MMO1289 Framework for a Process Evaluation of the MMO MPA Fisheries and Conservation Strategy

Final Report

29 July 2022

Submitted to:

Aisling Lannin and Gurpreet Padda

Marine Management Organisation

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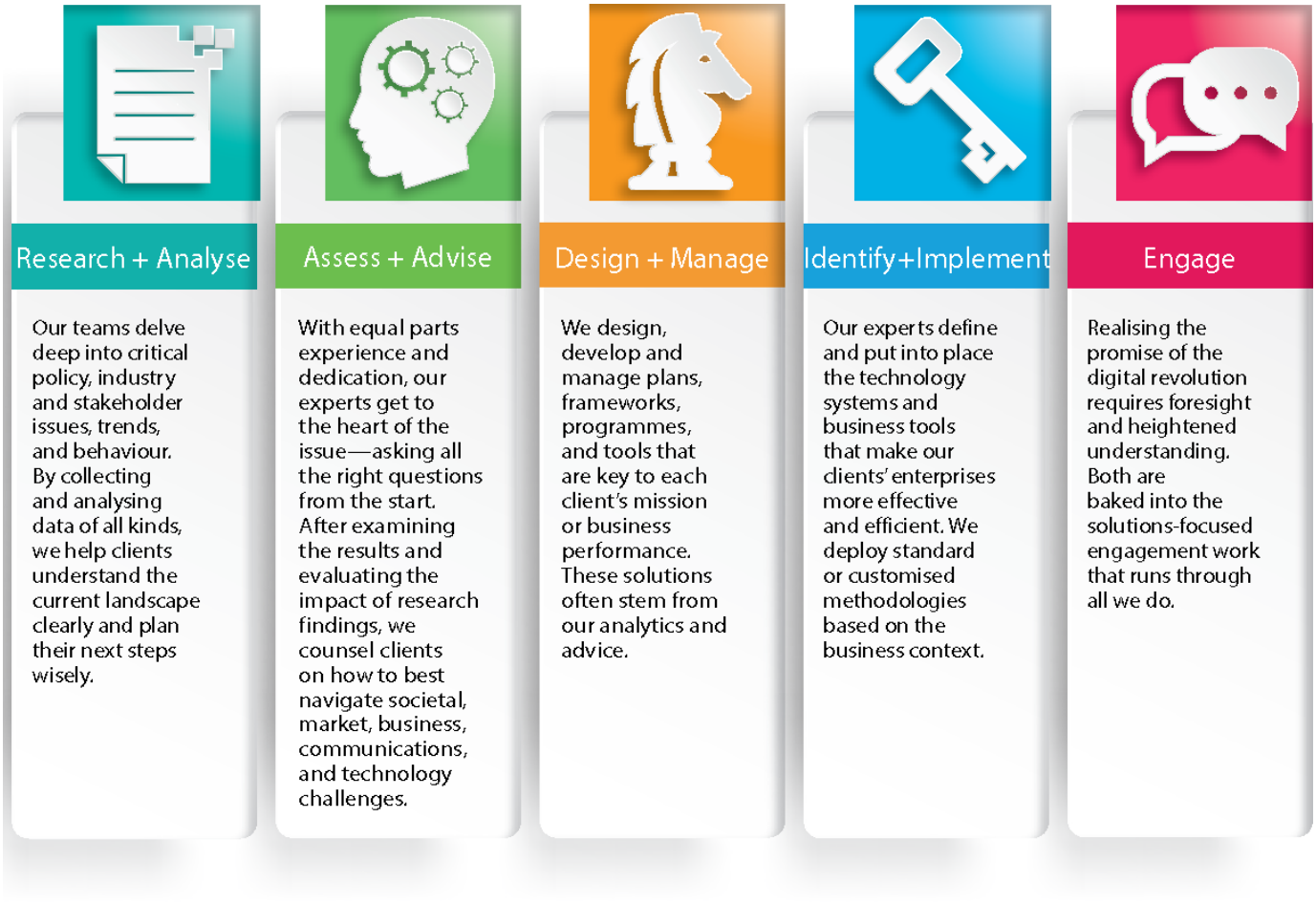

MMO1289 Framework for a Process Evaluation of the MMO MPA Fisheries and Conservation Strategy

Final Report

A report submitted by ICF Consulting Services Limited
in association with

Live Economics ltd, Howell Marine Consulting, University of Plymouth, Open University,

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Glossary

ACRONYM	EXPLANATION
BAU	Business as usual
CFP	The EU Common Fisheries Policy
CSA	Chief Scientific Advisor
Defra	Department for the Environment, Food and Rural Affairs
EEZ	Exclusive Economic Zone
ENGO	Environmental NGOs
DE	Developmental Evaluation
EU	European Union
GVA	Gross Value Added
HPMA	Highly Protected Marine Area
ICF	ICF Consulting Services Limited
IFCA	Inshore Fisheries and Conservation Authorities
JNCC	Joint Nature Conservation Committee
JR	Judicial Review
MCS	Marine Conservation Society
MCT	Marine Conservation Team
MCZ	Marine Conservation Zone
MMO	Marine Management Organisation
MMO MCT	Marine Management Organisation Marine Conservation Team
MPA	Marine Protected Area
M&E	Monitoring & Evaluation
MSY	Maximum sustainable yield
NE	Natural England
PID	Project Initiation Document
RSPB	The Royal Society for the Protection of Birds
SAC	Special Area of Conservation
SNCB	Statutory Nature Conservation Body (i.e. NE or JNCC)
SoS	Secretary of State
SPA	Special Protection Area
STiP	Systems thinking in practice
TAC	Total Allowable Catch

ToC	Theory of Change
WWF	World Wide Fund for Nature

Executive Summary

The MMO appointed ICF and partners to undertake the development of an evaluation framework for a process evaluation of the MMO Marine Protected Areas (MPA) Fisheries and Conservation Strategy. The work involved a review of documentation, interviews and orientation workshop, three workshops to collaboratively design and develop the Theory of Change and evaluation questions.

The MMO's implementation of the 'MMO MPA Fisheries and Conservation Strategy' led predominately by the MMO Marine Conservation team (from now on MCT), follows on from the UK exit from the EU which increased the regulatory competency of the MMO and required legislative action to ensure protection of the sensitive features within all MPAs. The objective of the 'MMO MPA Fisheries and Conservation Strategy' is to develop byelaws, supported by evidence and stakeholder consultation, that will manage fishing activity within MPAs, protect marine environment features, and support conservation objectives.

The MMO have indicated that the purpose of the evaluation should be to fulfil two key purposes: learning and accountability. However, weighting placed on these different purposes is important to consider in the decision to take an evaluation approach forward. Therefore, this evaluation plan includes three different options for a formative evaluation, that vary to their degree of emphasis on the purposes of learning and accountability.

The options include:

- **A tailored process evaluation that is focused on learning and providing mid-programme assessments**

  The tailored process evaluation approach outlined in this report, is an externally led evaluation with a greater level of independence and greater emphasis on accountability. The methods utilised are transparent and rigorous so can be well trusted by the users of the evaluation. The exact data collection methods utilised in this approach can be tailored depending on desired level of participation as well as resource and budget constraints.

- **Outcome-harvesting that enables evaluators and stakeholders to demonstrate the outcomes of the project bottom-up, without preconceived suppositions or proposals and identify opportunities for change**

  The outcome harvesting approach has a greater emphasis on participation with an external evaluator (Harvester) who has trust of the team and stakeholders enables conversations and exchanges to identify results and the contributors to results. This option can also provide accountability whilst having increased levels of stakeholder engagement however it is a less common evaluation method and there may be resource requirements from team members and stakeholders which are more intense and burdensome than the Tailored Process Evaluation.

- **Developmental evaluation recognising that the subject of evaluation is always in a state of flux requiring continually adaptive evaluation measures and techniques**

  The developmental evaluation approach has a greater emphasis on adaptive learning and stakeholder participation rather than assessment of the process. A developmental evaluation practitioner would be embedded as part of the team and whilst this has benefits for learning it is less independent and therefore has less focus on accountability. An embedded evaluator also has implications for resource and budgeting.

The options will have different focuses, objectives and capacity and resource requirements. These will need to be weighed up by Defra and MMO against budgetary constraints to decide which evaluation would be the best for this project. A breakdown between the

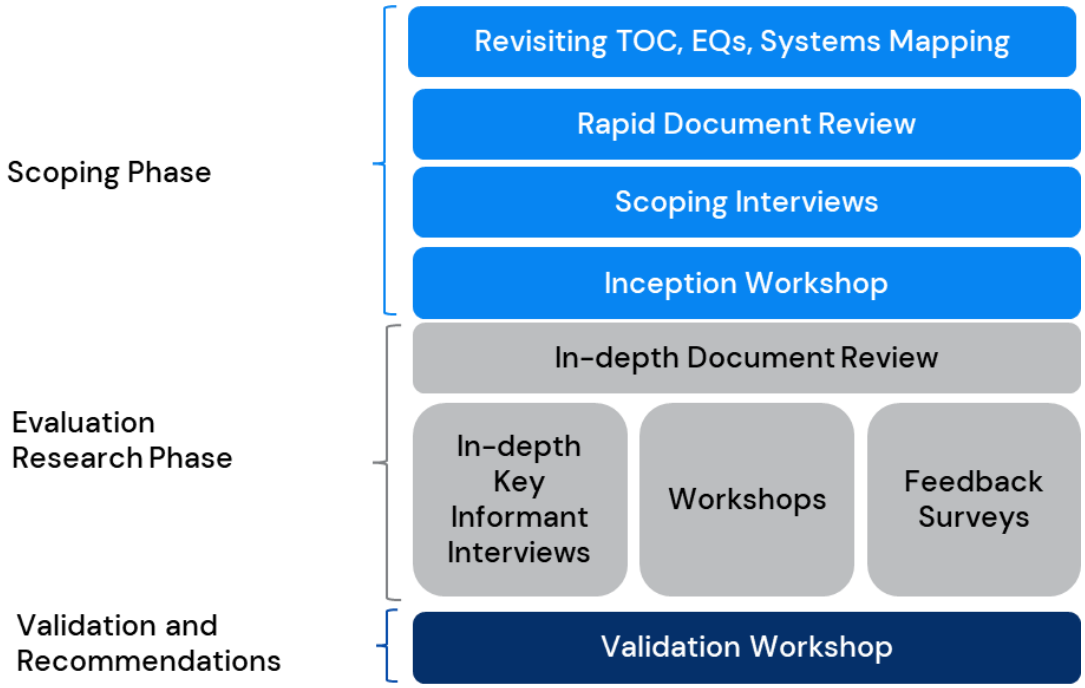
different options comparing the implications on the key focus of the evaluation, resource needs, timing and approaches can be found in Table 9.1.

Considering the options and the requirements of the MMO, the tailored process evaluation approach will likely be the most suitable choice. This option will provide the MMO with the independence and accountability that will be required for potential challenge as the methods are clear, transparent, and repeatable. The tailored approach can be more convenient as the data collection methods can be flexible to the need to balance participatory processes with the resource and budget constraints.

By conducting this evaluation midway through the MMO MPA Fisheries and Conservation strategy it gives the MMO time to learn and adapt their processes. Further opportunity to learn can be provided by considering the timing and frequency of data collection as well as continuing to work closely with the team in workshops such as those that have already been conducted as part of this evaluation plan. Some of the theories and tools outlined in the developmental evaluation approach such as systems thinking in practice and critical systems heuristics can also be utilised as part of a tailored evaluation approach if helpful to facilitate workshops and conversations with stakeholders.

Further work will be needed on the detailed design and delivery planning for the evaluation. This would start with the revisiting of the evaluation questions and Theory of Change proposed in this evaluation plan to ensure they still apply following progression of the 'MMO MPA Fisheries and Conservation strategy'. The evaluators and the evaluation team may want to agree to start this process evaluation with a participatory systems workshop and create a systems map. This can help ensure that the data collection methods listed in this plan can be reviewed and revised to ensure they cover all parts of the system. Figure ES1.1 outlines the sequencing of events of the tailored process evaluation approach that would be recommended, should this option be chosen for the evaluation.

Figure ES1.1 Outline of sequencing of the tailored process evaluation approach


Scoping Phase
Revisiting TOC, EQs, Systems Mapping
Rapid Document Review
Scoping Interviews
Inception Workshop
Evaluation Research Phase
In-depth Document Review
In-depth Key Informant Interviews
Workshops
Feedback Surveys
Validation and Recommendations
Validation Workshop

1 Introduction

ICF and partners have been contracted to undertake the development of an evaluation framework for the Marine Management Organisation (MMO). The type of evaluation is a process evaluation, and the object of the evaluation is the MMO Marine Protected Areas (MPA) Fisheries and Conservation Strategy.

As a process evaluation it needs to answer the following question put in the Magenta Book[1], (the UK Government's guidance for evaluation):

What can be learned from how the intervention was delivered?

The MMO is an executive non-departmental public body, sponsored by the Department for Environment, Food & Rural Affairs (Defra), and is the government's principal regulator for most activities in English waters[2].

The MMO is responsible for the management of activities within MPAs including[3]:

- Marine licensable activities within the English EEZ
- Fishing from 6-12 nautical miles (nm), and out to 200 nm offshore
- Marine non-licensable activities from 0 to 12 nm

The MMO's purpose is to protect and conserve the marine environment and to support marine communities by enabling sustainable marine activities. To fulfill this purpose the MMO is responsible for ensuring that the management of fishing and marine non-licensable activities support MPA conservation objectives set out by statutory nature conservation bodies, Natural England (NE) and Joint Nature Conservation Committee (JNCC).

The management of fishing and marine activities can be done through voluntary measures or through regulation by the development of byelaws. Whilst in the European Union (EU), regulatory measures for offshore fishing required consensus from other member states with a management interest.

The MMO's implementation of the 'MMO MPA Fisheries and Conservation Strategy' led predominately by the MMO Marine Conservation team (from now on MCT), is the object of the process evaluation framework. It follows on from the UK exit from the EU which increased the regulatory competency of the MMO and required legislative action to ensure protection of the sensitive features within all MPAs. The objective of the 'MMO MPA Fisheries and Conservation Strategy' is to develop byelaws, supported by evidence and stakeholder consultation, that will manage fishing activity within MPAs, protect marine environment features, and support conservation objectives.

Achieving the objectives of the 'MMO MPA Fisheries and Conservation Strategy' is complex and involves trade-offs that will bring the strategy into conflict with existing fisheries activities within MPAs. To support the process underlying the strategy, to be effective, and to navigate this complexity, the MMO require an evaluation that can generate rapid feedback and development in the implementation of

[1] HM Treasury (2020). *The Magenta Book: Central Government guidance on evaluation*. [pdf] London.: Crown Copyright. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879438/HMT_Magenta_Book.pdf [Accessed 3rd March 2022]

[2] GOV.UK. 2022. *Marine Management Organisation - About us*. [online] Available at: https://www.gov.uk/government/organisations/marine-management-organisation/about [Accessed 31 March 2022].

[3] Marine Management Organisation. (Unpublished) *Addressing MPA Gear-Feature evidence gaps MMO1273PID*

conservation management, as well as allowing accountability. For this purpose a formative evaluation is required to support learning and development in an ongoing intervention.

The MMO have indicated that the purpose of the evaluation should be to fulfil two key purposes: learning and accountability. However, weighting placed on these different purposes is important to consider in the decision to take an evaluation approach forward.

Therefore, this evaluation plan includes three different options for a formative evaluation, that vary to their degree of emphasis on the purposes of learning and accountability. The options include:

- A tailored process evaluation that is focused on learning and providing mid-programme assessments,
- Outcome-harvesting that enables evaluators and stakeholders to demonstrate the outcomes of the project bottom-up, without preconceived suppositions or proposals and identify opportunities for change,
- Developmental evaluation recognising that the subject of evaluation is always in a state of flux requiring continually adaptive evaluation measures and techniques

The options will have different focuses, objectives and capacity and resource requirements. These will need to be weighed up by Defra and MMO against budgetary constraints to decide which evaluation would be the best for this project.

1.1 Structure of this report

This report provides an overview of the context of the MMO's Fisheries and Conservation strategy, a description of the strategy including a theory of change and an evaluation framework based on three options – tailored process evaluation, outcome harvesting and developmental evaluation.

- **Section 2** gives an overview of the UK commercial fishing industry and the system change from after leaving the EU
- **Section 3** introduces the object of the evaluation 'MMO MPA Fisheries and Conservation Strategy'.
- **Section 4** provides the Theory of Change graphic and narrative that has been co-developed between the MMO MCT and ICF team.
- **Section 5** introduces the stakeholders of the evaluation.
- **Section 6** introduces the type of evaluation (formative process evaluation) and the key objectives of this type of evaluation.
- **Section 7** introduces the evaluation questions which have been co-designed by MMO MCT and ICF team.
- **Section 8** describes the different options of evaluation and their methodology
- **Section 9** compares the different options presented against characteristics including focus, methods, roles and resource requirements.
- **Section 10** concludes the report with a recommendation for the MMO after considering the options.

2 UK Fisheries and marine management: Changes after leaving the EU

The 'MMO MPA Fisheries and Conservation Strategy' which is the object of the process evaluation framework, follows on from the exit from the EU which increased the regulatory competency of the MMO, and required legislative action to ensure protection of the sensitive features within all MPAs in keeping with UK Government obligations. The objective of the 'MMO MPA Fisheries and Conservation Strategy' is to develop byelaws, supported by evidence and stakeholder consultation, that will manage fishing activity within MPAs, protect marine environment features, and deliver conservation objectives.

To provide context to the MMO MPA Fisheries and Conservation Strategy, a summary is provided of the UK commercial fishing industry and the system change from within the EU, to UKs exit from the EU.

2.1 A brief overview of the UK commercial fishing industry and marine environment

2.1.1 UK fish varieties

The types of fish that are caught can be separated across three different species groups – demersal, pelagic, shellfish. Pelagic and demersal are differentiated by their habitat preferences (water column and seabed respectively and are targeted using specific pelagic and demersal gears) whereas shellfish comprise molluscs and crustaceans that are fished using a variety of active and passive methods both in intertidal and subtidal habitats. (Table 2.1).

Table 2.1 Types of fish caught by the UK fleet[4]

Species group	Type / Habitat	Common UK fish species	Fishing method	Quota/Non-Quota
Demersal	Fish that live on or near the seabed	Cod, haddock, hake, lemon sole, monkfish, pollack, skates and rays, sole whiting	Active demersal gears include trawls (e.g. otter, beam trawls), and seine nets, while passive demersal gears include drift and fixed nets and lines.	Mostly quota species
Pelagic	Fish that inhabit the open sea, living in the water column, not near the sea floor. They are often migratory.	Herring, mackerel, sardines	Pelagic gears include midwater trawls (e.g. pair trawls) and seine nets while passive pelagic gears include drift and fixed nets and lines.	Mostly quota species
Shellfish	Marine species with a shell including molluscs and crustaceans that are located on the seabed.	Cockles, crabs, cuttlefish, lobsters, Nephrops, scallops, whelks	Shellfish are caught using a variety of methods specific to the target: active methods include trawls and dredges while the main passive gear types are pots and traps	Mostly non-quota species (except Nephrops)

[4] Marine Management Organisation, 2020. *UK Sea Fisheries Statistics 2020.* [online] pp.4-56. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020837/UK_Sea_Fisheries_Statistics_2020_-_AC_checked.pdf [Accessed 31 May 2022].

In 2020, UK vessels landed 623 thousand tonnes of fish into the UK and abroad with a value of £831 million[5]. 61% of the total landings by UK fleets was fish landed into the UK making up approximately £598 million in value[4] (Figure 2.1, Figure 2.2).

Figure 2.1 Value of landings in the UK, by UK vessels 2016 to 2020[6]

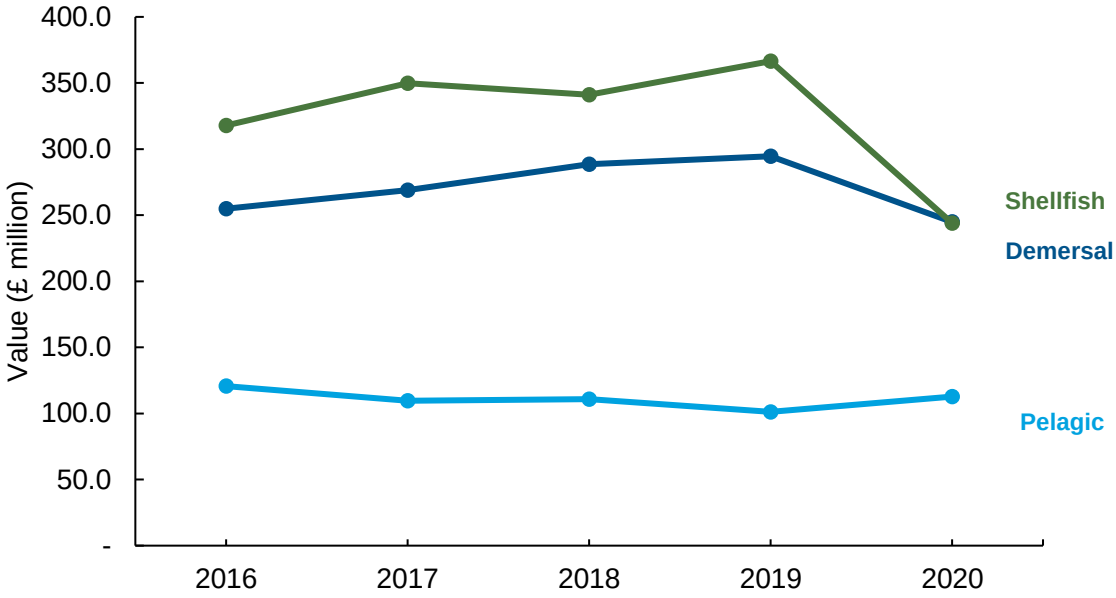
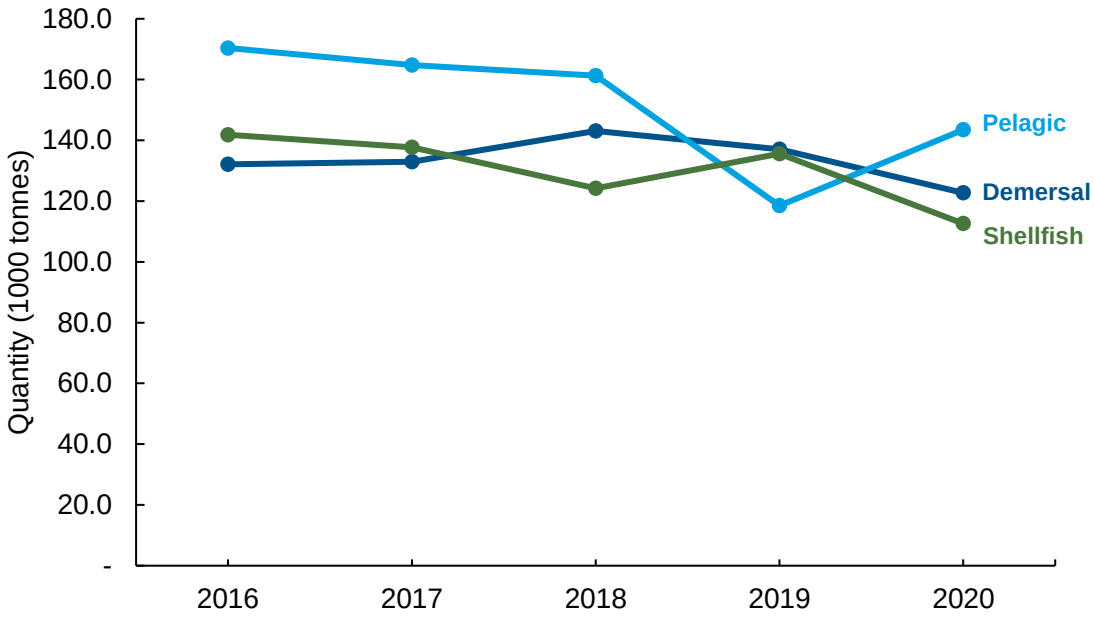


Figure 2.2 Quantity of landings in the UK, by UK vessels 2016 to 2020[6]



[5] Marine Management Organisation, 2021. *Fishing industry in 2020 statistics published*. [online] GOV.UK. Available at: https://www.gov.uk/government/news/fishing-industry-in-2020-statistics-published [Accessed 31 May 2022].

[6] Source: Data from Marine Management Organisation 2020. *UK Sea Fisheries Annual Statistics: Section 2 Landings*. [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020819/Section_2_Landings.ods [Accessed 31 May 2022].

The primary management mechanism for North East Atlantic fisheries targeting commercial species, including for UK fisheries are 'output controls' in the form of Total Allowable Catches (TAC). TACs are set for most pelagic species fished in UK waters and for many important demersal species. Fisheries for non-quota species are typically controlled through 'input controls' in the form of managing fishing effort (number of vessels, gear limits). Both approaches are intended to restrict fishing mortality to levels that are consistent with the requirements of the regulations and agreements (national and international) that are in place.

TACs are set according to quota limits that are generally agreed annually to reflect scientific advice on fishing opportunities provided by ICES, which are then subject to negotiation between States with fishing rights. National administrations then allocate fishing opportunities within national fleets. Fishing opportunities and landings vary between years to reflect which means that the total landings can vary depending on changes in TAC from year to year.

Pelagic fish (predominately herring and mackerel) contribute the greatest volume of landed catch by UK vessels and a substantial proportion of overall landed value (value per kg tends to be higher for high value demersals such as cod and for shellfish species). There was an increase in quotas of key pelagic species in 2019 which is reflected in the increase in catch shown in Figure 2.2.

Demersal species fish comprise a wide range of species including gadoids, flatfish, skate and rays, monkfish and sand eels. Many demersal species have seen a long trend of declining fishing opportunities that reflect the poor status of many of the species' populations. Management responses to stock reduction have been reduced quotas and increasing regulations at national and international level to manage the stock levels.

Landings of shellfish species have increased by over 250% in the last 80 years[7]. This is in large part due to shellfish species being non-quota species (with the notable exception of Nephrops) and due to increasing market demand including in relatively new markets in Asia for previously low value species such as whelks. Shellfish are caught mostly in coastal waters of the UK although high value offshore fisheries also operate[7].

The decline in total catch and value of shellfish seen between 2019 and 2020 can be attributed to the Covid-19 pandemic[7]. The shellfish sector was affected the most because typically shellfish are sold fresh (rather than frozen) and to the hospitality sector both in the UK and abroad[7]. It is likely that the value of the shellfish sector was impacted by the UK exit from the EU, as shellfish exporters experienced challenges exporting to the EU, which was the largest market.

The demersal and pelagic sector were also impacted by the pandemic but to a lesser extent. On larger vessels, the ability to freeze caught fish gave the industry capacity to preserve product and to have a degree of control over when to enter product to the market[7].

2.1.2 Fishing gear and vessels

Fishing vessels deploy specific gear types depending on the target fish species. Many larger vessels are specialised to operate one gear type, while smaller vessels

[7] Marine Management Organisation, 2020. *UK Sea Fisheries Statistics 2020*. [online] pp.4-56. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020837/UK_Sea_Fisheries_Statistics_2020_-_AC_checked.pdf [Accessed 31 May 2022].

operating in inshore waters are often multivalent vessels to enable year-round operation targeting seasonable abundances of commercially viable species.

Fishing gear can be grouped into two main types: active and passive. Active gears (also known as mobile gears) are towed behind a vessel through the habitat of the target species, while passive (or static) gears are deployed and recovered after a period (soak time).

Box 2.1 Types of fishing gear[7,8,9]

Active/Mobile gears

- **Dredges** are rigid gears that are towed along the seabed by a boat to target shellfish such as scallops and oysters. Dredges are designed to remain in close contact with the seabed to catch species that live on or in the seabed and cause abrasion of the surface of the seabed and penetration and or/disturbance below the surface of the seabed and therefore can cause damage to benthic features. Hydraulic dredges use jets of water to disturb the seabed and dislodge shellfish buried within sediments. This tends to be very localised but highly damaging to seabed habitats and species.
- **Bottom trawls** are nets dragged along or just above the seabed primarily to target demersal fish species, but which also catch other epibenthic organisms. Bottom trawls are diverse in design, including but not limited to beam trawls, bottom otter trawls and bottom pair trawls, Danish seines, etc. Bottom trawls typically disturb benthic habitats and are associated with high levels of bycatch. By virtue of the widespread use of bottom trawls, this gear category is considered to be one of the most environmentally damaging, although care is needed with this generalisation, as impacts between different designs vary greatly.
- **Pelagic trawls** are large nets dragged behind boats in the water column to target pelagic species. Typically, pelagic trawls are deployed to target a single shoaling species so are generally limited in terms of bycatch relative to bottom trawls. Pelagic trawls are, however, associated with periodic bycatch of protected species (e.g. small cetaceans). In terms of benthic impacts, the lack of contact of properly operated pelagic trawls results in no to negligible damage to the seabed features.

Passive/Static gears

- **Drift and fixed nets** hang in the water column, suspended from buoys or the seabed, typically targeting pelagic fish. There is low levels or no contact with the seabed from these gears, but there is a risk of bycatch and interaction with other marine animals (e.g. seabirds, marine mammals).
- Gears using **hooks** attract fish by placing a natural or artificial bait on a hook fixed to a line. Gear length can vary hugely from tens to thousands of hooks per line. Some longlines are deployed to rest on the seabed.. Longlines can have unintended interactions with non-target fish, seabirds and other marine life.

[8] Seafish. 2022. *Fishing Gear Database | Seafish*. [online] Available at: https://www.seafish.org/responsible-sourcing/fishing-gear-database/?t=docGear [Accessed 31 May 2022].

[9] FAO, 2021. *FAO Fisheries & Aquaculture.* [online] Available at: https://www.fao.org/fishery/en/geartype/search [Accessed 31 May 2022].

- **Pots and traps** are deployed in lines with each line attached to a number of pots (typically 10-40). The pots lie on the seabed for a period and will move depending on tidal currents and wave movements before being retrieved. While the benthic footprint is small in relation to active trawling, pots and traps do result in benthic disturbance.

In addition to the type of fishing gear, the number of vessels, vessel capacity and power, and operating patterns all contribute to the level of fishing pressure placed on the marine environment.

2.1.3 Summary of the UK fleet

In 2019, 5,668 licensed fishing vessels were recorded in the UK, although a number of these vessels are less active or inactive. The Seafish estimate of active fishing vessels in the UK is about 4,500. The 10 metre and under fleet comprises about 75% of the UK fleet, of which about 50% use static or passive fishing gear.

The number of active fishing vessels is greatest in England (about 50% of the active fleet), followed by Scotland (about 38%), Wales, then Northern Ireland (Figure 2.3). Scottish registered vessels contribute the majority of landings by weight and value reflecting the importance and contribution of the large pelagic fishing fleet based in Scotland. Vessels over 24 metres landed about 80% of the total landed weight. The relative power and capacity of this pelagic fleet is clearly visible in the national picture (vessel engine power Figure 2.4; gross tonnage Figure 2.5)

The contribution of the 10 metre and under fleet is widely dispersed and difficult to measure. The local socio-economic importance of this fleet should not be underestimated, however. This fleet is also associated with a much broader range of species being targeted and landed, and with more distributed value chains that are linked to both domestic and international markets.

In national terms, the contribution of fishing to GDP in 2019 was £747 million, representing 5.5% of the total for agriculture, forestry and fishing combined. Estimates of the UK fleet indicate a turnover of £1 billion per year with an operating profit of £240 million. Marine fisheries produced gross value added (GVA) of $483 million in 2018. The majority of GVA is associated with the over 24 metre fleet based in Scotland, contributing 67% of GVA in 2019[10].

[10] Guille, H., Gilmour, C., Willsteed, E. 2021. *UK Fisheries Audit*. Report produced by Macalister Elliott and Partners Ltd. for Oceana. Lymington, UK. 116 pp. Available at https://europe.oceana.org/sites/default/files/oceana_uk_fisheries_audit.pdf

Figure 2.3 Size of the UK fishing fleet, by country of administration in 2020 [11]

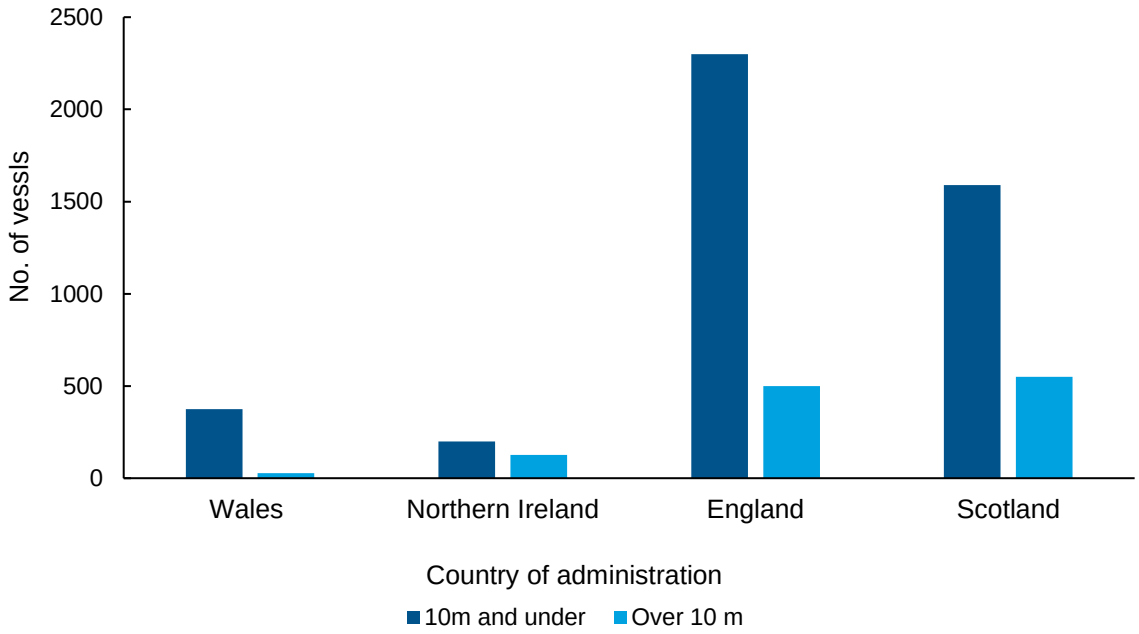
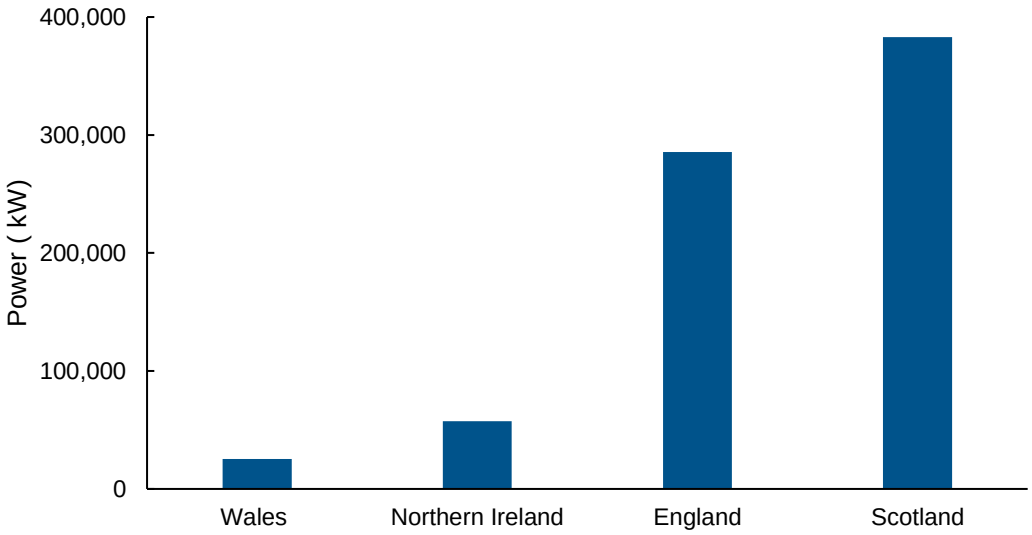
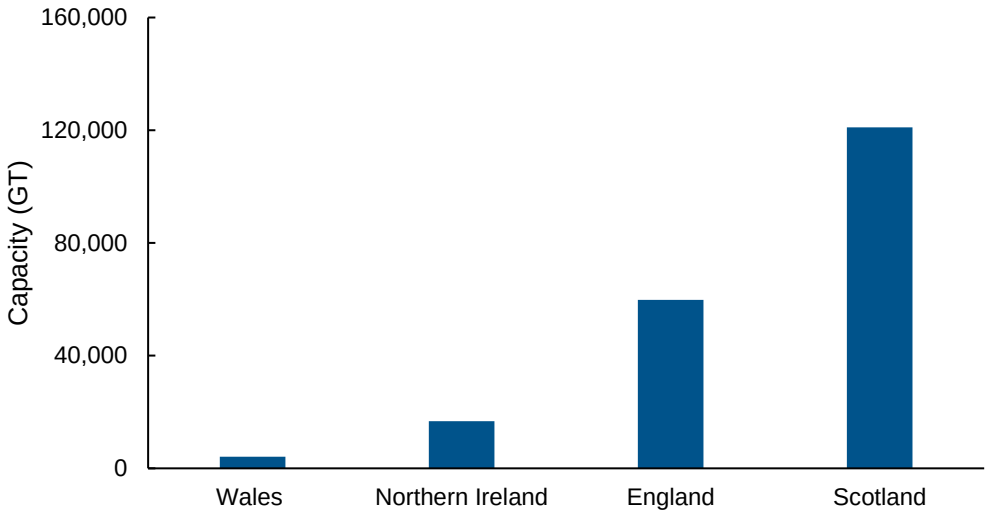


Figure 2.4 Power of UK fishing fleet in kW[11]



[11] Source: Data from Marine Management Organisation 2020. *UK Sea Fisheries Annual Statistics: Section 1 Fleet.* [online] Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1020818/Section_1_Fleet.ods [Accessed 31 May 2022].

Figure 2.5 Capacity of UK fishing fleet expressed as gross tonnage[11]



2.1.4 UK fish habitats

Fish habitats can be broadly divided into the water column (pelagic) and seabed (demersal). Pelagic habitats are defined by depth, the abundance of nutrients, oxygen, water temperature and salinity. Demersal fish habitats are characterised by seabed type, falling into broad categories of sedimentary (sand, mud, coarse) and rock. Within these broad seabed categories there are specific habitat types based on exposure, depth, salinity and physiographic type (e.g. inlets and bays, estuaries, lagoons, rias, tidal sounds, sea lochs, sandbanks). Finally, the presence of key and characterising species determines more detailed definitions of biotopes, and some are based on species that bioengineer habitats and provide structural complexity for refuge, feeding opportunity and nursery areas for juveniles such as seagrass, maerl, macroalgae, corals and bivalves.

- **Rocky reefs**

Rocky reefs vary greatly in both their ecological communities and topographic structure (horizontal ledges to vertical walls, flat or sloping bedrock, boulder fields and cobbles). All rocky reefs however provide a hard surface for animal and plant communities to attach to. Reef habitats can be divided according whether or not they are plant or animal dominated as shallow (infralittoral) and intertidal reefs have sufficient light for attached macroalgae while deeper reefs are characterised by sessile invertebrates (sponges, ascidians, corals and hydroids). Both types can have a range of mobile animals including commercially important invertebrates and fish (e.g. crab, lobster, pollack). In addition, ecological communities are structured by exposure (to wave action, tidal streams) and turbidity (that restricts the photic zone), and salinity (reduced salinity communities from inlets and estuaries are distinctive from those that are fully marine).

In addition to rocky reefs are reefs that are biogenic in origin, constructed by bivalves (blue mussels and horse mussels), worms (Ross worms and *Serpula vermicularis*) and cold water corals (*Lophelia pertusa*).

- **Sandbanks**

Sandbanks are habitat features that consist of sandy sediments and may be periodically exposed by the tides or permanently covered by seawater (typically in

shallower water <20m). The habitat comprises distinct banks (irregular, round or elongated) which may arise from plains of sandy sediment, and may be separated by deep channels. The ecological community associated with sandbanks is dependent on the sediment type (gravel or clean sands, muddy sands) as well as other physio-chemical and hydrographic factors including water temperature, exposure, habitat topography, and whether there is seagrass or maerl.

Sandbanks can support important commercial fisheries such as those for flatfish (plaice, sole, lemon sole), skates and rays. They can also provide habitat for sandeel, a keystone fodder species that are important prey item for higher trophic species such as commercially fished demersal species including cod, mackerel and whiting and also seabirds and marine mammals.

- **Seagrass beds**

Seagrass beds occur in the intertidal and subtidal sedimentary areas of sheltered bays, marine inlets, lagoons and channels. The seagrass plants stabilise the sediments (sands or muds), provide an important source of organic matter and provide a complex habitat for other species. Flatfish, cephalopods, and other commercially important species use seagrass beds for nursery areas with juveniles finding shelter, refuge and food amongst the seagrass plants. Seagrass beds are highly sensitive to many physical (e.g. removal through anchoring or trawling), chemical (e.g. nutrient enrichment, pollutants) and biological pressures (e.g. invasive species such as *Caulerpa racemosa* invasion) and in UK waters have suffered widespread habitat loss and degradation. For this reason, they are a conservation priority habitat and protected under various conservation designations[12].

2.1.4.1 Gear-feature interactions

Seabed habitats vary in their sensitivity to damage, degradation, and loss from fishing activities due to the life-histories, growth forms, and fragility of their ecological communities. This is often defined in terms of the resistance (likelihood of damage due to a pressure) and resilience (recovery time once the pressure is removed)[13]. For example, ecological communities dominated by long-lived, slow growing sessile species will have a higher sensitivity than one dominated by fast growing, highly fecund, highly mobile species.

Also some fishing gears are more likely to cause damage to seabed habitats because they are heavy and disturb the seabed by abrading the seabed surface and in some cases penetrating into the substratum (e.g. heavy gears such as beam trawls and scallop dredges).

Spatial and temporal exposure of a feature to fishing pressures are another important consideration – active (mobile) gears such as trawls impact a much larger area of a feature than passive (static) gears such as pots and traps (extent) and some activities are occasional or rare while others are ongoing constantly (frequency).

Thus, in order to understand the impact of fishing activity within an MPA, the specific combination of gear type and feature must be considered and assessed. Some

[12] Wildlifetrusts.org. n.d. *Common eelgrass | The Wildlife Trusts*. [online] Available at: https://www.wildlifetrusts.org/wildlife-explorer/marine/seaweeds-and-seagrass/common-eelgrass [Accessed 31 May 2022].

[13] Marlin.ac.uk. 2022. *MarLIN - The Marine Life Information Network - Marine Evidence based Sensitivity Assessment (MarESA)*. [online] Available at: https://www.marlin.ac.uk/sensitivity/sensitivity_rationale [Accessed 31 May 2022].

combinations of feature and gear type are not compatible with the conservation objectives of an MPA.

2.2 UK marine conservation and fisheries management: changes after leaving the EU

Fisheries and marine environments are managed with the aim of maintaining clean, healthy, safe, productive, and biologically diverse oceans and seas. The objectives of marine management include:

- To maintain the sustainable use of marine resources (such as fishing stocks)
- To protect the natural environment from damage caused by fishing, marine developments, or recreational activity.

The types of management that are used to manage fisheries and protect the marine environment from other human activity include:

- **Fisheries management** – the management of fishing pressure on fish stocks to restore and maintain fish stocks above biomass levels that can produce their Maximum Sustainable Yield. Management actions can include inputs and outputs controls that are achieved through licensing, regulation, control and enforcement, with the aim to restrict fishing mortality to levels consistent with the requirements of regulations and agreements in place.
- **Marine nature conservation** – MPAs is a collective term to describe areas including Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Marine Conservation Zones (MCZs), and, when designated will also include a new type of MPA, Highly Protected Marine Areas[14](HPMAs). Marine conservation byelaws can be used to restrict or prohibit certain activities within MPAs to protect them from harm or damage (Box 2.2).
- **Marine licensing –** there are seven categories of activities that require a marine licence for them to be approved to take place. Activities that require a licence include construction, dredging, depositing, removal, incineration, scuttling and use of explosives. To obtain a marine licence, applications need to be made which the MMO will review and approve depending on the activity and any assessments that have been made on the impact of the activity on the environment, human health, and interference with other sea-based activities[15].
- **Marine planning –** sets out the priorities and directions for development in line with the environment, social and economic opportunities. The purpose is to inform sustainable use of marine resources and to understand the best locations for different activities and where development may be appropriate[16].

2.2.1 UK fisheries and marine management whilst in the EU

Prior to leaving the EU, the basis upon which the UK negotiated annual fishing opportunities and managed the UK fleet's activities were primarily those set out in

[14] Highly Protected Marine Areas are not part of the MMO MPA Marine Fisheries and Conservation Strategy and therefore not part of this evaluation plan

[15] Marine Management Organisation, 2020. *Do I need a marine licence?.* [online] GOV.UK. Available at: https://www.gov.uk/guidance/do-i-need-a-marine-licence [Accessed 1 June 2022].

[16] Marine Management Organisation, 2021*. Marine planning in England.* [online] GOV.UK. Available at: https://www.gov.uk/government/collections/marine-planning-in-england [Accessed 31 May 2022].

the Common Fisheries Policy[17] (CFP) and the multiannual management plans developed under the CFP. The fundamental objective of the reformed CFP (2013) is to restore and manage fish stocks above biomass levels that can produce their maximum sustainable yield (MSY). For some fisheries, additional management measures are specified through regulations under the umbrella of the CFP, such as regional multiannual plans (MAPs) of which the North SEA MAP and Western Waters MAP were key.

During the time when the UK was part of the EU, TACs for stocks under exclusive EU competency were set by the EU Agriculture and Fisheries Council, which included the UK's Fisheries Minister, and were specified within the annual TAC and Quota Regulations. The allocation of agreed TACs among EU Member States, commonly known as quota, was subject to a fixed percentage of each TAC, known as the relative stability key. For stocks shared with third parties, bilateral and multilateral agreements were made, typically annually. Member States then set their own rules for how to allocate quotas among their nationally registered vessels (while meeting overarching EU criteria). For the UK, there was then a process of quota distribution to the devolved nations undertaken by each of the four fisheries administrations.

In addition to the CFP, European environmental legislation that covers marine environment included the following:

- EU Marine Strategy Framework Directive[18],
- EU Birds Directive – including designation of Special Protection Areas (SPAs)[19]
- EU Habitat Directive – including designation of Special Areas of Conservation (SACs)[20]
- EU Water Framework Directive[21].

The Marine and Coastal Access Act 2009[22] sought to modernise marine management in the UK to include both conservation and stakeholders in decision-making and balancing all marine activities to achieve effective stewardship of UK waters. Under the MCAA, the Marine Management Organisation (MMO) was established who license, regulate, and plan marine activities in the English zone, including fisheries and MPAs from 6-12nm and in the offshore area out to 200nm. The MCAA also led to the creation of 10 Inshore Fisheries and Conservation Authorities (IFCAs) who manage fisheries and MPAs in inshore waters (0-6nm)

[17] European Parliament, 2022. *The common fisheries policy: origins and development | Fact Sheets on the European Union | European Parliament*. [online] Europarl.europa.eu. Available at: https://www.europarl.europa.eu/factsheets/en/sheet/114/the-common-fisheries-policy-origins-and-development [Accessed 23 June 2022].

[18] European Commission, 2021. *Law - EU Coastal and Marine Policy - Environment - European Commission*. [online] Ec.europa.eu. Available at: https://ec.europa.eu/environment/marine/eu-coast-and-marine-policy/marine-strategy-framework-directive/index_en.htm [Accessed 31 May 2022].

[19] European Commission, n.d. *The Birds Directive - Environment - European Commission.* [online] Ec.europa.eu. Available at: https://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm [Accessed 31 May 2022].

[20] European Commission, n.d. *The Habitats Directive - Environment - European Commission*. [online] Ec.europa.eu. Available at: https://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm [Accessed 31 May 2022].

[21] European Commission, n.d. *River basin management - Water - Environment - European Commission*. [online] Ec.europa.eu. Available at: https://ec.europa.eu/environment/water/water-framework/index_en.html [Accessed 31 May 2022].

[22] Legislation.gov.uk. 2009. *Marine and Coastal Access Act 2009*. [online] Available at: https://www.legislation.gov.uk/ukpga/2009/23/contents [Accessed 31 May 2022].

within a defined district. IFCAs do not have a mandatory role in national infrastructure projects or in UK strategic decisions.

Under the Marine Coastal Access Act 2009 the UK government implemented their own set of MPAs including Marine Conservation Zones (MCZs) which could be designated in territorial and offshore waters. Despite many MPAs being designated prior to UK leaving the EU, UK had limited regulatory power to protect these areas. Marine conservation byelaws (Box 2.2) could be designated for inshore waters, in England byelaws were developed by IFCAs (covering 0-6nm) and MMO with sign off from SoS for Defra. However, marine conservation byelaws that were intended to be developed for offshore waters (>12nm), required consensus across EU member states that had a management interest. The requirement for consensus limited MMOs power and ability to manage the conservation of England waters and few byelaws were implemented offshore during this time.

Box 2.2 Marine conservation byelaws

"*Byelaws are local laws made by a local council under an enabling power contained in a public general act or a local act requiring something to be done – or not done – in a specified area. They are accompanied by some sanction or penalty for their non-observance.*"[23]

The MMO is the lead authority for the management of fisheries in English waters from 6nm to 200nm and is responsible for developing byelaws to protect MPAs from activities that may cause damage. From 0 to 6 nm IFCAs are the lead authority managing both fisheries and MPAs and can develop byelaws to protect MPAs in the inshore area[24].

As stated by the MMO, "MMO byelaws can prohibit or restrict:

- entry to a site, movement or other activity by people, animals, vessels or vehicles;
- vessel speed;
- vessel anchoring;
- killing, taking, destroying or disturbing any animals or plants;
- anything that interferes with the seabed or damages or disturbs any object in the sea;
- specific activities in certain parts of the site;
- specific activities in certain periods of a year;
- certain methods of activity within a site.
- A MMO byelaw will apply to everyone, including other member states that hold fishing access rights in the site or its specified areas.

A MMO byelaw will include:

- the law that allows the byelaw to be made;
- details (including coordinates) of the site or specified areas;
- details of the activity being prohibited or restricted;
- details of possible permits – like a scientific exemption;
- the conservation objectives of the site with background information about the byelaw possibly included in an explanatory note."[24]

2.2.2 UK fisheries and marine management after leaving the EU

After leaving the EU, the UK is no longer part of the EU's Common Fisheries Policy and since the end of the transition period in January 2021, the UK has full autonomy to decide management measures to apply to its fisheries within its EEZ. The Fisheries Act 2020[25] is the main framework regulation for the management of the UK's fish and shellfish resources and fisheries now the UK has left the EU.

This regulation contains for example the principles and basis for setting exploitation rates for UK fish stocks, negotiating management measures for shared stocks, and permitting access of non-UK fishing vessels to UK waters. There are Fisheries

[23] Department for Levelling Up, Housing and Communities and Ministry of Housing, Communities & Local Government, 2012. *Local government legislation: byelaws*. [online] GOV.UK. Available at: https://www.gov.uk/guidance/local-government-legislation-byelaws [Accessed 31 May 2022].

[24] Marine Management Organisation, 2022. *Understand marine conservation byelaws*. [online] GOV.UK. Available at: https://www.gov.uk/guidance/marine-conservation-byelaws [Accessed 31 May 2022].

[25] *Fisheries Act 2020*. [online] Available at: https://www.legislation.gov.uk/ukpga/2020/22/contents/enacted [Accessed 16 June 2022].

Objectives that cover various sustainability objectives, including a commitment to best management standards such as MSY. The objectives are not firm duties as were obligated by the CFP. There are specified duties to develop Fisheries Management Plans to maintain stocks at or above MSY or restore them to levels capable of producing MSY, as well as plans for data deficient stocks.

Since the end of the transition period, for shared stocks, which represent most of the stocks managed through catch limits, the UK will now directly negotiate bilateral and multilateral agreements, like those recently adopted with the EU and Norway. After leaving the EU, the EU-UK Trade and Cooperation Agreement sets the percentages for each party for every shared fish stock and then fishing rights and quotas are developed as part of EU and UK consultations[26]. These consultations will continue on a yearly basis to agree the rights of parties to the share stocks for the following year[26]. As before leaving the EU, the UK will continue to have full discretion in the distribution of fishing opportunities among its fishing fleet.

Much of the EU environmental legislation is being transferred into UK law[27], however the UK now has authority to develop and manage its own marine and environmental policy. This includes the ability for the UK government and devolved administrations to develop marine conservation byelaws to better regulate, restrict and prohibit certain activities inside marine protected areas. In England the MMO has the role of developing, implementing, and enforcing these marine conservation byelaws from 6 to 200 nm and this is the objective of the MMO MPA Fisheries and Conservation Strategy. The UK government are also considering upgrading some of the existing MPAs to HPMAs[28].

An outline of the changes in management across the different water zones is provided in Table 2.2.

Table 2.2 UK fisheries and conservation management within and outside of the EU

Classifications of zones			Distance from shore (nm)	UK fisheries and marine conservation management within the EU	UK fisheries and marine conservation management after leaving the EU	The changes as it relates to the MMO MPA Fisheries and Conservation Strategy
UK Economic Exclusive zone	UK Territorial waters	Inshore	0-6	Fishing and conservation managed and enforced by IFCAs since 2009. IFCAs were able to develop marine conservation byelaws with MMO to be signed off by Defra.	Fishing and conservation managed and enforced by IFCAs since 2009. IFCAs are able to develop marine conservation byelaws with MMO to be signed off by Defra	Management of water 0 to 6 nm has not changed significantly after UK exit from the EU. However, regulation developed by the MMO as part of the strategy may overlap into IFCA jurisdiction and therefore they need to be consulted on these areas.

[26] Council of the European Union, 2021. *Fishing quotas after Brexit*. [online] Consilium.europa.eu. Available at: https://www.consilium.europa.eu/en/infographics/fishing-quotas-eu-uk [Accessed 16 June 2022].

[27] Defra, 2020. *Guidance to the UK Marine Policy Statement from 1 January 2021*. [online] GOV.UK. Available at: https://www.gov.uk/government/publications/uk-marine-policy-statement/guidance-to-the-uk-marine-policy-statement-from-1-january-2021 [Accessed 16 June 2022].

[28] Defra, 2021. *Government response to the Highly Protected Marine Areas (HPMAs) review*. [online] GOV.UK. Available at: https://www.gov.uk/government/publications/government-response-to-the-highly-protected-marine-areas-hpmas-review/government-response-to-the-highly-protected-marine-areas-hpmas-review [Accessed 16 June 2022].

Classifications of zones	Distance from shore (nm)	UK fisheries and marine conservation management within the EU	UK fisheries and marine conservation management after leaving the EU	The changes as it relates to the MMO MPA Fisheries and Conservation Strategy
	6-12	MMO enforce measures 6nm to 12nm as the competent authority	MMO enforce measures 6nm to 12nm as the competent authority	The MMO can now develop byelaws to improve the protection of MPAs by restricting certain activities. Previously, offshore byelaws would have required consensus at the EU level between member states with a management interest. Now, UK byelaws within the EEZ will not require EU consensus and can be developed and implemented more quickly.
Offshore	12 - 200	Fishing industry was regulated at the EU level and in England managed by the MMO. Member states shared access to fishing grounds from 12 to 200 nm. The Total Allowable Catch (TAC) for UK was set by the EU. Much of UK fisheries law and environmental legislation was set at the EU level with limited national policy development.	The UK is no longer part of the EU's Common Fisheries Policy and is now a sovereign independent coastal state. Fisheries quotas of shared fishing stocks need to be consulted and negotiated with other countries to comply with international treaty commitments and historical fishing rights[29]. Much of EU environmental legislation is being transferred into UK law, however UK now has authority to develop and manage its own marine and environmental policy.	

2.2.3 Challenges facing the fishing industry operating in English waters

The fishing industry operating in English waters is experiencing a period of significant change that is likely to continue as the UK government responds to energy security, net zero, and biodiversity protection obligations. This section provides a brief on the key changes facing the industry, as these collectively influence how commercial fishery stakeholders perceive and respond to strategic initiatives such as the MPA Fisheries and Conservation Strategy.

The UK's commitment to protecting the marine environment is structurally shifting the landscape for fisheries. The importance of maintaining biodiversity and ecosystem integrity is increasingly recognised in policy and legislation, and ecological criteria carry increasing weight when making decisions about who can access marine spaces. The expansion of MPAs has progressed rapidly, with 38% of UK waters now covered by some form of protection[30]. While varying designations mean that fishing is often permitted within MPAs, more MPAs will be closed to some

[29] Ares, E., Rhodes, C. and Ward, M.,: House of Commons Library. 2017. *The UK Fishing Industry*. [online] Available at: https://researchbriefings.files.parliament.uk/documents/CDP-2017-0256/CDP-2017-0256.pdf [Accessed 16 June 2022].

[30] JNCC, 2022. *UK Marine Protected Area network statistics | JNCC - Adviser to Government on Nature Conservation*. [online] Jncc.gov.uk. Available at: https://jncc.gov.uk/our-work/uk-marine-protected-area-network-statistics/ [Accessed 16 June 2022].

or all types of fishing going forward[31]. In addition, there is the potential that areas of ocean that are currently unprotected may be closed or limited to fishing for biodiversity and climate change mitigation purposes[32,33].

The UK commitment to climate change also has implications for commercial fishing. The UK has committed to reach net zero greenhouse gas emissions by 2050, a commitment strengthened in 2020 with ambitious new targets for at least 68% reduction in greenhouse gas emissions by 2030 (from 1990 levels)[34]. To help meet this target, the Government has committed to 40 GW of new offshore wind electricity generation by 2030, representing a fourfold expansion of infrastructure deployment in UK waters[35]. Commitments to net zero are made in the Industrial Strategy, the Clean Growth Strategy and the Offshore Wind Sector Deal and are being advanced through The Crown Estate's leasing process for offshore wind, including Round 4, with future leasing rounds anticipated. The ongoing conflict in Ukraine and the 2022 British energy security strategy[36] add additional impetus to expand offshore energy generation capacity rapidly, increasing the speed and scale of interactions with commercial fisheries.

The policy and regulatory environments governing fisheries are also changing. After leaving the EU, the UK's commitment to sustainable fishing[37] is legislated for through the Fisheries Act 2020. At present, numerous important stocks are depleted or recovering, suggesting that fisheries targeting those stocks will be subject to greater regulatory scrutiny in future and may experience reduced fishing opportunities. While there are confounding variables, it is often the case that reducing fishing pressure is the fastest and most assured means of enabling stock rebuilding.

Beyond the policy and regulatory landscape, climate change, public perceptions and tastes are also altering the outlook for future fisheries. The ecological effects of climate change altering the distribution and abundance of species will influence the operational landscape for commercial fisheries. Public perceptions about seafood are also changing, with impacts on market demand, both positive and negative. A greater number of people are moving towards meat-free diets, particularly in younger generations[38]. For those still consuming fish, there is a relatively small but growing market catering to consumers who want low impact seafood. Market access

[31] Defra, 2020. *Coverage of the review into Highly Protected Marine Areas - Defra in the media*. [online] Deframedia.blog.gov.uk. Available at: https://Deframedia.blog.gov.uk/2020/06/08/coverage-of-the-review-into-highly-protected-marine-areas/ [Accessed 16 June 2022].

[32] Luisetti, T., Turner, R., Andrews, J., Jickells, T., Kröger, S., Diesing, M., Paltriguera, L., Johnson, M., Parker, E., Bakker, D. and Weston, K., 2019. Quantifying and valuing carbon flows and stores in coastal and shelf ecosystems in the UK. *Ecosystem Services*, 35, pp.67-76.

[33] Sala, E., Mayorga, J., Bradley, D. *et al.* 2021. Protecting the global ocean for biodiversity, food and climate. *Nature* **592,** 397–402. https://doi.org/10.1038/s41586-021-03371-z

[34] UK GOV, 2020. *UK sets ambitious new climate target ahead of UN Summit*. [online] GOV.UK. Available at: https://www.gov.uk/government/news/uk-sets-ambitious-new-climate-target-ahead-of-un-summit [Accessed 23 June 2022].

[35] UK GOV, 2020. *New plans to make UK world leader in green energy*. [online] GOV.UK. Available at: https://www.gov.uk/government/news/new-plans-to-make-uk-world-leader-in-green-energy [Accessed 23 June 2022].

[36] BEIS, 2022. *British energy security strategy*. [online] GOV.UK. Available at: https://www.gov.uk/government/publications/british-energy-security-strategy [Accessed 16 June 2022].

[37] At its most basic, sustainable fishing leaves enough of the target species so that the population is able to regenerate in subsequent years. As fished species are dependent on the bio-physical environment, this requires that the impacts of fishing on target species, non-target species and the wider environment are also accounted for.

[38] Johnson, G., 2022. *How many vegetarians and vegans are in the UK?*. [online] Finder UK. Available at: https://www.finder.com/uk/uk-diet-trends [Accessed 16 June 2022].

following the UK's exit from the EU and Covid have also had significant impacts on market dynamics, with turnover decreasing by 17% in 2020 compared with the previous 3 years[39].

The sum of the above is a shifting, uncertain future for fisheries in the UK. The rebalancing of values towards greater recognition of the importance of environmental protection has led to the fishing industry voicing a concern that fishers' livelihoods are of secondary importance to environmental protection and to other maritime industries[40]. Members of the fishing community from the UK, Europe and the USA within the ICES Working Group on Offshore Wind Development and Fisheries have expressed a sentiment of "being left behind". This sentiment is increasing, as consensus grows for urgent, ambitious change associated with the net-zero transition. This presents a challenge for the MMO and for the MPA Fisheries and Conservation Strategy specifically, as measures that add restrictions to fishing operations will be perceived through a lens of multiple creeping restrictions acting on the industry.

[39] Seafish, 2021. *2020 economic performance estimates for UK fishing fleet - Seafish*. [online] Seafish. Available at: https://www.seafish.org/about-us/news-blogs/profit-and-turnover-down-as-uk-fishing-fleet-weathers-a-challenging-year/ [Accessed 16 June 2022].

[40] See, for example, https://www.nffo.org.uk/hpma-selection-process-rigged-to-harm-fishing-communities/

3 The MMO MPA Fisheries and Conservation Strategy process

The intervention, MMO MPA Fisheries and Conservation Strategy, consists of three, partly parallel running stages and a 'business as usual' stage. The three stages have common factors such as the production of an evidence review of the impact of the use of fishing gear on features to be protected in the MPAs. The stages are differentiated by the number of MPAs involved and gear-feature combinations involved within those MPAs (see section 2.1.4.1) included. Figure 3.1 outlines the timeline of key events of the MMO MPA Fisheries and Conservation Strategy as occurred to date (June, 2022).

Stage 1 includes all gear-feature combinations in 4 MPAs. These sites were chosen as some of the most at risk sites as well as providing a representative spread of features, designation types and geographies.

Stage 2 includes bottom towed fishing over reef and related features in 13 MPAs.

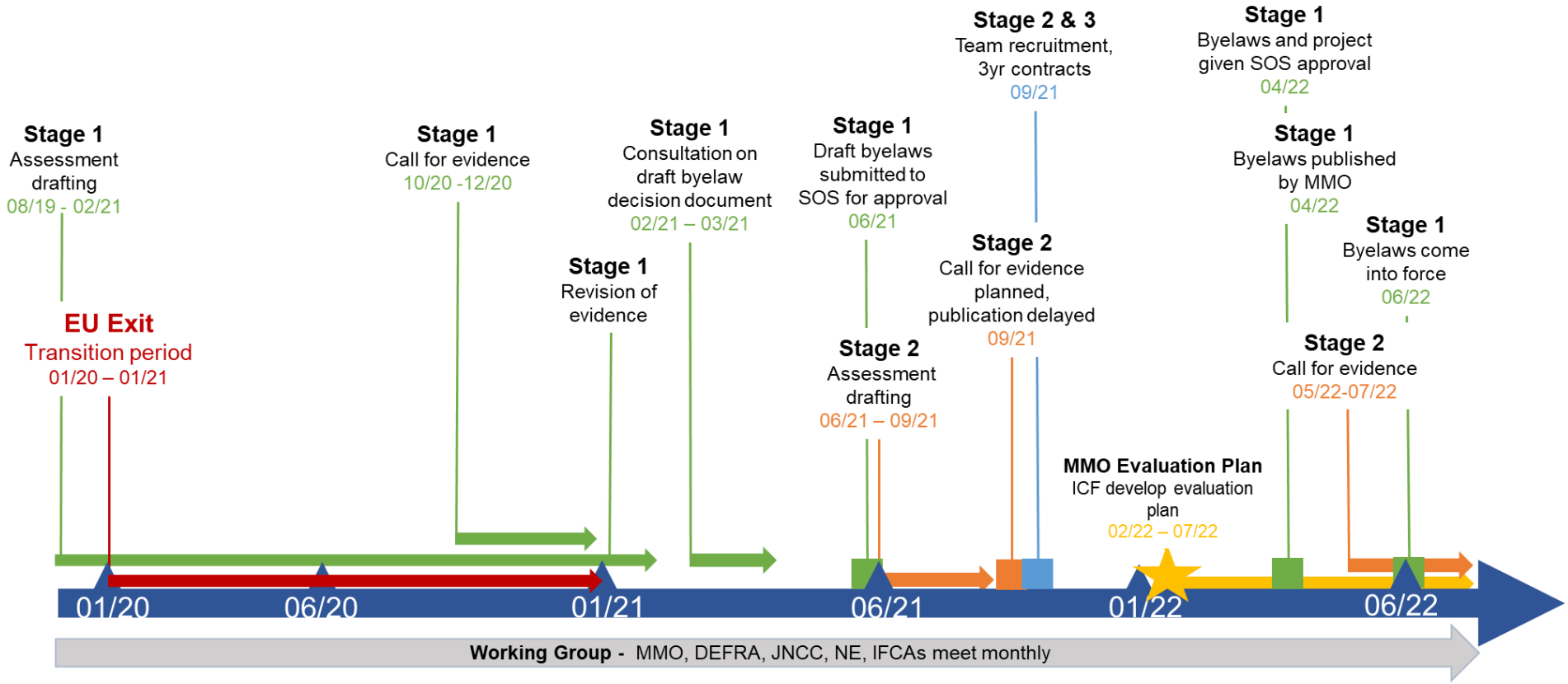
Stage 3 includes more than 40 MPAs with a variety of gear-feature combinations not included in the other stages.

The three Stages are similar in that each applies commons steps to reach their objective of implementing a byelaw to protect the features. These steps are:

- MMO assessment, including advice from the Statutory Nature Conservation Bodies (SNCBs), of the evidence available for a specific gear-feature combination;
- Public call for evidence focused on the draft assessment;
- Review of any responses received;
- Final assessment;
- Application of general principles for decision making under uncertainty such as the precautionary principle;
- Drafting of byelaws and regulatory impact assessment;
- Public consultation on the draft byelaws and regulatory impact assessment;
- Amendments depending on the consultation return;
- MMO formally make the byelaw
- Defra confirm the byelaw on behalf of Secretary of State.

A Business as Usual stage follows the implementation of byelaws. The (Business as Usual) BAU stage also includes most of the elements listed above but starts at monitoring and reviewing of the existing byelaws and ends with either a change to the byelaw, its revocation, or no change.

Figure 3.1 Timeline of activities for the different stages of the MMO MPA Fisheries and Conservation Strategy



4 The Theory of Change

4.1 Introduction

The Theory of Change (ToC) for the MMO MPA Fisheries and Conservation Strategy was developed during a workshop with the MMO MCT, a representative of Natural England (one of the MMO's partners in this project) and the ICF team. The ToC and its narrative were then drafted by the ICF team and refined further in consultation with MMO and the ICF team in a validation workshop (details are provided in Annex 1 and Annex 3)

A ToC narrative tells the story of the project delivery in ideal circumstances. This means that it assumes that all the assumptions are met. The evaluation tests whether assumptions and outcomes directly related to the process have held true. The ToC narrative can also be used to explore assumptions with the MMO MCT and other stakeholders to identify any missing assumptions, changes in context and environment, and unintended consequences.

A fully fleshed-out ToC provides a much richer diagrammatic representation for process evaluation which includes core assumptions (conditions) underpinning the model, and any important dynamic feedback loops signalling the non-linearity of actual practice. The ToC for the MMO MPA Fisheries and Conservation Strategy includes a nested ToC, feedback loops, assumptions, and contextual considerations to highlight the non-linear nature of the system.

At the same time a need for simplicity is required to ensure a legible ToC that can be conveyed and understood. The design, development and delivery of any project is likely to be iterative and in places messy. This narrative aims to reflect the iterative nature, whilst being short and accessible so that stakeholders not involved in the delivery can understand and relate it to their own position. This means that it is simplified in places and may not include all the iterations and steps taken.

This section includes a brief description of the structure of the ToC, the role of the context and underlying assumptions how this will change over time, it then shows the flow chart for the Theory of Change demonstrating how inputs are used to achieve outcomes. In addition, there is a ToC narrative. This narrative tells the story of what would happen in an ideal situation where all conditions and assumptions are met moving smoothly from inputs to impacts. When reading the ToC this has to be borne in mind, i.e., it is an idealistic description which is not always met by reality.

4.2 Structure of the ToC for the MPA conservation project

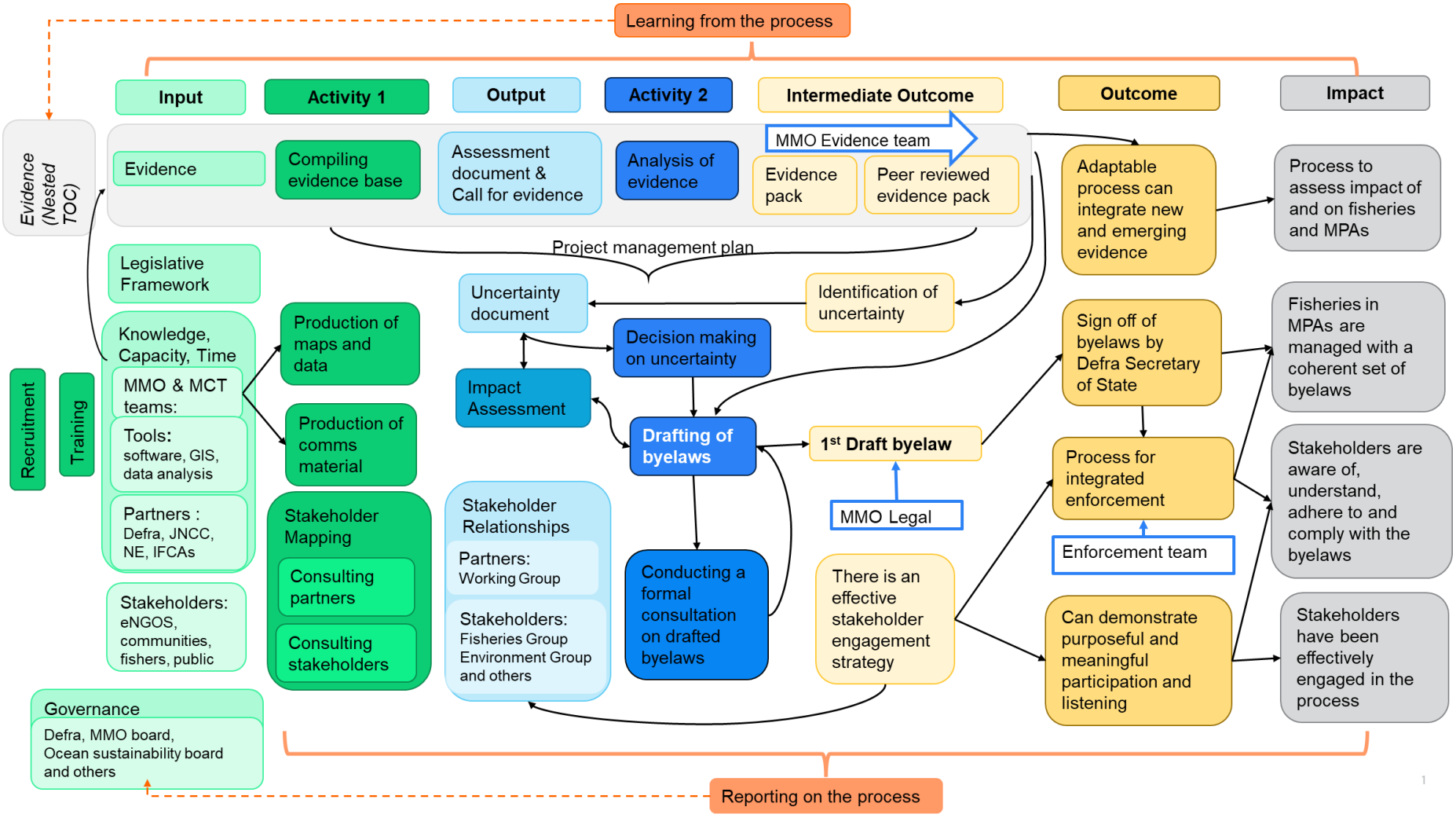
The design of the ToC as presented here includes a nested ToC for the delivery of evidence. Evidence plays a key role in the decision-making process regarding the identification of management measures that are required to protect features within MPAs. Calls for evidence are also one way of engaging with stakeholders including the academic community, the fishing industry, NGOs, and local communities in coastal areas. Evidence is collected throughout the three stages of the MMO MPA Fisheries and Conservation Strategy, and later the business as usual, and will contribute to future changes of the byelaws. The three stages are part of the project design and while different in size and with varying challenges involve comparable inputs, activities, outputs and so forth. However, iterative processes, feedback and learning loops are created by these stages and will need to be explored by the evaluation. The staged approach also means that all steps of the ToC are run in

parallel most of the time, closely interwoven and feeding back into each other providing opportunities for learning. The nested evidence ToC in the wider ToC is closely connected to the design and delivery of the project.

Uncertainty is an intrinsic feature of the decision-making process, as the evidence that is available for analysis will likely always be limited. Knowledge gaps about the marine environment abound, knowledge gaps about where features are, what fishing gear is employed where, and gear-feature interactions all being particularly relevant. From a process evaluation perspective, it is important that there is a clear means of observing and testing how the delivery of the strategy is being or has been impacted by the uncertainty associated with the evidence gathering and decision-making processes. In addition, there is uncertainty as to how stakeholders will perceive and react to any changes in the regulations.

4.3 Chart

Figure 4.1 Theory of Change for MMO MPA Fisheries and Conservation Strategy



4.4 Narrative

4.4.1 Introduction

The narrative below describes step by step how the MPA management process is implemented and what activities would take place in order to achieve outputs, outcomes and impact. It is an idealistic and hypothetical description, assuming that all assumptions are met, and no unexpected obstacles occur. In describing this the narrative brings out the potential barriers or unrealistic assumptions and can enable the identification of additional measure that need to be taken to ensure a successful deliver.

Where the elements of the ToC, such as the inputs used, are already clear and activities have taken place and were evidenced during the work for the evaluation plan, this is stated in the narrative.[41]

The description of the pathway to delivery will not include every detail. That is not possible because it describes in most part future events it is also not desirable as this would make this text too long to be useful.

The evaluation will need to review the ToC including the narrative to assess whether circumstances may have changed.

4.4.2 Context

The context within which a policy delivery project sits has significant influence on the steps that need to be taken to reach its successful conclusion. As with delivery, the context is complex and changeable. During the project delivery, the delivery team and MMO management will need to periodically revisit stated assumptions including of the broader context to assess whether the assumptions hold true and whether the influences on the project have changed or are about to change over time.

The context includes the political environment, alignment with other political processes for example negotiations with the EU or elections, and the willingness of government to make resources available to achieve the objectives of marine conservation. The context also includes the relationship between the MMO and fisheries stakeholders, fisheries stakeholders willingness or resistance to byelaws (see section 2.2.3), the environmental status of MPAs as far as this is known and understood and wider scientific knowledge of the links between fishing gear and features (see section 2.1.4.1).

Much of the context noted above is strongly influenced by relationships and external factors beyond the MMOs control. As a result, these can be formulated as assumptions with a significant influence on the delivery of the intervention.

These assumptions include:

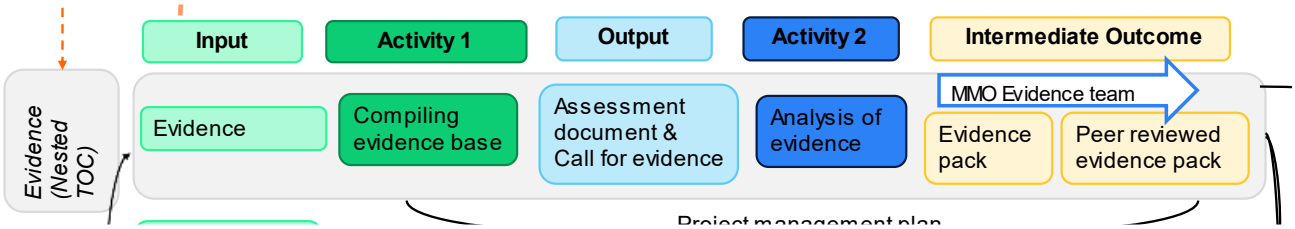
- There is sufficient political support underpinning implementation of the strategy for its duration

[41] In these cases, the past tense is used or other linguistic markets.

- Timing of the process aligns with other political timetables (e.g. elections)
- Evidence is sufficient to enable robust decision-making that can withstand scrutiny
- Climate change / natural variation in the protected features can be observed, monitored, and managed

4.4.3 The nested evidence ToC

Figure 4.2 The nested evidence Theory of Change



The nested evidence ToC (Figure 4.2) has as its main input the existing evidence base. The existing evidence base is analysed and compiled by the MMO MCT to determine whether byelaws are required to protect an MPA, in consultation with the SNCBs and IFCAs. The compiling of this evidence results in a draft MPA assessment.

The MMO will then seek views and input from stakeholders including academics, industry bodies and NGOs, on the draft MPA assessment as part of the call for evidence. The call for evidence includes the scientific evidence identified by the MMO team and asks questions in order to fill emerging gaps in the knowledge base or update the evidence. The call for evidence is circulated with known stakeholders as well as published on the MMO website to allow other stakeholders not known to the MMO to contribute. In this sense the call for evidence is both an activity as well as an output, as the result includes the evidence collected through the input of various stakeholders.

After the conclusion of the call for evidence the MMO MCT analyses the responses received, finalises the draft assessment and creates a decision document to explain how stakeholder responses have been addressed. The evidence included as part of the assessment is internally reviewed and is quality assured by the MMO evidence team, which is separate from the MCT and which provides a degree of external quality assurance. The MCT and MMO's evidence team may want to review this process to ensure a robust quality assurance without creating unnecessary bureaucracy.

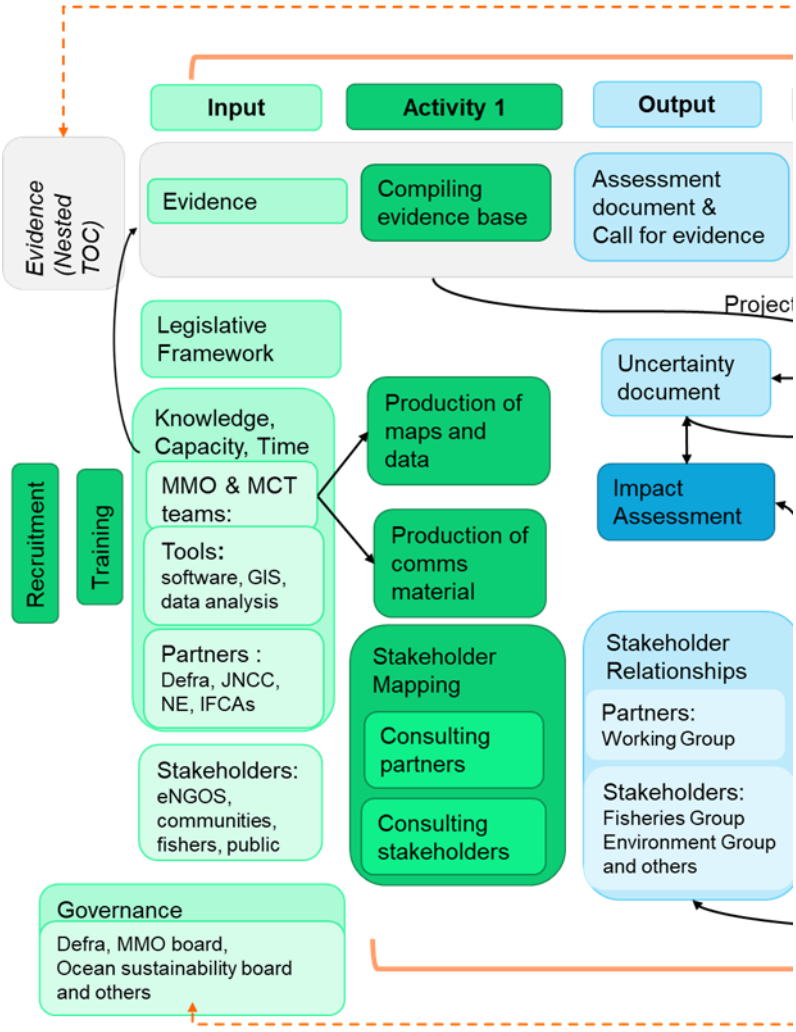
The nested ToC is closely linked to the main project ToC. It is "run" by MCT, feeds into the drafting and has to work alongside the timetable for the delivery of byelaws. In a way it forms an input and output of the MCT's work. It is an iterative process as new evidence is constantly being discovered and added to the evidence base. With its link to stakeholders, it is also likely to lead to the identification of stakeholders so far unknown to the MMO MCT.

4.4.4 Inputs and activities to outputs

Figure 4.3 defines the inputs and activities of the MMO, its partners and stakeholders, as listed in the light green boxes. The inputs include the current legislative framework established by UK government within which the MMO operates, which defines the MMO's mandate. MCT, its team members, their knowledge and skills as well as the overall MMO with the evidence team, are inputs into the project.

The MMO recruited the MCT with a view of efficient delivery of the project in house. The team has available the necessary software and IT. The MCT utilizes MMO support functions including legal, communications, data analysis and mapping, and works closely with partners and stakeholders allowing them to input their knowledge and contribute to the evidence base.

Figure 4.3 Inputs and activities to outputs



These inputs produce maps of the MPAs and features within it as well as related data to help with evidence collection. The inputs also produce a stakeholder map

which is used to identify stakeholders and produce communication material in order to engage with stakeholders on the topic.

Stakeholders and partners are consulted throughout the project in a meaningful manner. As the project moves to the different stages the team and its partners and stakeholders learn from what has been going on. They have the capacity and openness to learn, adapt and change. As a result, the team builds relationships with stakeholders and partners which will support delivery throughout.

Uncertainty in the evidence is identified and feeds back as an input in order to identify further evidence, or provide guidance on, how to deal with this uncertainty. The evidence workstream (see nested ToC Figure 4.2) is an integral part of the inputs and outputs.

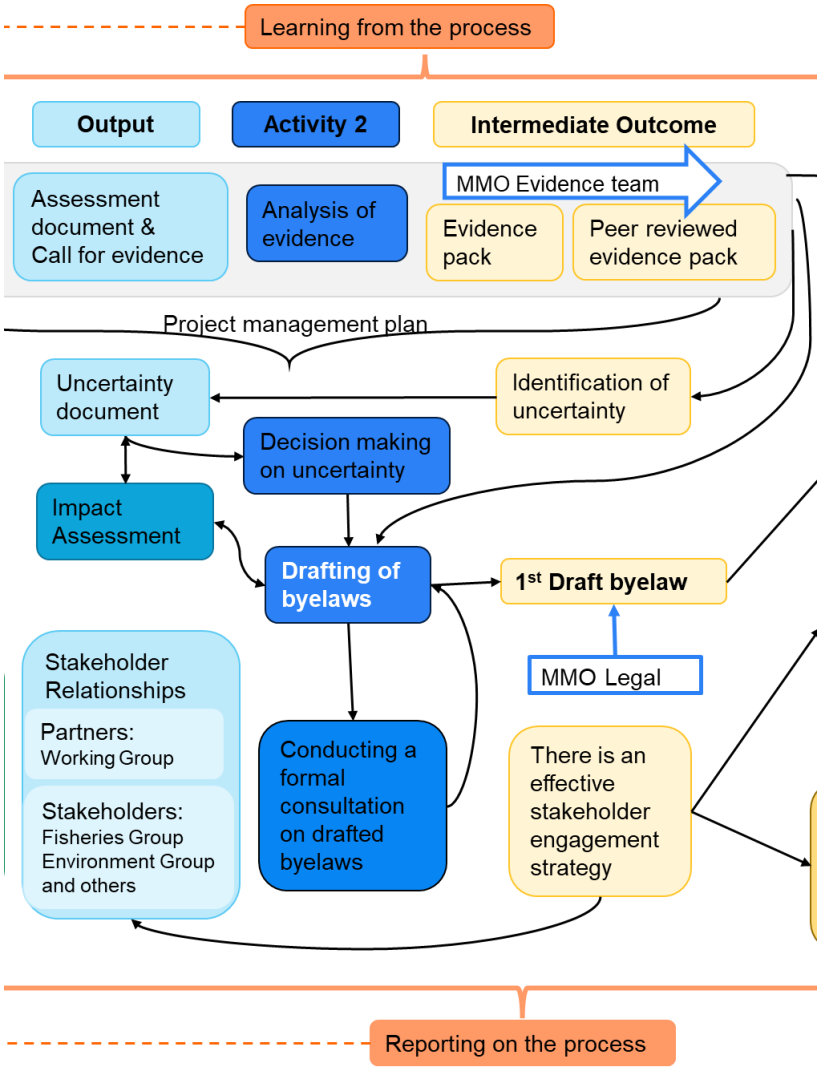
The project management plan is the result of an activity and a constantly changing activity of its own. It holds the project together and provides an anchor.

These two steps in the ToC are based on several assumptions, including:

- MMO recruitment and training is effective
- All stakeholders groups are reached, and stakeholders and partners are willing to participate and contribute
- Partners and stakeholders commit sufficient resources to fulfill their role in the process
- Relevant expertise is available within MMO, partners and stakeholders
- Technology and IT (incl GIS) are up to date and suitable to enable the process
- MMO is able to gather all relevant evidence (incl socio-economic evidence) to assess the impact of the proposed byelaws (Impact Assessment)

4.4.5 Outputs and Activities 2 to intermediate outcomes

Figure 4.4 Outputs and Activities 2 to intermediate outcomes



The outputs are used for further activities (Figure 4.4). The outputs include the byelaws themselves. The decision of how to deal with uncertainty is an activity, which as described above is likely to be ongoing as further evidence is discovered and as more stakeholders are involved in the consultation and become aware of the impacts. The outcome of the nested evidence ToC feeds into the drafting of the byelaws. Any regulatory impact assessment such as those that consider the socio-economic impacts of the byelaws also feed into the drafting of the byelaws. The impact assessments themselves will require effective quality assurance to ensure they are to standard.

Once considering all evidence streams and after a thorough drafting process, the intermediate outcome is the First draft of the byelaw. This will then need to be agreed with the legal team in MMO before passing through to Defra for legal review and sign-off.

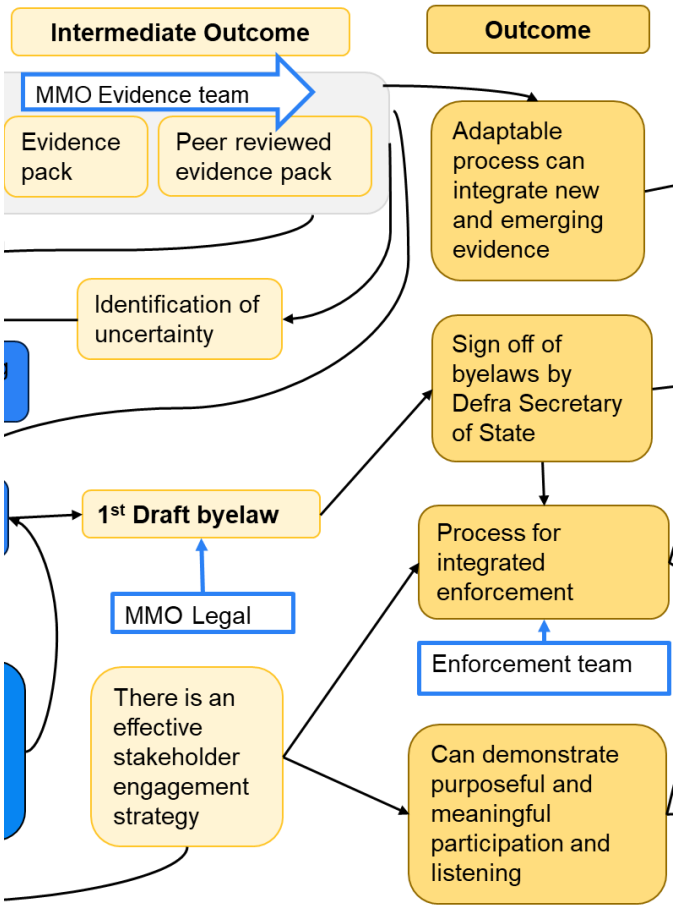
In parallel with the development of the byelaw, an effective stakeholder engagement strategy which is also subject to mutual learning and change is another intermediate outcome. The stakeholder engagement ensures that stakeholders either actively support the process or have gained sufficient understanding and the perception of having been heard and understood.

The two steps are based on the following assumptions:

- Learning takes place within MMO and between MMO and IFCAs and other partners
- Evidence is robust, sufficient for decision-making, and able to withstand scrutiny. Knowledge gaps can be managed using the procedures in the uncertainty document.
- MMO has a sufficient understanding of where specific fishing gears are operated
- MMO has sufficient understanding of where the protected features are
- External factors do not prevent timely delivery

4.4.6 Intermediate outcomes to outcomes

Figure 4.5 Intermediate outcomes to outcomes



Intermediate outcomes feed into outcomes (Figure 4.5). Again, it is important to remember that the process is not as linear as depicted here. There are feedback loops, iterations and changes as the team and its stakeholders learn more about the process. An outcome of an effective stakeholder engagement strategy is that the MMO is able to demonstrate that stakeholders are empowered to participate and that the participation results in action. These are important steps to avoid future challenges and should they occur to defend the MMO's position.

In addition, another outcome is one based on constant learning and gaining of experience by the team creating adaptable and integrated processes which can always take up and make use of new evidence.

After the drafting of a byelaw that accounts for emerging evidence, effective stakeholder engagement and legal review, an important outcome is the Sign-off of byelaws by the Defra Secretary of State (SoS).

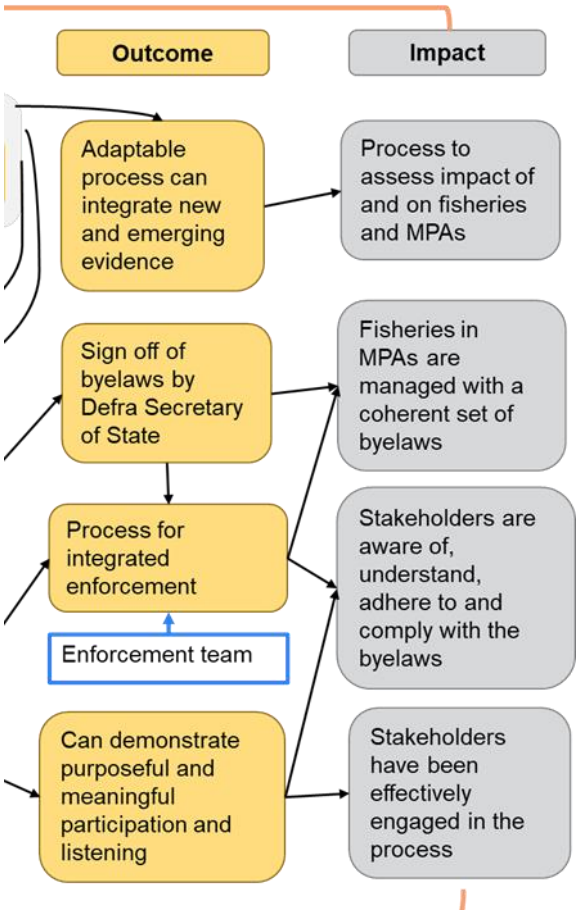
In anticipation of the sign-off of byelaws, MMO needs to coordinate with MMO Control and Enforcement teams. Enforcement plays an important role in making sure that all stakeholders either learn about or adhere to the new rules introduced. Enforcement therefore contributes to achieving compliance with new byelaws. This is part of the integration of the project into MMO and a move to BAU when the MPA protection will be one of the many objectives on which the MMO delivers on Defra's behalf. The enforcement team optimises its approach to surveillance and enforcement now also including the MPAs.

The step between intermediate outcomes and outcomes is also based on assumptions which include:

- Quality assurance and review process is appropriate (outcome in nested TOC)
- Stakeholders and partners are engaged in the process in a meaningful way
- MMO has sufficient control and enforcement capacity
- The outcomes reflect the needs of sustainable fisheries in the wider context of marine use and planning.
- The outcomes reflect the need for sustainable fisheries as part of a biodiverse and healthy MPA landscape.
- The byelaws are clear and follow the correct procedures.

4.4.7 Outcomes to impacts

Figure 4.6 Outcomes to impacts



This step is often understood as the final step to delivery in a ToC (Figure 4.6). In this case it is only one step in an ongoing developmental process.

The evaluation planned is a process evaluation. The ToC focuses therefore on the delivery of the intervention and what can be learned, rather than the outcomes and impact. The MPA conservation project is one process among many in the MMO which all support the MMO's overall objectives. It is part of an overall framework of processes that collectively seek to protect the marine environment and enable a sustainable fishing industry. This effectiveness of this could be evaluated in a wider impact evaluation.

An important impact of this process is that stakeholders are effectively engaged in the process and therefore stakeholders are aware of, understand, adhere to and comply with the byelaws. The close working relationship between the MMO MCTand its stakeholders are key contributions to this. Respecting this process will also mean that the stakeholders operating in and around the MPAs and the managed areas with them follow its implementation as BAU, provide the MCT with new information and evidence as it emerges and have the capacity to absorb changes in the legislation as this evidence is taken into account. The MMO is able to demonstrate to stakeholders that they have enabled meaningful participation. As the previous

step of the ToC this is also important in order to avoid potential challenges by being transparent at the outset and enabling the MMO to defend its position.

The successful process enables low impact fisheries to work within MPAs (where low impact is relative to the protected features). Byelaws are coherent across MPAs as fisheries will operate in several areas and depend on coherence to avoid confusion and potential breach of the byelaw.

The MCT has the evidence to assess the impact of the byelaws on fisheries and on the features of the MPAs, and uses these insights in further development of evidence and potential changes to the byelaws.

Several of these steps will start the process again and feed into further development and revision of byelaws and evidence.

The step from outcomes to impacts is based on assumptions, including:

- Engagement methods are accessible to stakeholders (i.e. they consider factors such as online and offline engagement)
- Designation and specific features designated are clear and sufficient to ensure protection for the future~~. e~~.
- Byelaws are aligned with the terms of the UK-EU TCA to prevent challenges by the European Commission.
- Decisions and measures are sufficiently robust to prevent or withstand legal challenges.
- Newly created byelaws are coherent with existing ones.

4.4.8 Learning and Reporting

As indicated in the full graphic (Figure 4.1) the MMO team will be able to learn throughout the process. This will lead to improvements and adaptation of their processes to achieve the intended impacts effectively.

The MMO will also continually report on the progress and developments of the process to relevant governance structures to ensure they maintain accountability and sight of the objectives of the project.

5 Stakeholders of the Evaluation

Drawing on one tradition of critical systems thinking in practice (STiP) (see section 8.4.5, four general stakeholder roles might be identified for any particular intervention. Actual stakeholders may cross different stakeholder roles at any one time. Actual stakeholders may also change their roles during the course of any intervention (including an evaluation)

- **Intended beneficiaries** – those who provide the motivation for the intervention, including representatives of non-human nature e.g., the marine environment. This could be defined very widely to include all the ENGOs with an interest in the marine environment e.g., Wildlife Trusts, Angling Trust, MCS, WWF and NGOs for specific taxa such as RSPB, Seal Conservation Society, Whale and Dolphin Conservation, Shark Trust etc. Society in general is also an intended beneficiary as there is a wellbeing benefit associated with knowing that the seas are taken care of and in good condition.
- **Decision makers** – those in command of resources - financial, infrastructure, social capital, natural resources etc. - necessary to effect the intended changes stipulated in the ToC e.g., the MMO, Defra, SoS.
- **Knowledge providers (or 'experts')** – those with necessary know-how at different levels of practice - ranging from conventional disciplinary knowledge to facilitation and administration skills etc. - who can provide some guarantee (assurances of provisional certainty) enabling the intervention to succeed. This could include JNCC, NE, MMO, IFCAs, academia, other maritime sectors with relevant industry data.
- **The affected and those potentially 'disaffected'** – Stakeholders that may be affected (positively or negatively) in some way by the intervention as well as those stakeholders who may be disaffected by the intervention either by intent or as a result of unintended consequences and/or unforeseen events. This could include commercial fisheries sectors where byelaws restrict some or all forms of gear types.
- There are other stakeholders and marine industries that are important to consider as part of strategy, and the evaluation, whose position within the stakeholder landscape may change over time. For example, there is the potential for byelaws that lead to habitat protection and, over time, restoration over sufficient scales to indirectly affect (positively) other sectors such as renewable energy, by increasing the ceiling for further development in proximal areas to MPAs. The relationships between the marine industries and those who are more positively or negatively impacted may evolve overtime.

As mentioned above stakeholders may cross different roles at any one time. Whilst the MMO stakeholder engagement process will consider the interests of stakeholders such as fisheries alongside their conservation goals, they may still be disaffected by the byelaw development. At the same time, fisheries could be beneficiaries of the regulation from a healthier environment which improves fishing stocks. This highlights the changing nature of a stakeholder role.

There will always be limits to the level of participation amongst stakeholders associated with any intervention, given the time and resources available. From a

STiP perspective it is important that some representation of the balance between the four groups of stakeholder interests are kept alive during implementation. Whilst many ‘participatory’ interventions tend to focus on inclusivity of intended beneficiaries, insights from STiP suggest equal attention be given particularly for involving the decision makers, but also those potentially or actually disaffected.

6 Type of Evaluation

The purpose of an evaluation is to provide learning - so that risk and uncertainty can be managed, improvements can be made, and a clear understanding can be gained of what does and doesn't work; and accountability – so that government departments are transparent and accountable for the management of an intervention and the spending it entails.

The Magenta Book is a guide developed by HM Treasury to provide a source of guidance for UK government departments on how to design and conduct an evaluation. The guide provides a detailed outline of the types of evaluation, the approach, methods, and data collection.

The type of evaluation that is chosen for a situation is dependent on the focus of what needs to be evaluated. The types of evaluation can include:

- **Process Evaluation** – What can be learned from how the intervention was delivered?
- **Impact Evaluation** – What difference has the intervention made?
- **Value-for-money Evaluation** – Is the intervention a good use of resources?

6.1 Process Evaluation

The evaluation of the MMO MPA Fisheries and Conservation Strategy will be a process evaluation. This means the focus of this work is on understanding how and what can be learned from the processes MMO have used in setting up the MPA Fisheries and Conservation strategy and how it can be improved. Whilst it will be a factor of consideration, the focus is not on evaluating the impacts of conservation measures.

The Magenta Book[42], UK Government's guidance on evaluations, suggests questions typically asked in a process evaluation.

"What can be learned from how intervention was delivered?

- Was the intervention delivered as intended?
  - Were there enough resources?
  - Were there any unexpected or unintended issues in the delivery of the intervention?
  - To what extent has the intervention reached all the people that it was intended to?
- What worked well, or less well, for whom and why?
- What could be improved?
- What can be learned from the delivery methods used?

[42] HM Treasury (2020). The Magenta Book: Central Government guidance on evaluation. [pdf] London.: Crown Copyright. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/879438/HMT_Magenta_Book.pdf [Accessed 3rd March 2022]

  - Could the intervention have been procured and delivered for less cost?
- How has the context influenced delivery?
  - How did external factors influence the delivery and functioning of the intervention?
  - How did external factors influence the attitudes and behaviours of target groups?”

7 Evaluation Questions

7.1 Developing the Evaluation Questions

Evaluation questions articulate the main issues that will be explored by the evaluation.

> *Evaluation Questions (EQs) are the high-level questions that an evaluation is designed to answer - not specific questions that are asked in an interview or a questionnaire. Having an agreed set of Evaluation Questions (EQs) makes it easier to decide what data to collect, how to analyse it, and how to report it.*[43]

Evaluation questions typically evolve during evaluation design and implementation, depending on feasibility, data availability, practical issues during the evaluation's execution, emerging findings, and other considerations. For this reason, it is vital to maintain strong links with the users of evaluation, so that evaluation designs evolve with their needs in mind.

Evaluation questions developed as part of this evaluation plan were co-designed by the ICF team and the MMO and utilising insights from interviews with NE and IFCAs (see Annex 1).

A brainstorm workshop (see Annex 4) enabled the ICF and MMO team to generate ideas and draft evaluation questions. The brainstorm was structured around four themes (Figure 7.1) to help facilitate the discussion and group the results. These themes are derived from STiP[44] and also featured heavily in discussions in the previous workshop developing the ToC (see Annex 3).

The ideas and questions generated as part of the brainstorm were then grouped again into subthemes. From these thematic groupings of ideas generated in the brainstorm, a set of high-level draft evaluation questions were developed. These draft evaluation questions were then discussed as part of a follow up meeting between ICF and the MMO.

The evaluation questions and the ToC were refined further in a validation workshop with the ICF team, MMO and NE. This allowed a holistic design of the ToC and evaluation questions. In this validation workshop the final draft evaluation questions were mapped onto all steps in the ToC to ensure that the evaluation would address the pathways to impact comprehensively (see A1.2.3 and Annex 5)

[43] BetterEvaluation. (2016) Specify the Key Evaluation Questions (KEQs). Retrieved from: http://betterevaluation.org/en/plan/engage_frame/decide_evaluation_questions

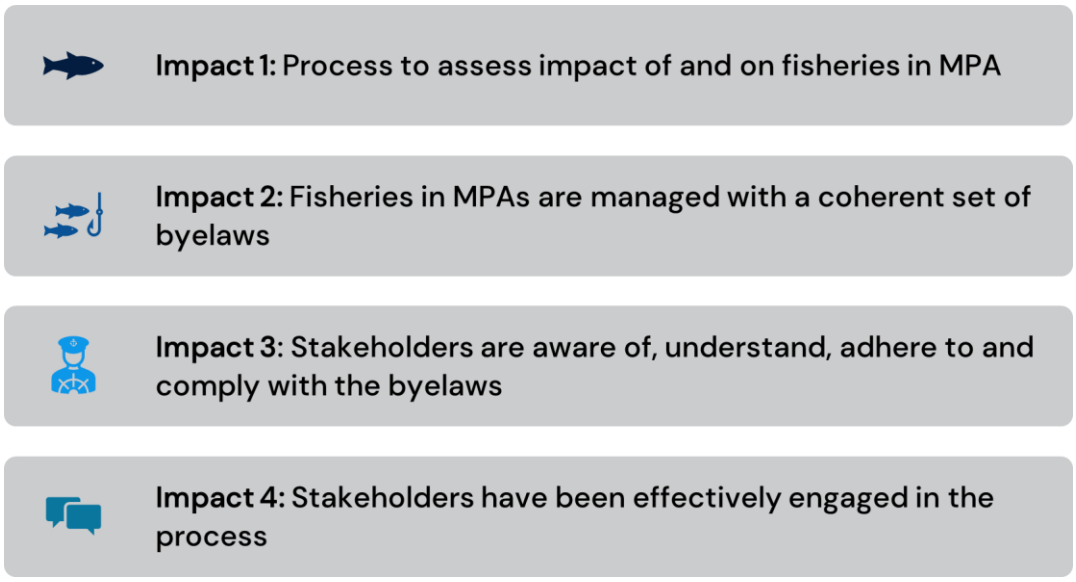
[44] The four themes are associated with critical systems heuristics (CSH) – a particular approach to STiP (Ulrich and Reynolds, (2020). **Ch. 6. Critical Systems Heuristics: The Idea and Practice of Boundary Critique.** In: Reynolds, Martin and Holwell, Sue eds. *Systems Approaches to Making Change: A Practical Guide. 2nd Edn.* London: Open University and Springer, pp. 255–305.)

Figure 7.1 Themes derived from STiP used to structure brainstorm workshop

7.2 Evaluation Questions

The evaluation questions have been co-developed with the MMO MCT. They are designed to test the assumptions in the ToC and the validity of the pathways from inputs to impacts within the context of the process evaluation. This section includes the questions, links them to the themes (see Figure 7.1) and the pathways to impact in the ToC (Figure 7.2).

Figure 7.2 Impacts of MMO MPA Fisheries and Conservation Strategy as derived from the ToC Question 1

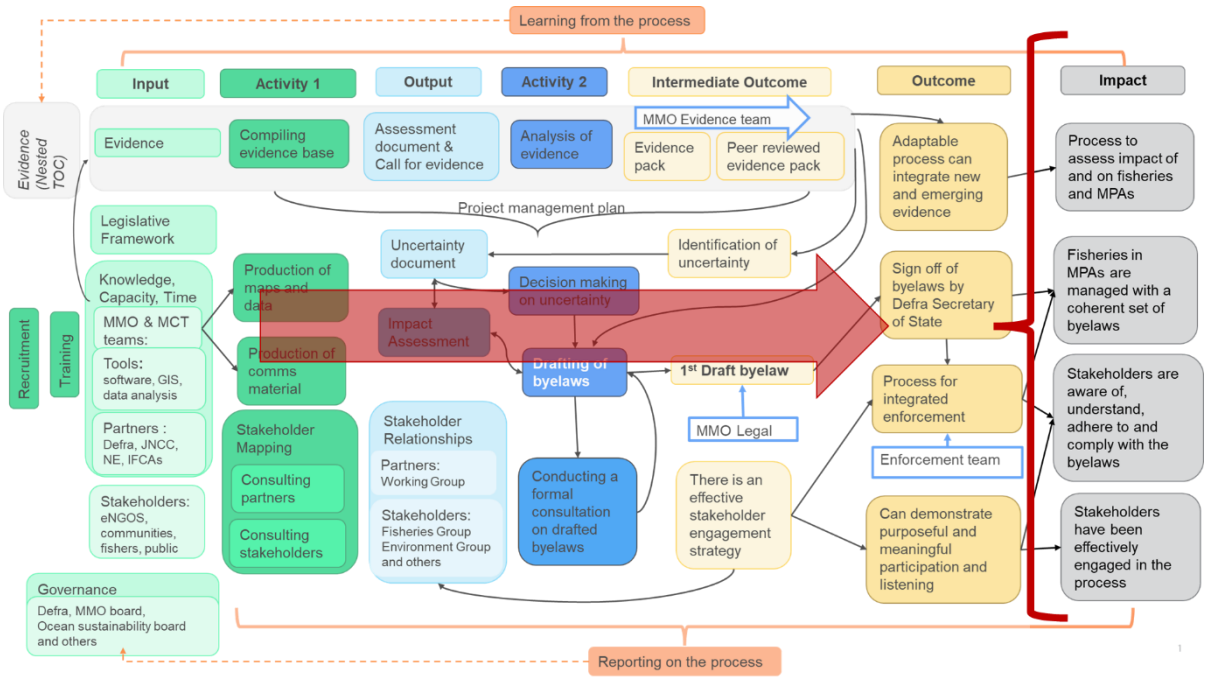


7.2.2 Question 1

Do teams in MMO and partner organisations have the capacity (policy, resource, technology) required to deliver the MMO MPA Fisheries and Conservation Strategy?

Theme: Resource, capacity, and knowledge

Pathways to impact – Underpins all impacts

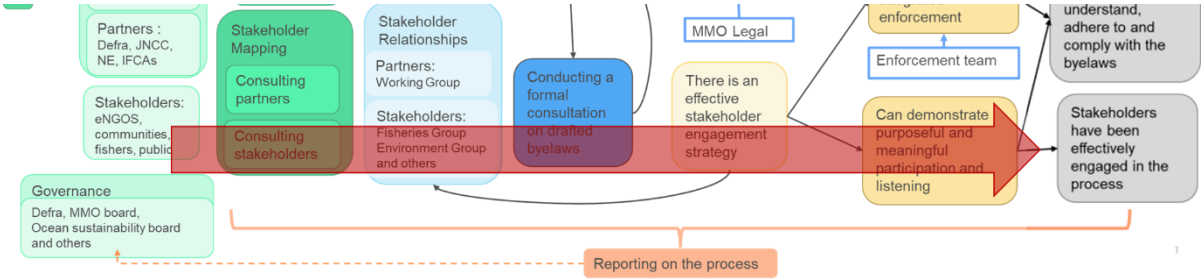


7.2.3 Question 2

Is effective stakeholder engagement in place?

Theme: Stakeholder engagement & participation

Pathway to impact 4: Stakeholders have been effectively engaged in the process



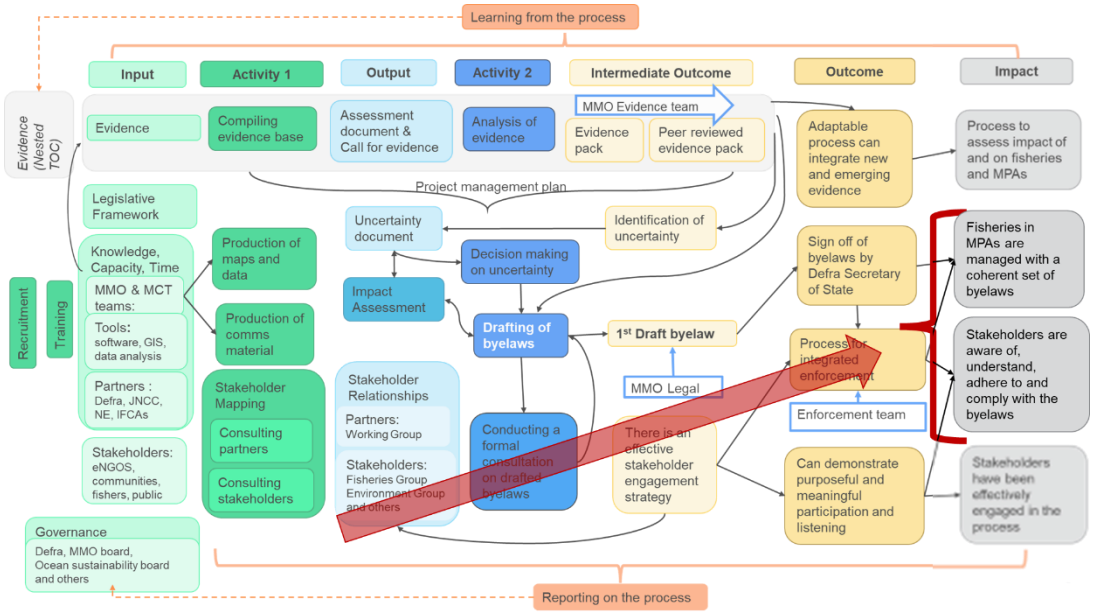
7.2.4 Question 3

Is there effective process and governance in place to support the delivery of the MMO MPA Fisheries and Conservation Strategy?

Theme: Governance and control

Pathway to impact 2: Fisheries in MPAs are managed with a coherent set of byelaws

Pathway to impact 3: Stakeholders are aware of, understand, adhere to, and comply with the byelaws

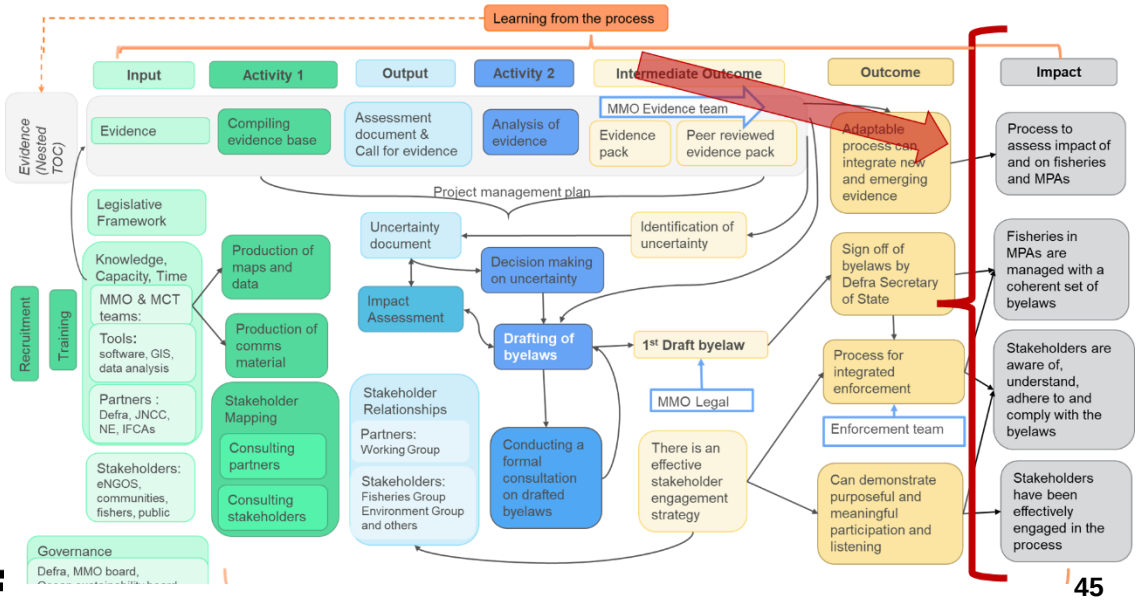


7.2.5 Question 4

How is process adaptation and learning managed during delivery of the MMO MPA Fisheries and Conservation Strategy?

Theme: Learning, key developmental evaluation question

Pathway to impacts: Underpins all



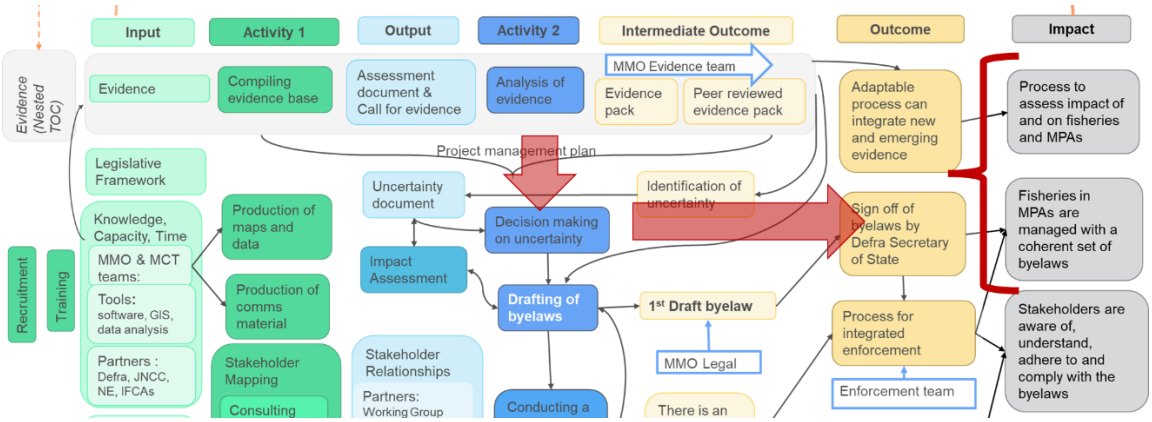
7.2.6 Question 5

How does evidence inform decision making?

Theme: Knowledge, resource, capacity

Pathway to impact 1: Process to assess impact of and on fisheries in MPA

Pathway to impact 2: Fisheries in MPAs are managed with a coherent set of byelaws



7.2.7 Questions addressing uncertainty

Uncertainty is present in almost every stage of the TOC. It has been addressed explicitly in the uncertainty document addressing how to deal with gaps in the evidence base, but it plays also a role in the potential reactions by stakeholders who are hard to reach, the political and economic situation and more. Uncertainty is therefore a question that is included in a number of sub-questions to the main evaluation questions.

8 Evaluation Methods

8.1 Introducing the evaluation approach

Evaluations can fulfil different purposes depending on the needs of the intervention being evaluated.

A **summative evaluation** assesses an intervention to determine whether it should continue, change or stop. Summative evaluations usually occur after the implementation of an intervention[45].

A **formative evaluation** focusses on supporting learning and development in an ongoing intervention to support the identification and implementation of improvements. A formative evaluation will usually occur during the intervention, and interim reports and regular feedback and updates are provided[45].

The MMO would like an evaluation to be able to support them in learning throughout the project and therefore this evaluation plan has presents options for a formative evaluation. The principles considered for the development of these evaluation options are further outlined in Annex 2.

This evaluation plan has included three potential options for consideration for a formative process evaluation. These options include:

- Tailored Process Evaluation;
- Outcome Harvesting; or
- Developmental Evaluation.

There are differences between these three methods which need to be considered against the purpose of the evaluation as well as costs, resourcing and the skill requirements to conduct the evaluation. The differences are related mainly to the balance between independence and embeddedness of the evaluator and therefore impact on learning and accountability. These differences are outlined further in section 9.1.

As well as differences between the approaches there are also commonalities. These include:

- Development or review of the Theory of Change for the project (in Tailored Evaluation and Development Evaluation. Outcome Harvesting may come to review the ToC, but would not start with predetermined outcomes);
- A systems approach that takes the whole of the system into consideration in the development of the evaluation itself (all three methods);
- A participatory approach, as all three methods include the involvement of the MMO MCT and the partners and stakeholders. However, the degree and role of team members, partners and stakeholders differs depending on the exact method deployed.

[45] BetterEvaluation. n.d. *What is evaluation?*. [online] Available at: https://www.betterevaluation.org/en/what-evaluation [Accessed 16 June 2022].

Whilst a final approach will be selected, some aspects and tools detailed in each of the process could be utilised and considered useful as part of a future evaluation.

The next section provides further detail of these three options.

8.2 Tailored Process Evaluation

8.2.1 Introducing tailored process evaluation

Instead of a prescribed method which comes with literature and a set framework it is possible to use established information collection techniques all referred to as suitable in the Magenta Book to design a bespoke process evaluation. This section describes what this could look like.

The method would be oriented towards a statement of purpose for the evaluation. In the case of the MMO MPA Fisheries and Conservation strategy, this could be to answer the set evaluation questions in a cost-effective manner and to enable stakeholders to hold the MMO to account. This will provide both learning about the process amongst stakeholders and transparency in helping to hold the MMO to account.

The evaluation questions and Theory of Change proposed in the evaluation plan need to be workshopped to ensure they still apply. This could start with the following activities at the beginning of the evaluation.

Systems mapping

Participatory Systems Mapping (PSM)[46] is a technique which enables stakeholders to become part of the evaluation process and design, identify and critically discuss their role and come to a joint learning as a result of the evaluation. (Further detail on stakeholder mapping using a systems thinking is covered in section 8.4.5.) This allows the exchange of stakeholder views on the core factors of this system. These will differ between stakeholders and could include:

- The role different stakeholders play in the conservation process;
- Their needs and future agency in the MPA management process;
- The links and dependencies between stakeholders and their stakes in the MMO MPA Fisheries and Conservation Strategy;
- The role conservation plays in the wider social and economic context, including sustainable fishing and tourism industries.

The participatory approach to systems mapping will allow stakeholders to gain a good understanding of each other's perspective and activities and how they are impacted by the process established by the MMO.

Revisit the Theory of Change and evaluation questions

[46] CECAN, 2020. *Participatory Systems Mapping: a practical guide*. [online] Cecan.ac.uk. Available at: https://www.cecan.ac.uk/wp-content/uploads/2020/09/PSM-Workshop-method.pdf [Accessed 16 June 2022].

Following the PSM exercise, the Theory of Change and evaluation questions developed as part of this evaluation plan need to be revisited and tested further for their continued validity and relevance.

8.2.2 Steps to answer the Evaluation Questions

Methods to collect data to answer evaluation questions include: document review, Key Informant Interviews, workshops (or focus groups), and surveys. Descriptive analysis of statistics collected by MMO will also form part of this evaluation method. A suggested outline of the potential methods that could be used to answer the evaluation questions is provided in Table 8.3.

The extent to which the activities outlined in Table 8.3 would be carried out would be dependent on the budget and time available to conduct the evaluation as well as the desire to conduct more participatory activities. More participatory activities will require more time and resource to complete but will allow for greater stakeholder engagement in the process.

Table 8.3 also includes indicators which can be used in the tailored process evaluation. These were developed in such a way to be useful for any of the three evaluation methods proposed here, including developmental evaluation. The evaluation method as well as time and budget available will be reflected in the frequency with which they are collected.

All evaluation questions will require at least two of the methods to provide a robust answer. In most cases it will be more. The first source, such as the document review for example, would establish a proposed answer which then needs to be triangulated with at least one further source.

Document review

A review of documents related to the MMO MPA Fisheries and Conservation strategy, and the context can contribute to:

- Validation of the Theory of Change and evaluation questions as drafted in the evaluation plan;
- Drafting of interview and workshop scripts;
- Contribute to answering EQs 1 to 5.

In-depth Key Informant Interviews

Key Informant Interviews allow the interviewees to express their views, insights, and opinions in an anonymised manner. The interviewer can explore more sensitive questions around the ‘How’ and ‘Why’ of the MMO MPA Fisheries and Conservation strategy. This will supply useful information to adapt the process and refine it.

Interviews can be segmented into scoping interviews at the beginning of the evaluation and the main interviews during the evaluation phase.

The scoping interviews support the more detailed design of the evaluation and its focus. These interviews would be used to identify the main stakeholders of the MMO MPA Fisheries and Conservation strategy and of the process evaluation, the

potential uses of the evaluation and its main objectives. They can also contribute to the review of the ToC, the EQs and shape the evaluation method itself.

Interviews will also be an important source of data and information in the main part of the evaluation to collect data to inform the evaluation questions.

The interview questions will be informed by the document review and will contribute to answering all the evaluation questions.

Table 8.1 Stakeholder groups to be consulted for Key Informant Interviews

Stakeholder Group	Description
MMO	Project managers, team leaders and team members
Partner Stakeholders:	Defra. Statutory Nature Conservation Bodies including NE and JNCC. IFCAs.
External Stakeholders: Fishing industry	Stakeholders that may be affected in some way by the intervention as well as those stakeholders who may be disaffected by the intervention either by intent or as a result of unintended consequences and/or unforeseen events. The fishing industry could be represented by The National Federation of Fishermen's Organisation (NFFO); individual Fish Producer Organisations (FPOs); Sea Fish Industry Authority (Seafish); Shellfish Association of Great Britain; New Under Ten Fishermen's Association (NUTFA), and local fishing associations where specific spatial overlaps with MPAs exist.
External Stakeholders: ENGOs	Those who provide the motivation to hold the implementing body to account, including representatives of non-human nature e.g., the marine environment. This could be defined very widely to include all the ENGOs with an interest in the marine environment e.g., Wildlife Trusts, MCS, WWF and NGOs for specific taxa such as RSPB, Seal Conservation Society, Whale and Dolphin Conservation, Shark Trust etc. This could also include other marine users who have a stake in protecting the marine environment such as anglers e.g., Angling Trust.
External Stakeholders: Other industry	There are other stakeholders and marine industries that are important to consider as part of strategy, and the evaluation, whose position within the stakeholder landscape may change over time. Marine renewable energy generation (potential overlap with strategic compensation). Other relevant maritime industries could be confirmed through spatial analysis, but could include: shipping & navigation, aggregate extraction, cables and pipelines, aquaculture, recreational fishing & boating

Workshops or focus groups

Group discussions add additional insights by providing participants with the opportunity to spark of each other ideas. The evaluation design will need to consider whether these group discussions should be topic focused (for example “Evidence Collection”) and bring in all relevant stakeholders or to be stakeholder focused (for example fishing industry) and cover all parts of the process.

Surveys

Depending on the purpose and sample size of a survey both quantitative data and qualitative data can be collected. However, a survey must balance the requirements of the data collection with the length and ease at which the survey can be filled out in order to improve the response rate. If effectively designed, surveys can reach a larger audience than you might get for an interview although they can be limited in the depth of which questions can be answered based on the constraints of the medium in comparison to interviews or workshops.

The method used for the survey, i.e., CATI (computer assisted telephone interview), postal, face-to-face or online will depend on the likelihood of the community of having an online presence. There will also be implications for the cost with face-to-face and CATI surveys being more costly than a postal or online survey.

Surveys could contribute to answering Evaluation Question 2: ‘Is effective stakeholder engagement in place?’ to understand the fishing industries perspective and level of engagement with the MMO MPA Fisheries and Conservation strategy.

However, the fishing industry is unlikely to engage with an online survey. To survey fishers directly would require face-to-face surveying at English ports, such as those conducted annually by Seafish[47]. To survey in this way would be very costly and time consuming and unless all English ports were targeted, or a representative sample of ports could be developed, it would introduce selection bias. After this consideration a survey for the fishing industry would not be recommended.

Instead, to represent the views of the fishing industry, targeted interviews of the major fishing industry bodies, POs and fishing associations could be conducted to get an understanding of the fishing industry perspective and awareness of the MMO MPA Fisheries and Conservation Strategy. These interviews would be included as part of the Key Informant Interviews.

Where stakeholders have been engaged with by the MMO as part of an engagement strategy, here a short online feedback survey could be used to gain an understanding from stakeholders on how well they felt that process went. This provides an opportunity for stakeholders to provide feedback on the MMO process as well as an opportunity for the MMO to take on board recommendations.

As the stakeholder engagement strategy for the MMO MPA Fisheries and Conservation project is yet to be determined, defining appropriate inquiries for Evaluation Question 2 will likely require refinement. However, the following sub-questions provide a starting point for consideration.

[47] Seafish, 2022. *Fleet Survey 2021 | Take part in our survey of the UK Fishing Fleet | Seafish*. [online] Seafish. Available at: https://www.seafish.org/insight-and-research/fishing-data-and-insight/uk-fishing-fleet-survey/ [Accessed 24 June 2022].

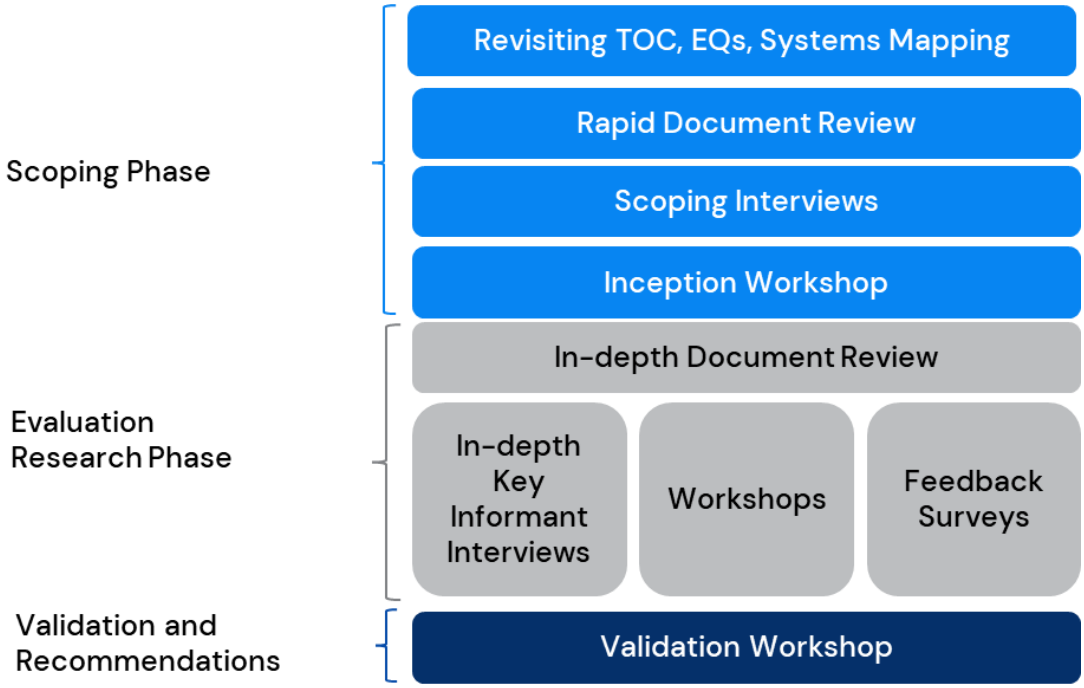
Table 8.2 Surveys to contribute to Evaluation Question 2

Evaluation Question 2: Sub-question	Type of Survey	Description
Do stakeholders feel engaged and able to participate in the process where appropriate?	Qualitative survey - Short feedback survey - Likert scale questions - A small amount of short open ended questions - Opportunity to include email to be interviewed	Online survey emailed to participants who took part in an engagement/consultation activity as part of the MMO's engagement strategy to get an understanding of their experience and recommendations for improvement.

Sequencing of the information collection methods

The four methods of collecting evaluative information need to be sequenced so that they can feed into each other (Figure 8.1). A rapid document review will provide the evaluators with a first understanding of the process and the main stakeholder groups. One of the outputs of such a review will be a more detailed request for documents. The scoping interviews will be informed by the rapid document review, include questions about stakeholders of the evaluation to be included in the main interviews and workshops as well as requests for documents. A workshop can complete the inception of the evaluation to ascertain mutual understanding of the objectives of the evaluation and its uses. This workshop should include the review. The main part of the evaluation will then start off with a more in-depth document review. The results of this can inform the Key Informant Interviews and Workshops. The evaluation should conclude with a workshop to validate the results and agree the recommendations.

Figure 8.1 Outline of sequencing of the tailored process evaluation approach



Synthesis

A systematic approach would be needed to synthesise the information from the 4 sources to answer the EQs. The draft final report should be discussed in a workshop.

Variation

The evaluators and the evaluation team may want to agree to start this process evaluation with a participatory systems workshop and create a systems map. This can help ensure that the data collection methods listed above cover all parts of the system.

Table 8.3 Evaluation questions, sub-questions indicators and data sources

Evaluation Question	Sub-Question	Indicator	Primary data source
Question 1: Do teams in MMO and partner organisations have the capacity (policy, resource, technology) required to deliver the MMO MPA Fisheries and Conservation Strategy?	Is there a defined UK Government policy that underpins the MMO MPA Fisheries and Conservation Strategy?	Policy present/absent If no, why not?	Documentation
	Is the MMO MPA Fisheries and Conservation Strategy documented and understood by MMO?	Strategy present/absent If no, why not? And Strategy used in wider MMO decision making, incl enforcement If not, why not	Documentation and interviews with key MMO personnel
	Are roles and responsibilities of MMO team documented and understood?	Roles and responsibilities documented yes/no Understanding present/absent If no, why not?	Documentation and interviews with key MMO personnel
	Do the skills of the MMO team meet the requirements of the roles and responsibilities?	Staffing of specified roles Staff capacities relative to role requirements	Interviews
	Are roles and responsibilities of partners documented and understood?	Roles and responsibilities documented yes/no Understanding present/absent If no, why not?	Documentation and interviews
	Do the skills of the partners meet the requirements of the roles and responsibilities?	Specified roles within partner orgs Staffing of specified roles Staff capacities relative to role requirements	Interviews
	Are there KPIs to measure the contribution of MMO teams to implementing the strategy?	KPIs present/absent If no, why not?	Documentation

Evaluation Question	Sub-Question	Indicator	Primary data source
	Is there an IT system to support casework? If so, is there technological support and training to use appropriate software?	Supporting IT system present/absent If no, why not? If yes: evidence of support and training If yes: sufficient training for effective use	Data
Question 2: Is effective stakeholder engagement in place?	Is there are stakeholder engagement plan in place and is it used to guide stakeholder engagement?	Stakeholder engagement plan present/absent. If no, why not?	Documentation and data
	Are stakeholders aware of MMO MPA Fisheries and Conservation Strategy and how to engage in its development?	Levels of awareness of strategy and their opportunity to engage	Targeted interviews with key representative bodies and associations.
	Do stakeholders feel engaged and able to participate in the process where appropriate?	Stakeholders on experience of engagement	Qualitative Feedback Survey / Interviews
	Do stakeholders feel that the process is adequately governed and that decisions are open, transparent, proportionate, accountable and consistent?	Stakeholder perceptions of process governance	interviews
	Is there a process for responding to stakeholder feedback and is this followed?	Presence/absence of adaptive/reflexive learning process	Documentation
	How is stakeholder uncertainty managed?	MMO engagement strategy and managing of expectations and uncertainty Stakeholder's perception of uncertainty and how it is managed	Interviews

Evaluation Question	Sub-Question	Indicator	Primary data source
Question 3: Is there effective process and governance in place to support the delivery of the MMO MPA Fisheries and Conservation Strategy?	Is there documented and understood governance of the process including measures for accountability, oversight and quality assurance of decision making, such as delivering management measures, enforcement of measures and integration with other functions in the MMO and key delivery partners?	Documented decision-making process present/absent If no, why not? Documented operation process present/absent If no, why not? Understanding present/absent	Documentation and interviews
	Is there evidence of governance mechanisms being used?	Evidence of applied governance process	Documentation
	At what level does accountability for decision making sit and is this appropriate?	Decision-making benchmark	Interviews with key MMO personnel (e.g. are people comfortable with the level of decision-making, is it correctly benchmarked with other levels of decision-making?)
	Is there a means to appeal decision making?	Appeal process present/absent	Documentation
	Is there appropriate legal review of decision making?	Evidence of applied legal review process yes/no Effectiveness of legal review	Documentation and interviews
	Have any unexpected outcomes been encountered and has learning from those outcomes been captured?	Documented outcomes	Documentation
Question 4: How is process adaptation and learning managed during delivery of the MMO MPA	Is there a documented and understood process for adaptation and learning during delivery of management measures, enforcement or integration with other functions in the MMO and key delivery partners?	Adaptation and learning process (delivery of management) present/absent Adaptation and learning process (enforcement) present/absent Adaptation and learning process (integration) present/absent	Documentation Interviews

Evaluation Question	Sub-Question	Indicator	Primary data source
Fisheries and Conservation Strategy?	Has the MPA F&C strategy changed since inception, and if so, was this change documented and understood?	Evidence of change in strategy/PMS	Documentation
	Is there a mechanism for understanding significant internal and external factors affecting the delivery of the MPA F&C strategy (e.g. risk register), and if so, is this an active consideration in operational delivery?	Mechanism for understanding risks present/absent Effect on operational delivery	Documentation and interviews
Question 5: How does evidence inform decision making?	Is there a quality assurance process in place to ensure that decisions are based upon best available evidence and account for uncertainty (robustness and confidence), if so is this being used?	QA process present/absent If no, why not? If yes: Evidence of use of QA process	Documentation
	Is the evidence QA process effective?	QA process effectiveness	Documentation and interviews
	Does the evidence underpinning decisions consider environmental, social and economic impacts, including cumulatively?	Use of evidence for environmental impact assessment Use of evidence for social impact assessment Use of evidence for economic impact assessment Use of evidence for cumulative impact assessment	Documentation
	Is evidence sufficiently considered and documented in decision making?	Use of evidence in decision-making	Documentation and interviews and workshops[48]

[48] A workshop could address Question 5 as a whole with a range of stakeholders to explore the use of evidence at a holistic level.

Evaluation Question	Sub-Question	Indicator	Primary data source
	Is there process in place to identify and consider evidence gaps relevant to operational delivery, and if so is it being used?	Evidence gaps identified yes/no Process to respond to evidence gaps yes/no Understanding present/absent	Documentation and interviews
	Is the process for dealing with evidence gaps effective?	Effectiveness of process to respond to evidence gaps	Interviews and workshops

8.3 Outcome Harvesting

8.3.1 Introduction to the Outcome Harvesting

Outcome harvesting is a participatory method which works with stakeholders to identify change and the reasons for it. It investigates complex situations and programmes where stakeholder relationships play an important role in the delivery of outcomes but are often not easily understood. In many cases it is described primarily as an impact evaluation method, however its specific focus on change, how change is achieved and the role of relationships makes it particularly appropriate for the evaluation of the MMO's MPA conservation project[49]. Here stakeholders are key to the success of the project itself, however many important stakeholders are in hard to reach groups, such as small fishing communities.

The method starts by asking what has changed and how, i.e., what the MPA conservation project has achieved in terms of outcomes and how this has been achieved. It does not presuppose a change observed or determined by the objectives of the MPA conservation project but instead aims to find out from those involved or affected. Therefore, it can identify unintended consequences, unrealistic assumptions and gaps in the process. Outcome harvesting allows evaluators to identify emerging impacts of the MPA conservation project and its process as well as those points at which stakeholders might have had a different experience than what was expected in the Theory of Change the MPA Conservation team has created. The method collects information on what has changed and then work backwards to establish whether, and how, the MPA conservation project has generated these changes.

This participatory element makes this method, in our view, suitable for process evaluation in the case of the MPA conservation project to help identify why changes have occurred and how different stakeholder groups contributed to it.

The purpose of Outcome Harvesting goes well beyond evaluation. It can contribute to learning and improvement of processes in order to achieve better outcomes in the future.

8.3.2 Step by step description

During the Outcome Harvest a so called "Harvester" is a person leading on the evaluation. This can be an internal or external person. The so called "Harvest users" are the stakeholders to the evaluation. They need to be closely involved throughout the process. In this respect, Outcome Harvesting and Developmental Evaluation are similar.

Outcome Harvesting consists of 6 steps:

- **Design the Outcome Harvest:** The first step is to identify the primary intended users of the harvest, i.e., the first step in the evaluation and their principal intended uses for the harvest process and findings. Based on those, the "harvest

[49] See for example Intrac, Outcome Harvesting, 2017

users" and "harvesters" agree what needs to be known and write useful, actionable questions to guide the harvest (harvesting questions). These are similar to evaluation questions and the process evaluation questions in section 7.2 could be used as guidance, should this method be employed for the future evaluation of the MMO's MPA conservation project. The harvest users would be the MMO Marine Conservation Team.

- **Review documentation and draft outcome descriptions**: The document review identifies potential outcomes and how the MMO MPA Fisheries and Conservation strategy contributes to them. The Harvester will be aware of the fact that this is a process evaluation and will consider the how of the changes that have occurred in order to achieve the outcomes. The ToC developed for this evaluation plan already provides some of the information but will need to be reviewed. However, it should be noted that Outcome Harvesting does not start from the impacts or outcomes identified in a ToC but uses an interactive process to identify changes and outcomes as perceived by the stakeholders.
- **Engage with stakeholders in formulating outcome descriptions:** Harvesters engage directly with key stakeholders of the MPA conservation project to review the outcome descriptions and how they have been achieved, based on the document review. This engagement is also used to identify and formulate additional outcomes and again consider how these have been achieved.
- **Substantiate:** Harvest users, in this case the MMO MCT and harvesters review the final outcomes and the pathways that led to them, and select those to be verified. "Third parties", notably individuals independent of the intervention but knowledgeable about the outcomes and how these were achieved are brought into the process. The objective is to validate the findings of work done in the second and third steps and enhance their credibility. Should this approach be used for the evaluation of the MMO MPA Fisheries and Conservation strategy, the third parties should be independent of the design of the process evaluated and the delivery of the impacts as currently drafted in the Theory of Change. They need to be knowledgeable about it and the contribution of the organisations involved in these processes. Academic advisors may be a possibility.
- **Analyse and interpret:** Harvesters classify all outcomes and pathways to them, often in consultation with those who provided the information. This step would also include a revisit of the ToC which may require updating following the steps above. Given that the impacts of the MMO MPA Fisheries and Conservation strategy will materialise in the longer term, the Harvester could consider focusing on the outcomes as described in the revised ToC and the process leading to these, rather than the impacts.
- **Support use of findings**: Harvesters propose issues for discussion to harvest users grounded in the evidence-based answers to the harvesting questions. Facilitated discussions with the users allows and enables the use of the evaluation results and learning across the MMO driven by the Harvest Users.

The steps can be done in parallel or be repeated to ensure a good understanding of the role of different stakeholders in the process.

8.4 Developmental Evaluation

8.4.1 Introducing DE

Developmental evaluation (DE) uses a practical application of theory approach where interplay between design and implementation is a core feature[50]. DE is suited to situations that are **complicated** (multiple interconnected variables), **complex** (involving multiple stakeholders with differing perspectives), and often **conflictual or contested**. A number of features distinguish the DE approach from conventional 'external auditing' approach whereby an evaluation is kept separate from the implementation process:

- DE is concerned with **developing value** amongst different stakeholders and for the project as a whole, rather than just **determining value** (as with conventional external auditing)
- Whilst DE is primarily about 'learning' it also supports building a sense of responsibility amongst all stakeholder groups including decision makers. The responsibility comprises both 'caring' for the situation as well as developing 'accountability'.
- DE invites responsibilities amongst all stakeholders as evaluators – co-developing value for the intervention during implementation. Evaluators commissioned are regarded as having 'skin-in-the-game' – part of, rather than external to, the evaluand.
- DE acknowledges uncertainties and the provisional nature of judgements regarding implementation (e.g., rules and regulations being enforced through any framing), thus drawing on expertise (guarantors of rigour) from a range of stakeholders including those with disciplinary knowledge in relevant fields (reliability), as well as sources of rigour from interdisciplinary (resonance) and transdisciplinary (relevance) expertise
- The framing of DE (M&E framework) is responsive and adaptable to changing circumstances - the ever-changing flux of events, people, and ideas – associated with the situation of interest (MMO MPA Fisheries and Conservation Strategy).

Developmental Evaluation has been suggested as an approach to conducting the evaluation on the MMO MPA Fisheries and Conservation Strategy based on the need for adaptive learning as well as the intervention being a complex and conflictual situation.

8.4.2 Systems thinking in practice

The features of DE listed above are informed by another separate though related group of methods associated with systems thinking in practice (STiP[51]).

[50] Referred to as a 'praxis-oriented' approach which is defined in Annex 2 A2.4.6

[51] The namesake of a postgraduate programme of study developed by The Open University, UK., and increasingly used in association with systems thinking in the policy domain

A system can be defined simply as “a collection of entities that are seen by someone as interacting together to do something” (Morris, 2005)[52]

Three core principles underpin STiP:

(i) The importance of relational thinking – ‘entities interacting together’ – rather than a focus on the entities alone (residual thinking). Thinking and practicing with just a limited number of interactions is often termed ‘reductionist’ thinking or reductionism. One core aspect of relational thinking involves a concern for being both systematic -interacting together to do something – whilst being systemic –thinking through wider possible consequences and impacts. Systems thinking represents a continual interplay between thinking systemically (understanding the bigger picture) and acting systematically (joined up thinking in practice)

(ii) Systems are perspectives – ‘a collection of entities *that are seen by someone*’ – rather than real world objects or entities alone. There will always be some bias in any system. For that reason STiP always begins *systemically* with a view to exploring different possible systems based on different perspectives rather than *systematically* with ‘the’ system or ‘a’ system. This might avoid prematurely getting locked-in to one particular perspective (system) regarding the complex situation. When being invited to be part of a system, it is often good practice to ask ‘whose system?’

(iii) Any system constructed individually or collectively for an intervention must have some means of being responsive to the changing environment of the system and hence adaptable. Ashby's Law of Requisite Variety (RV), formulated in the 1950s summarises the dilemma:

“if a system is to be able to deal successfully with the diversity of challenges that its environment produces, then it needs to have a repertoire of responses which is (at least) as nuanced as the problems thrown up by the environment. So a viable system is one that can handle the variability of its environment. Or, as [Ross] Ashby put it, only variety can absorb variety.” (Naughton, 2017)[53]

Note, for purposes of designing an evaluation framework as a system it might be helpful substituting ‘system’ for ‘evaluation’ in the description of RV above.

Based on these principles, STiP invites three core activities associated with designing and implementing an evaluation framework associated with an evaluand (e.g., MMO MPA Fisheries and Conservation Strategy):

- understanding inter-relationships in a given situation of interest or evaluand e.g., addressing issues of intersectionality and importance of feedback;

[52] Morris, R.M, 2005. Thinking about systems for sustainable lifestyles. *Open University Systems Society (OUSys) Newsletter* No. 39 (Autumn) 15-19

[53]Naughton, J, 2017. Ashby’s Law of Requisite Variety. Blog posting on series of invited contributions from different authors *What Scientific Term or Concept Ought to be More Widely Known?* Published by Edge https://www.edge.org/response-detail/27150 [accessed 24th March 2021]

- engaging with multiple perspectives regarding issues of concern arising in an evaluand e.g., addressing issues of complexity and different ideas of purposefulness amongst stakeholder groups;
- reflecting on boundary judgements concerning the inevitable limitations in framing of inter-relationships (what's in and what's out?), and likewise, inevitable biases in framing of perspectives. Both limitations address issues of conflict and contestation.

8.4.3 Developmental Evaluation guidance 1: starting systemically

Insight and guidance on the developmental evaluation approach has been provided by expert Martin Reynolds, the literature and practical guidance and toolkits sourced online found through the better evaluation website.

Developmental is a context-specific approach focussed on adaptive learning in real-time, drawing on existing sources of experiences and expertise. Hence there are no prescribed methodologies. However, as indicated in the guidance provided by J.W.McConnell Family Foundation[54,55] , there are general functions associated with the DE approach that can be followed. For example, the starting conditions need to be set up systemically.

Entry point work can include orienting the team and building relationships[55]. As part of the development of this evaluation plan, activities that contribute to this entry point work have already been undertaken.

Interviews and workshops with the MMO and partner stakeholders have helped the ICF team to orient themselves and build relationships. Reviewing of existing documents has helped to understand the current evidence base. The co-design of the ToC has helped to orient both the ICF team and the MMO. It would be advised that if a developmental evaluation was commissioned with a new team that they start by orienting themselves in a similar way to as listed above.

If a developmental evaluation is commissioned and undertaken by this team, this work can continue with the following suggested activities.

8.4.4 Developmental Evaluation guidance 2: developing a simple system

The MMO MPA Fisheries and Conservation strategy can be defined as a system. In order to understand a 'system' it is important to understand what are the 'boundaries' of that system i.e., what is inside and outside of the system and what separates it from others. Defining and demarcating these boundaries is referred to as 'boundary judgement'. Different stakeholders may have a different opinion on

[54] Gamble, J., 2008. *A Developmental Evaluation Primer*. The J.W. McConnell Family Foundation [online] Mcconnellfoundation.ca. Available at: https://mcconnellfoundation.ca/wp-content/uploads/2017/07/A-Developmental-Evaluation-Primer-EN.pdf [Accessed 16 June 2022].

[55] Dozois, E., Langlois, M. and Blanchet-Cohen, N., 2010. *DE 201: A Practitioner's Guide to Developmental Evaluation*. The J.W. McConnell Family Foundation and the International Institute for Child Rights and Development [online]. Mcconnellfoundation.ca. Available at: https://mcconnellfoundation.ca/wp-content/uploads/2017/07/DE-201-EN.pdf [Accessed 16 June 2022].

where the boundaries of a system may lie and therefore may have different boundary judgements on a system. Reflecting and examining these boundaries is referred to as 'boundary critique'[56].

The following activity can be used to facilitate discussion internally to orient the team as well as a participatory discussion with stakeholders to define the MMO project map the system. Reflecting and revising this system and the boundaries of it both internally and with stakeholders can be part of a developmental evaluation approach.

System changes for MMO in developing MPA management measures

The object of the planned evaluation is MMO's project to implement the Marine Protected Area fisheries regulations following the UK's exit from the EU. The project can be regarded as a 'simple system' - comprising a what, why and how:

- A system to...(what)? i.e., primary objective(s)
- in order to ... (why)? i.e., overall meaning/ social legitimacy
- by means of...(how)? i.e. primary resources

In the case of the MMO project, this could be defined as

- **(what) A system to... implement fisheries management measures in offshore MPAs**
- **(why) In order to ...** enhance the ecological status of MPAs (as a 'public good')
- **(how) By means of ...**developing ongoing effective stakeholder engagement etc....

The measures of success for the system might be identified at each of the 3 levels.

- **(what) Efficacy** – (outputs of the system) is the primary objective being served ('does it do what it says on the tin')?
- **(why) Effectiveness** – (outcomes/ impacts of the system) what are the actual (systemic) outcomes/ impacts outside the immediate effects (beyond measures of efficacy)?
- **(how) Efficiency** – (activities/ resources) how well is the system working with mobilising resources in terms of fulfilling *both* the 'what' and the 'why' coherently?

Often decision making is undertaken at the level of 'efficiency' in isolation to concerns about 'marrying' efficiency to measures of 'effectiveness' and 'efficacy'. It is a common cause of systemic failure. An example of this failure could be contracting out items of work for immediate cost reduction, which may have longer term effects in terms of losing goodwill.

[56] Reynolds, M., Wilding, Helen., 2017. Boundary critique: an approach for framing methodological design. In: de Savigny, Don; Blanchet, Karl and Adam, Taghreed eds. Applied Systems Thinking For Health Systems Research: A Methodological Handbook. Maidenhead: Open University Press, pp. 38–56

Table 8.4 MMO management plan as systems change using simple systems

System parameters What? Why? How?	**System change**...		**Measures of success** Criteria for evaluation questions
	From ('is' mode) Based on existing EU benchmarking	To ('ought mode) UK benchmarking	
(What?) A system to... (aims/ objective/s)...	...???	...???	**Efficacy** ...does system work according to it's own terms of reference (the What)?
(Why?) In order to... (wider meaning/ legitimacy/ values etc)....	...???	...???	**Effectiveness**.... does the system have wider social legitimacy... what are the possible knock-on effects in terms of possible systemic failure or systemic betterment?
(How?) By means of... (resources)...	...???	...???	**Efficiency** ...does system best use available resources to meet the purpose (the What) in line with it's wider meaning (the Why)? NB. Important to consider efficiency – the **how** - in relation to the **what** and **why** rather than being seen as an independent measure.

Table 8.4 is a template that can be a helpful device for facilitating discussion amongst potential stakeholders. Situations are *always* subject to change. The world does not stand still. Any system that you design or understand a situation to be, must therefore be continually adaptable to the changing situation. Systems need to be viable[53] In terms of regarding situations as 'simple systems', decision making should always be alert to revising the objectives/ purpose of the system (the What) in accordance with possible changes to, or expansion of, underpinning meaning (the Why) with consequent alterations of drawing on and mobilising different resources (the How).

The dynamics of a system can be continually revised and iterated on. Particularly the measures of success will need continual revision. One way of ensuring appropriate adaptation is to have ongoing participatory engagement amongst different stakeholders. Using 'simple systems' with 'developmental evaluation' can ensure transparency of governance, which invokes trust, and avoidance of 'talking at cross purposes'.

Mapping the development of this simple system onto existing evaluation questions can help to alter the evaluation plan into a learning framework.

8.4.5 Developmental Evaluation guidance 3: Using Systems Thinking for Participatory Stakeholder mapping

Stakeholder mapping is the process of developing a list of stakeholders that have influence in or are impacted by the intervention and then mapping those stakeholders out according to a set of criteria that is valuable to the exploration of the stakeholders[57]. This may be criteria such as 'influence', 'impactedness' and 'interest' and mapping out how stakeholders may be connected to one another.

Once a simple system has been agreed on, the 'simple' system for making initial boundary judgements (what/why/how) might be further unfolded to a richer 'reference' system which can be helpful for making further boundary judgements, including judgements about possible stakeholders and their stakes, associated with any system design (including developing an evaluation framework). Critical systems heuristics (CSH) provides a reference system for flushing out relevant stakeholder groups associated with any intervention. Figure 8.2 illustrates the four key stakeholder groups and relevant stakes, and questions associated with each group. Together they make up 12 boundary judgements which can be helpful in both stakeholder mapping and for getting some grip on the political ecology (inter-relationships) associated with a particular intervention (who gets what? Who owns what? Who does what? …and who suffers what?).

[57] Active Neighbourhoods Canada. n.d. *Stakeholder Mapping*. [online] Available at: https://participatoryplanning.ca/tools/stakeholder-mapping [Accessed 20 June 2022].

Figure 8.2 Reference system for Critical Systems Heuristics (CSH) for Stakeholder Mapping (including 12 boundary judgements and associated questions)[58]

Sources of influence	Boundary judgements informing a system of interest (S) where S may represent an intervention such as a policy, programme, project or evaluation			
	Stakeholders	**Stakes** *(specific interests)*	**Stakeholding issues** *(key problems)*	
Who gets what? Sources of **motivation**	1. Beneficiaries Intended clients or customers of S?	2. Purpose key objective of S?	3. Measure of success (performance indicators) S's measure of improvement?	The 'involved'
Who owns what? Sources of **control**	4. Decision –makers Those in command of resources necessary to enable S?	5. Resources conditions of success for S - relevant components ('capital') to secure improvement?	6. Decision environment (accountability) conditions of success *outside* the control of the decision maker for S?	
Who does what? Sources of **knowledge**	7. Experts Those providing relevant knowledge and skills for enabling S?	8. Expertise relevant knowledge and skills supporting S?	9. Guarantor (assurances) promises or guarantee of successful implementation of S?	
Who suffers what? Sources of **legitimacy**	10. Witnesses (guardians of 'victims') Those representing the interests of those negatively affected by but not involved with S?	11. Emancipation (marginalisation) constraints on the interests of those negatively affected to have expression and freedom from the worldview of S?	12. Worldview (political space) opportunities available for reconciling contrasting worldviews giving meaning to improvement in S?	The 'affected'

As part of this evaluation plan, different types of stakeholders have already been identified and categorised into across 4 key roles 'intended beneficiaries', 'decision makers', 'knowledge providers (or 'experts')', and 'the affected or disaffected'' Table 8.5

Whilst many 'participatory' interventions tend to focus on inclusivity of intended beneficiaries, insights from STiP suggest equal attention be given particularly for involving the decision makers, but also those potentially or actually disaffected. From a DE perspective it is important that the concerns of particular stakeholder groups are addressed as part of the process of developing value.

[58] Adapted by Reynolds from Ulrich, W. and Reynolds, M. (2020) **Ch. 6. Critical Systems Heuristics: The Idea and Practice of Boundary Critique.** In: Reynolds, Martin and Holwell, Sue eds. *Systems Approaches to Making Change: A Practical Guide. 2nd Edn.* London: Open University and Springer, pp. 255–305.

Table 8.5 Stakeholder groups identified

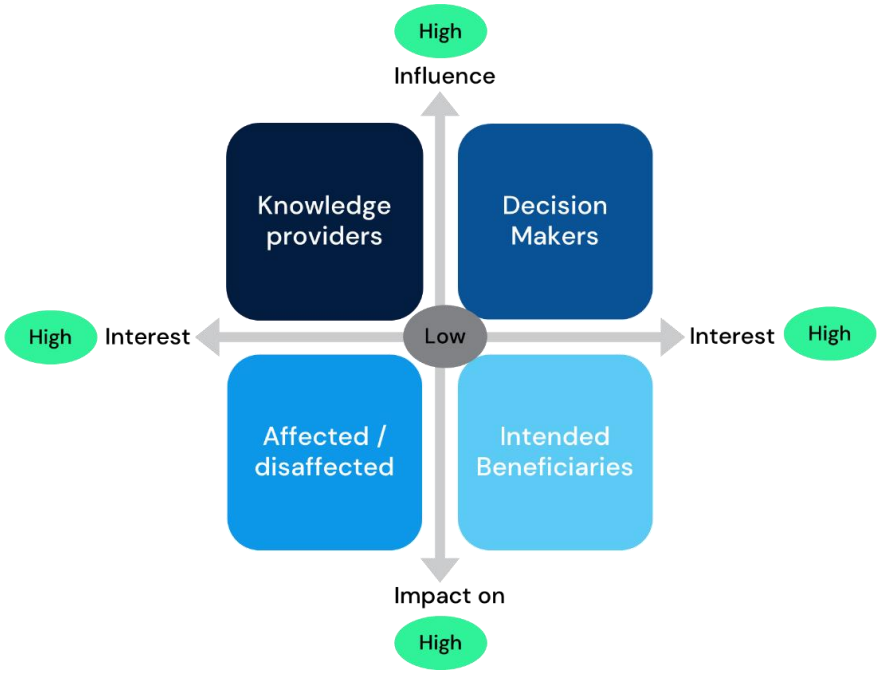
Stakeholder role	Identified groups
Knowledge providers (or 'experts')	MMO, JNCC, NE, IFCAs, academia,
Decision makers	MMO, Defra, SoS
Intended beneficiaries	Public, ENGOs – Wildlife Trusts, MCS, WWF, RSPB, Seal Conservation Society, Whale and Dolphin Conservation, Shark Trust other marine users e.g. Angling Trust
The affected and those potentially 'disaffected'	Commercial fisheries which can be represented by 'The National Federation of Fishermen's Organisation (NFFO); individual Fish Producer Organisations (FPOs); Sea Fish Industry Authority (Seafish); Shellfish Association of Great Britain; New Under Ten Fishermen's Association (NUTFA), and local fishing associations where specific spatial overlaps with MPAs exist.
Other stakeholders	There are other stakeholders and marine industries that are important to consider as part of strategy, and the evaluation, whose position within the stakeholder landscape may change over time. Marine renewable energy generation (potential overlap with strategic compensation). Other relevant maritime industries could be confirmed through spatial analysis, but could include: shipping & navigation, aggregate extraction, cables and pipelines, aquaculture, recreational fishing & boating

An example matrix that could be used to map stakeholders according to their role and criteria is provided in Figure 8.3.This matrix has been developed by the ICF team as an example matrix that could be used for stakeholder mapping. It incorporates features from the Mendelow Model[59] matrix as well as the four stakeholder roles identified in systems thinking in practice. After allocating stakeholders into the four different roles (noting they could be present in more than one role) the stakeholder can then be mapped against influence and interest (if knowledge provider or decision maker) and impact on and interest (if beneficiary or affected).

Within the stakeholder map, stakeholders may move between the different areas and may fall under several different roles at the same time. As part of a developmental evaluation approach, a stakeholder map could be revisited and revaluated to recognise and identify how stakeholders' position may change in the project over time.

[59] Reference: Mendelow, A. L. (1991) 'Environmental Scanning: The Impact of the Stakeholder Concept'. *Proceedings From the Second International Conference on Information Systems* 407-418. Cambridge, MA.

Figure 8.3 Example stakeholder matrix for a stakeholder mapping exercise



Inviting stakeholders to be part of the stakeholder mapping exercise in a participatory manner can further help to identify and assess their and others stakeholders' position and how this can change overtime. It also helps to engage stakeholders and build transparency and trust. A participatory stakeholder mapping exercise can orient the team and the DE practitioner and help to build relationships with stakeholders.

If stakeholders are invited to take part in a participatory stakeholder mapping process, care should be given around confidentiality and data protection.

8.4.6 Developmental Evaluation guidance 4: Revisiting the Theory of Change – a STiP perspective

Complemented by STiP a Theory of Change (ToC) is a key method also used in a DE approach. ToC is a device used in a participatory manner amongst relevant stakeholders associated with a project. It presents a mutually developed storyline for an intervention, highlighting core issues and concerns and assumptions, in a visibly engaging manner (usually using graphics).

From a STiP perspective, the ToC might be regarded as a learning system; one which can evolve and be iterated during the course of implementing an intervention. The ToC should be simple and accessible enough for the range of stakeholders to engage with and co-develop.

As part of a developmental approach, it would be recommended that the ToC be continually revisited, revised, and adapted to recognise the changes in the MMO MPA Fisheries and Conservation Strategy as well as to capture how learning that has occurred has altered and developed the project. The ToC model might also be customised and adapted for use in different MPAs. Workshops conducted with MMO and partner stakeholders to co-design the Theory of Change as part of this

evaluation plan, have already helped the MMO MCT team to reflect on their work to date. Continuing with this activity at appropriate stages in the project can provide value for the MMO team. Inviting stakeholders to be part of this process give stakeholders further transparency on how the project is evolving as learning is being taken on board.

8.4.7 Developmental Evaluation guidance 5: Developing a learning framework

The evaluation plan within this report that includes high-level evaluation questions, sub-questions, indicators and data sources (Table 8.3) can form the basis of a framework to orient a developmental evaluation. Whilst the evaluation plan has been developed with learning in mind, as part of a developmental evaluation approach the framework may need to be revised to focus more clearly on learning, rather than assessment[55]. As has been done with the development of this plan, this can be co-designed with MMO and partners to review which areas they need to pay attention to as they continue with their project and what they need to learn as they go through the process. This learning framework should then act as a living document that is updated regularly to reflect the challenges and learning that have been uncovered as part of the developmental evaluation[55].

8.4.8 On-going practice

The following activities recommended in developmental evaluation guidance from J.W.McConnell Foundation[54,55] could form part of a developmental evaluation approach where a DE practitioner is embedded in the team. The activities could also be taken on as internal approach by the MMO to encourage learning.

1. Orienting

Activities that support revising and testing the assumptions of the system models and theory of change to help maintain adaptive learning to the unfolding of complex situations.

2. Watching

Observing the development of the MMO MPA Fisheries and Conservation strategy and how the team and stakeholder dynamics develop over time. DE practitioners observe developmental moments, group dynamics, structure, actions, and challenges and opportunities that develop.

3. Sense-making

DE practitioners would help to facilitate learning and development within the project by identifying patterns, highlighting new or evolving situations and reflecting on the implications of what they observe taking place.

4. Intervening

As an embedded member of the team, the DE practitioner can help to add value to the project by asking questions of the team, facilitating discussions between the team and stakeholders, modelling the system, synthesising and presenting data, and encouraging the team to pause, reflect and learn.

9 Recommendation for the Evaluation

9.1 Comparison of options

There are differences between these three methods which need to be considered against the purpose of the evaluation as well as costs, resourcing, and the skill requirements to conduct the evaluation. Table 9.1 provides a detailed comparison of the methods proposed.

The MMO have indicated that they would like an evaluation to fulfil two key purposes learning and accountability, however weighting placed on these different purposes is important to consider in the decision to take an evaluation approach forward.

The outlined tailored process evaluation is an externally led evaluation with a greater level of independence and greater emphasis on accountability. The methods utilised are transparent and rigorous so can be well trusted by the users of the evaluation. The exact data collection methods utilised in this approach can be tailored depending on desired level of participation as well as resource and budget constraints.

The outcome harvesting approach has a greater emphasis on participation with an external evaluator (Harvester) who has trust of the team and stakeholders enables conversations and exchanges to identify results and the contributors to results. This option can also provide accountability whilst having increased levels of stakeholder engagement however it is a less common evaluation method and there may be resource requirements from team members and stakeholders which are more intense and burdensome than the Tailored Process Evaluation.

The developmental evaluation approach has a greater emphasis on adaptive learning and stakeholder participation rather than assessment of the process. A developmental evaluation practitioner would be embedded as part of the team and whilst this has benefits for learning it is less independent and therefore has less focus on accountability. An embedded evaluator also has implications for resource and budgeting.

Table 9.1 Comparison of evaluation methods proposed

	Tailored Process Evaluation	Outcome Harvesting	Developmental Evaluation
Key focusses	Independence External role Accountability Assessment	Independence External role Accountability Identification of results (results-based)	Situated praxis Embedded (skin-in-the-game) Adaptive learning (values-driven) Responsibility (with Real-time feedback)
When to use	To assess and provide accountability of a project.	Used to gain understanding of project/ process results and change processes from within the stakeholders	Used in emergent, evolving complicated and complex situations that require learning and development.
Timing	Episodic and assessment based. Evaluators can be brought in at the appropriate timing which could be mid-way or at the end of a project to provide an overall assessment of the work.	Episodic – as often as deemed necessary by the MMO and the evaluator and depends on the progress made in the MPA project[60] Evaluator to be emersed in team for some time, but not as team member. Start early on in the delivery.	Continuous with constant feedback provided. Developmental evaluation practitioners should be brought in early to be established as a team member and play a key role in the initial stages of the project to map out the systems and groundwork.
The Evaluator	Primarily 'honest-broker' role with concerns for being trusted. The evaluator may work closely with the team but has a strong position of independence to make an overall unbiased assessment. This could be considered 'first order' evaluation where the evaluator is an independent objective observer outside of the initiative, they are evaluating[64].	Primarily 'honest-broker' role with concerns for being trusted. External evaluator (Harvester) who has trust of the team and stakeholders enables conversations and exchanges to identify results and the contributors to results. This could be described as a "half way house" evaluation where the evaluator while still	Primarily 'trusted-companion' role with concerns for being objective Internal or external evaluator embedded as part of the team as a critical and supportive observer, questioner, and facilitator[54] with skills in skills in strategic thinking, relationship building, facilitation and systems thinking[55.]

[60] Wilson-Grau and Britt, https://www.outcomemapping.ca/download/wilsongrau_en_Outome%20Harvesting%20Brief_revised%20Nov%202013.pdf

	Tailored Process Evaluation	Outcome Harvesting	Developmental Evaluation
		independent has enabled communication as a trusted "harvester".	Considered 'second-order' evaluation where the evaluator reflects on their observations and are integral to the initiative considered[64.]
Practice and Methods	Practice and methods are detailed in UK Government Magenta book. Research methods that can be used in process and impact evaluation include: – Document reviews – Interviews and focus groups – Surveys and polling – Output or performance monitoring – Qualitative observational studies – Consultative/deliberative methods The selection of the method will depend on: – The evaluation questions The sensitivity of the issues identified in the systems mapping and ToC review whereby interviews allow stakeholders to raise sensitive issues in a confidential manner while workshops and focus groups allow participants to "spark" off each others' ideas and contribute directly to learning.	Methods include research methods such as[61] – Document reviews – Interviews – Workshop discussions The questions asked and discussed with informants will be informed by results identified in the document reviews. Discussions aim to identify change processes, stakeholder relationships and pathways to outcomes. Informants will also bring in further stakeholders to be included in the harvest. Results are classified and tested in conversation with the informants. Feedback and repeated assessment are important.	Methods can include interviews, focus groups, surveys, observation, group analysis and interpretation. The difference in developmental evaluation is that the methods are taken as the process that is being evaluated is developing so that questioning and learning can happen simultaneously with action. The developmental evaluation process will focus on reflecting on the evaluating work – this may involve revising terms of reference, revising evaluation questions or revising the theory of changes based on exploration and observations that have been made. Developmental evaluators may collect and track two streams of data: (i) information that assists in validating decisions, approaches or assumptions and (ii) innovation/learning to provide a memory for decision making and innovation as the project progresses. The developmental evaluation will attempt to build this type of data collection into the organisations processes[54].
Reporting	A formative process evaluation can provide regular feedback on the process deliveries,	Findings are reported to Harvest users and interactively discussed.	DE provides real-time feedback throughout the project lifecycle. Synthesis of data in a digestible

[61] Wilson-Grau, R. (2015) *Outcome Harvesting*. BetterEvaluation. Retrieved from http://betterevaluation.org/plan/approach/outcome_harvesting

	Tailored Process Evaluation	Outcome Harvesting	Developmental Evaluation
	learning points etc to enable the MMO team to adapt. In addition, the traditional approach allows for a mid-term and final report on the delivery of the process. It is recommended that the mid-term and final report is published. This will provide accountability.		way through visuals, diagrams and stories which track the project innovation as it progresses54.
Resource needs	It is strongly recommended to commission an external evaluator to support the MMO in delivering the process evaluation. MMO can decide on the depth and duration of the evaluation. Resource requirements will vary between the selected methods however all of them will require experienced evaluators to conduct interviews, moderate workshops or focus groups etc. A full formative evaluation will require the appointment of the evaluator as soon as possible in order to inform the further delivery of the process and enable learning and amendments to apply.	External Harvester has to be appointed. The number of repeats of the method can be discussed. There are also resource requirements from team members and stakeholders. These may be more intense and burdensome than the Tailored Process Evaluation as there are several feedback loops included in Outcome Harvesting. It is not a very common approach to evaluation and it may be difficult to find an experienced Harvester in the UK.	DE is time intensive. An external DE practitioner would be embedded in the team early and throughout the project life cycle54. This can be resource intensive and complex as DE is an iterative process where a pre-specified evaluation design contract isn't always appropriate[62]. More practically, an externally sourced DE might be appointed to take on a mentoring role with an identified in-situ practitioner/ evaluator taking the lead in developmental evaluation in the organisation. An internal staff member could take on the DE role but this would require that sufficient time be dedicated to this role and that the staff member have skills in facilitation, pattern recognition, inquiry, listening and communicating, dealing with ambiguity and holding truth to power54.

[62] For futher guidance on budgeting for a Developmental Evaluation see - Better Evaluation, 2012. *Budgeting for Developmental Evaluation: An Interview with Michael Quinn Patton (MQP) by Heather Britt (HB)*. [online] Betterevaluation.org. Available at: https://www.betterevaluation.org/sites/default/files/Budgeting%20for%20Developmental%20Evaluation.pdf [Accessed 24 June 2022].

9.2 Recommendation: Tailored Evaluation Approach

Considering the options and the requirements of the MMO the tailored process evaluation approach will likely be the most suitable choice. This option will provide the MMO with the independence and accountability that will be required for potential challenge as the methods are clear, transparent, and repeatable. The tailored approach can be more convenient as the data collection methods can be flexible to the need to balance participatory processes with the resource and budget constraints.

By conducting this evaluation midway through the MMO MPA Fisheries and Conservation strategy it gives the MMO time to learn and adapt their processes. Further opportunity to learn can be provided by considering the timing and frequency of data collection as well as continuing to work closely with the team in workshops such as those that have already been conducted as part of this evaluation plan. Some of the theories and tools outlined in the developmental evaluation approach such as systems thinking in practice and critical systems heuristics can also be utilised as part of a tailored evaluation approach if helpful to facilitate workshops and conversations with stakeholders.

An estimated budget and timeframe for this tailored evaluation approach has been provided in Table 9.2. This budget is based on a mid-project process evaluation that will provide MMO with time to learn from the results of the process evaluation. This could be followed up with a future evaluation which would allow MMO to see if they have learnt from the recommendations outlined in the mid-project evaluation.

Table 9.2 Estimated timings and budgets of a tailored evaluation approach

Stage	Stage	Approximate timing	Estimated cost
Tailored Process Evaluation	**Mid-project process evaluation**	**October 2022 – June 2023**	**Total: £102,000**
Scoping	Inception meeting First document review and document request Systems mapping workshop Stakeholder mapping workshop Revising TOC workshop Revising evaluation questions and methodology	October 2022 – December 2022	£19,000
Data gathering: Desk research	Document Reviews	November 2023 – January 2023	£5,000
Stakeholder engagement	In-depth Key Informant Interviews and workshop with external stakeholders	January – May 2023	£22,000

Stage	Stage	Approximate timing	Estimated cost
	Stakeholder engagement feedback surveys	January – May 2023	£4,000
	Survey, interview, and workshop with MMO and Partner stakeholders	January – May 2023	£13,000
Analysis and Reporting	Synthesis of evidence	May – June 2023	£15,000
	Report drafting	May – June 2023	£15,000
	Validation and review workshops	May – June 2023	£9,000

ANNEXES

Annex 1 Overview of work conducted

A1.1 Task 0: Inception

The inception phase was conducted from 4th February till 9th March 2022 and included the following subtasks:

- M0/D1 Inception meeting
- T.01 Preliminary Interviews
- T0.2 Workshop 1
- D1 Inception report

The **inception meeting** held February 4th between MMO and ICF clarified the scope of the project, important considerations, potential challenges and risks, and next steps.

1:1 semi-structured **interviews,** with 3 nominated MMO officials, were conducted to discuss structures and processes relating to the MMO MPA Fisheries and Conservation Strategy, stakeholders and sources of data.

The first workshop, **Workshop 1: Orientation**, was held virtually on February 17th with the ICF team and the MMO. This workshop was to provide further insight into the 3 stages of the MMO MPA Fisheries and Conservation Strategy.

A summary of the data and work conducted to date was covered in **the inception report** which was delivered March 9th. The report includes a description of the work done during the inception phase, a summary of the MMO's requirements and evaluation needs, next steps and a review of the project dependencies and risks.

A1.2 Task 1: Theory of Change development

The Theory of Change development phase which started February 28th and was conducted throughout March includes the following subtasks:

- T1.1 Supporting research
- T1.2 Online workshops planning and delivery
- T1.3 Supplementary interviews
- M2 Presentation & progress review
- D3/D4 Mid-project review report

A workshop plan was developed to conduct four workshops which aim at gaining knowledge and insight about the MMO MPA Fisheries and Conservation Strategy as well as co-designing the evaluation framework with the MMO team.

The 4 workshops include

- Workshop 1 - Orientation workshop (Task 0)
- Workshop 2 - Theory of Change development (Task 1)
- Workshop 3 - Evaluation Questions (Task 1)
- Workshop 4 – Validation (Task 2)

As mentioned above, the orientation workshop was conducted as part of the inception phase to gain a greater understanding of the MMO MPA Fisheries and Conservation Strategy.

Workshop 2 – Theory of Change, and **Workshop 3 – Evaluation Questions**, were conducted in March as part of Task 1 and the objectives and findings are described below.

Workshop 4 – Validation was conducted in May to further refine, develop, and validate the evaluation questions with the MMO. Supplementary interviews were also conducted to help support the framework development.

A1.2.1 Workshop 2: Theory of Change

The objectives of workshop 2 included:

- Co-design a draft Theory of Change for the MMO MPA Fisheries and Conservation Strategy focussing on the processes of the project
- Provide the ICF team with sufficient inputs to draw up such a Theory of Change

This was conducted via:

- Interactive, participatory discussion
- Everybody contributing using an interactive tool – Mural

A Theory of Change is a comprehensive visual and narrative description that aims to map out a phenomenon by describing a progression of steps from the inception, middle, and the end. It aims to understand how a series of activities can lead to a desired long-term impact. It is typically used to describe an intervention such as an event, project, programme, policy, or strategy.

A Theory of Change covers 4 key components and the links between them:

- **Inputs** – Resources or activities
- **Outputs** – What is delivered or what is produced as a result of the resources/activities
- **Outcomes** – Early to medium term goals
- **Impacts** – Long term results and desired impact

As part of the Theory of Change there may also be **'assumptions'** that are made. These tend to include supporting activities that are required that will be assumed to take place.

Workshop 2 was conducted with the MMO team, a representative of Natural England (one of the MMO's partners in this project) and the ICF team. Prior to the workshop briefing material was sent to participants so that there was a clear understanding of the purpose of the session, background context information including a description of what a Theory of Change is, and how the workshop will be formatted including the use of interactive tools.

In order to encourage ideas and conversation the ICF teams facilitated the discussion by asking questions and prompting discussion. Mural[63], an online interactive whiteboard, was also used so people could add and record their ideas.

Workshop Activity

The first activity was to work through the Theory of Change using a backwards mapping method i.e., starting with the impacts and working backwards to the inputs. This helps the team map through the required steps needed to achieve the long-term desired impacts.

[63] Mural.co. 2022. *MURAL is a digital-first visual collaboration platform*. [online] Available at: https://www.mural.co.uk [Accessed 31 March 2022].

Participants were asked to brainstorm ideas around each point in the ToC through both a facilitated discussion and utilising the Mural board. Before moving to the next step of the ToC, the team discussed and voted on the ideas generated to help refine the initial brainstorm development.

After all the stages of the ToC had been worked through and a set of main components developed, the team then developed a rudimentary ToC by linking certain components together and discussing the assumptions and context that the ToC needed to consider.

The results of this workshop (the Mural board) are provided in Annex 3Annex 4.

The subsequent first draft ToC that was developed forms section 4 of this report.

A1.2.2 Workshop 3: Evaluation Questions

The objectives of the workshop 3 included to:

- Brainstorm 'Evaluation Questions' that will be used as part of the evaluation framework,

via;

- Interactive, participatory discussion
- Everybody contributing using an interactive tool – Mural

Workshop 3 was conducted with the MMO team, and the ICF team. Prior to the workshop briefing material was sent to participants so that there was a clear understanding of the purpose of the session, background context information, a first draft of the ToC that was developed as a result of workshop 2, and a description of how the workshop will be formatted including the use of interactive tools.

Following the Theory of Change workshop, the ICF team identified the relevant objectives or impacts of the MMO MPA Fisheries and Conservation Strategy as:

Stakeholders adhere to and comply with the byelaws

Stakeholders have been effectively engaged in the process

Fisheries in MPAs are managed with a coherent set of byelaws

Process to assess impact of and on fisheries in MPA

Workshop Activity

For workshop 3, the mural board was set up as a mind map to generate evaluation questions around specific themes of the project (Annex 4). These themes were developed both from the discussions on the ToC as well as taking inspiration from components of systems thinking in practice (STiP) (see section **Error! Reference s ource not found.**).

These themes include:

- **Knowledge, resource, and capacity:** different types of knowledge and resource that are required as inputs and activities in the project. This includes disciplinary knowledge such natural, social, economic, and interdisciplinary knowledge such as facilitation, management, evaluation. It includes the evidence and data that forms as part of that as well as the tools that are used to analyse and map that out.
- **Stakeholder Engagement & Participation:** the different stakeholders, their level of participation and input, the potential opportunities, conflicts, and consequences.
- **Control and governance**: different elements of control and power that are part of the project and how might that affect the project process. This could include those with decision-making power and what the decisions are, how legislative and legal frameworks fit, and how the project is integrated and enforced with other stakeholder groups.
- **Cross cutting themes**: important points to consider in evaluation that cut across the project such as learning and uncertainty.

The results of the brainstorm session can be found in Annex 4.

After the brainstorm session, the ideas generated were further thematically grouped to better understand the types of questions that were developed (**Error! Reference s ource not found.**). From this thematic grouping, a set of high-level first draft evaluation questions were developed.

In a follow up meeting between the MMO and the ICF team these high-level questions were discussed, and feedback was given that will help to develop these questions further.

A1.2.3 Workshop 3: Validation Workshop

The evaluation questions and the ToC were refined further in a validation workshop with the ICF team, MMO and NE. This allowed a holistic design of the ToC and evaluation questions. In this validation workshop the final draft evaluation questions were mapped onto all steps in the ToC to ensure that the evaluation would address the pathways to impact comprehensively.

The objectives of the workshop included:

- Validate the Theory of Change including:
  - Presentation style
  - Any additions, alterations or clarifications
- Validate the Evaluation Questions
  - Go over the revised evaluation questions
  - Using Mural conduct a mapping exercise to map the evaluation questions onto all sections of the TOC
- Martin Reynolds to introduce systems thinking in practice (STiP) and critical systems heuristics (CSH) to the team including a reference system for supporting benchmarking of evaluation questions.

Workshop Activity

For workshop 4 a mural board was set up to show different options for the ToC. The team were then invited to vote on their preference using tick marks on the Mural board. After voting their preference the teams discussed the ToC further and added post-its and arrows to add further detail to the Theory of Change.

Following on from validating the ToC the evaluation questions were presented on the mural board and discussed. These were then mapped onto all areas of the theory of change using a number system so teams could drag the number of each question onto the Mural board. Any identified gaps were then used to refine the evaluation questions further.

A1.3 Task 2: Evaluation Framework development

Following from the validation workshop and further discussions with the MMO the evaluation plan was developed further. This included three options for the MMO to consider depending on the weighting they place on the two purposes of the evaluation: accountability and learning.

The subtasks of Task 2 include:

- T2.1-Design principles
- T2.2 Framework development
- T2.3 Draft and Final Evaluation Framework
- D5 Draft Report
- M3 Presentation of draft evaluation framework
- D6 Final report.

Annex 2 The development of an evaluation framework

This section of the report covers the plan for the process evaluation framework for the MMO MPA Fisheries and Conservation Strategy'. The MPA Conservation Strategy implements the UK Government's policy to protect the natural environment in the seas around the UK following the exit from the EU.

The evaluation plan was developed by the ICF team with; Dr Ulrike Hotopp, LIVE Economics ltd; Prof. Dickon Howell, Dr Edward Willsteed and Dr Lucy Greenhill, Howell Marine Consulting; Dr Olivia Langmead, University of Plymouth; and Dr Martin Reynolds, Open University as an expert on Development Evaluation. It can form the basis for a future evaluation of the 'MMO MPA Fisheries and Conservation Strategy'.

The evaluation plan builds on the guidance provided in the Magenta Book on process evaluation but with aspects of a developmental evaluation in mind. To make clear the differences in approach, method and resource requirements that following a developmental evaluation approach would involve, an additional section has been provided that provides recommendations and guidance on this approach.

This evaluation framework contains a Theory of Change, evaluation questions, a description of a three different approaches to a formative evaluation as well as an indication of the indicators and data that will be required to conduct the evaluation.

A future evaluation should review this plan to establish whether circumstances have changed and especially whether the Theory of Change and evaluation questions still reflect what the MMO MPA Fisheries and Conservation Strategy is intended to achieve. It is strongly recommended to start the evaluation process with a workshop that will review the Theories of Change which brings together all stakeholders.

A2.1 Context

The MMO MPA Fisheries and Conservation Strategy project has to be understood as part of the wider efforts by the UK government in general, including its cooperation with the EU and the MMO to protect the marine environment. While the MMO MPA Fisheries and Conservation Strategy project has clear boundaries it would not be able to be effective without the MMO's infrastructure and other bodies active in the protection of the marine environment and the fishing industry.

This context needs to be reflected in the evaluation plan and its implementation.

A2.2 Scope

The scope of this evaluation plan is the process evaluation of the MMO MPA Fisheries and Conservation Strategy. This includes:

- The implementation process developed by the MMO MPA Fisheries and Conservation Strategy team.
- The wider process, which is required to enact the project, i.e., Defra which provides final sign off, oversight responsibilities by the MMO board and the statutory role of the SNCB.
- The process used to involve stakeholders.

- It does not include the final impact of the MPAs once they are fully legally set up.

A2.3 Ownership and management of the framework

In order to achieve the objectives of the evaluation, a continuous improvement and learning environment which constantly aims at hearing from all stakeholders and feeding back, it is important to have an owner of the evaluation plan and later the evaluation.

The owner of the evaluation should be part of the MMO, but, if possible, a step removed from the team that implements the MMO MPA Fisheries and Conservation Strategy. From our current knowledge the MMO's evidence team is best placed to own the evaluation plan and evaluation.

A2.4 Principles of the monitoring & evaluation framework

A2.4.1 Proportionality

An evaluation needs to be proportionate to the scope it covers. This can be measured in terms of spending – e.g., the Magenta Book recommends that Government should spend about 2% of the value of spending on the intervention on the evaluation which went into an intervention – or in terms of influence of a policy tool in an overall policy framework.

Proportionality should also apply to the amount and depth of the data collected and the complexity of the methods used. Data collection can be costly and burdensome. It falls under the proportionality with respect to cost. Complexity can exclude people from an evaluation process if it gets in the way between a stakeholder group and the evaluators.

A2.4.2 Timeliness

Evaluation has to be delivered at the right time in order to be useful. The development evaluation aims to support the project team in its delivery. To achieve this, it has to start in time to allow the evaluators to learn about the project and the process it has developed, and to build relationships with the stakeholders in order to become trusted partners.

A2.4.3 Usefulness

Evaluation has to be useful to all its stakeholders. It can achieve this by:

- Enabling continuous development and improvement within MMO MPA Fisheries and Conservation Strategy and stakeholders, during development and delivery and between programmes and projects in the MMO, i.e., one programme can learn from the experiences of another as to what has worked in terms of processes, delivery, and impact, as well as the evaluation. This learning outside of the programme should include other organisations like Defra, NE, JNCC or the IFCAs. For this to happen the evaluation has to be transparent (see principle A2.4.4).
- Enabling accountability: A transparent evaluation will enable stakeholders to hold MMO and its partners to account as to whether:

- They are delivering on the objectives of the MMO MPA Fisheries and Conservation Strategy.
- They are fulfilling the tasks assigned to them by parliament.

A2.4.4 Transparency

The method of the evaluation, and how this method is implemented, needs to be clearly documented. The evaluation plan has to set out clearly the questions to be asked in the evaluation, as well as the data used and indicators which will be part of the monitoring programme.

It is strongly recommended to publish evaluation reports in full as soon as they have been completed and signed-off by the owner. This increases the credibility of the framework and its evaluation and allows all stakeholders to participate in the learning.

A2.4.5 Independence

A developmental evaluation approach [64,65] will encourage the MMO team and all stakeholders to take on an 'evaluating role' in their own work, which will allow them to adapt and add value as the project progresses. This is something that the evaluation framework will encourage and provide recommendations on.

Whilst that is the case, any formal evaluation conducted to assess the programme development needs to be conducted with independence as to ensure credibility, remove bias and ensure that the programme is accountable to the stakeholders of the evaluation. In addition, an evaluation requires professional knowledge and experience to be conducted to high quality standards.

A2.4.6 Developmental Evaluation - Praxis

'Praxis'[64,65] is the interplay between thinking (design) and practice (implementation) and represents another core principle of the development evaluation framework, closely associated with 'Usefulness'. For purposes of the mid-project review it may be helpful to distinguish between two projects:

Project 1: shorter-term initial design for a benchmarking M&E framework to support MMO in successfully implementing the MMO MPA Fisheries and Conservation Strategy (project 2).

Project 2: the longer-term implementation of MMO MPA Fisheries and Conservation Strategy i.e., developing and implementing byelaws for managing fishing practices inside MPA

Drawing on the principle of praxis, the set of evaluation methods used for the design of the M&E framework are the same as those being recommended for the implementation of MMO regulations. The recommended design will be continuously

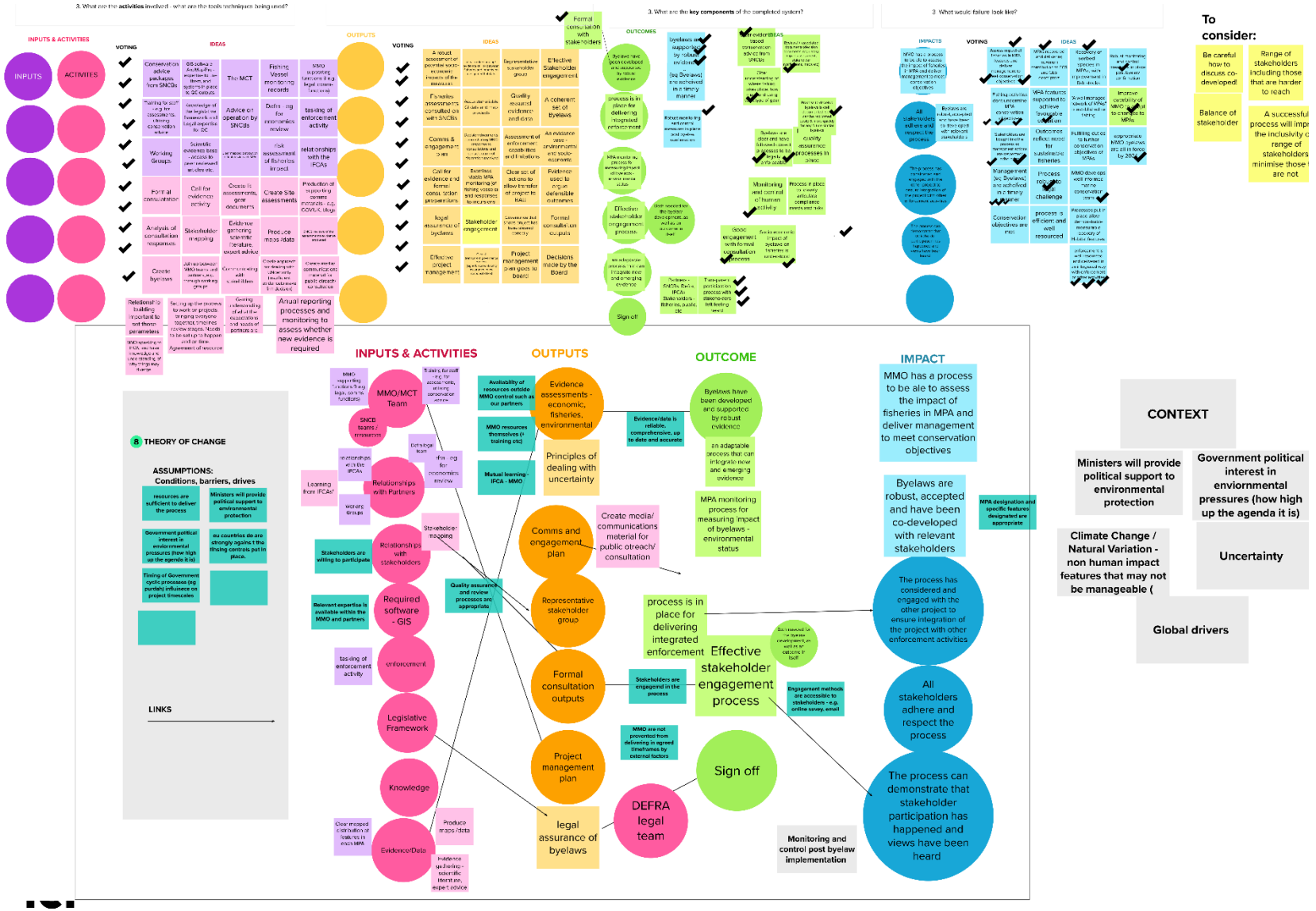
[64] Schmidt-Abbey, B.; Reynolds, M; and Ison, R (2020). **Towards Systemic Evaluation in Turbulent Times – Second-order practice shift.** *Evaluation*, 26(2) pp. 205–226.

[65] Knight, A.T; Cook, C. N.; Redford, K.H.; Biggs, D; Romero, C.; Ortega-Argueta, A.; Norman, C. D.; Parsons, B.; Reynolds, M.; Eoyang, G. and Keene, M. (2019). **Improving conservation practice with principles and tools from systems thinking and evaluation.** *Sustainability Science*, 14(6) pp. 1531–1548.

adapted during the course of implementation. This interplay between design and implementation is a core feature of the developmental evaluation approach underpinning current project work; an approach in this instance informed by a tradition of systems thinking in practice.

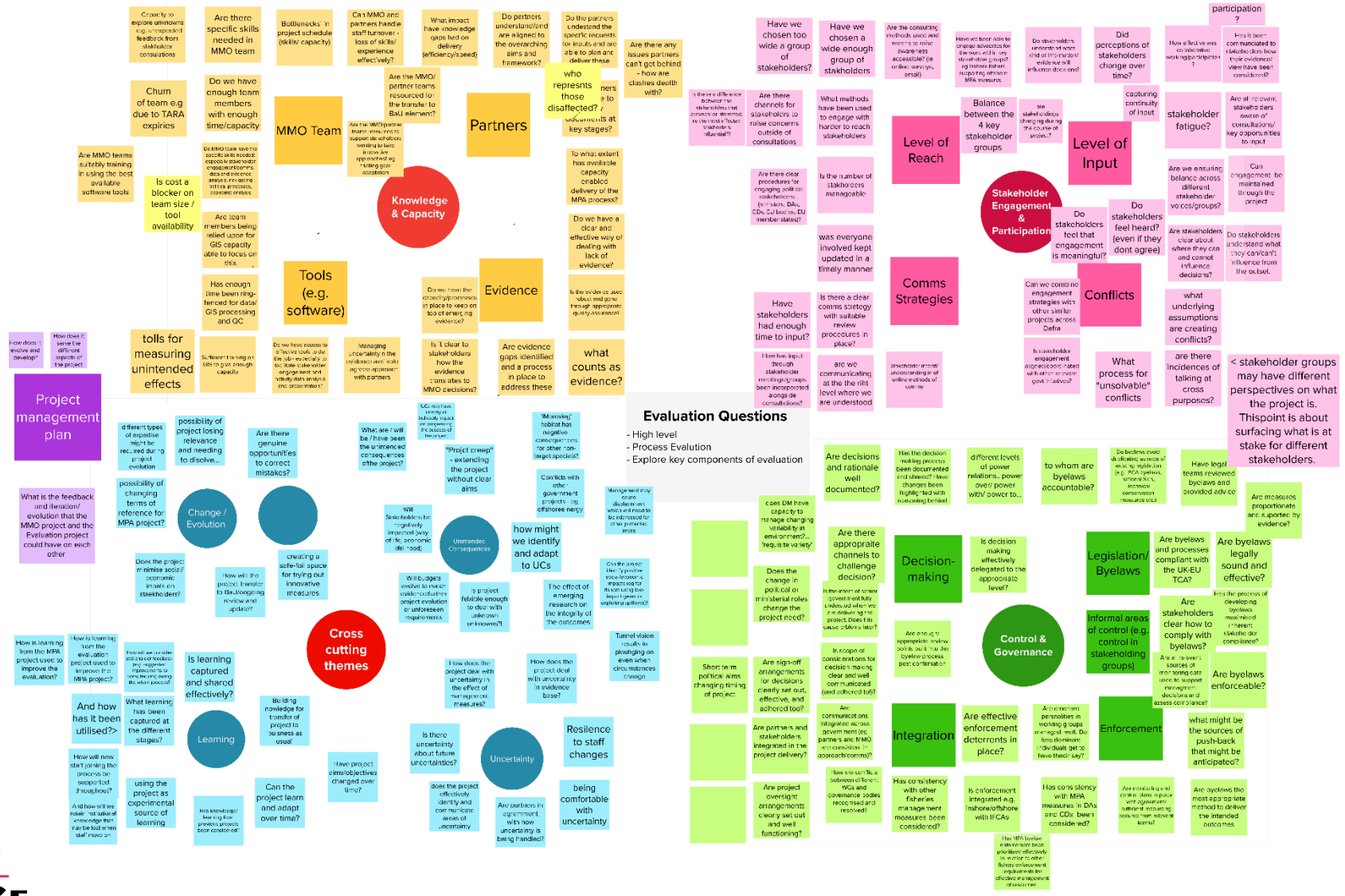
Annex 3 Workshop 2: Theory of Change Mural Board

Viewable online here.



Annex 4 Workshop 3: Evaluation Questions Mural Board

Viewable online here.



Annex 5 Workshop 4: Validation Workshop Mapping Evaluation Questions

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