

EMPOWERING WOMEN THROUGH INNOVATIVE DRY FISH PROCESSING TECHNOLOGIES IN CAMBODIA

By IM Samruol, MEAS Chanthavy and KONG Tosoth

The article highlights practical experiences and outcomes from the CAPFISH-Capture: Post-harvest Fisheries Development project in Cambodia, focusing on how improved dry fish processing technologies have contributed to women's economic empowerment, enhanced product quality, and strengthened market access in the post-harvest fisheries sector. It offers policy-relevant insights and field-based lessons that may be of interest to readers, particularly those engaged in fisheries development, value-addition, and inclusive growth in the region.



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

Fish sauce production line at an enterprise supported by the UNIDO's CAPFISH-Capture project

Fisheries are a cornerstone of Cambodia's socio-economic development. They provide employment opportunities, generate income, and contribute significantly to food security and nutrition in rural communities, while boosting national GDP. Women are central to this sector, making up around 70% of the post-harvest workforce. They clean, process, package, and market dried fish products, ensuring that fish and fishery products reach consumers across the country.

Yet, despite their essential contributions, women remain at the bottom of the value chain. Many fish processing enterprises are micro- or small-scale, often informal, and women face persistent gender inequalities that limit their opportunities for advancement. Their work is vital, but their voices are often unheard.

The challenge: Traditional practices and barriers

Most women-led enterprises rely on traditional methods such as open sun-drying. These practices are labour-intensive, weather-dependent, and prone to contamination and post-harvest losses. Productivity is low, quality is inconsistent, and market access is limited.

Beyond technical barriers, women face structural challenges. Unpaid care responsibilities restrict mobility and access to resources, while gender inequalities limit opportunities for training and leadership. The 2021 Gender Analysis Study highlighted these gaps and recommended strategies to promote gender equality and empowerment.

This study revealed that women's contributions were undervalued, despite their majority presence in the sector. It emphasized the need for tailored

interventions to address gender disparities, improve working conditions, and create pathways for women to move up the value chain.

Introducing CAPFISH-Capture

The CAPFISH-Capture: Post-harvest Fisheries Development project, co-funded by the European Union (EU) and implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with Cambodia's Fisheries Administration (FiA), private sector stakeholders, universities, and support institutions (2019-2025), aims to enhance the competitiveness of post-harvest fisheries operators and foster sustainable, inclusive growth.

The project envisions a sector where both women and men equally lead, participate in, and benefit from inclusive and sustainable industrial development. Its goal is to improve regulatory systems, promote better practices, and enhance market access, ensuring that women make up at least 40% of beneficiaries at all levels. CAPFish embedded gender equality and women's economic empowerment into its value-chain development approach, ensuring that sector competitiveness is aligned with inclusive and sustainable growth.

Innovative technologies: A game-changer

UNIDO introduced innovative dry fish processing technologies and green solutions such as solar dryer domes, chillers, refrigerators, and vacuum machines. These reduce contamination, improve hygiene, alleviate physical strain, and minimize post-harvest losses.



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

A woman fish processor and her husband drying fish in a solar dryer dome

By modernizing facilities and introducing simple yet effective tools, 73% women-led enterprises are now better-positioned to meet food safety standards, increase productivity, and access new markets. The adoption of solar dryer domes, for example, has transformed the way fish is processed. Unlike open sun-drying, which is vulnerable to weather and contamination, solar dryers provide controlled conditions that ensure consistent quality and safety.

Empowering women: Skills, voices, and leadership

Capacity-building programmes were central to the project. A pool of Business Development Service (BDS) providers was developed (45% of them women), and training was provided to the women entrepreneurs on food safety, business planning, record-keeping, labeling, and marketing. These interventions not only enhanced technical skills but also built confidence and leadership capacity.

Importantly, Gender Equality and Women's Empowerment (GEWE) were integrated into policies, including the Cambodia Quality Seal (CQS) food safety certification. Impressively, 68% of the enterprises certified under CQS are women-led, and 64% of these women-led enterprises are implementing a traceability system in their operations. This achievement demonstrates that women are not only participants but leaders in ensuring food safety and quality standards.

The project also supported women in accessing resources and networks. By linking them to cooperatives, markets, and support institutions, women gained visibility and recognition as entrepreneurs.



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

Cambodian Minister of Agriculture, Forestry, and Fisheries presenting the CQS certificate to the representative of a qualified fish processing enterprise

Community impact: Beyond individual gains

The project's ripple effects extend to households and communities. Women-led enterprises under the Value Chain Investment Support (VCIS) schemes have received USD 1.86 million in direct support. The grants are often blended with collateral-free loans from financial institutions under the framework of an Investment Support Facility (ISF). This funding has leveraged USD 4.18 million in additional investments from the enterprises themselves and others, strengthening resilience, upgrading business operations, and creating role models for inclusive growth.

Marketing support such as logos, labels, and promotional materials, helped 72% of women-led enterprises expand visibility and sales. Collectively, these efforts have improved household incomes, strengthened cooperatives, and enhanced food security.

The impact is not only economic but also social. Women who once struggled with informal, low-income activities now stand as respected business leaders. Their success inspires younger generations and challenges traditional norms about gender roles in fisheries.



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

A woman enterprise owner provided a media interview during a CAPFISH-Capture roadshow

Beyond enterprise support, women researchers have played a pivotal role in research and development. Out of 33 supported research projects, 13 are led by women, and women comprise more than half of the core research teams (36 out of 68 members). Their leadership has already resulted in seven women-led enterprises accessing critical services for product development and the successful commercialization of nine products. These achievements highlight women's growing influence not only in processing, but also in innovation and scientific advancement.



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

New products: instant soup and green mussel sauce, resulting from the project's R&D support, are being successfully commercialized

Market access and sustainability

Women-owned enterprises now access both local and international markets. Twelve enterprises participate in "One Village One Product" initiatives and weekend markets in Phnom Penh and Siem Reap, while two have successfully exported fish products to New Zealand and Australia.

Sustainability is embedded in the project's design: eco-friendly technologies reduce waste, while regulatory frameworks integrate gender-responsive safeguards. By promoting green technologies and embedding gender considerations into food safety systems, the project ensures that progress is both inclusive and sustainable.

Voices from the field

Behind the statistics are transformative human stories which illustrate empowerment not only in economic terms but also in dignity, recognition, and leadership. Women processors describe how new equipment reduced physical strain, improved product quality, and opened doors to new customers. Women scientists lead research projects, contributing innovations such as fish-based baby supplements and premium green mussel sauces registered with the Ministry of Industry, Science, Technology, and Innovation (MISTI).



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

Ms. Sokhim, owner of Heng Hort Sokhim Fish Processing Enterprise, drying fish in a solar dryer dome

“Before, we relied on sun-drying, and our products often spoiled. With the solar dryer dome, I can produce clean, high-quality fish consistently. Customers trust my products now, and my income has doubled.” — Ms. Sokhim, Heng Hort Sokhim Fish Processing Enterprise.

Partnerships and policy support

The project’s success reflects strong collaboration among UNIDO, EU, FiA, academia, and private sector partners. Gender mainstreaming guidelines were integrated into project outputs and activities, contributing to the FiA Gender Action Plan (2024–2030). Among 27 food safety auditors, 22% are women playing an essential role in technical support.



Credit: CAPFISH-Capture: Post-harvest Fisheries Development project, Cambodia

Cambodian women Inspectors performing their duties at a fish sauce company

Policies such as the Environmental and Social Management Plan (ESMP) embed gender equality safeguards, ensuring compliance across value-chain investments. These frameworks institutionalize gender equality, making it a permanent feature of fisheries development.

Looking ahead: scaling and replication

With over 17 800 jobs created or retained (52% held by women) the CAPFish project demonstrates scalable impact. Lessons learned emphasize the importance of baseline gender analyses, capacity-building, and embedding gender requirements into regulatory frameworks.

Future initiatives can replicate this model across other provinces and sectors, advancing inclusive industrial development and empowering women entrepreneurs. The success of women-led enterprises in accessing international markets shows that Cambodian fisheries can compete globally when supported with innovation and gender-sensitive approaches.

Conclusion: a story of transformation

The CAPFISH-Capture: Post-harvest Fisheries Development project showcases how innovation and gender-sensitive approaches can transform Cambodia’s fisheries sector. By modernizing dried fish processing, empowering women, and strengthening market access, the project has created a foundation for sustainable, inclusive growth.

Women are no longer confined to the bottom of the value chain — they are leaders, innovators, and role models driving progress in Cambodia’s fisheries. Their stories of resilience and success demonstrate that when women are empowered with knowledge, technology, and recognition, entire communities thrive.

The lessons learned from this project highlight the importance of integrating gender considerations into every stage of development. From policy frameworks to practical tools, from training programs to market access, gender equality must remain at the heart of fisheries modernization.

As Cambodia looks to the future, the empowerment of women in fisheries stands as a powerful example of how inclusive development can drive economic growth, social transformation, and sustainable progress.

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IM Samruol brings over 14 years of expertise in communications and advocacy. He dedicated more than 7 years to UNDP and nearly 3 years to UNIDO’s CAPFish project, as Communication and Visibility Expert. Under his role, the CAPFish project achieved remarkable outreach reaching more than 18 million people through social media and video campaigns, and generating over 1,800 news articles across both online and traditional media platforms.



MEAS Chanthavy has 27 years of experience in gender equality, women’s economic empowerment, and livelihood development. Throughout her professional career, she has worked with the private sector, NGOs, UN agencies, and the Asian Development Bank. Over the last 10 years, her focus has primarily been on gender issues. She served as the Gender Expert for the CAPFish Project for 5 years, achieving outstanding results. In 2023, the project was honored with the Gender Equality Mobilization Award by UNIDO.



KONG Tosoht has 19 years of experience in monitoring and evaluation. She has spent approximately 11 years with non-governmental organizations (NGOs) and 8 years with United Nations agencies, including UNDP and UNIDO. In her role as the National M & E Expert for the CAPFish project, she developed a digital M & E database as part of the results-based management system. This project was awarded a Certificate of Excellence in RBM by UNIDO in 2025.