



imani

DEVELOPMENT

global vision, local knowledge

Company Aquaculture Profile:

Within the context of the aquaculture sector, the Imani team remain focused on the company vision of 'Global vision, local knowledge'. Imani works across countries and scales of industry to apply innovative solutions to context-specific problems, taking lessons learned internationally and applying these to local situations.

A key focus of Imani's work in aquaculture is employing community-based approaches to project management, moving towards sustainable outcomes. Imani Development has extensive experience in aquaculture, including system feasibility and development in several African countries; as well as considerable focus on the strategic development of the Scottish aquaculture industry. Imani recognises aquaculture's role in economic transformation, and long-term, global, sustainable nutrition, as some of the biggest opportunities in the 21st Century, not least for low-income countries and facing multiple resource pressures at both a national and community level.



Imani Development and Aquaculture

The experience gained by Imani, working from community-level pond aquaculture projects in Malawi, through to National-level engagement in the Scottish aquaculture sector, enables the team to draw on a wide range of skills that can be tailored to meet the needs of specific project engagements.



Within the UK, Imani delivered a ground-breaking study into the Scottish aquaculture industry in 2014 which cast new light on the industry's significant contributions to local economic growth and social impacts, including, supporting populations and incomes in remote rural areas and 'fragile economic areas'. Building on these findings, in 2016 / 2017 Imani produced the Scottish aquaculture industry roadmap to 2030 for the Scottish Aquaculture Innovation Centre (SAIC) with extensive industry engagement and consultation. The team have been able to take experience of Sustainable Livelihoods Assessment (SLA) and community engagement from African projects and apply this to a UK context, which has been highly beneficial and provided lesson learning in both directions.

The Imani team have been engaged in African aquaculture at both practical design and implementation as well as national strategy levels, most recently in Malawi including the Phata Sugarcane Outgrowers Cooperative and surrounding communities in the Lower Shire area. Within this project the team were engaged in implementation of a crop / livelihood diversification project and integrated Aquaculture-Agriculture strategies to combat the issues associated with climate change and food security through sustainable animal protein production combined with seasonal food crops.

Projects such as this have allowed Imani to have maximum impacts in terms of livelihood benefit and economic development, for relatively small investment by building on existing skills, experience and infrastructure and capacity building with local communities.



Wider Imani Experience

A key strength of Imani is the ability to draw internally on complementary skills from throughout the group. These include extensive business, trade, economic development and investment services expertise to complement agriculture and aquaculture-specific technical knowledge to address industry growth and feasibility.

These services include:

- **Technical Assistance:** assisting producers to increase yield and improve efficiency in their specific systems with core focus on integrated agriculture-aquaculture strategies.
- **Economic and Social Impact Assessments:** measuring, analysing and reporting on the impacts of projects on economy and targeted beneficiaries, particularly within private sector / market system frameworks.
- **Value Chain Analysis and Integration:** including seed and feed to market assessment and segmentation, as well as their relevance to a viable production system.
- **Financial and Investment services:** feasibility studies and the investment case for aquaculture business models, as well as experience in design and management of financing facilities.
- **Community Engagement:** working with surrounding communities through needs analysis and utilising sustainable livelihoods approach to measure, monitor and attain meaningful benefits

In addition to the skills available internally, Imani have close links with international research institutions such as the Institute of Aquaculture in the University of Stirling and Scottish Association for Marine Science (SAMS) after successful collaboration on many projects.



Staff Experience

Iain Gatward
*Director / Senior
Aquaculture Consultant*

Iain has an MSc in aquaculture and is an experienced project manager and technical consultant. He has worked on projects relating to aquaculture and the marine environment in the UK, Africa and Asia for over 10 years. Selected experience includes being aquaculture consultant and project manager for the Integrated Farming for Cooperative Agribusiness Programme (IFCAP) in Southern Malawi; part of the SEAT project team exploring sustainability of trade in aquaculture species from Asia to the EU; as well as developing a sector roadmap and needs study to 2030 for the Scottish aquaculture sector for the Scottish Aquaculture Innovation Centre.

David Bargh
Aquaculture Consultant

David has an MSc in sustainable aquaculture and practical experience in managing and providing technical support to small-scale, commercial aquaculture enterprises in Malawi as well as coordinating and inputting to consulting projects for aquaculture in Southern Africa. Most recently, David has been involved in projects assessing the potential to improve supply chains for aquaculture inputs in Malawi, as well as improving local supply networks for small-scale farms in the Southern Region as a core focus of time spent as the Aquaculture Manager at Phata cooperative in Chikwawa, Southern Malawi.

Andrew Parker
*Director / Senior
Economist*

Andrew was lead economist for the Marine Scotland project 'Assessment of the Benefits to Scotland of Aquaculture' (2014), industry analyst on SAIC's Scottish Aquaculture Roadmap to 2030 (2016) and related foresighting work (2017). Andrew has extensive experience of impact mapping and market feasibility including integration of aquaculture into other supply chains, particularly in Africa. He assessed the impact of the IFCAP project in Malawi reviewing aquaculture elements within the wider economic development context, and has advised on feed and seed value chains. International expert on inclusive business models / associated development impact and industry value chains.

Shannon Anderson
Environmental Economist

Shannon is an Environmental Economist holding an MSc in Natural Resource & Environmental Management. Her areas of expertise include Natural Capital and valuing ecosystem services. Most recently, demonstrated through her contribution to reports for clients such as SeaFish, comparing commercial sea fisheries and recreational angling.

Luca Desideri
*Senior Agriculture
Consultant*

Luca is an experienced agronomist and project manager incorporating a wide range of agricultural and core development principles from 10 years' experience in agribusinesses management and development interventions for the public and private sectors in Malawi. In this time, he has designed and implemented numerous technical and agribusiness projects and he has managed and contributed to projects tackling soil fertility, climate change, agricultural diversification, value chains and integrated agriculture. Luca has also contributed to standards' development for specific crops, for international certification bodies such as Fairtrade.

Jonathan Thorneycroft
Development Consultant

Jonathan Thorneycroft BSc is based at the Imani Consultants office in Blantyre and speaks fluent Chichewa. He has gained experience through research involving Malawian fisheries and aquaculture as well as a range of core business areas through several Monitoring & Evaluation projects within Malawi and Zambia, with a focus towards implementing field research on human-wildlife conflicts in communities around national parks in both Malawi and Zambia for the International Fund for Animal Welfare (IFAW).



Selected Imani Project History and Experience

Scottish Inshore Fisheries Integrated Data System (SIFIDS)

Client: University of St. Andrews / MASTS **Location:** Scotland **Date:** 2016-19

EMFF funded project consisting of 12 work packages, improving the evidence base on which management decisions are made through stakeholder participation, incorporating inshore fisheries activities within spatial marine plans. Imani Development and SAMS Research Services Ltd., are undertaking WP4: Assessment of Socio-economic and Cultural characteristics of Scottish Inshore Fisheries. Establishing qualitative and quantitative data on economic, social, and cultural drivers of inshore fisheries in Scotland.

Farmers in Transition Fund (FIT Fund)

Client: IDH Sustainability **Location:** Malawi **Date:** 2016

Building on the IFCAP 2013-15 (see Case Study), this project sought to expand aquaculture production and crop diversification using integrated agriculture techniques at Phata cooperative, benefitting the 436 member households and surrounding community through additional income and protein security. Focused on building local supply chains; feed, seed and markets, as well as demonstrating viability of novel, partial-harvesting methods to reduce costs, within a rural-development context.

Commercial feed and fingerling supply chains for Malawian smallholder aquaculture

Client: Landell Mills – Agri-TT **Location:** Malawi **Date:** 2016

Feasibility study assessing the current profitability of smallholder aquaculture in Malawi and how feed and seed supply chains can be sustainably commercialized to fulfil the needs of these farmers. Involved in-depth stakeholder interviews and reporting key areas for growth potential.



Scottish aquaculture, a view towards 2030: Innovation roadmap and sector needs study

Client: Scottish Aquaculture Innovation Centre **Location:** Scotland **Date:** 2016

Mapping Scottish aquaculture priorities through to 2030 including key growth opportunities, gaps and constraints and emerging technologies. This was a sector-wide scoping study into the critical success factors required for sustainable growth of the sector to 2030, including industry consultation from farm staff to National strategy level.

Community Engagement Charter for Scottish Salmon

Client: Scottish Salmon Producers Organisation **Location:** Scotland **Date:** 2015-16

Development of a charter for the Scottish Salmon Producers Organisation (SSPO), outlining key commitments being made by the Scottish salmon industry in relation to how they work and engage with communities throughout Scotland. Final charter published by industry including details on why commitments are needed and how they will benefit both companies and the communities where they are based.

Scoping and Feasibility Study for aquaculture expansion in Ghana

Client: IDH and University of Stirling **Location:** Scotland and Ghana **Date:** 2015

Scoping study reviewing the Ghanaian aquaculture sector and potential for private sector and donor investment throughout the supply chain from hatcheries to markets. Role included project development and producing outputs, as well as managing consultants in Ghana & UK.



Chikolongo Integrated Fish Farming Aquaculture Project, Liwonde National Park

Client: International Fund for Animal Welfare (IFAW) **Location:** Malawi **Date:** 2014-16

Fish farm developed to address human-animal interactions and poaching within National Park, offering a sustainable source of protein for consumption and sale. The farm consists of fish ponds, duck houses an apiary and 22 hectares of agricultural land, engaging 24 households. Handbook developed to provide instructions for sustained management of aquaculture components at Chikolongo Farm including concept development and management of resident aquaculture consultant at the farm as well as community engagement.

Midterm Evaluation of Horticulture Productivity & Trade Development (HPTD)

Client: ITC (International Trade Centre) **Location:** Lesotho **Date:** 2014-15

Strengthening targeted sectors' competitiveness, with focus on developing opportunities in domestic, regional and international markets for building capacity, income and employment in small-medium enterprises (SMEs). As well as utilising technologies to increase production, market centres and financial skills for SMEs.

Assessment of the Benefits to Scotland of Aquaculture

Client: Marine Scotland **Location:** Scotland **Date:** 2014

A ground breaking socio-economic assessment of the benefits of aquaculture and growth in aquaculture to Scotland. The project included economists, environmental and policy specialists, and social scientists. It included an extensive consultation process in Scotland, culminating in a report and presentation to stakeholders including Government and Industry.

Strengthening ACTESA's Program Development and Implementation (SAPDI)

Client: AAPF, ACTESA **Location:** COMESA Countries, Zambia **Date:** 2013-15

Enhancing capacity of ACTESA facilitated improved free, cross-border trade in staple foods and regional knowledge portal for best practice in staple commodity markets within region. Increased access to nutrition, smallholder incomes and resilience to climate and economic shocks for both urban and rural people.

Tilapia Certification Scoping Report

Client: Fair Trade Africa **Location:** Sub-Saharan Africa **Date:** 2012-13

Fieldwork and associated feasibility review of certification options available for aquaculture producers in Sub-Saharan Africa and study into criteria for a new aquaculture label relating to African aquaculture products.

Commercial Aquaculture Producers of Africa

Client: Tradecom **Location:** East and Southern Africa **Date:** 2010

Reviewing sustainable & ethical supply chains for aquaculture products from Africa to Europe including development of a manual for fair trade aquaculture development in Africa. Role included project design through to implementation and management of project partners.

Delma Island: Feasibility study – Delma Aquaculture Development List

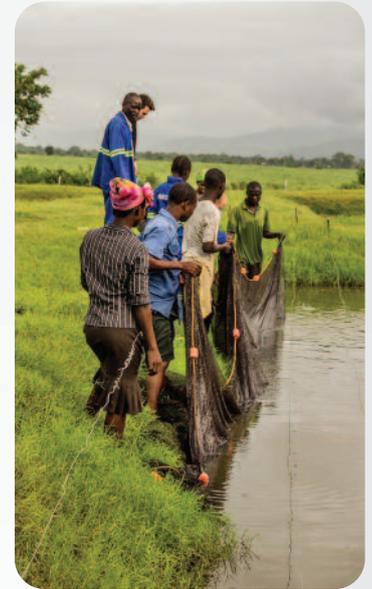
Client: Abu Dhabi Food Control Authority **Location:** UAE **Date:** 2010

Assessment of aquaculture development potential for a small island in UAE including technical, environmental and policy factors. Assisted with design of field work and data collection and proposed systems for the aquaculture facility.

Feasibility of an Australian Aquaculture System in Scotland

Client: Aquanova **Location:** Australia and Scotland **Date:** 2008

Feasibility study into the potential use of McRobert Aquaculture 'Aquanova' Systems in Scotland. Included visits from the Australian team to Scotland and workshops undertaken with specialists at the Institute of Aquaculture in Stirling, as well as reciprocal visits from the Imani team to trial sites in Perth, Australia. Final report included a detailed review of potential sites in Scotland, environmental constraints and species options, as well as an assessment of financial opportunities and constraints.



Case Study 1: Phata Cooperative, Chikwawa, Malawi:

Integrated Farming & Cooperative Agribusiness Programme (IFCAP) and Farmers in Transition Fund (FIT)

Diversifying livelihoods, providing vital protein for a community and Integrating Agriculture and Aquaculture. The area around Phata cooperative has a dense population and is heavily impacted by climate change. A community-based needs analysis identified that despite increased income from sugarcane sales, nutrition insecurity remained critical due to poor agricultural practice and lack of crop diversity.



The IFCAP project was designed as a replicable integrated system with complimentary activities taking place to diversify income sources, improve soil health and environmental conditions, develop climate resilience and improve food security and protein intake for the local communities.

- Tackling **food security** and stimulating **livelihood diversification**; aquaculture, **food crops** (i.e. maize, rice), **cash crops** (i.e. banana, mango, citrus, pigeon peas and cowpeas).
- On-site training for farmers to tackle gaps in agricultural knowledge, coupled with specific **technical aquaculture training** and a context-specific pond system built to meet demand for fish as a source of income, but more importantly a source of vital protein.
- Optimal environmental conditions for aquaculture led to **development of 10 fish ponds** on a 1.2ha site designed and engineered to the local context using existing bulk water supplies from the sugar cane irrigation system.
- Inputs: local brans sourced for **supplementary feeding**, farm **ducks** for water fertilisation making for low-input system.
- Effluent water gravity-fed through **banana, sweet potato, rice**.
- **Cooperative members** have priority for purchasing fish and remaining stocks sold at commercial rates to surrounding communities and wholesale buyers through robust linkages.
- Links to **local markets** developed to strengthen sales opportunities and increase reach of impact beyond cooperative.
- Highly **successful aquaculture production** targeting local market demand for small fish (growing from 5g to an average of 75g in 5-6 months), 3 tonnes harvested in 2016 increasing production by >100% on 2015 and planning 5 tonnes for 2017.
- Imani provided pre-post **Monitoring and Evaluation services** to assess benefits from intervention activities.

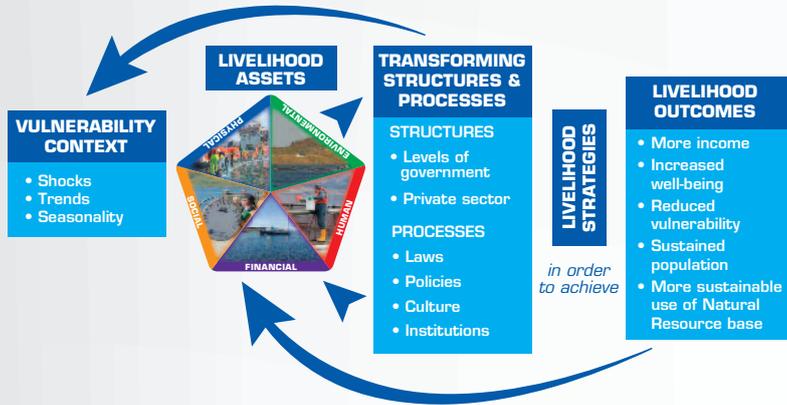
IFCAP at a glance

MEASURE	NUMBER
IFCAP project investment (Scottish Government)	£393,000
Potential revenue from IFCAP 2015 – 2025	£2,543,000
Number of Cooperative member households	380
Percentage female-headed households	43%
Indigenous trees planted in woodlot	25,000
Improved-variety fruit trees planted in orchard	1,200
Fish ponds constructed	10 ponds, 1.2ha site
Maize harvested (2015)	39 tonnes
Beans harvested (2015)	17.5 tonnes
Demonstration centre, tree nursery & vegetable garden	Construction & planting complete. Over 350 training days provided.



Case Study 2: National Assessment of the Benefits of Aquaculture

Imani produced a study into the economic impact of the aquaculture industry in Scotland, where aquaculture is a pillar of rural industry, and provides considerable benefit for fragile economic areas. The project involved analysis of this highly diverse supply chain with demands for feed, research, engineering and downstream logistics and processing opportunities, as well as direct employment and revenue opportunities for a diverse range of sectors nationally. Importantly, this work included both shellfish and finfish aquaculture.

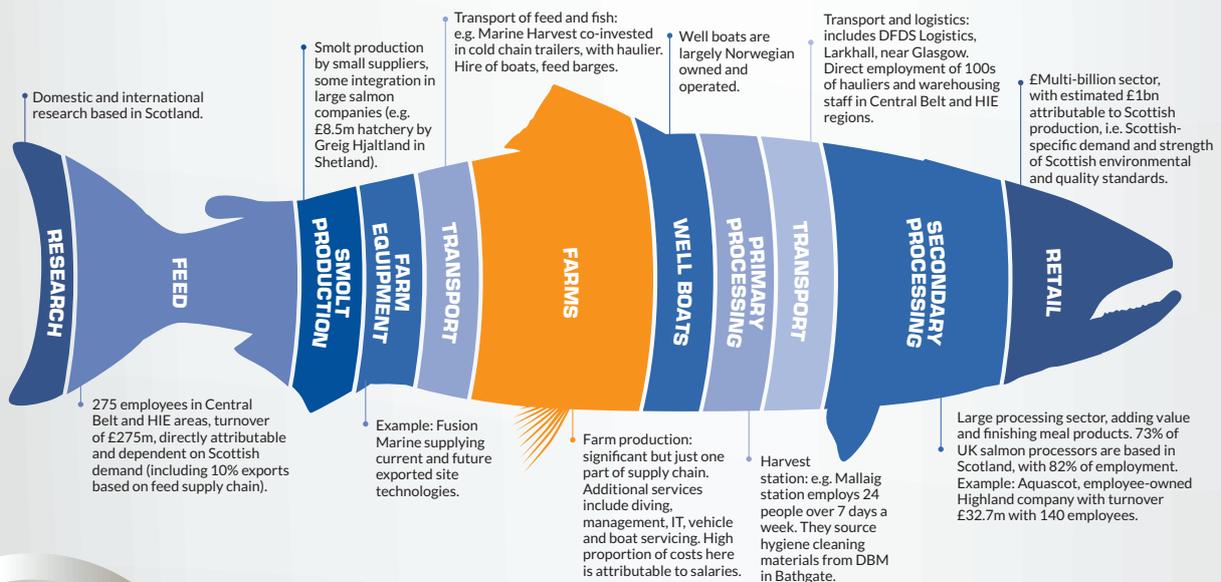


This figure outlines the Sustainable Livelihoods Assessment framework, as applied to the aquaculture sector.

Below image, created during this project, shows indicative value of each segment of the salmon value chain in Scotland and has been widely referenced and reproduced subsequently.

This assessment described the benefits of aquaculture through the industry's economic contribution including social, environmental, human, financial and physical capital. It included reviewing the benefits from local village / town level where farms are located, through to economic impacts, including exports and value addition, at a national level.

Analysis was split into four work packages; a macro-level industry assessment; a Market Systems Approach (MSA) analysing the whole market; a Sustainable Livelihoods Approach (SLA) using a combination of interviews and questionnaires to investigate sustainability and benefits to communities; and Value Matrix to summarise the overall benefits provided by the industry. The final Value Matrix included employment, as well as turnover and GVA figures, both for time of writing and looking ahead to 2020 – these figures have since been widely referenced by both industry and government.



Contact: If you would like more information, please contact: ian@imanidevelopment.com
Imani Development is an employee-owned economic development consultancy firm with primary offices in Malawi, South Africa and Scotland. Further details available at www.imanidevelopment.com