



# Building Resilient and Attractive Business Investment Pathways for Smallholder Fish Farmers and Agri-SMEs: A case study from Nkhotakota, Malawi

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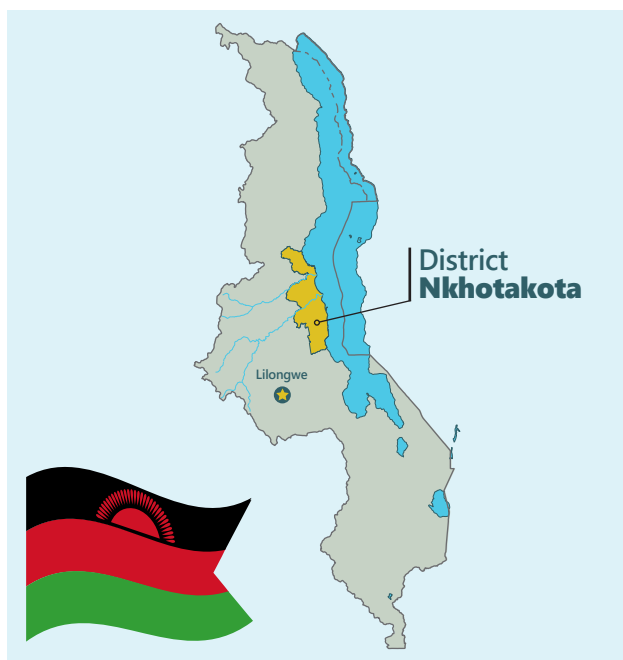




Rapid population growth and the effects of climate change on fish production in the main water bodies, such as Lake Malawi, have significantly affected the uptake of fish protein among Malawians due to declining availability on the local market. The rapidly growing population in urban and rural areas has increased the demand for fish products, yet the country's fish producers are failing to supply matching quantities. Consequently, the market in Malawi is flooded with fish products from neighbouring countries. Limited investment in fish production by large companies has resulted in a fish marketing and distribution landscape that is largely dominated by resource-constrained micro, small, and medium enterprises (MSMEs), which rely primarily on local fishermen for supplies. Aquaculture remains the most sustainable pathway towards increasing fish production and supply in the country. However, aquaculture is still in its nascent stages of development, with most farmers lacking the expertise and resources needed to grow fish commercially. Smallholder farmers also lack technical knowledge on aquaculture and have limited resources to afford good quality fingerlings and fish feeds which compromise the quality and quantity of fish harvested from their farms. These smallholder farmers also sell their fish at low prices within their local community markets, which undermines profitability. Together, these factors affect the commercial viability of aquaculture farming among smallholder farmers. As a result, a significant number of farmers tend to abandon their fish ponds, as has been the case in Nkhotakota District, where less than half of the estimated 400 fish ponds are reported to be operational. To leverage the existing fish market opportunity, Nkhotakota Steadfast Cooperation for Youth (NS4Y) has developed a comprehensive business model which addresses fundamental aquaculture production constraints to create a commercially sustainable and structured enterprise involving smallholder producers.

## THE CASE STUDY

NS4Y provides an inspiring case of a growth-oriented agri-SME which is taking advantage of opportunities in the existing fish market to develop an innovative investment solution projected to bring more profitable business to involved smallholder fish farmers while pursuing their commercial objectives in a sustainable way. While the company is at an early stage of implementing this newly developed model, the design itself provides a good learning opportunity in terms of the uniqueness of the business investment model, the fundamental business-related challenges it seeks to address, and the extent to which the smallholder fish farmers are willing to embrace commercial aquaculture farming. The case study highlights the prevailing business opportunities that are yet to be tapped by smallholder farmers, agri-SMEs, and potential investors. It also demonstrates the potential role of the investment model in promoting mitigation of climate change effects and adaptation, improvement of livelihoods, and gender and social inclusion. The model has captured insights from NS4Y management, and smallholder fish farmers in Nkhotakota, both individuals and groups such as the Jakwatu and Takondwa clubs. This piece has been prepared to present a baseline assessment that will provide the basis for on-going evaluation of the impact of the model vis-à-vis its inward objectives as well as its ability to trigger industry-wide systemic impacts over time.



## NS4Y, AN AGRI-SME WITH A VISION

NS4Y is a private agribusiness enterprise registered as a partnership, involving four like-minded young people, who also manage the company's daily operations. Established in 2021, the agri-SME focused primarily on fish processing, with rice trading as a secondary line of business. Under the core business line of fish processing, NS4Y contracted over 72 fishermen from five Beach Village Committees (BVCs) of Mbalame, Kaweya, Vinthenga, Kambindingo, and Kaliba who supply the company with fish caught in Lake Malawi. Over the years, the enterprise has experienced a significant supply shortage compared to the consistently high market demand.



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### NS4Y Partners

**James Chimbiya** – Managing Director  
**Thokozani Mwadzama** – Finance and Administration Manager  
**Naomi Phiri** – Operations Manager  
**Alson Manda** – Field Officer

### NS4Y partners in a meeting at its offices in Nkhotakota

The enterprise's annual demand for fish from its current customers, without what the owners call "serious marketing effort", is pegged at 46 metric tons, against the supply of only eight metric tons. This entails a deficit of about 38 metric tons. However, NS4Y is able to make an annual revenue of more than 60 million Kwacha (approximately over £25,000 at the current exchange rate).

The overwhelming level of unmet demand and the estimated annual returns demonstrate the viability of the business and highlights the value of the untapped opportunities for interested agri-SMEs. NS4Y has started

to capitalise on these business opportunities through strategic initiatives, supported by the Commercial Agriculture for Smallholder and Agribusiness (CASA) Programme. The enterprise is currently transitioning from a partnership to a limited liability company and establishing an outgrowing and input credit scheme involving smallholder farmers as suppliers. These strategic steps are designed to catalyse its capacity enhancement and facilitate business growth.

## MIGRATION FROM CAPTURE FISHERIES TO AQUACULTURE

One important factor that negatively affected the ability of NS4Y to provide sufficient fish supplies to the market was the dependency solely on capture fisheries, which has proven to be limited. The effects of climate change have affected fish production in the lake, and fishermen have also faced limitations in their capacity to capture the required volumes of fish. In addition, the fishermen were unreliable as they sometimes went into the lake only when they needed money or kept moving from one place to another.

To achieve its business growth ambitions, NS4Y needed a robust business investment model that could ensure an uninterrupted supply of high-quality fish in the necessary volumes. Therefore, the company embarked on a migration from capture fisheries to aquaculture to utilise smallholder fish farmers. However, aquaculture is also still developing with most fish farmers growing fish on a small scale and sometimes on a subsistence basis due to, among others, limited technical knowledge on best aquaculture practices, limited resources to access high-quality fingerlings and recommended fish feed, and lack of access to profitable markets which could yield better returns to the farmers and sustain their operations.

Given these circumstances, NS4Y sought support from CASA to bring technical expertise and market-based solutions to improve fish farming techniques and ensure a more sustainable supply chain. Through the partnership, CASA is providing Technical Assistance (TA) to NS4Y and helping them build the capacity of smallholder fish farmers contracted to feed into their supply chain, e.g., in climate-smart aquaculture practices such as improved feeding and pond management. Additionally, NS4Y is piloting an input credit model with 100 farmers, providing inputs such as feed and fingerlings at different stages of production, with flexible repayment terms.

## THE BUSINESS MODEL

NS4Y's model emphasizes innovation, sustainability, and profitability for both the smallholder fish farmers and the enterprise. It integrates technical capacity building, input loans, and market access to transform the traditional fish farming approach into a viable business for smallholder farmers while ensuring the commercial sustainability of agri-SMEs.

Key aspects of the model and their links to business investment opportunities include:

- **Polyculture Approach:** The smallholder fish farmers are encouraged to utilise a polyculture system, which involves stocking both tilapia and catfish species to reduce production costs while optimising fish growth. The polyculture approach lowers feed requirements and enhances profitability, making the fish farming business more attractive even to low-income farmers.
- **Profitability through Market and Inputs Access Support:** NS4Y provides a ready profitable market for the farmers' fish. The company buys the fish at a competitive price using a recommended scale rather than selling to vendors who buy the fish by the dozen or by using a bucket, but at low prices. The input support is meant to help low-income farmers access the right fingerlings and recommended feed such as starters, growers, and finishers, which will help to improve the quality of the fish, thereby fetching profitable prices on the market.
- **Sustainability and Expansion:** The technical support from CASA is intended to stimulate the capacity growth of both the smallholder fish farmers and NS4Y. It provides farmers with technical knowledge on best aquaculture practices, and access to inputs and profitable markets, as well as the means to better manage the revenue by investing in Income Generating Activities (IGAs) and setting up community-level revolving funds through Village Savings and Loan Associations (VSLA) and reinvesting the proceeds back in the business.

## RISK MITIGATION OF THE MODEL

The uniqueness of NS4Y's model resides in its risk mitigation measures which provide safety to the business investment, and resilience and adaptation mechanisms, as well as commercial sustainability to both the smallholder farmers and the agri-SMEs.

Such measures are:

- **Climate-Smart Aquaculture:** Building farmers' capacity in climate-resilient techniques such as polyculture, which reduces stress on individual fish species, and optimal pond management to ensure water conservation. The polyculture method also ensures healthy fish populations in the face of environmental challenges like water shortages or feed scarcity, creating a more sustainable and cost-effective aquaculture system.
- **Capacity Building and Knowledge Transfer:** Providing technical training on pond management, water use efficiency, and sustainable feeding practices to the fish farmers. This capacity building ensures that farmers adopt techniques that help mitigate the impact of climate change, enhancing their resilience against shocks such as droughts or fluctuating temperatures.
- **Resilience through Economic Stability:** By offering farmers loans for inputs and ensuring reliable market access, the model helps farmers generate stable incomes, invest in IGAs and establish VSLAs which will ensure continued liquidity among members, making them more resilient to economic shocks caused by climate variability.
- **Loan Structure and Repayment:** NS4Y's loan system for fish farming inputs, with a 15% interest rate, encourages financial responsibility to NS4Y while giving farmers access to the necessary inputs. Dubbed the pay-as-you-grow model, the farmer repays 12% of the loan starting in the third month when starting to feed the fish growers. Then the remaining 88% is expected to be completed after selling the fish to NS4Y. The technical support and access to both the right inputs and profitable markets increases the chances for the farmers to generate resources to repay the loan.



## SHAPING ATTRACTIVE BUSINESS OPPORTUNITIES FOR COMMERCIALISED AQUACULTURE

Smallholder farmers in Nkhotakota have expressed excitement about the business opportunities that NS4Y is bringing to them through the model.

Ms Mervis Maseya is an individual smallholder fish farmer in Tandwe Village in the district. She started fish production in 2022 on a 150 square metre earthen pond which was dug with support from her children. Currently, Ms Maseya owns two ponds. Her experiences highlight the challenges that are negatively affecting the production of high-quality fish and the achievement of better yield potential among many farmers in the district. She used fish that fishermen captured from the nearby rivers as fingerlings. This meant that there was no proper control over the fish sex, which is associated with challenges of controlling reproduction, leading to fish overcrowding and stunted growth of the fish. In addition, Ms Maseya fed the fish using homemade feed, especially maize bran, and food residues from her home. In 2023, she harvested only 20 kg of fish from the pond, sold them in the community, and realised 22,000 Kwacha (approximately £10.41 at the exchange rate in 2023).



Ms Mervis Maseya explaining to CASA staff about her aquaculture experiences  
(©Vincent Eliya / CASA, NIRAS)

Ms Maseya believes the partnership with NS4Y will bring more business opportunities.

“The model allows us farmers to access high quality fingerlings and feed. We will be able to feed our fish starters, growers, and finishers as per recommendations thereby improving the quality and productivity of the fish,” she said.

Ms Maseya also confirmed that NS4Y is providing an attractive market for the farmers. She is optimistic of generating enough revenue from the fish sales to be able to hire people to construct additional ponds with recommended specifications, and to invest some of the money in other income generating activities.



Ponds of individual farmers in Tandwe Village  
(©Vincent Eliya / CASA, NIRAS)



Apart from the individual farmers, fish farming groups also view the model as a viable and sustainable business path for improved economic livelihood, business growth, and promotion of food and nutrition security. The current experiences of the fish farming groups highlight the prospective role of the NS4Y model in bringing out business potential from aquaculture production, mostly by addressing key constraints that are currently suffocating the farmers' ability to produce high-quality fish in the right volumes.

Jakwatu Club started in 2018 with the purpose of producing vegetables. Later the group was inspired to venture into aquaculture production. In 2021 the group constructed a 15x20 metre pond and started growing fish. The club members contributed some money that they used to buy fingerlings. However, the group did not have resources to access the recommended fish feed. They have only harvested the fish once in 2023 and it was only ten kg. The group just shared the fish among the group members for consumption, without selling any.



**Jakwatu Club members at their group pond**  
(©Vincent Eliya / CASA, NIRAS)

Takondwa Club was established in 2019. The community members constructed a 20-metre by 15-metre pond. The club had challenges to afford recommended fish feed. As such they fed fish homemade feed prepared from cassava and maize bran. In 2022 the group harvested only 17 kg of fish which they just sold among themselves and realised MK45,000 (approximately £37 in 2022). In 2023 the group harvested 75 kg from the same pond, suggesting the potential of the pond to produce an increased volume of fish. The group members shared among

themselves almost 35 kg for consumption and sold the remaining 45 kg. The farmers realised 55,000 Malawi Kwacha (approximately £26 in 2023) from the sales.



**Ponds of individual farmers in Tandwe Village**  
(©Vincent Eliya / CASA, NIRAS)

Azizi Major, Community-Based Facilitator for Takondwa Club, disclosed that the farmers lacked the appropriate motivation, resources, and expertise to produce the fish on a commercial basis. As a result, the fish was of low quality, fetched low prices, and the group suffered post-harvest management issues given the perishability of fish. The fish farming groups have expressed optimism about the potential of the NS4Y model in helping the smallholder fish farmers to manage the ponds as commercial enterprises. With the support, it is anticipated that the groups will experience an increase in production (both in terms of quality and quantity), as well as equipping them with tools for growth and the ability to thrive without NS4Y later.



**Takondwa Club members with Edward Chigwere from CASA**  
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# BUSINESS INVESTMENT FOR IMPROVED LIVELIHOODS, CLIMATE CHANGE EFFECTS MITIGATION AND ADAPTATION, AND GENDER AND SOCIAL INCLUSION

## Improved Livelihoods

NS4Y provides a reliable and more lucrative market for fish produced by smallholders, as the company has committed to offering more competitive prices compared to what the farmers are getting at the moment. This is expected to result in increases in incomes for smallholder producers which will allow them to better manage household expenses and invest in other income-generating activities, such as livestock rearing or crop production, through Village Savings and Loan Association (VSLA) programmes.

## Climate Change Effects Mitigation and Adaptation

Promoting the farmers to commercialise aquaculture would help to reduce pressure on Lake Malawi which has been the main source of fish in the district. Due to limited technical capacity, most of the ponds used by smallholder producers have hitherto been shallow, exposing the fish to excessively hot weather conditions. Nkhotakota is also prone to flooding, and shallow ponds which are also not protected along their embankments increases the risk of pond destruction and/or fish being swept away during flooding incidences. In 2023 when the district experienced catastrophic floods, Takondwa Club lost some of its fish. Under the partnership with NS4Y, the increased projected profits will allow farmers to construct secure ponds that can survive both droughts and floods. This has already been built into the climate-tailored technical production training curriculum that will be used during farmer training sessions by NS4Y field officers who have already been trained in adoption and integration of these climate-smart production techniques by a CASA expert. The improved financial security will also help to cush-

ion the effects of economic and environmental shocks, such as poor harvests or rising food prices, providing them with a more stable and resilient livelihood.

## Gender and Social Inclusion

The inclusion of an input credit facility under the PAYG framework is designed to address a major barrier to entry into aquaculture for women and youth as well as enhance their productivity. Many women and youth shun aquaculture because of insufficient working capital, which is essential for purchasing necessary inputs, particularly feed, which constitutes 70% of production cost. The model will, therefore, provide equal opportunities to men, women, and young people to establish their footing in the industry and exploit the existing business opportunities in aquaculture and associated income-generating activities.

## CONCLUSION

NS4Y's unique CASA-supported aquaculture model offers a blueprint for sustainable fish farming in Malawi. In Nkhotakota, out of the 800 smallholder farmers that NS4Y has visited, most have expressed their willingness to be part of the business model. This creates a fertile investment opportunity for smallholder fish farmers, agri-SMEs, and investors to capitalise on the existing fish market business opportunities in Malawi and abroad.







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