

UK Submission of the FAO Code of Responsible Fisheries (CCRF) Aquaculture Questionnaire 2017

Background Information

The [Code of Conduct for Responsible Fisheries](#), (also known as CCRF, or the Code) was adopted in 1995 by the FAO, and seeks to facilitate change and adjustment within fisheries and aquaculture in order to ensure that resources are utilized in a long-term sustainable manner.

In accordance with [Committee on Fisheries Sub-Committee on Aquaculture](#) recommendations, a biennial questionnaire on the aquaculture provisions of the Code was first circulated globally in 2013; the aim of which was to enable the FAO to compile a comprehensive set of data and carry out analysis of the global aquaculture performance in relation to the Code.

- This 2017 UK submission is in accordance with the FAO CCRF questionnaire structure and details the essential aquaculture management instruments and measures across the UK, as well as mechanisms that support or enhance these instruments and measures
- Aquaculture is a devolved responsibility in each Devolved Administration (DA), therefore aquaculture management instruments, support mechanisms, etc., are often different across the UK
- As such, to produce 'UK wide' answers to the questions held within this document is a challenge as each nation needs to be given the opportunity to produce its own responses
- Each of the Fisheries Administrations in Northern Ireland, Scotland, England and Wales have provided responses with a score and a written explanation – these are given in the following tabulated questionnaire
- The Fisheries Administrations that provided the 2017 responses were:
 - **Northern Ireland** – Responses provided by the **Department of Agriculture, Environment and Rural Affairs (DAERA)**: <https://www.daera-ni.gov.uk/>
 - **Scotland** – Responses provided by **Marine Scotland**: <http://www.gov.scot/About/People/Directorates/marinescotland>.
 - **England and Wales** – Responses provided by the **Centre for Environment, Fisheries and Aquaculture Science (CEFAS)**: <https://www.cefasc.co.uk/>, and **Welsh Government** (<http://gov.wales/?lang=en>)
- An overall 'UK score' has been assigned to each of the questionnaire items based on the Fisheries Administrations responses
- The coordination of this UK response was undertaken by the Sea Fish Industry Authority (Seafish: <http://www.seafish.org/>)
- Approval for Seafish to organise/coordinate the UK questionnaire came from the Department of Environment, Food and Rural Affairs (Defra: <https://www.gov.uk/government/organisations/department-for-environment-food-rural-affairs>)
- Seafish submitted the 2017 questionnaire on behalf of the UK in February 2017 (Seafish contact: Mr Lee Cocker, Aquaculture Manager lee.cocker@seafish.co.uk)

Questionnaire Scoring

- 0 for no or none
- 1 for very low effectiveness and extent of implementation or enforcement
- 2 for low
- 3 for moderate
- 4 for high
- 5 for very high

FAO Code of Responsible Fisheries (CCRF) Aquaculture Questionnaire 2017 – UK Submission	
Item	Explanation
Part 1 consists of the essential management instruments or measures; Part 2 are the support mechanisms to facilitate the measures listed in Part 1, and Part 3 are the enhancing mechanisms to improve the implementation of the measures listed in Parts 1 and 2. (Refer to the Explanations for the rating).	
PART 1. ESSENTIAL MANAGEMENT INSTRUMENTS AND MEASURES	Aquaculture development occurs in an orderly manner if its development objectives are clear and its governance is in place. Policy and its enabling regulations regulate the sector development while a Plan guides its development. Rating should be based on whether these are present and the extent of their implementation. The explanatory statements in each cell below indicate the optimal (4 or 5) and in few cases the sub optimal (1, 2 or 3).
1) The UK has.../ In the UK	
1.1) Aquaculture Policy	UK SCORE 5
	<p>5. Northern Ireland: Aquaculture policy is enabled by local legislation namely the Fisheries Act (Northern Ireland) 1966 which allows DAERA to grant Fish Culture Licences authorising aquaculture activities. The key policy drivers are Going For Growth, The Rising Tide Report which reviews the Bottom Grown Mussel sector on the Island of Ireland and the Reformed CFP. DAERA provide support to the aquaculture sector with a small Aquaculture/Fish Health policy team headed by a Grade 7, and deal with specifics relating to aquaculture licence applications and supporting administrative processes such as Appropriate Assessments under the Habitats Directive, and additional necessary consents from other authorities such as landowners and the Maritime and Coastguard Agency.</p> <p>5. Scotland: The Scottish Ministerial Group for Sustainable Aquaculture (MGSA) was established in 2013, working alongside the Aquaculture & Fisheries (Scotland) Act 2013 to secure the sustainability of aquaculture growth and its interactions, supporting Scotland's industry to achieve its targets set out in Scotland's National Marine Plan (NMP). The NMP: http://www.gov.scot/Publications/2015/03/6517. The MGSA was replaced by the Aquaculture Industry Leadership Group in February 2017.</p> <p>4. England: Defra are supportive of industry lead sustainable growth of sector. There are no specific growth targets but there are government mechanisms (e.g. European Maritime and Fisheries (EMFF) funding: https://www.gov.uk/guidance/european-maritime-and-fisheries-fund-emff-before-you-apply), regulations (Shellfish Act 1967) and initiatives (e.g. Marine Planning) which are aimed at providing the support to the industry. In addition, there is a UK-wide aquaculture development plan running to 2020 in the form of The United Kingdom Multi Annual National Plan (MANP) for Sustainable Aquaculture: www.gov.uk/government/publications/sustainable-aquaculture-the-united-kingdom-multiannual-national-plan-manp.</p> <p>5. Wales: Welsh Government supports the continued sustainable growth of aquaculture and recently it published a list of policy priorities for the industry: http://www.wlga.wales/eu-policy-priorities. Aquaculture is one of the UK's key food production sectors and helps to underpin sustainable economic growth, particularly in rural and coastal communities.</p>
	UK SCORE 4
1.2) Aquaculture Development Plan	UK SCORE 4
	<p>5. Northern Ireland: Contributes to the UK Multi-Annual National Plan for Aquaculture. Aquaculture is already well developed to the extent that there is now little scope for further marine or freshwater developments due to the limited availability of suitable sites. All 5 sea loughs support aquaculture. There is very limited potential for further development of marine sites however, and a moratorium on the granting of any further licences for the bottom culture of mussels has been in place since 2002. Aquaculture and other legitimate developments are provided for in the DAERA Marine Plan: https://www.daera-ni.gov.uk/articles/marine-plan-northern-ireland.</p> <p>5. Scotland: EU member States must have a Multi-Annual National Plan for Aquaculture which includes sustainable growth targets and best practice. The UK plan and Scotland's NMP includes industry production targets to grow 210,000 tonnes of marine finfish (180,352 tonnes in 2015) and 13,000 tonnes (7,506 tonnes in 2015) of shellfish sustainably with due regard to the marine environment, by 2020.</p> <p>3. England: There are no specific aquaculture growth targets however the MANP for the UK does highlight a number of UK government initiatives which support England's policy position of supporting industry-lead growth.</p> <p>4. Wales: The Welsh Aquaculture policies are contained within the draft Wales National Marine Plan, which is currently out for consultation: http://gov.wales/topics/environmentcountryside/marineandfisheries/marine-planning/welsh-national-marine-plan/?lang=en.</p>
	UK SCORE 4

<p>2) Regulatory measures to support aquaculture development</p>	<p>UK SCORE 5</p>	<p>5. Northern Ireland: A number of measures are in place to support the aquaculture sector. The key funding scheme is the European Maritime and Fisheries Fund. Specifically DAERA enables the development of Aquaculture through fish culture Licences under Section 11 of The Fisheries Act (NI) 1966, the same provision preventing the operation of aquaculture without such a licence by establishing an offence. Further licences confer the ownership of a species under cultivation at a specific location to the licence holder, preventing species under aquaculture being perceived as species within a public fishery (or unprotected species). All aquaculture developments are subject to an Appropriate Assessment under the Habitats Directive determining the impacts on features of conservation value designated under this Directive. This assessment informs DAERA and other stakeholders of the desirability or otherwise of the proposed development and takes into account such issues as discharge to waterways or biosecurity, the former being controlled by a Discharge consent under the Water Order (NI) 1999.</p> <p>All these issues are backed up by an inspectorate service and inappropriate development or practices in breach of consent conditions would be subject to enforcement action. In the event of unforeseen impacts or concerns DAERA retain the ability to alter consents by application of additional conditions, alteration of existing conditions or by revocation. DAERA similarly applies the Aquatic Animal Health Regulations (NI) 2009 establishing the controls of the EC Directives as they apply to the health requirements for aquaculture animals, the certification requirements for import/placing on the market of aquaculture animals and measures against diseases in aquaculture animals, and these are applied by the inspectorate.</p> <hr/> <p>5. Scotland: Licenses and consents</p> <p>Scottish Environment Protection Agency (SEPA) consents discharges from fish farms, and routinely inspects for conformity to all environmental regulation, including the provisions of the Water Framework Directive and related permissions and controls: https://www.sepa.org.uk/environment/water/aquaculture/.</p> <p>Marine Scotland grants Marine Licenses (Section 20, Marine (Scotland) Act 2010) for navigational risk (replacing the previous consenting regime under the Coast Protection Act 1949) or discharge from boat: http://sh45inta/Topics/marine/Licensing/marine.</p> <p>Crown Estate leases the foreshore: https://www.thecrownestate.co.uk/rural-and-coastal/coastal/aquaculture/.</p> <p>Local Authorities grant planning consent for Marine and freshwater fish farms (both shellfish and finfish) under the Town and Country Planning Act 1997. When considering an application the local authority will conduct a detailed assessment of the potential impacts of the development and may request the submission of an Environmental Statement (full EIA). It will also seek advice from Marine Scotland, SEPA, Scottish Natural Heritage, Historic Scotland, and local District Salmon Fishery Boards on potential impacts of the development on water quality, interactions with predators, wild salmonids, species and habitats, conservation areas, landscape, marine cultural heritage, and noise.</p> <p>Regulations</p> <p>Marine Scotland regulates fish health and security under the Aquatic Animal Health (Scotland) Regulations 2009: http://www.legislation.gov.uk/ssi/2009/85/contents/made.</p> <p>Marine Science Scotland's Fish Health Inspectorate (FHI) routinely inspects fish farms for conformity with all statutory requirements under the Aquatic Animal Health (Scotland) Regulations 2009. MSS's Fish Health Inspectorate also authorises Aquaculture Production Businesses (APBs) to operate, and discharges from chemotherapeutants from wellboats are regulated under the Food Environment Protection Act 1985(II Deposits in the Sea) and section 34 consents issued under the Coast Protection Act 1949.</p> <p>Marine Science Scotland's Animal Health Programme aims to provide regulation and scientific advice underpinned by research to support the Scottish Government's vision of a sustainable, growing and diverse aquaculture industry while safeguarding the high health status of farmed wild fish and shellfish stocks.</p> <p>Other controls</p> <p>The Scottish Government introduced measures to ensure the continued protection and improvement of Scotland's shellfish growing waters by integrating these within the river basin management planning process. A Designation Order identifies 84 waters as 'shellfish water protected areas, and regulations set environmental objectives for those areas: http://www.scotland.gov.uk/Topics/marine/Fish-Shellfish/18716.</p> <p>Escapes of farmed fish and parasite control are covered by measures under the Aquaculture and Fisheries (Scotland) Act 2013: http://www.legislation.gov.uk/asp/2013/7/enacted.</p> <p>Data</p> <p>Fish Farm records are required under The Fish Farming Businesses (Record Keeping) (Scotland) Order 2008 (http://www.legislation.gov.uk/ssi/2008/326/contents/sld/made), and the Aquaculture and Fisheries (Scotland) Act 2013 (http://www.legislation.gov.uk/asp/2013/7/enacted).</p> <p>Scotland's Aquaculture Database contains data collected by SEPA, Marine Scotland, Food Standards Agency Scotland (FSAS) and The Crown Estate through their regulatory function: http://aquaculture.scotland.gov.uk/.</p>
--	---------------------------	---

		<p>5. England and Wales: A number of measures are in place to support the English and Welsh aquaculture sectors. The Welsh Government is reviewing the existing shellfish regulatory framework as a result of changes made by the Environment (Wales) Act 2016: http://gov.wales/topics/environmentcountryside/consmanagement/natural-resources-management/environment-act/?lang=en</p>
2.1) Access rights to land and water bodies	UK SCORE 5	<p>5. Northern Ireland: Legal provision exists. Marine sites are subject to land-owner consents e.g. from the Crown Estates and private land-owners.</p>
		<p>5. Scotland: Under the Land Reform (Scotland) Act 2016 everyone can exercise access rights over most land and inland water in Scotland, providing they do so responsibly. This applies to rivers, lochs, reservoirs, riverbanks, loch shores, beaches, and the coast.</p>
		<p>4. England and Wales: The development of fish and shellfish farms in England is subject to land-owner consent both in the marine and the freshwater environments. There are no inherent rights to access land and water bodies for the purpose of aquaculture development.</p>
2.2) Registration of aquaculture farms and hatcheries	UK SCORE 5	<p>5. Northern Ireland: All farms and hatcheries must be authorised as Aquaculture Production Businesses under the Aquatic Animal Health Regulations (NI) 2009. Details of all authorised sites are published on the DAERA website: https://www.daera-ni.gov.uk/.</p>
		<p>5. Scotland: Details of all aquaculture farms and hatcheries are maintained for authorised APBs by the Marine Scotland FHI. The Aquatic Animal Health (Scotland) Regulations 2009 (2009 Regulations) implement the Council Directive 2006/88/EC on animal health requirements for aquaculture animals and products thereof, and on the prevention and control of certain diseases in aquatic animals. The 2009 Regulations requires the authorisation of all APBs and replaces previous legislation (Registration of fish and Shellfish Farming Business (Scotland) Order 1985- as amended) that required the registration of fish and shellfish farming businesses. The authorisation procedure is undertaken on behalf of the Scottish Ministers by the FHI. APBs are defined as any undertaking, whether for profit or not and whether public or private, in carrying out any of the activities related to the rearing, keeping or cultivation of aquaculture animals: http://www.gov.scot/Topics/marine/Fish-Shellfish/FHI/authorisation/apb</p>
		<p>5. England and Wales: All aquaculture production businesses are required to be authorised by the Competent Authority, in England and Wales under the Aquatic Animal Health (England and Wales) Regulations 2009. This is the Cefas Fish Health Inspectorate acting on behalf of Defra and Welsh Government. The authorisation process is risk based with higher risk businesses subject to full authorisation and lower risk activities registered under a lighter regulatory regime: www.gov.uk/guidance/fish-shellfish-or-crustacean-farm-authorisation. A register of authorised aquaculture production businesses is published at: www.cefas.co.uk/eu-register/</p>
2.3) Zonation (area for aquaculture, or aquaculture systems or for species culture)	UK SCORE 4	<p>0. Northern Ireland: Not for DAERA. Applications for aquaculture sites are not restricted by zoning. All sea loughs have active aquaculture developments.</p>
		<p>5. Scotland: The Town and Country Planning (Marine Fish Farming) (Scotland) Order 2007 Article 5 signals that marine waters are divided into marine planning zones. Article 5(1) designates the local authority which is to be the planning authority for the purposes of marine fish farming within a particular marine planning zone: http://www.gov.scot/Topics/marine/seamanagement/nmpihome/Productive/AqZones Shellfish farms are protected by being located in sites designated under The Water Environment (Shellfish Water Protected Areas: Designation) (Scotland) Order 2013: http://www.gov.scot/Topics/Environment/Water/15561/ShellfishWaters</p>
		<p>3. England: Aquaculture areas are included within England's Marine Spatial Plans. Further information on marine special planning in England can be found at: www.gov.uk/government/collections/marine-planning-in-england. In addition The Alien and Locally Absent Species in Aquaculture (England and Wales) Regulations 2010 may constrain the aquaculture of certain species in parts of the country where they are normally absent.</p> <p>3. Wales: Welsh Government is committed to delivering a National Marine Plan for Wales and has published a draft plan for consultation: http://gov.wales/topics/environmentcountryside/marineandfisheries/marine-planning/welsh-national-marine-plan/?lang=en. The plan will have an important role in achieving robust sustainable management of Wales' seas and will provide clarity for decision makers and all those carrying out activities in the marine area (including aquaculture).</p>
2.4) Carrying capacity (limits set on density)	UK SCORE 4	<p>5. Northern Ireland: DAERA has funded the development of ecological shellfish Carrying Capacity Models (The Smile Models) for each of Northern Ireland's 5 sea loughs. These Models are maintained and updated regularly by the Agri-Food and Biosciences Institute (AFBI: https://www.afbini.gov.uk/). DAERA has invested heavily in modelling for carrying capacity through the Sustainable Mariculture In Lough Ecosystems (SMILE) programme which has demonstrated the desirability or otherwise to licence aquaculture developments: http://www.longline.co.uk/site/smile.pdf.</p>

		<p>5. Scotland: Locational Guidelines for the authorisation of Marine Fish farms in Scotland's waters give maximum biomass levels for all Scottish lochs, based on MSS's predictive modelling on nutrient enhancement and benthic impact in sea lochs or similar water bodies supporting aquaculture: http://www.gov.scot/Topics/marine/Publications/publicationslatest/farmedfish/locationalfishfarms There are no upper limits on the sizes of shellfish farms, as production declines at higher densities in response to food limitation, but planning authorities will consider capacity when consenting new farms in the vicinity of existing sites</p> <p>2. England and Wales: There are no direct constraints on animal density in aquaculture systems. Carrying capacity is generally constrained by water availability and discharge consents. Although welfare and eco-labels are now providing a form of limit but these are not regulatory.</p>
2.5) Environmental assessment and monitoring	UK SCORE 5	<p>5. Northern Ireland: Aquaculture developments are subject to assessments under Article 6 of the Habitats Directive 92/43/EEC and the Environment (Northern Ireland) Order 2002. Applications for marine finfish farm developments are also subject to assessment under the Environmental Impact Assessment (Fish Farming in Marine Waters) Regulations (Northern Ireland) 2007 which implements the requirements of Council Directive 85/337/EEC as amended by Council Directive 97/11/EC. Routine monitoring is undertaken by AFBI and by operators of individual licensed sites. DERA retains the ability to modify a licence if monitoring indicates an undesirable environmental impact.</p> <p>5. Scotland: Most finfish farm planning applications require an Environmental Impact Assessment (EIA) to be completed. When considering an application, the local authority will seek advice from Marine Scotland, SEPA, Scottish Natural Heritage, Historic Scotland, and local District Salmon Fishery Boards, on potential impacts of the development on water quality, interactions with predators, wild salmonids, species and habitats, conservation areas, landscape, marine cultural heritage, noise, and waste. Regular monitoring of water quality, including discharges from fish farms, is carried out by SEPA under the Water Environment (Controlled Activities) Scotland) Regulations 2011 (CAR), which arose when the EC's Water Framework Directive was transposed into Scots law by the Water Environment and Water Services (Scotland) Act 2003 (WEWS Act). The regulations cover rivers, lochs, transitional waters (estuaries), coastal waters groundwater, and groundwater/dependant wetlands: http://www.sepa.org.uk/regulations/water/</p> <p>5. England and Wales: EIA is required for aquaculture developments, and there is a good capacity for EIA and monitoring. Local authorities will consult with relevant statutory consultees on specific environmental impacts of development proposals under The Town and Country Planning (EIA) Regulations 2011. Under The Conservation of Habitats and Species Regulations 2010 (as amended) Habitats regulations assessments are required for aquaculture developments that may impact upon European sites (e.g. SPA's). Natural England (NE) and/or Natural Resources Wales (NRW) the government's advisers on the natural environment, and where appropriate other government bodies are consulted during the APB authorisation process and in the completion of HRA's</p>
2.6) Effluents	UK SCORE 5	<p>5. Northern Ireland: There are strict standards for Effluent discharge which is regulated by the DAERA under the Water Order (NI) 1999. Standards are set for good environmental practices. Each site has water quality monitoring.</p> <p>5. Scotland: Control of effluents from fish farms is monitored by SEPA under the Water Environment (Controlled Activities) Scotland) Regulations 2011 (CAR). All fish farms operators must obtain a CAR license, which sets limits for discharges in its consent conditions. http://www.sepa.org.uk/regulations/water/pollution-control/</p> <p>5. England and Wales: There are strict standards for both water abstraction and effluent discharge regulated under the Environmental Permitting Regulations (England and Wales) 2010. Both the Environment Agency in England and Natural Resources Wales (NRW) have good capacity for surveillance and monitoring, and the enforcement of standards. It is strictly enforced and extensively implemented.</p>

<p>2.7) Feeds (environmental impact, quality, food safety issues)</p>	<p>UK SCORE 5</p>	<p>5. Northern Ireland: Legislation on animal feed is harmonized at European Union (EU) level. It applies principally to feed for farmed livestock, but also covers farmed fish.</p> <p>5. Scotland: Control of effluents from fish farms (including medicines and feedstuffs) and their environmental impacts is monitored by SEPA under the Water Environment (Controlled Activities) Scotland) Regulations 2011 (CAR). All fish farms operators must obtain a CAR license, which sets limits for discharges in its consent conditions: http://www.sepa.org.uk/regulations/water/pollution-control/ Food Standards Scotland has policy responsibility for feed hygiene, quality and safety in Scotland with input from Local Authority Environmental Health Officers. Local authorities (Trading Standards) are responsible for carrying out official controls and enforcement at all feed businesses, and feed hygiene at the level of primary production is also delegated to Scottish Government’s Rural Payments and Inspection Division. Food Standards Scotland has issued the Feed Law Code of Practice to local authorities in Scotland .Feed containing processed animal protein or other animal by-products is monitored by the Animal and Plant Health Agency and enforced by Local Authority Environmental Health Officers. There are no specific regulations that apply to aquaculture feed. Feed Hygiene applies across all sectors. The following is the list of EU legislation that apply and in brackets, the Scottish Statutory Instruments that provide powers, enforcement measures etc. EU Regulation 183/2005 on Feed Hygiene (The Feed (Hygiene and Enforcement) (Scotland) Regs 2005, as amended)</p> <ul style="list-style-type: none"> • EU Regulation 1831/2003 on Additives for use in Animal Nutrition (The Animal Feed (Scotland) Regulations 2010, as amended) • EU Regulation 882/2004 on Official Feed and Food Controls Regulations (The Official Feed and Food Controls (Scotland) Regulations 2011, as amended and The Feed (Hygiene and Enforcement) (Scotland) Regs 2005, as amended) • EU Regulation 178/2002 on General Food Law (The Feed (Hygiene and Enforcement) (Scotland) Regs 2005, as amended) • EU Regulation 152/2009 laying down the methods of sampling and analysis for the official control of feed (The Feed (Sampling and Analysis and specified undesirable substances) (Scotland) Regulations 2010) • EU Regulation 767/2009 on the placing on the market and the use of feed. (The Animal Feed (Scotland) Regulations 2010, as amended) • EU Regulation 1829/2003 on Genetically Modified Food and Feed (The Genetically Modified Animal Feed (Scotland) Regulations 2004) • Directive 2002/32/EC on undesirable substances in animal feed (The Feed (Sampling and Analysis and specified undesirable substances) (Scotland) Regulations 2010) <p>5. England and Wales: The regulation on feed, whether produced locally or imported has provisions on traceability of ingredients, and sets standards for feed quality. Legislation on animal feed is harmonized at EU level. It applies principally to feed for farmed livestock, but also covers farmed fish. Local Authorities license and conducts inspection of animal feed manufacturing plants on behalf of the Food Standards Agency (FSA): www.food.gov.uk/business-industry/farmingfood/animalfeed/animal-feed-activity-and-inspections-in-the-uk. In addition the Veterinary Medicines Directorate license and inspect feed manufacturing plants that produce medicated feedstuffs. Guidance can be found at: www.gov.uk/government/uploads/system/uploads/attachment_data/file/424676/VMGNote17.PDF. Fish farms mixing medicated feed are subject to a licensing and inspection regime as required under the Veterinary Medicines Regulations (VMR). The Cefas Fish Health Inspectorate undertakes inspections of fish farms holding veterinary medicines mixing licenses on behalf of Veterinary Medicines Directorate.</p>
<p>2.8) Seed (as environmental issue e.g. source – wild, hatchery)</p>	<p>UK SCORE 4</p>	<p>5. Northern Ireland: Collection of wild mussel seed for the bottom culture of mussels is prohibited unless authorised by DAERA and only after surveys and assessments have been conducted. No other wild seed is harvested. Pacific oyster spat is imported from disease free hatcheries for on-growing. All imported seed is subject to licence application and inspection.</p> <p>5. Scotland: Mussel seed is currently sourced from wild spat settlement and imported from rope-grown stocks in Ireland. Pacific oyster seed is sourced from hatcheries within UK. Native oyster stocks from wild settlement and from hatcheries within the UK. Marine Scotland is currently assessing the commercial viability of a Scottish mussel hatchery, and we have some small scale hatchery production of pacific and native oysters within research establishments.</p> <p>3. England and Wales: The use of wild seed occurs in shellfish aquaculture but is uncommon in fin fish aquaculture, other than for the culture of migratory salmonids for stock enhancement. The removal of wild fish as broodstock is controlled under the Salmon and Freshwater Fisheries Act 1975. In addition there are regulations and restrictions on the exploitation of the European eel under the Eels (England and Wales) Regulations 2009). A seed mussel licence is issued to allow farmers to harvest wild mussel resources without the need to have a licensed fishing boat, and any vessel with a general fishing licence can harvest seed. There is no restriction on the total catch allowed, however industry has codes of practice to manage associated risks of this practice .Local by-laws made by Inshore Fisheries and Conservation Authorities (IFCA’s) in England and Natural Resources Wales in Wales may regulate the exploitation and use of wild stocks of shellfish seed. Pacific oyster seed is sourced from hatcheries within UK.</p>

2.9) Water abstraction	UK SCORE 5	<p>5. NI: Water Abstraction is regulated by DAERA under the Impoundment (Licensing) Regulations (Northern Ireland) 2006.</p> <p>5. Scotland: Water abstraction for any purpose in Scotland is covered by the Water Environment (Controlled Activities) Scotland) Regulations 2011 (CAR). http://www.sepa.org.uk/regulations/water/abstractions/</p> <p>5. England and Wales: Use of water is subject to regulation under the Environmental Permitting Regulations (England and Wales) 2010. An abstraction charge is imposed on the use of freshwater water for aquaculture.</p>
2.10) Use of alien species along the lines of FAO's or OIE's guidelines or CBD provisions (including potential trans-boundary issues)	UK SCORE 5	<p>5. Northern Ireland: Regulated by DAERA under the Alien and Locally Absent Species in Aquaculture Regulations (Northern Ireland) 2012 and the Molluscan Shellfish (Control of Deposit) Order (Northern Ireland) 1972.</p> <p>5. Scotland: The Alien and Locally Absent Species in Aquaculture (Scotland) Regulations make provision for the enforcement of Council Regulation (EC) No 708/2007 and for the notification of both an intended movement of an Annex IV species and the translocation of a locally absent species from within the United Kingdom. The movements of two of the Annex IV listed species – <i>Crassostrea gigas</i> (Pacific oyster) and <i>Oncorhynchus mykiss</i> (rainbow trout) are exempt from the Regulations. For the other species listed, where measures are considered necessary to restrict the use of Annex IV species, the movement must be notified and may then be prohibited or allowed subject to any conditions by means of a notice or an environmental risk assessment may be requested http://www.legislation.gov.uk/ssi/2015/103/made. Guidance is available at: http://www.gov.scot/Topics/marine/Fish-Shellfish/FHI/Legislature/AlienLASGuide</p> <p>5. England and Wales: The Alien and Locally Absent Species In Aquaculture Regulations (England and Wales) 2010 is derived from European legislation Council Regulation 708/2007 concerning the use of alien and locally absent species in aquaculture. Capacity for enforcing the regulation is strong and can be applied to alien species and those that are locally absent from particular geographic areas.</p>
2.11) Movement (within country and across borders) of live animals along the lines of FAOs or OIE's	UK SCORE 5	<p>5. Northern Ireland: Movements regulated under the Aquatic Animal Health Regulations (Northern Ireland) 2009, which implements Council Directive 2006/88/EC and Commission Regulation (EC) No 1251/2008, the TRACES system (https://www.daera-ni.gov.uk/articles/information-traces) and through conditions of Fish Culture Licences granted by DAERA.</p> <p>5. Scotland: Import and exports of aquaculture produce is covered by the FHI: http://www.gov.scot/Topics/marine/Fish-Shellfish/FHI/importexport</p> <p>4. England and Wales: The regulation on moving animals within the country and across borders (transboundary) is guided by the provisions of Council Directive 2006/88/EC on aquatic animal health, OIE guidelines, and alien species regulations. Further information can be found at: www.gov.uk/guidance/import-or-export-live-fish-and-shellfish. Capacity for enforcement is strong.</p>
2.12) Impacts on biodiversity	UK SCORE 5	<p>5. Northern Ireland: Part of assessment and licence conditions and on-going monitoring and inspection regime carried out by DAERA. All applications are subject to both appropriate assessment and consultation and biodiversity impacts are picked up at these stages. Unsustainable applications are not advanced - the Department being "not minded to grant licences". Lesser concerns may be addressed by reducing scale of application or by finding mitigating measures which can be applied by licence conditions, e.g. the use of triploidy to address feral establishment.</p> <p>5. Scotland: Prior to development consent, the local authority will conduct a detailed assessment of the potential impacts on the environment. Additionally, where it is considered that the proposal is likely to have a significant effect on the interest for which a Natura site is designated, the proposal will be subject to and Appropriate Assessment. The Scottish Government Impact of Aquaculture on Wild Fish Populations project aims to investigate and quantify the risk to wild sea trout populations in Scotland from sea lice originating from salmon farms. It involves scientists from MSS marine and freshwater Laboratories and builds on the work of the latter, which has monitored the sea trout population in the River Shieldaig for several years: http://www.gov.scot/Topics/marine/Fish-Shellfish/18716/environmentalimpact/wildfish .</p>

		<p>5. England and Wales: Impacts on biodiversity will be assessed during the Local Authority process in undertaking or facilitating environmental impact assessments of development proposals under The Town and Country Planning (EIA) Regulations 2011. For developments that have the potential to impact on European sites, The Conservation of Habitats and Species Regulations 2010 (as amended) Habitats regulations require assessments for aquaculture developments. Natural England (NE: https://www.gov.uk/government/organisations/natural-england) and/or Natural Resources Wales (NRW: http://naturalresources.wales/?lang=en) the government's advisers on the natural environment, and where appropriate other government bodies are consulted during the APB authorisation process and in the completion of HRA's. Alien and Locally Absent Species In Aquaculture Regulations (England and Wales) 2010 provide provisions to manage and control the use of alien species in aquaculture.</p>
2.13) Escapes	UK SCORE 5	<p>5. Northern Ireland: Bio-security is a key component of DAERA's licensing regime. Each farm must have a Bio-security Plan in place and this is a key component of an Aquaculture Production Business Authorisation granted under the Aquatic Animal Health Regulations (Northern Ireland) 2009.</p> <p>5. Scotland: Escapes from fish farms represent a loss of valuable assets. For conservation and wild fish interests, escaped fish may represent a disease hazard, occupy valuable habitat to the exclusion of wild fish, and have the potential to interbreed with wild fish, leading to dilution of genetic integrity. All fish farm businesses in Scotland are authorised and inspected by Marine Scotland for measures in place to contain fish and prevent escapes with a range of sanctions available where non-compliance is identified. The Aquaculture & Fisheries (Scotland) Act 2013 includes specific powers to prescribe statutory technical requirements to ensure the installation and deployment of fish farming equipment that is well maintained and appropriate for site conditions. It also imposes a duty for training to use prescribed equipment and requirements on operators to keep records. The Scottish Government published a Technical Standard for Scottish Finfish Aquaculture, in 2015 www.gov.scot/Publications/2015/06/5747.</p> <p>4. England and Wales: Legal provisions under The Salmon and Freshwater Fisheries Act 1975 require farms to install security measures to prevent escape of cultured fish. However there are no mitigation measures required once escapes have taken place. Under certain circumstances the willful release of fish may constitute an offence under the Wildlife and Countryside Act 1981. Enforcement of the means to prevent escapes is variable.</p>
2.14) Stocking and restocking	UK SCORE 5	<p>5. Northern Ireland: Stocking is subject to the Alien and Locally Absent Species in Aquaculture Regulations (Northern Ireland) 2012, the Molluscan Shellfish (Control of Deposit) Order (Northern Ireland) 1972 and the Aquatic Animal Health Regulations (Northern Ireland) 2009.</p> <p>5. Scotland: The FHI regulate the trade in aquaculture animals to ensure that stocks are obtained from sources with an equal or higher health status to the GB health zone. This is regarded as part of the good biosecurity practice which APBs must demonstrate to maintain authorisation under the aquatic Animal Health (Scotland) Regulations 2009.</p> <p>5. England and Wales: The FHI regulates the trade in aquaculture animals to ensure that stocks are obtained from sources with an equal or higher health status to the GB health zone www.gov.uk/government/collections/aquatic-animal-health-and-movements-guides. Movements of fish into the wild are regulated by the Environment Agency under The Keeping and Introduction of Fish (England and River Esk Catchment Area) Regulations 2015 and in Wales by Natural Resources Wales under The Keeping and Introduction of Fish Regulations 2014.</p>
2.15) Food safety, (along the lines of CODEX Alimentarius)	UK SCORE 5	<p>5. Northern Ireland: Responsibility for food safety in Northern Ireland rests with the Food Standards Agency as part of its public health remit: https://www.food.gov.uk/northern-ireland.</p> <p>5. Scotland: Food safety in Scotland is the responsibility of Food Standards Scotland (FSS). For shellfish, FSS publish weekly Official Control results from the bio-toxin, phytoplankton and E.coli monitoring programmes. Potential changes to future monitoring programmes will be consulted on in 2017. The FSS website details all historic shellfish monitoring results: http://www.foodstandards.gov.scot/food-safety-standards/advice-business-and-industry/shellfish/shellfish-results#sthash.IBiwa1PE.dpuf. Food Standards Scotland (FSS: http://www.foodstandards.gov.scot/), Scottish Environment Protection Agency (SEPA: http://www.sepa.org.uk/), The Crown Estate (https://www.thecrownestate.co.uk/) and Marine Scotland (http://www.gov.scot/About/People/Directorates/marinescotland) developed the website Scotland's Aquaculture, providing aquaculture data: http://aquaculture.scotland.gov.uk/.</p> <p>5. England and Wales: Food safety is the responsibility of the Food Standards Agency www.food.gov.uk and the Food Standards Agency in Wales www.food.gov.uk/wales. Comprehensive food safety legislation is in existence with regard to aquaculture products.</p>

<p>2.16) Use of drugs, chemicals and other substances</p>	<p>UK SCORE 5</p>	<p>5. Northern Ireland: Samples are taken annually by AFBI Chemical Surveillance Branch under the National Surveillance Scheme for Residues in Fish. Fin fish are also tested for dyes such as Malachite Green which was used in farm fish production in the past for the control of fungal infections but which is now prohibited. DAERA will also have a role in relation to monitoring compliance with Effluent Discharge consents, and also has statutory obligations to fulfil under The Veterinary Medicines Regulations 2011 (S.I. 2011 No. 2159) which control the authorisation, manufacture, classification, distribution and administration of veterinary medicinal products.</p> <p>5. Scotland: Sea lice medicine use is controlled by the CAR consent conditions set by SEPA. These are set by computer modelling of the site conditions, with discharges monitored by SEPA.</p> <p>5. England and Wales: The Veterinary Medicines Directorate is responsible for the licensing, and use of veterinary medicines in the UK. Surveillance programmes on farmed fish, and on fish products are undertaken to detect banned substances, unauthorized substances, and product containing antibiotics over maximum residue limits The law provides for the monitoring of and penalty for the use of banned drugs and other substances. There are guidelines that contain veterinary products and chemicals used in animal husbandry including aquaculture, and their proper application it is widely enforced.</p>
<p>2.17) Fish health management along the lines of FAO or OIE</p>	<p>UK SCORE 5</p>	<p>5. Northern Ireland: All fish health matters fall within the statutory remit of DAERA under the Aquatic Animal Health Regulations (Northern Ireland) 2009. The Department operates a surveillance survey by capturing and testing wild fish from each catchment to determine the background level of fish health in the natural environment.</p> <p>5. Scotland: The Fish Health Inspectorate's (FHI) mission is to support the Scottish Government's vision of a sustainable, growing, diverse aquaculture industry whilst maintaining the high health status of farmed and wild fish and shellfish stocks in Scotland. It aims to prevent the introduction and spread of serious fish and shellfish diseases in Scotland, by providing an advice and diagnostic service to fish and shellfish farmers, District Salmon Fishery Boards, Fishery Trusts and other stakeholders. Fish Health Inspectors are appointed by Scottish Ministers under the fish health legislation.</p> <p>5. England and Wales: Regulations and guidelines for health management and biosecurity are enforced under the Aquatic Animal Health (England and Wales) Regulations 2009 and the government official service the Fish Health Inspectorate has strong capacity to enforce the regulations and monitor compliance with the guidelines.</p>
<p>PART 2. SUPPORT MECHANISMS THAT FACILITATE THE IMPLEMENTATION OF THE REGULATORY MEASURES LISTED IN Part 1</p>		<p>These questions are aimed at a assessing the extent and therefore also the capacity of the country to support the Policy and the Development Plan and specifically the regulations described in Part 1.</p>
<p>3.1) Government monitoring, data collection and analysis system on aquaculture</p>	<p>UK SCORE 5</p>	<p>4. Northern Ireland: Member States are required to collect aquaculture data under Regulation 762/2008 and the Data Collection Framework (DCF) Regulation (EC) No 199/2008. Producers are required to submit annual statistical returns on aquaculture production and employment to DAERA. The collated data is submitted in a UK return to CEFAS, the European Commission and FAO. Fish movements are subject to authorisation and inspection. The Department operates an inspectorate service to oversee compliance.</p> <p>5. Scotland: FSS, SEPA, The Crown Estate and Marine Scotland developed the website Scotland's Aquaculture, providing aquaculture information http://aquaculture.scotland.gov.uk/ For shellfish, FSS publish weekly Official Control results from the bio-toxin, phytoplankton and <i>E.coli</i> monitoring programmes. The FSS website details all historic shellfish monitoring results http://www.foodstandards.gov.scot/food-safety-standards/advice-business-and-industry/shellfish/shellfish-results#sthash.IBiwa1PE.dpuf Regular monitoring of water quality, including discharges from fish farms, is carried out by SEPA under the Water Environment (Controlled Activities) Scotland) Regulations 2011 (CAR), which arose when the EC's Water Framework Directive was transposed into Scots law by the Water Environment and Water Services (Scotland)Act 2003 (WEWS Act). The regulations cover rivers, lochs, transitional waters (estuaries), coastal waters groundwater, and groundwater /dependant wetlands. More information can be found at http://www.sepa.org.uk/regulations/water/ An online database of environmental data from marine fish farms is also maintained http://www.environment.scotland.gov.uk/get-interactive/discover-data/</p>

		<p>5. England and Wales: Cefas has responsibility for aquaculture information gathering, statistics and analysis that is essential to track the impacts of policy and support the development of policy and plans. Aquaculture production statistics are collected and collated for the UK on an annual basis and submitted to Eurostat as required under Regulation (EC) 762/2008. In addition the UK is required to provide economic and production data on the aquaculture sector under the EU Data Collection Framework Regulation 199/2008. Aquaculture production data is also submitted to other agencies such as the Food and Agriculture Organisation of the United Nations (FAO). Statistics and analysis pertaining to the aquaculture sector are published regularly for example: www.gov.uk/government/uploads/system/uploads/attachment_data/file/405469/Aquaculture_Statistics_UK_2012.pdf.</p>
3.2) Consultation with stakeholders in formulating the Aquaculture Policy and/or Aquaculture Development Plan	UK SCORE 4	<p>3. Northern Ireland: Stakeholders are routinely consulted by government on policies and legislative proposals that affect the aquaculture sector. All aquaculture developments require licensing and applications for such licences are advertised and consulted on. Objections received may require DAERA to hold a local public enquiry for the purpose of considering issues which arise during these consultations. The DAERA Marine Plan has been subject to similar consultation.</p>
		<p>5. Scotland: The Aquaculture & Fisheries (Scotland) Act 2013 was subject to full consultation with all interested stakeholders. The responses to this consultation informed aquaculture policy and the Aquaculture Development Plan, and the consultation results can be found at http://www.gov.scot/Publications/2012/04/5057 The MGSA was established in 2013, working alongside the Aquaculture & Fisheries (Scotland) Act 2013 to secure sustainability of aquaculture growth and its interactions, engaging and supporting Scotland's industry to achieve its sustainable growth targets as set out in Scotland's NMP. The MGSA was replaced by the Aquaculture Industry Leadership Group in February 2017. Engagement with the public and other stakeholders is undertaken as early as possible in developing aquaculture policy to enable a range of views to be fairly reflected. Marine users and potential users, planners and decision makers, statutory consultees, communities, representative organisations, public bodies, government and the general public all contribute, with the views expressed being a major consideration in decision making. Stakeholder engagement is covered in the NMP http://www.gov.scot/Publications/2015/03/6517</p>
		<p>4. England and Wales: The Multi-Annual National Plan (MANP) was subject to national public consultation within the UK.</p>
3.3) Participation of farmers associations in sector development and management	UK SCORE 4	<p>4. Northern Ireland: Farmers participate in sector development and management through a number of groupings e.g. the Aquaculture Representative Group, the All Island Bottom Grown Mussel Consultative Forum and Co-ordinated Local Aquaculture Management System (CLAMS) Groups.</p>
		<p>5. Scotland: Marine Scotland has regular and close engagement with farmers and trade associations, such as the Association of Scottish Shellfish Growers Association and the Scottish Salmon Producers Organization. Stakeholders are fully consulted before making any significant policy changes. The industry also and plays an active role in the MGSA (now replaced by the Aquaculture Industry Leadership Group in 2017)</p>
		<p>4. England and Wales: Defra consults regularly with trade organisations involved in the aquaculture sector. The MANP was consulted with various stakeholders and trade bodies representing the sector. The aquaculture sector does also work collaboratively and on its own behalf.</p>
3.4) Aquaculture is integrated in coastal development and management plans	UK SCORE 4	<p>3. Northern Ireland: Marine Planning is the responsibility of the DAERA and aquaculture is integrated in the draft Marine Plan for Northern Ireland.</p>
		<p>5. Scotland: Scotland's NMP details management plans for Scotland's marine and coastal waters and covers aquaculture. http://www.gov.scot/Topics/marine/seamanagement/national The related EU Directive 2014/89/EU introduces a framework for maritime spatial planning and aims to promote the sustainable development of marine areas and the sustainable use of marine resources. It also sets out a number of minimum requirements all of which have been addressed in Scotland's NMP. Planning authorities are required to make positive provision for aquaculture development, in both their local development plans and supplementary guidance. They need to ensure integration with policies and activities arising from the National Marine Plan, Marine Planning Partnerships, Regional Marine Plans, and Integrated Coastal Zone Management.</p>
		<p>3. England: Aquaculture areas are included within England's Marine Spatial Plans. 4. Wales: Welsh Government has published a draft National Marine Plan for Wales for consultation. The plan will have an important role in achieving robust sustainable management of Wales' seas and will provide clarity for decision makers and all those carrying out activities in the marine area (including aquaculture).</p>

<p>3.5) Aquaculture is integrated in watershed management or land use development plans</p>	<p>UK SCORE 3</p>	<p>2. Northern Ireland: River basin management is the responsibility of the DAERA and aquaculture is accommodated in River Basin Management Plans.</p> <p>4. Scotland: Marine and freshwater fish farms (both shellfish and finfish) are authorised by local authorities under the Town and Country Planning Act local authority planning system. Local authority planners aim to support, encourage and make positive provision for the continued growth of aquaculture in sustainable locations. Planning authorities are required to make positive provision for aquaculture development, in both their local development plans and supplementary guidance. They need to ensure integration with policies and activities arising from the National Marine Plan, Marine Planning Partnerships, Regional Marine Plans, and Integrated Coastal Zone Management.</p> <p>2. England: Aquaculture is being considered in the context of River Basement Management Plans www.gov.uk/government/collections/river-basin-management-plans-2015; however there may be limited inclusion of aquaculture in land use development planning.</p> <p>2. Wales: Aquaculture is not explicitly mentioned in the Wales water strategy. However, all businesses will be covered by this framework.</p>
<p>3.6) Integration of aquaculture in community development planning</p>	<p>UK SCORE 2</p>	<p>0. Northern Ireland: Aquaculture is not subject to community development planning.</p> <p>4. Scotland: Marine and freshwater fish farms (both shellfish and finfish) are authorised by local authorities under the Town and Country Planning Act local authority planning system. Local authority planners aim to support, encourage and make positive provision for the continued growth of aquaculture in sustainable locations. Aquaculture companies planning new developments are strongly encouraged to engage and consult with local communities before commencing any work. Planning authorities are required to make positive provision for aquaculture development, in both their local development plans and supplementary guidance. They need to ensure integration with policies and activities arising from the National Marine Plan, Marine Planning Partnerships, Regional Marine Plans, and Integrated Coastal Zone Management. http://www.gov.scot/Topics/marine/Fish-Shellfish/18716/fish-farm</p> <p>0. England and Wales: Aquaculture is not subject to community development planning</p>
<p>3.7) Ecosystems functions are considered in aquaculture planning and development</p>	<p>UK SCORE 5</p>	<p>4. Northern Ireland: Ecosystem functions are addressed through environmental assessments required under the provisions of the Habitats Directive 92/43/EEC. Ecosystem drivers and limitations are addressed by ecological shellfish carrying capacity models (the SMILE models): http://www.longline.co.uk/site/smile.pdf.</p> <p>5. Scotland: The Marine (Scotland) Act 2010 requires that marine plans set economic, social and marine ecosystem objectives and objectives relating to the mitigation of and adaptation to, climate change. Plans must also state policies for, and in connection with, the sustainable development of the area to which this plan applies.</p> <p>5. England and Wales: Certainly with regard to conservation areas, water usage, and Marine Plan Areas, etc. Most aquaculture developments in Wales are likely to be in or near European Marine Sites, therefore any issues affecting nature conservation will be subject to habitats regulation assessment.</p>
<p>3.8) There is an incentive system for farmers to restore or rehabilitate resources degraded by their aquaculture activities</p>	<p>UK SCORE 0</p>	<p>1. Northern Ireland: Degradation of habitat has not occurred locally and Fish Culture Licences are granted by DAERA subject to appropriate prior environmental assessment and conditions to prevent this. DAERA is able to amend or revoke a Fish Culture Licence if a problem emerges. Incentives are not available.</p> <p>0. Scotland: NOT APPLICABLE</p> <p>0. England and Wales: NOT APPLICABLE</p>

<p>3.9) Practices are adopted that lead to improvement in the sustainability of aquaculture farms</p>	<p>UK SCORE 4</p>	<p>3. Northern Ireland: Fish Culture Licences granted by DAERA are subject to conditions to promote good standards of practice in relation to husbandry, hygiene, fish welfare and environmental impact. Aquaculture Production Business Authorisations require operators to have approved bio-security plans in place. Bottom grown mussel sector has obtained Marine Stewardship Council (https://msc.org/) accreditation. ECOPACT concept is available (http://www.bim.ie/media/bim/content/publications/ECOPACT%20Northern%20Ireland.pdf) to enable the aquaculture sector to adopt Environmental Management Systems. Opportunity for operators to apply for organic status.</p> <p>5. Scotland: The Code of Good Practice for Scottish Finfish Aquaculture (CoGP) was first published in 2006, the result of an agreed industry action arising from the 2003 Strategic Framework for Scottish Aquaculture. Since its implementation in 2006, the CoGP has been widely adopted as an industry production standard in Scotland. It is an evolving document, regularly reviewed to incorporate elements of change in legislation and emerging priorities in environmental management and the sustainable development of the industry, and is referenced in the NMP. CoGP: http://thecodeofgoodpractice.co.uk/ NMP: http://www.gov.scot/Publications/2015/03/6517</p> <p>3. England and Wales: Partly achieved through various quality systems that pertain to the aquaculture sector, however these are voluntary schemes, so not mandatory. The Welsh Government supports the co-location of food production businesses with other industries including renewable energy. Integrated Multi-trophic Aquaculture and aquaponics are some of the initiatives currently being considered.</p>
<p>3.10) Application of the polluter-pays principle</p>	<p>UK SCORE 5</p>	<p>5. Northern Ireland: Legislation for water pollution prevention, response, enforcement and prosecution exists and is the responsibility of the DAERA and policy accepts the polluter-pays principle.</p> <p>5. Scotland: The polluter pays principle is applied (where possible) by SEPA to all pollution incidents in Scotland, on land or in water. The control of effluents from fish farms is monitored by SEPA under the Water Environment (Controlled Activities) Scotland) Regulations 2011 (CAR). All fish farms operators must obtain a CAR license, which sets limits for discharges in its consent conditions. CAR is also referenced in the NMP. CAR: http://www.sepa.org.uk/regulations/water/pollution-control/ NMP: http://www.gov.scot/Publications/2015/03/6517</p> <p>5. England and Wales: There are fines, penalties and/or taxes imposed on pollution. There are also requirements for reducing discharges or treating the effluent before it is discharged. The regulation(s) is widely and effectively enforced.</p>
<p>3.11) Trend of investment in aquaculture research</p>	<p>UK SCORE 4</p>	<p>3. Northern Ireland: DAERA has invested in development of ecological shellfish carrying capacity models. In the past Departments did undertake a development role with the testing of mollusc systems and feed conversion ratios in fish however there are well developed systems in place now which negate this research and industry has the financial ability to undertake such work, particularly in the salmon sector.</p> <p>5. Scotland: Sustainable development and use of the marine environment in Scotland provides multiple economic benefits at a community and national level, including economic growth, skills development, employment, maintaining or increasing population levels and opportunities for investment and trade. NMP: http://www.gov.scot/Publications/2015/03/6517. Creation of the Scottish Aquaculture Innovation Centre (SAIC) one of eight Innovation Centres established by the Scottish Government in 2013-2014, funded by the Scottish Funding Council (in partnership with Scottish Enterprise and Highlands and Islands Enterprise) and by industry.</p> <p>3. England and Wales: Historically there has been a mixed picture. There will be funds made available under the EMFF to invest in Aquaculture. Aquaculture research funding is on the increase, (e.g. through funding streams such as the BBSRC-NERC (http://www.bbsrc.ac.uk/; http://www.nerc.ac.uk/); Innovate UK (https://www.gov.uk/government/organisations/innovate-uk) and it is now more focused on industry needs.</p>
<p>3.12) Trend of investment in aquaculture extension and training</p>	<p>UK SCORE 4</p>	<p>4. Northern Ireland: Funding available under the European Maritime and Fisheries Fund (EMFF). Support available through Lantra and AquaTT.</p> <p>4. Scotland: LANTRA is the Sector Skills Council which supports skills and training for people and businesses in the land-based and environmental sector. Lantra has developed a Modern Apprenticeship in Aquaculture at two levels to support the industry in Scotland. Modern Apprenticeships in the aquaculture sector https://www.skillsdevelopmentscotland.co.uk/what-we-do/our-products/modern-apprenticeships/modern-apprenticeship-frameworks/lantra/aquaculture/.</p> <p>4. England and Wales: The LANTRA Aquaculture National Occupational Standard (NOS) has been revised and approved by the UK Commission for Employment and Skills (UKCES) in 2015 (http://nos.ukces.org.uk/Pages/index.aspx).</p>

<p>3.13) Trend of investment in infrastructure and facilities that support aquaculture development</p>	<p>UK SCORE 4</p>	<p>3. Northern Ireland: Funding that supports aquaculture development is available from the EMFF.</p> <p>5. Scotland: Creation of the Scottish Aquaculture Innovation Centre (SAIC) in 2013-2014 http://scottishaquaculture.com/. Technical standards have now been developed in Scotland which assists cage culture -the 2015 Scottish Technical Standard applies to all of Scotland's marine and freshwater (including hatcheries) finfish farms, and covers nets, pens and mooring systems. http://www.gov.scot/Publications/2015/06/5747.</p> <p>3. England and Wales: Funding that supports aquaculture development is available under the EMFF. The provision for funding aquaculture developments in England under EMFF has increased in comparison with the earlier EFF scheme www.gov.uk/guidance/european-maritime-and-fisheries-fund-emff-before-you-apply.</p>
<p>PART 3. ENHANCING MECHANISMS THAT WOULD IMPROVE THE EFFECTIVENESS OF THE MEASURES AND MECHANISMS LISTED IN PARTS 1 AND 2</p>	<p>These “enhancing mechanisms” are measures that are not essential but are “good to have”. Having them in the Plan tends to makes the implementation of the Policy and Plan less costly and more effective.</p>	
<p>4.1) Mechanisms are in place to ensure that livelihoods of the local communities are benefited and not adversely impacted when developing aquaculture</p>	<p>UK SCORE 4</p>	<p>2. Northern Ireland: Applications for Fish Culture Licences are subject to public consultation and stakeholders have the right to object. Opportunity is not restricted to local community but in effect both local projects have been licensed and we have seen some integration with international investors as French interests look to acquisition in intertidal oyster production and Dutch interests to bottom mussels. Local impacts are rarely reported by local communities.</p> <p>5. Scotland: Both Scottish Planning Policy and Scotland's NMP contain provision for sustainable development. Local Development Plans should promote developments which contribute to the economic regeneration or wellbeing of communities whose livelihood is dependent on marine or coastal activities. All aquaculture policy development is subject to consultation with all interested parties (including members of the public). The Scottish Government is committed to consulting with all parties potentially affected by proposals for new regulation, or where any regulation is being changed significantly. In addition, if required, a Business and Regulatory Impact Assessment (BRIA) is carried out. All policy changes, whether European or domestic and which may have an impact upon business or the third sector should be accompanied by a BRIA. The BRIA helps policy makers to use available evidence to find proposals that best achieve the policy objectives while minimising costs and burdens. Through consultation and engagement with business, the costs and benefits of the proposed legislation can be analysed. It also ensures that any impact on business, particularly small enterprises, is fully considered before changes are made.</p> <p>4. England and Wales: There are a number of regulations and regulatory processes (e.g. in the case of establishing Fishery Orders, marine planning, Environmental Impact Assessment etc.) in place to ensure that the concerns of stakeholders, including relevant local communities, are recognized and considered by relevant regulators</p>
<p>4.2) There are voluntary certification system/s that promote the practice of responsible aquaculture</p>	<p>UK SCORE 4</p>	<p>4. Northern Ireland: Yes, producers may apply for organic status, Marine Stewardship Council Certification or the ECOPACT concept to adopt environmental management systems.</p> <p>5. Scotland: The NMP highlights existing areas of good practice, for example where voluntary collaborative arrangements have been put in place to resolve potential competition for space between or within particular aquaculture businesses. Where such arrangements have proved effective they are encouraged to continue. Each company has its own schemes.</p> <p>4. England and Wales: There are a number of stewardship type production/operation-related programmes available in England and Wales.</p>
<p>4.3) Farms are covered by government assistance scheme in case of disasters</p>	<p>UK SCORE 0</p>	<p>0. Northern Ireland: No</p> <p>0. Scotland: No</p> <p>0. England and Wales: There is no government assistance in this respect. Private insurance may cover some of the instances of disaster recovery.</p>

4.4) Farmers have access to institutional credit	UK SCORE 0	<p>0. Northern Ireland: No</p> <p>0. Scotland: No</p> <p>0. England and Wales: No</p>
4.5) Aquaculture farmers have access to commercial insurance	UK SCORE 5	<p>5. Northern Ireland: Yes</p> <p>5. Scotland: Yes</p> <p>5. England and Wales: Yes</p>
<p>The capacity of the State is assessed to develop knowledge, information, technology and advice and promote their adoption to support the development, enforcement, implementation, and monitoring and evaluation of the measures in Parts 1 to 3. As it is now of growing importance, questions on capacity to deal with disasters and climate change are included.</p>		
<p>PART 4. THE LEVEL/DEGREE OF CAPACITY TO SUPPORT THE MEASURES IN PARTS 1, 2 AND 3</p>	<p>This Part aims to assess the capacity of the State to support the Policy, Plan, the enabling legislation, and the voluntary management mechanisms, in other words all the measures in Parts 1, 2 and 3.</p>	
5.1) Capacity of the national research system to provide knowledge, information, technology, advice to policy, planning and management	UK SCORE 4	<p>4. Northern Ireland: Yes, scientific research undertaken by AFBI and Seafish and disseminated to aquaculture sector. Research also supported by EU funding e.g. the IBIS projects under INTERREG funding. The Aquaculture Initiative EEIG also provides technical support and advice to the aquaculture sector</p> <p>5. Scotland: The Scottish Aquaculture Innovation Centre (http://scottishaquaculture.com/), established in 2013-14, is funded by the Scottish Funding Council (in partnership with Scottish Enterprise and Highlands and Islands Enterprise) and industry, and provides support and advice to the aquaculture sector. Other research partners include the Scottish Aquaculture Research Forum (SARF http://www.sarf.org.uk/), Seafish, and Stirling University Institute of Aquaculture (http://www.stir.ac.uk/ia/institute/). Marine Scotland also directly conducts research through its Marine and Freshwater Laboratories and grant awards to other agencies and organizations.</p> <p>4. England and Wales: There are a number of research partners (e.g. CEFAS https://www.cefas.co.uk/, FSA https://www.food.gov.uk/, MMO https://www.gov.uk/government/organisations/marine-management-organisation, academia, Seafish http://www.seafish.org/, BBSRC http://www.bbsrc.ac.uk/, NERC http://www.nerc.ac.uk/, etc.) which provide advice to inform policy and the sector. The output from research programmes are disseminated to the aquaculture sector.</p>
5.2) Capacity of the extension systems to disseminate and utilize the outputs from the national or external research systems in support of aquaculture development	UK SCORE 4	<p>4. Northern Ireland: Yes, well-developed systems in place - see 5.1 above.</p> <p>5. Scotland: Well developed - see 5.1 above</p> <p>4. England and Wales: Systems for the dissemination of information are very well developed - see 5.1 above</p>

6) Specific capacity of the UK on:		
6.1) Health management	UK SCORE 5	4. Northern Ireland: Processes adopted under the Aquatic Animal Health Regulations (Northern Ireland) 2009.
		5. Scotland: The majority of the Fish Health Inspectorate's work is carried out under The Aquatic Animal Health (Scotland) Regulations 2009 which implement Council Directive 2006/88/EC and The Aquaculture and Fisheries (Scotland) Act 2007, and associated secondary legislation, The Fish Farming Businesses (Record Keeping) (Scotland) Order 2008.
		5. England and Wales: There are very stringent health (both human and animal health) regulations underpinned by a very strong enforcement regime.
6.2) Environmental management	UK SCORE 5	4. Northern Ireland: AFBI undertake environmental modelling and the maintenance of SMILE Shellfish Carrying Capacity Models. All applications subject to Environmental Assessment.
		5. Scotland: Regulations and controls are in place to assist with management of environmental impacts, as detailed in 2.7.
		5. England and Wales: There are regulations and controls safeguarding the English and Welsh natural environmental asset in the context of development proposals. Equally there are a number of measures which aquaculture farmers need to comply with to manage their environmental footprint.
6.3) Food safety	UK SCORE 5	5. Northern Ireland: Very stringent controls in place which are the responsibility of the Food Standards Agency for Northern Ireland
		5. Scotland: Very stringent and the responsibility of Food Standards Scotland
		5. England and Wales: There are very stringent food safety regulations underpinned by a very strong enforcement regime.
6.4) Conflict management	UK SCORE 4	4. Northern Ireland: Fish Culture Licence applications are subject to public consultations and referral to appeals tribunal.
		5. Scotland: Applications for aquaculture planning permissions and discharge consents under the Controlled Activities Regulations are subject to public consultation.
		4. England and Wales: The MANP was consulted with various stakeholders and trade bodies representing the sector. The aquaculture sector does also work collaboratively with stakeholders on their own behalf.
6.5) Preparedness to respond to disasters	UK SCORE 5	3. Northern Ireland: DAERA has developed fish disease and fish escape contingency plans. DAERA inspectorate visit aquaculture premises and look for potential weaknesses in infrastructure or husbandry which might give rise to concerns.
		5. Scotland: A Scottish Technical Standard was published in June 2015 to ensure all finfish farms have equipment that is appropriate for the site conditions in order to prevent escapes, and the Fish Health Inspectorate is responsible for preventing the introduction and spread of serious diseases in fish, shellfish and crustacea.
		5. England and Wales: The Competent Authorities in England and Wales have contingency plans in place for outbreaks of serious diseases in fish and shellfish which are regularly tested. The FHI is responsible for preventing the introduction and spread of serious diseases in fish, shellfish and crustacea: https://www.gov.uk/government/groups/fish-health-inspectorate#our-responsibilities .
6.6) Preparedness to manage the risk impacts from climate change	UK SCORE 4	2. Northern Ireland: Work with shellfish sector to actively manage OHSV in oysters.
		5. Scotland: The Fish Health Inspectorate is responsible for preventing the introduction and spread of serious diseases in fish, shellfish and crustacea. This includes statutory responsibilities for emerging diseases.
		4. England and Wales: The FHI is responsible for preventing the introduction and spread of serious diseases in fish, shellfish and crustacea. Also the Alien Species In Aquaculture Regulations (England and Wales) 2010 concerning the use of alien and locally absent species in aquaculture - capacity for enforcing the regulation is strong and it applies to any species. A number of research programmes are underway to assess the impact of climate change on aquaculture in the UK.