

CASE STUDY: Integrating Fish Farming and Agriculture: Jane Aor's Model of Sustainable Farming

MBOSIE VILLAGE, UGUNJA SUB COUNTY, SIAYA COUNTY



Jane Aor Oduor narrating her five (5) years vision journey as a fish farmer to visitors at her farm in Mbosie village, Ugunja sub county.

Introduction:

Aquaculture (fish farming) has become increasingly popular as a sustainable solution to address food security and economic development challenges in rural areas. Aquaculture can both be land based and fish cage farming done in the lake, dams and any other large water body. This case study focuses on Jane Aor, a female fish farmer in Mbosie village, Sigomore ward, Ugunja Sub County, Siaya County, whose dedication, innovative practices, and commitment to sustainability have made her a role model for aspiring fish farmers.

Background:

Jane Aor Oduor of Unique code – **12/UGU/SIG/0473** is a female fish farmer aged 52 years and a member of SIWA AFS. SIWA is an AFS/ SAG with 27 members. The group do table banking, outside catering in addition to fish farming. She has 3 three fish ponds with 3000 fish. Jane is recognized by her potential of utilizing her small piece of land for fish farming integrated with other crops like maize, maize, poultry bananas, vegetables and hibiscus. With determination and limited resources, she embarked on her fish farming journey in 2018. Starting with a small pond and a few fingerlings, Jane gradually expanded her operations over time, capitalizing on the opportunities available in the aquaculture sector.

Sustainable Farming Practices:

Jane Aor's success can be attributed to her adoption of sustainable farming practices. She prioritizes environmental conservation and animal welfare while ensuring optimal fish growth and production. Her commitment to sustainability is evident through the following strategies:

i) Efficient Water Management:

Jane understands the importance of water conservation and employs various techniques to minimize water consumption. She has dug a trench from a spring 5 kilometers away leading water to her farm where she utilizes the water efficiently in her fish ponds and irrigating other crops. Additionally, she implements proper pond management techniques, such as maintaining water levels, preventing leaks, reducing wastage and conserving this valuable resource.

ii) Feeds and Feeding:

To promote sustainability and reduce costs, Jane uses commercial feeds but supplements with locally available feeds like fresh water shrimps (Ochong'aa). This is due to high cost of feeds and feeds quality that as a result increases cost of production. Poor feeding regimes leads poor growth of fish hence delayed maturity.

iii) Disease Prevention:

Jane understands the risks associated with disease outbreaks and takes proactive measures to prevent them. She maintains strict biosecurity protocols, including regular monitoring of water quality, maintaining appropriate stocking densities, and practicing proper pond hygiene. By doing so, Jane minimizes the risk of diseases spreading among her fish population, reducing the need for antibiotics or chemical treatments.

iv) Circular Agriculture:

In line with sustainable farming practices, Jane embraces an integrated farming approach by combining fish farming with agriculture. She utilizes the nutrient-rich pond water as natural fertilizer, irrigating her crops with it. This integration optimizes resource utilization, minimizes waste, and creates a sustainable farming ecosystem. The symbiotic relationship between fish farming and agriculture enhances productivity and supports a more efficient use of land and resources.

Support from the Government/ABDP and impact on Jane's livelihood

The International Fund for Agricultural Development (IFAD) in conjunction with the Government of Kenya (GoK) initiated an eight-year Programme dubbed the Aquaculture Business Development Programme (ABDP) with the Lead Implementing Agency being the State Department for Fisheries, Aquaculture and the Blue Economy (SDFA&BE) in collaboration with fifteen counties. The ABDP aims at transforming the aquaculture in the county from subsistence to commercial scale giving it the slogan *Fish for health ad wealth*.

The overall goal of ABDP is to reduce poverty and increased food security and nutrition in rural communities. The programme aims at increasing the incomes, food security and nutritional status of the wider communities of poor rural households involved in aquaculture.

Siaya County being among the 15 counties implementing the programme, all the six sub counties with nineteen (19) wards as Aquaculture Development Areas, Jane is a beneficiary through SIWA AFS, she benefitted from a predator control and 1000 fingerlings (in 2021 August and 2023 January respectively) and technical assistance from the extension officers who have been facilitated too. The County Government of Siaya through Department of Agriculture and Fisheries also supported Fish farmers with quality feeds to a tune of 98.4 metric tons, Jane benefitted -100kgs of fish feeds. Jane has participated in several trainings and capacity built by ABDP through Participatory Rural Appraisal (PRA), Gender Action Learning Systems (GALS), Community nutrition

Initiatives (nutrition diversity through kitchen garden establishment) and fish farmer exchange visits. Jane has been trained as GALS Champion in Sagana National Aquaculture Research Development and Training Centre.

Impact of ABDP on the farmer:

After the support by ABDP, Jane have harvested her fish ponds four (4) times after every season, a total of **Kshs. 212,000** has been realized. She has managed to educate her children, three in college and one in secondary school. She expects much with the support from the program since lack of quality fingerlings and predation has been a major challenge to her.

i) Employment Generation:

Jane's successful venture has created employment opportunities for the local community. She has hired individuals for various tasks such as pond construction, fish feeding, harvesting, and marketing. This job creation contributes to the economic growth of the region, reduces unemployment, and improves the livelihoods of community members.

ii) Knowledge Sharing:

Jane actively participates in community outreach programs and shares her experiences and knowledge with aspiring fish farmers. She conducts training sessions, workshops, and mentorship programs to empower others to start their own sustainable aquaculture ventures. Her knowledge-sharing initiatives contribute to capacity building and the dissemination of best practices in the local fish farming community.

iii) Improved Nutrition:

Jane's fish farming enterprise has increased the availability of affordable, high-quality protein in the community. Local residents, especially vulnerable groups such as children and pregnant women, benefit from improved access to nutritious fish and hibiscus juice that she processes from her own farm. This contributes to improved overall nutrition, supporting better health outcomes in the community.

Challenges Faced:

Jane Aor's journey has not been without challenges. Some of the obstacles she encountered include:

i) Limited Access to Capital:

Like many small-scale farmers, Jane faced difficulties in accessing adequate financial resources to scale up her operations. Limited access to credit and investment opportunities posed challenges to expanding her fish farming enterprise. However, through perseverance and resourcefulness, she managed to navigate these constraints and gradually grow her business.

ii) Market Access:

Initially, Jane struggled to find reliable market for her fish produce fearing brokers. However, she overcame this challenge through proactive networking with local restaurants, markets, and individual customers. By establishing relationships and ensuring a steady demand for her fish, she was able to create a stable market for her products.

iii) Cost of Quality feeds and seeds:

Accessing quality feeds and seeds has been costly to Jane which has seen her using local feed supplements. High cost of production is evident hence low profit.

Conclusion:

Jane Aor's case study highlights the transformative power of sustainable fish farming practices in rural communities. Her commitment to environmental stewardship, innovative approaches, and

community engagement sets a remarkable example for others. By combining efficient water management, predator control, disease prevention measures, and integration with agriculture, Jane has not only built a successful fish farming enterprise but also made a positive impact on her community's livelihoods, food security, and sustainable development. Her story serves as an inspiration for aspiring aqua culturists, demonstrating that with dedication and sustainable practices, fish farming can be a catalyst for economic growth, environmental conservation, and improved livelihoods in rural areas.

Pictorials



Members of SIWA AFS receiving fingerlings and stocking there ponds in January 2023, Jane being a beneficiary.



SIWA AFS receiving farmer record books by ABDP. Fred Akello - SCPC on routine extension service delivery.



Jane receiving visitors and taking them around her farm during IFAD Mission led by Dr Wamalwa - NDPC



Jane's integrated fish farm with arrow roots, bananas, maize and vegetables



Jane and a group member exhibit and promote nutrition diversity, all the foods displayed from farm



Ms Jane facilitating GALS Methodology during PRA activities in East Ugenya and North Alego ADA respectively.



Ms Jane partially her harvest one of her fish pond in November 2022.



Ms Jane signing for fish feeds support from the County Government in March 2023



Ms Jane in a GALS Methodology training in Sagana National Research Centre with three other farmer representatives in February 2022 Courtesy of ABDP.