

STIRLING AQUACULTURE

Project Experience (p1)

Sector studies & support for policy institutions

- The preparation of an aquaculture strategy for Malta (Government of Malta, Ongoing)
- Study on the prospects and opportunities for shellfish farming in Scotland (Scottish Government - 2010)
- Assessment of project document for the development of sustainable marine aquaculture in Cuba (NORAD, 2010)
- Report on drivers for aquaculture development as contribution to UK Government Global Food and Agriculture Foresight Project (BIS - 2010)
- Inputs into Aquashops project, Kenya - Aquaculture Research Into Use: Building Services, Sharing Best Practice with Supporting Policy (UK Department for International Development - 2009-11)
- Study on competitiveness of the European Aquaculture Sector (European Parliament - 2009)
- Assistance to Government of Malawi in developing fisheries and aquaculture policy (Development Alternatives Inc, 2009)
- A GIS-based review of aquaculture development (UK Department for Innovation, Universities and Skills contribution to Future of Food and Farming Foresight Project, 2009)
- Participation in project appraisal mission concerning a proposed public-private partnership for marine fish farm development in Vietnam (NORAD/Centre for Development Cooperation in Fisheries, Institute of Marine Research, Norway, 2009)
- Assistance to Government of Mozambique to develop a National Aquaculture Animal Health Strategy (NORAD/Centre for Development Cooperation in Fisheries, Institute of Marine Research, Norway, 2009)
- Support to EC Aquagenome project on aquaculture industry trends and projections, and assistance in preparing presentation materials for use at a workshop (EC funded project, 2008)
- Report on aquaculture shrimp diseases and control strategies (best management practices and accreditation) with emphasis on grow-out systems (For insurance company, 2007)
- Prospective Analysis of the Aquaculture Sector in the EU (2 volumes in press - EC Joint Research Centre, Institute of Prospective Technological Studies, 2008)
- An economic evaluation of the impact of the salmon parasite *Gyrodactylus salaris*, should it be introduced in Scotland (with Glasgow Caledonian University, SEERAD, 2006)
- Report: Perspectives for aquaculture development and poverty alleviation (DfID, 2006)
- Report: Perspectives on aquaculture development, food safety and trade (DfID, 2006)
- Strategic economic analysis of the ornamental trade in the UK (Defra, 2006)
- Report on the potential impact of technological innovation on the aquaculture industry (Royal Commission on Environmental Pollution, 2003)

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Project Experience(p2)

- Assessment of the potential to develop the trout farming sector in the Highland Regions of Papua New Guinea (Commonwealth Secretariat, 2002)
- Report on the value of the Scottish Label for the farmed salmon industry (Scottish Quality Salmon, 2001)
- Scoping study of the mussel fishery in the Wash Estuary, England (King's Lynn Fishing Industry Cooperative, 2001)
- Report on the Scottish Farmed Salmon Sector: A performance Assessment (Norwegian Export Council, 2000)
- Study on the Nephrops fishery and its contribution to the Highlands and Islands economy (Highlands & Islands Enterprise & Scottish Executive, With PACEC, 2000)
- Review of opportunities for investment in aquaculture world wide (International bank, 1999)
- Study of the commercial potential for the development of a shrimp farm in the Arabian Gulf (Private, 1998)
- Assessment of the status and prospects for aquaculture in Jamaica - Contributions to the South Coast Sustainability Study (Halcrow, 1998)
- Organisation of an international workshop and development of a study document on the concept of open-sea marine parks stocked with behaviourally conditioned fish with the objective of exploitation by traditional methods. (European Parliament, 1997-98)
- Study on the Economic impact of the salmon farming industry in Scotland (with Public and Corporate Economic Consultants Ltd for Highlands and Islands Enterprise and The Scottish Office, 1997-1998)
- A survey of the International export and import of marine shrimp seed (EC, 1997)
- Preparation of a review of the Central and Northern Regions Fish Farming Project in Malawi (EC, 1996-7)
- Report on the present state of the aquaculture sector in the EU member states and its future up to 2005 (European Parliament, 1996)
- Report on the technical aspects and prospects for a sustained development of the aquaculture sector (European Parliament, 1996)
- A financial analysis of salmon farming in Scotland and an International review of farm rents. The project included the building of a computer model to assist the analysis (with Bidwells chartered Surveyors for The Crown Estate, 1995-1996)
- A study of current and future Producer Organisation structures and functions servicing the requirements of the Highlands and Islands fishing fleet (Highlands and Islands Enterprise, 1993)
- Assessment of the impact of EEC regulation 4028/86 upon the development of aquaculture in the EEC (EEC, 1991)
- Development of a computerized species information database (FAO, 1990)

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Project Experience (p3)

- Review of fishery stock enhancement potential in Qinghai Lake, China (FAO, 1990)
- A survey of key production data for farmed Atlantic salmon (private, 1989)
- Study of the opportunities for the use of discharge water from UK power stations for aquaculture (Central Electricity Generating Board, 1989)
- Assessment of and recommendations for the development of the Greek marine and inland aquaculture industry (FAO, 1987)
- Assessment of the impact of Scottish marine aquaculture on the environment (NCC, 1987)
- A study of the opportunities for aquaculture-related industries in Victoria (Victoria Investment Corporation, 1987)
- A survey of commercial opportunities in European aquaculture (Booker, 1986)
- Technical advice on the development of a large-scale commercial fish farm in Uganda (Private Client, 2009-11)
- Baseline water quality study along the shrimp value chain in Bangladesh (UNIDO, 2010)
- Assessment of options for improved efficiency of water use at Wansford Trout Farm (Environment Agency, 2009)
- Survey of water quality analysis practices and facilities in Bangladesh as part of a support programme for strengthening fisheries and shrimp sector inspection capacity and the competitiveness of the shrimp sector (UNIDO, 2009)
- Comparative performance trial of novel solids removal filtration system for use in recirculated aquaculture systems (Private, 2009)
- Advice on small-scale, short-cycle coastal aquaculture technologies to enable poor communities to cope with climate change (DfID, 2008-9)
- Assessment of options for improved efficiency of water use at Humberside Fisheries (Environment Agency, 2007)
- Technical advice concerning the management of wetlands for sustainable livelihoods in Nepal (The Wildfowl & Wetlands Trust/DARWIN, 2006-09)
- Technical advice to catfish farmer in Nigeria (Private, 2006)
- Technical support to private developer of marine recycle system (2002-2005)
- Support to Department of Fisheries in Brunei for the sustainable development of aquaculture (Commonwealth Secretariat, 2003-2004)
- Advice on monitoring programme for chemical contaminants to ensure the hygiene of fishery products (Private client, 2003)
- Investigation into failure of fish cage net in Ireland (private client, 2002)
- Assessment of Risk and development opportunities for site redevelopment (Western Isles Enterprise, 2001)

Technical Assistance and Advice

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Project Experience (p4)

- Review of muddy off-flavours in cultured fish and outline specifications for a recirculated purging system (Private Client, 2000)
 - Investigations into unexplained mortalities at a salmon farming site in Scotland (Private, 2000)
 - Technical assistance to CAMP shrimp farm, Jamaica (Commonwealth Secretariat, 1999)
 - Provision of advice on offshore cage installations and related strategic decisions (Private, 1998)
 - Assessment of commercial shrimp farm facilities and operation in Jamaica (Commonwealth Secretariat, 1998)
 - Assessment of tank outlet design with recommendations for improvements (Private, 1998)
 - Shrimp project technical evaluation, Luannan County, China (FAO, 1996)
 - Technical and management support to 250 ha shrimp farm, Malaysia (Samak Aquaculture, 1996)
 - Technical evaluation of a marine shrimp hatchery, Jamaica (CDC, 1996)
 - Review of nutrient requirements and diet formulations for sea bream and sea bass (Private, 1996)
 - Provision of technical support to Department of Fisheries North West Russia to develop an action plan for hatchery facilities and fishery management (with Produce Studies Ltd, EC (taxis), 1994/5)
 - A study and preparation of manual on the use of water recirculation for rearing Atlantic salmon smolts (with Babbie, Shaw and Morton for Department of Fisheries and Aquaculture, New Brunswick, 1994)
 - Advice to insurance company on the effect of locating a sewage outfall pipe near a commercial salmon farm (Aquaculture Risk Control, 1993)
 - Testing of a filter media for its suitability for use in the fish culture industry and aquarium trade (private, 1993 & 1995/6)
 - Investigations into the reason for poor growth performance at a cage salmon farm (private, 1992)
 - Development of a Quality Assurance Scheme and manual for the Irish salmon farming industry (BIM, 1989)
 - Provision of independent technical advice to the conversion of redundant oil refining facilities to a salmon culture unit (Irish National Petroleum Corporation, 1987-90)
- Project Management**
- Provision of secretariat and management of projects for Commercial Aquaculture Producers of Africa (CAPA) (EC, CDE 2007-ongoing)
 - Coordination EC Research and Demonstration project CSN-INTRAN (AquaInnovation) promoting innovation and technology transfer within New EU Member States (EC, 2003-06)

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Project Experience (p5)

- 18 month technical management contract for offshore sea bream farm project in Libya (Private, 2000 - 2003)
- 18-month technical management contract for large sea bass and bream producer in Turkey (2000 - 2001)
- 3-year technical management contract for grow-out operations (both tank and cage) of large bass and bream producer in Italy (1998-2001) (extended to include hatchery in 2000).
- Manager of a pilot sea bream cage culture project at Baia d'Abra, Madeira (Department of Fisheries, Madeira, Portugal, 1996-1999)
- Partners and technical managers of 500t sea bream and sea bass farm in Malta (Malta Mariculture Limited, 1992-1997)
- Start up management for a sea bass and bream hatchery at the National Aquaculture Centre, Malta (Government of Malta, 1992)
- Provision of staff, management and technical inputs to the Central and Northern Regions Fish Farming Project in Malawi (EC, 1988 - 1995)
- Start up and management support (including EC grant application, business plan and management accounts) for a large commercial trout farm in Scotland (Trossachs Trout, 1989-91)
- Establishing and managing a pilot scale salmon hatchery and ongrowing unit in the Falkland Islands (Falkland Islands Development Corporation, 1986-90)
- Report on the status of artemia replacement diets in aquaculture hatcheries worldwide in support of due diligence procedures (Private, 2009)
- Assessment of salmon farm sites as part of due diligence (private 2009)
- Support for due diligence on proposed purchase of aquaculture sector pharmaceutical company (private 2008)
- Assessment of biosecurity risks and biosecurity management at major salmon producing company in Chile (for insurance company, 2008)
- Review of aquaculture product contamination incident and provision of expert report (Private, 2008)
- Technical advice to legal team in connection with failure of an oxygenation system at an intensive salmon smolt hatchery (Insurance company, 2007)
- Technical investigations and advice into failure of a recirculated turbot aquaculture system in Denmark (Insurance company, 2007)
- Technical review of proposed marine fish and crustacean farm plans on behalf of prospective investor (Private, Australia, 2006)
- Expert advice to legal investigations in connection with feed contamination incident affecting Mediterranean sea bass and sea bream producer (Private, 2005)
- Risk assessment advice for crop mortality insurance of shrimp farm in Madagascar (Private. 2005)

Business Audits, Insurance Assessments & due diligence

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Project Experience (p6)

- Support for commercial due diligence on aquaculture feed sector company (Private Finance Company, 2005)
- Assessment of need for dwelling house at fish farm (Dumfries Council, 2004)
- Stock assessment of commercial mussel farm associated with transfer of business to new owner (D.M McKinnon Estates Ltd., 2004)
- Liability report relating to alleged pollution of trout farm (Thompson Mitchell, 2004)
- Evaluation of commercial opportunity for _____ (Salmon breeding company) (Highlands & Islands Enterprise, 2004)
- Assessment and consultancy advice to private shrimp farm in Madagascar (Proparco, 2004)
- Investigation into failure of life support system following a power failure at a recycle salmon hatchery (Private, 2002)
- Inspection of farm records following halibut farm mortality (Private, 2001)
- Review of IPN and ISA regulations and appraisal of management options” (Private Client, 2000)
- Review of environment, site characteristics, and site potential for fish farm site (Private Client, 2000)
- Shrimp farm appraisal in Philippines on behalf of an investor (Private Client, 1999)
- Appraisal of proposed farm expansion plans (World Bank, 1999)
- Technical appraisal of novel shellfish harvesting system (Argyll & The Islands Enterprise, 1999)
- Evaluation of shrimp farms in Peru for stock insurance (RMB Aquaculture Insurance, 1998)
- Assessment of oil pollution incident at a trout farm in Wiltshire (Ministry of Defence, 1998)
- Assessment of oil pollution incident at a trout farm in Gloucestershire (McLarens Toplis, 1997-98)
- Assessment of oil tainting incident at trout farm in East Lothian (McLarens Toplis, 1996)
- Advice in legal case involving a fish farmer (Birketts Solicitors, 1996)
- Assessment of rainbow trout broodstock loss claim, Northern Ireland (Arnold & Green Liability Adjusters, 1995)
- Carry out management audit to advise an American bank on a possible investment in a major vertically integrated salmon farming operation in Chile (First National Bank of Maryland, 1994)
- Technical and financial review of a commercial aquaculture operation on behalf of a

bank (Bank of Scotland, 1994)

- Assessment of oil contamination on Shetland salmon farms following the Braer oil spill (Aquaculture Risk Control, 1993)
- Assessment of hatchery operation/loss adjustment, system failure claim, Northern Ireland (C & H Jefferson, 1992-93)
- Review of existing production strategies and recommendations for new measures for a trout fishery (private, 1988-90)

Market and Product Studies

- Technical assistance to the Commercial Aquaculture Producers of Africa (CAPA) to facilitating a fair-trade label for aquaculture fish products and exports in Africa (Including the production of "Ethical certification for Africa: a review and manual of procedures) (EC TradeCom Facility, 2010)
- Market opportunity study for carbon compounds to the aquaculture and algae culture sector (Private, 2010)
- Assessment of the market status and prospects for Atlantic salmon ova, parr and smolt producers, especially in Scotland. (Highlands and Islands Enterprise, 2009)
- Report on the market for sea bass and sea bream in the UK. (Private, 2008)
- Market research report - The European tuna ranching sector (Private, 2007)
- Support to market feasibility study for artemia replacement feed products (Private, 2006)
- Study on the importance of fish and other products from novel and conventional aquaculture to the poor and strategies to enhance their livelihoods (DFID, 2003-2006 with World Fish Centre)
- Warmwater fish production as a niche production and market diversification strategy for organic arable farmers with implications for sustainability and public health (RELU, 2005 to present)
- Study of the UK market for air freighted fresh fish imports and exports (With Alan Stratford & Associates for the Humber forum, 2004)
- Consumer perceptions of aquatic products produced from integrated systems (focus group studies in UK and France). (EC combined RTD and demonstration project - GENESIS, 2002-2005)
- Study on the market for aquaculture produced seabass and seabream species (European Commission, 2004)
- Marketing plan for Jamaica ornamental fish industry (Agricultural Support Services Project, 2002)
- Report on the global market for aquatic animal health products (Published by Animal Pharm Reports, PJB Publications Ltd, 2002)
- Appraisal of market opportunities for a new filter system for intensive aquaculture (Private, 2001)

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Project Experience (p8)

- Appraisal of opportunities for pharmaceutical products aimed at the ornamental sector (Private, 2000)
- Organic salmon production and consumption: Ethics, Consumer Perceptions and Regulations. (EC RTD project "ORGSAL", 2000)
- The potential for selective media for the isolation of pathogens causing BKD and RTFS in salmon and trout farmed in the UK." (Private client, 2000)
- Further investigations into the market for diagnostic kits for the salmon and trout industries (Private Client, 1999)
- Market evaluation study for new antimicrobial compound (Private, 1998)
- Report on the global market for aquatic animal health products (Published by Animal Pharm Reports, PJB Publications Ltd, 1998)
- Novelty verification study and economic impact assessment for new feed additive (Private, 1998)
- A study of the market for fish cultured in Madeira (Direccao Regional das Pescas, Madeira, 1997),
- Assessment of the potential for obtaining polyunsaturated fatty acids with pharmaceutical potential from freshwater fish and shellfish (private, 1996)
- Study into the potential market for both microalgae products and production equipment (private, 1996)
- Product and market potential assessment for an aquaculture cage monitoring system (private, 1995)
- Study into the potential international market for a fish farm security system (private, 1994)
- Study into the cost effectiveness of hydrogen peroxide based sea lice treatments for use in salmon culture (Solvay Interlox Ltd, 1994)
- Preparation of database of all marine cage fish farms in the UK. The database was for use as a marketing tool (private, 1994)
- A study into the potential market of Hybrid Striped Bass particularly in France and the UK. The study also included identifying how the product attributes might best be placed to defend any market positions chosen (AquaFuture Inc., 1994, revised 1997)
- Study for a chemical company into the effect of vaccines on the market for antimicrobials in the Scottish salmon industry (Clearview Marketing, 1993)
- A study of the international market for feed administered sea lice treatments for use in salmon culture (private, 1993)
- An investigation of the market potential for African Catfish cultured in Scotland (Scottish Enterprise, 1993)
- An assessment of the market for antibiotics in the Mediterranean mariculture industry (private, 1992)

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Project Experience (p9)

- An assessment of the market for antibiotics in the Spanish aquaculture industry (private, 1992)
- An assessment of the market for antibiotics in the Scottish salmon farming industry (private, 1991)
- Appraisal of the opportunities for processing and exporting fish products from Kamchatka, USSR, to the international market (ECO/SETCO, 1991)
- An examination of marketing margins in a selection of fish processing firms in developing countries (FAO, 1991)
- An assessment of the worldwide market for products to treat sea lice infestation in farmed salmon (Elanco Products Ltd, 1991)
- An examination of the market prospects for coho salmon produced in Yugoslavia (FAO, 1989)
- A study of opportunities for performance and health enhancing products in intensive aquaculture (Cyanamid, 1989)
- Marketing activities of salmon smoking companies in the UK (Highlands and Islands Development Board and Scottish Salmon Board, 1989)

Design Survey and Construction

- Egypt: Outline design and costings for a tilapia and catfish breeding centre in Egypt (WorldFish 2005)
- Development of outline shrimp hatchery designs for Indonesia (Private Client, 2000)
- Site visit and recommendations for further development of a tilapia farm in Kuwait (Private, 1999)
- Survey of oyster beds of Loch Ryan to assess potential damage of dredging operation (Stena Sealink, 1996-1997)
- Preparation of outline specifications for tender to design and construct a sturgeon hatchery, Kazakhstan (Kazakhstan Caspishelf, 1995/1996)
- Design, supply and installation of an offshore fish farm in Madeira (Department of Fisheries, Madeira, Portugal, 1995)
- Supply and installation of equipment and facilities for culture of tilapia, sea bream, grouper and snapper. System included facilities to control the culture conditions through the use of recycling, water treatment, controllable temperature and photoperiod (In partnership with Farmocean International and Generator Systems on behalf of Kuwait Institute for Scientific Research, 1994)
- Assessment of potential locations in Scotland for hybrid striped bass farming and processing activities (Locate in Scotland, 1994)
- Detailed design of aquaculture research laboratories (broodstock, marine larvae, tilapia hatchery and systems research) (Kuwait Institute for Scientific Research, 1993)
- Advice and detailed comments on design of aquaculture research laboratory for UK university (Babtie Electrical and Mechanical, 1993)
- Outline and detailed design, supervision of construction and start up management for

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a sea bass and bream hatchery project at the National Aquaculture Centre, Malta (Government of Malta, 1992)

- Site survey, outline and detailed design and construction of the Machrihanish Marine Environmental Laboratory, the Institute of Aquaculture's marine research station on the West coast of Scotland (Institute of Aquaculture, 1991-92)
- Design and construction of an African catfish hatchery for the Central and Northern Regions Fish Farming Project in Malawi (EC, 1991)
- Design of a lobster holding unit for wild-caught lobster before sale (Loch Shinn Game, 1991)
- Survey, outline design, bills of quantities, and EC grant application for the modernisation of a farm producing trout for the restocking market (River Doon Trout Co. Ltd, 1991-92)
- Site identification, design and costing for a new salmon hatchery in Wales (NRA, 1991)
- Refurbishment and modernisation of two existing salmon hatcheries in Wales (NRA, 1989-90)
- Survey of the oyster stocks in Loch Ryan and recommendations for future management of the resource (private, 1988)
- Survey of potential salmon hatchery sites, and design of the proposed facility in Chile (private, 1988-89)
- Detailed design and preparation of tender documents for a sea bass hatchery and land-based raceway on-growing system in Libya (FAO, 1987)
- Topographical survey and outline design of a research, training and demonstration facility in Malawi (EC, 1987)

Feasibility Studies and Business Plans

- Study of the feasibility of a commercial recirculated aquaculture system for marine fish & shrimp in Bahrain (Private, 2011)
- Development of Business Plan for large commercial fish farm in Uganda (Private, 2010)
- Pre-feasibility study for proposed shrimp farm and other aquaculture activities in Sierra Leone (Private, 2009)
- Initial appraisal of proposed aquaculture project in Tanzania (Private, 2008)
- Feasibility study into an Integrated Scottish research initiative on seafood (summary report and 4 annexes, Scottish Funding Council, 2007)
- Study in support of feasibility assessment - Development of technologies for rearing bluefin tuna (Private, 2007)
- Pre-feasibility study on the potential for developing aquaculture and fisheries in <Scottish Loch> as a commercial venture (Private, 2006)
- Pre-feasibility study for an African catfish production unit (Private, 2006)
- Support for pre-feasibility study for recirculating tilapia farm in Tanzania (Private, 2006)

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Project Experience(p11)

- Technical advice in support of feasibility study for grouper farming in Malaysia (Private, 2005)
- Pre-feasibility study on the creation of a fishing loch in Scotland (Private, 2005)
- Pre-feasibility study for shrimp farm development in Saudi Arabia (Private client, 2004)
- Appraisal of opportunities for aquaculture development on the West Coast of Scotland (Private Client, 2004)
- Feasibility assessment for aquaculture research centre in the Maldives (Private, 2003)
- Site inspection and appraisal for cage marine fish farm in Eastern Australia (Private Bank, 2003)
- Feasibility study for high health shrimp seed production in Jamaica (Commonwealth Secretariat, 2001)
- Site inspection and initial appraisal for shrimp farming project in Turkey (Private Client, 2000)
- Site inspection and Advice on establishing high-density closed shrimp rearing system in Lebanon (Private Client, 2000)
- Feasibility study for proposed shrimp farm in Jamaica (Private Client, 2000)
- Shrimp farm site assessment and hatchery site selection in Indonesia (Private Client, 1999)
- Feasibility study for marine aquaculture research station in Oman (National Engineering Office, 1998)
- Pre-feasibility study on shrimp farming in Kuwait (Private, 1998)
- Assessment of the options for development at a fish farm in Perthshire (Private, 1997)
- Shrimp and finfish farm feasibility study, West Sumatra, Indonesia (Private, 1996)
- Pre-feasibility study for an integrated tilapia and shrimp culture project in Jamaica (Private, 1996)
- Feasibility study for an integrated shrimp farming company (hatchery, 2000ha farm, processing plant) in East Africa (Private, 1996)
- Pre-feasibility study into a proposed aquaculture site on the River Derg, Co. Tyrone (Private, 1996)
- An assessment of feasibility into locating a fish rearing facility in an old water treatment plant, Scotland (Monklands District Council, 1996)
- Feasibility study for the construction of earth fish ponds, Scotland (Scottish Natural Heritage, 1995)
- Preparation of business plan and grant application for a proposed rainbow trout farm, Scotland (Ben Vorlich Trout Ltd, 1994)

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Project Experience(p12)

- Pre-feasibility study to review plans for aquaculture development in the Sultanate of Oman (Ministry of Agriculture and Fisheries Resources, Oman, 1993)
- Assessment of proposal to farm warm water fish and ornamentals in a heated recycle system in Scotland (private, 1993)
- Study on the use of power station waste heat for the use of aquaculture (ADAS, 1993)
- Pre-feasibility and feasibility study including an Environmental Impact Statement on the proposed conversion of a disused desalination plant into a marine fish hatchery in Malta (private, 1992-ongoing)
- Assessment of potential for fish culture using waste heat from a Scottish distillery (William Grant & Sons Ltd, 1992)
- Assessment of a proposal to farm tilapia using waste heat from a Scottish distillery (Glen Moray Distillery, 1992)
- Assessment of a proposal to farm European sea bass and bream in waters off the West coast of India (Goetze (India) Ltd, 1992)
- Assessment of a proposal to use waste hot water from a Scottish power plant to farm European sea bass (Enterprise Ayrshire, 1992)
- Study of the technical and economic feasibility of a European hatchery and production unit serving the ornamental fish trade (private, 1991)
- Business plan and EC grant application for a new trout ongrowing unit in Scotland (Ben Vorlich Trout Ltd, 1991)
- Feasibility study and outline business plan for a Spanish-based sea bass and bream hatchery (private, 1991)
- Study of the feasibility of the construction of an artificial lake for a put and take trout fishery in central Scotland (private, 1991)
- Assessment of a proposal for an intensive tilapia culture unit on the River Ulhas, near Bombay (Ion Exchange (India) Ltd, 1990)
- Evaluation of the technical and financial feasibility of two South American shrimp farm proposals (CDC, 1990)
- Recommendations for a corporate development plan for aquaculture in Saudi Arabia, including production strategies and budgets for the culture of tilapia and shrimp (Saudi Fisheries Company, 1989-90)
- Investigation of the potential for ship-based transport of goods for aquaculture (Harrisons (Clyde) Ltd, 1987)
- Outline of the possibilities for aquaculture in the village environment, Nigeria (private, 1987)
- Review of resources, constraints and benefits and possible options for extensive aquaculture development in Swaziland (CDC and Swaziland Government, 1987)
- Feasibility study and site selection for a sea bass and bream hatchery and cage unit (Booker Tate, 1987)

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Project Experience (p13)

- Training and Study Visits**
- Community salmonid hatchery group practical training: Broodstock handling and good hatchery practice (with Howietoun Fish Farm) (East Ayrshire Council, 2008)
 - Organisation of Aqualabs advanced training course on aquatic animal disease diagnostics (with Aqua TT, EC Marie Curie Conferences, 2006)
 - Organisation of an on-line course in Information Technology in Aquaculture (BBSRC supported, 2002-2003)
 - Organisation of a course in Environmental monitoring and management (with Environmental Services) (BBSRC supported, 2002)
 - Organisation of a course in Aquaculture Feed Management (with University of Glasgow) (BBSRC supported, 2002)
 - Organisation of a 3-day course and study visit for 4 study fellows from China (UK-China Training Ltd., 2001)
 - Development of computer-based materials (on CD-ROM) for Computers in Aquaculture course (With Aqua TT, EU Leonardo da Vinci project, 2000)
 - Provision of a 3-day course in recirculation systems for study fellow from Singapore (2000)
 - Delivery of six day course on recirculation systems for aquaculture (SHILAT, Iran, 1999)
 - Delivery of a six day course on trout farm engineering (SHILAT, Iran, 1997)
 - Three day course on “Computers in Aquaculture”, a course on communication and Information Technology in Aquaculture for the European Aquaculture Industry (AquaTT (EU Leonardo Project), 1997)
 - Development and supervision of a 2 year research programme on intensive aquaculture water recirculation technologies in partnership with Aqua Systems Ltd (Teaching Company Directorate, 1996-1998)
 - Provision of inputs to shrimp health management course, Thailand (AAHRI, 1996)
 - Four day workshop on computers in aquaculture planning and management (Institute of Aquaculture, 1996)
 - Delivery of talk at Agrivision '96 at Hyderabad, India on 'Aquaculture: what Britain has to Offer' (DTI, 1996)
 - One day workshop on the use of software prepared to assist in the design and appraisal of salmon hatcheries and smolt units using water recirculation (Dept. of Fisheries & Aquaculture, New Brunswick, 1995)
 - Two day workshop on On-line information and communications for the aquatic sciences (Institute of Aquaculture, 1994)
 - One day training of extensionists in participatory methods of extension, Malawi (EC, 1994)

Project Experience (p14)

- Provision of an expert on fish transportation to conduct two workshops in Bangladesh. Field based practical training was also used to improve trainees skills and knowledge of fish transportation (BAFRU, 1994)
- Development of a database to help manage extension services in Malawi. Training in the use of the database (EC, 1992-1994)
- Developing and presenting a workshop in communication skills for fish farming extensionists in Malawi (EC, 1992)
- Development and management of a new short course specifically designed for the fish farming industry, *Financial Management for Fish Farmers* (1991)
- Development of course material for a new distance-learning MSc in Aquaculture (Deakin University, Australia, 1991)
- Organisation of visits and presentations of the fish processing industry to a delegation of senior personnel from the Regional Authority of Kamchatka during their UK visit (Regional Authority of Kamchatka, 1991)
- Developing and presenting a workshop in catfish hatchery techniques, including biological, technical and design considerations (EC, 1991)