious reefs, which are essential for maintaining biodiversity and the overall health of our oceans.

## 5. Marine lab

In partnership with SINU, the innovation hub is developing options for ocean research where both tertiary and secondary students can actively participate in experiments and ecological field surveys as an integral part of their academic programs. This hands-on experience is crucial for fostering the next generation of scientists and environmental stewards. Moreover, the hub will function as an education center, facilitating school excursions that allow students to delve into the fascinating worlds of marine biology, coral reefs and sustainable practices. This kind of immersive learning is vital for raising awareness and building a sense of responsibility towards our marine ecosystems from an early age. In addition to catering to students, the hub will also play a pivotal role in adult education. It will provide a venue for workshops, training sessions and seminars aimed at adults who wish to broaden their knowledge and skills in the domains of marine biology and conservation. By offering opportunities for both formal and informal learning, the hub will contribute significantly to enhancing public awareness and understanding of the marine environment and its conservation.

## 6. Fish handling

The hub will be dedicated to ensuring that local communities acquire the knowledge and skills necessary for effective post-harvest fish handling, packaging, storage and hygiene practices to maintain fish quality and prevent spoilage. The primary goal is to ensure the freshness and safety of fish for consumption. With the support of Provincial Fisheries Officers and the SINU School of Fisheries, the hub is developing a comprehensive training program to empower community members. Through hands-on training sessions, workshops and practical demonstrations, participants will gain expertise in essential fish-handling practices. These include correct fish cleaning and gutting procedures, and appropriate storage methods and preservation techniques, all aimed at reducing waste and maximizing the overall value of their catch. By equipping communities with best practice fish-handling skills, our aim is to increase the economic value of local fisheries while minimizing food loss. This training will not only sustain the livelihoods of community members but also foster responsible resource management, contributing to the long-term sustainability of the marine ecosystem. The collaboration with the SINU School of Fisheries further enriches the program, ensuring that communities receive well-rounded and up-to-date training in this critical field.



## 7. Novel technologies

The innovation hub will serve a dual purpose as a training center and a practical demonstration site for solar technology maintenance and support. The training will encompass a range of solar-powered equipment, including freezers, lighting systems, water pumps, food vacuum packers and various other devices. This holistic approach will ensure that participants acquire a thorough understanding of solar technology, enabling them to effectively maintain and troubleshoot different components when they return to their respective villages or communities. To facilitate these training activities, experienced staff will be on hand to provide support. They possess specialized knowledge in basic servicing and maintenance of solar technology, including diagnosing problems, conducting repairs and ensuring the efficient operation of these systems. Their expertise will be invaluable in guiding interested villagers through practical exercises, enabling them to develop hands-on skills in solar technology maintenance. Importantly, the hub itself is powered entirely by solar energy. This alignment with solar technology reflects a broader mission to promote local development, instigate positive change and display an achievable model housing system. By embracing solar energy solutions, the hub will exemplify a commitment to sustainable, environmentally friendly practices. It will demonstrate the possibilities of clean energy adoption, setting an example for the local community and fostering a culture of environmental responsibility.

## Acknowledgements

The development of the innovation hub at Nusatupe Research Station is an activity of the CGIAR Initiative on Aquatic Foods. We would like to thank all funders who supported this research through their contributions to the CGIAR Trust Fund: [www.cgiar.org/funders](http://www.cgiar.org/funders). In Solomon Islands, the initiative is implemented together with research financed by the Australian Government through Australian Centre for International Agricultural Research (ACIAR) project FIS/2019/124.

### Citation

This publication should be cited as: Bennett G, Tutuo J, Siota F, Pu'uara S, Aropa A, Saeni-Oeta J, Tua P, Havimana L, Tikai P and Eriksson H. 2023. Establishing the WorldFish Nusatupe Research Station as an innovation hub for island food systems. Penang, Malaysia: WorldFish. Program Brief.

### Creative Commons License



Content in this publication is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0), which permits non-commercial use, including reproduction, adaptation and distribution of the publication provided the original work is properly cited.

© 2023 WorldFish.

For more information, please visit [www.cgiar.org/initiative/aquatic-foods](http://www.cgiar.org/initiative/aquatic-foods) and [www.worldfishcenter.org](http://www.worldfishcenter.org)