Food and Agriculture Organization of the United Nations

Technical guidance for the creation and implementation of a national fisher registry in support of fisheries management

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Abbreviations

API	application programming interface
CARICOM	Caribbean Community
CARIFIS	Caribbean fisheries information system
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
CFRAMP	CARICOM Fisheries Resource Assessment and Management Program
CRFM	Caribbean Regional Fisheries Mechanism
FK	foreign key
GIZ	Gesellschaft für Internationale Zusammenarbeit
ICT	information and communications technology
ID	identification number
ISIC	International Standard Industrial Classification of All Economic Activities
IT	information technology
LRS	licensing and registration system
MS Access	Microsoft Access
NGO	non-governmental organization
PK	primary key
SSF	small-scale fisheries
MCS	monitoring, control and surveillance
UML	Unified Modeling Language

1. Background

1.1. Introduction

1.1.1. Rationale

Small-scale and artisanal fisheries, encompassing all activities along the value chain – pre-harvest, harvest and post-harvest – and undertaken by men and women, play an important role in food security and nutrition, poverty eradication, equitable development and sustainable resource utilization. Small-scale fisheries produce at least 40 percent of the global catch and employ about 90 percent of the world's capture fishers and fishworkers in the secondary sector, about half of whom are women. In addition to employment as full- or part-time fishers and fishworkers, seasonal or occasional fishing and related activities provide vital supplements to the livelihoods of millions. Despite their importance, many small-scale fishing communities continue to be marginalized, and therefore their contribution to decent livelihoods and sustainable fisheries management is not fully realized.

Empowering and enabling both women and men to participate more effectively in fisheries (throughout the value chains) not only improves nutrition, health and education outcomes, but also brings both immediate and long-term economic and social benefits for families, communities and nations at large, as well as environmental gains for all.

The Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication (commonly known as the Small-Scale Fisheries Guidelines, or the SSF Guidelines) (FAO, 2015) have been developed as a complement to the 1995 FAO Code of Conduct for Responsible Fisheries (the Code) (FAO, 1995). They provide complementary guidance with respect to small-scale fisheries in support of the overall principles and provisions of the Code. Accordingly, the SSF Guidelines are intended to support the visibility, recognition and enhancement of the already important role of small-scale fisheries and to contribute to global and national efforts towards the eradication of hunger and poverty. The SSF Guidelines support responsible fisheries and sustainable social and economic development for the benefit of current and future generations, with an emphasis on small-scale fishers and fishworkers and related activities, including vulnerable and marginalized people and promoting a human rights-based approach.

In this context, paragraph 5.16 of Chapter 5 on Governance of tenure in small-scale fisheries and resource management section of the SSF Guidelines says that "States should endeavor to improve registration of the fishing activity". To support the implementation of this point, and as part of the supporting role that the SSF Guidelines undertake at a national, regional and global level, the Fisher Registry Technical Guidelines aim to provide countries with a tool to support the establishment of new registries, or the development or adaptation of existing ones.

Setting up fisher registries to collect regular, high-quality fisheries data on fishers and fishworkers along the value chain is fundamental to identify who they are, where they operate, and what are the needs and conditions of the sector.[1] In such a way, fisher registries offer the necessary in-sector knowledge to support the development and delivery of well-informed policies, especially by making visible a group that has been historically marginalized. Fisher registries allow the inclusion of women,

1 See Box 1 for details on who the registry is targeting.

who make up most of the post-harvest sector, thus furthering understanding of the composition of the sector, highlighting their needs and capacities, and mainstreaming them into policies and programme design.

Fisher registries also offer a one-stop shop for fishers and fishworkers to access a wide array of benefits (FAO and GIZ, 2023). From the fishers' perspective, registering means being clearly identified by a fisheries authority as a professional, which could facilitate their empowerment and contribution to policymaking processes.

Box 1. Dominica success story on implementing a fisher registry and related tools by Derrick Theophille, Chief Fisheries Officer, Fisheries Division, Dominica

It has been said that managing a fishery requires managing its extractive potential. Extractive potential is typically denoted as the fishing unit or fishing vessel that is operated by the fisher. This means that having knowledge of fishers and their operations is critical to the management of the fisheries sector. The Fisheries Act of 1987 of Dominica mandates that the Fisheries Division manages marine resources and living marine resources of the country, which includes regulating the fishing impact on those resources. A registry is a useful tool for enumerating fishing potential, giving fishery managers an indication of fishing impact. Additionally, in the case of the growing, though small-scale, artisanal and open-access fisheries of Dominica, a registry has been invaluable in determining the size and productive capacity of the national fleet as it develops.

Moreover, the Government of Dominica incentivizes the growth of the fisheries sector by offering subsidies to fishers. This policy provides a financial reprieve to persons wishing to invest further in the sector, perhaps in the form of a new fishing vessel, an engine, fishing gear or tackle. Fuel rebates are another means of softening the financial burden on small-scale fishers. These fishers often represent rural communities, with fishing representing an important and sometimes the most viable livelihood option. Critical to note, though, is that these incentives are awarded on the basis that the fisher is "known" to the Fisheries Division. This means that a key condition for being awarded subsidies is being registered, which reveals the necessity for a registry of fishers and a database to maintain the records digitally and adequately accessible by the Fisheries Division.

Different tools have been successively deployed in the Fisheries Division: The Licensing and Registration System (LRS) was introduced to the Fisheries Division of Dominica as part of an initiative by the Caribbean Community (CARICOM) Fisheries Resource Assessment and Management Program (CFRAMP) to foster the capture of fishery sector data regionally in a standardized manner and enable greater utility of the data. Following the Y2K scare in 2000, the Caribbean Fisheries Information System (CARIFIS), a relational database with a FoxPro back-end, was implemented as a successor, developed with the support of the Caribbean Regional Fisheries Mechanism (CRFM), successor to CFRAMP. Unfortunately, CARIFIS was plagued with several technical issues, including the incompatibility with operating systems, dysfunctional queries, inability to allow data entry at certain points, and was generally not intuitive to use. Additionally, and resulting from these issues, a significant decline in the use and adoption of CARIFIS occurred across the region, leaving many countries without a database solution or reverting to Microsoft Excel.

Box 1 continued.

In Dominica, the Fisheries Division began construction of its own database, as CARIFIS was not usable, nor was it possible to revert to LRS or Microsoft Excel. Using Microsoft Access, however, in house staff developed a database to support catch and effort and LRS, incorporating existing forms for data collection and registration. Some of the promised CARIFIS functionality, such as queries and reports, was incorporated into the database. The interface was streamlined and simplified to meet national needs, while the back-end captured data that would be standard across the region. Over the years the database has further developed to incorporate the issuance of fisher registration cards, linking fishing vessels to fishers and ultimately linking catch to fishers. This fisher registry database remains a key tool for managing the fishery resources of Dominica. It is now being moved into the FAO Calipseo platform.

While vessel registry programmes are more commonly implemented at the national level, examples of ongoing fisher registration programmes are not as easily found. Even when programmes have been established, they either do not necessarily contribute to the successful management of small-scale fisheries, both with regard to the resources and the livelihoods of said communities, or do not incorporate marginalized groups, such as women, within the sector. Many reasons account for these failures, including low levels of registration, limited support to local management bodies to undertake registration programmes, limited interoperability with other social and economic registries, lack of institutional and legal backing, and lack of financial or human resources at the institutional level.

This guidance document is a tool aimed at facilitating the creation of national fisher registries, or further development and enhancement of existing registration programmes. Its sections also explore options to extend the scope of national fisher registries to increase socioeconomic information about the fisheries sector as well as offer new services to fishers as an incentive to register. Therefore, this document is aimed at government institutions of FAO Members and non-Members. However, it can also be of support to subregional, regional, international and intergovernmental organizations and small-scale fisheries actors (fishers, fishworkers, their communities, traditional and customary authorities, and related professional organizations and central statistics organizations), research and academic institutions, the private sector, non-governmental organizations (NGOs), and all others concerned with the fisheries sector,2 coastal and rural development and the use of the aquatic environment. The first part (Section 2 and Section -3) is aimed at fisheries authorities, such as senior fisheries officers, while the second part (Sections 4 and Section -5) is targeted at technicians, especially data and information managers, who design, adjust and implement fisher registries. The appendices comprise technical information and thus target information technology (IT) developers and technicians.

1.1.2. Scope and methods

This guidance document, which considers only the registration process, not licensing programmes, follows a layered approach that allows countries to adapt the methodology to their national reality. It starts by establishing the minimum data requirements necessary to set up a basic registry and includes add-on features and guidelines for users to add additional information where possible and available. In addition, the guidance provides advice for users to link fisher registries to other registration programmes and databases present at a national level.

The guidance document was built upon the lessons learned from existing registration programmes, as well as from information gathered from questionnaires, which were sent to several countries exemplifying the diversity of the fisheries sector at the global level and completed by institutional respondents and fishing communities. The aim of this exercise was to gain a deeper understanding of the role of registries in countries that already have data collections set up, the difficulties in obtaining information, the specifics of the indicators collected, and the interoperability of fisher registries with wider integrated information systems. For countries without registries, the focus was on the reasons why programmes have not been established, their obstacles and constraints, the pros and cons of setting up fisher registries and how to make them interoperable with government information systems.

The questionnaires highlighted various national realities and stressed that flexibility is key to implementing fisher registries that fit in with and respond to national contexts. For instance, when a country does not have a registry in place, the layered approach proposed in the guidance document offers fisheries authorities the option to develop and implement registries according to the specificities of national realities and needs. For countries having registries, the questionnaires showed that these registries do not necessarily cover needs, such as monitoring access to resources or interoperability with other information systems such as social registries. In these cases, the layered approach allows fisheries authorities to incorporate the features necessary to enhance their registries

Clear-cut policies and regulations are at the basis of establishing a successful registration programme, as well as regular and clear communication between institutional bodies and between government and fisheries stakeholders. The registration programme, its objectives and the roll-out plan at the

Box 2. Implementing fisher registries: a case for flexibility

In certain cases, an existing national registry consists of only a subset of persons defined as fishers, which depends on whether they hold a specific fishing licence (a compressor licence for conch or lobster divers in the Bahamas, for instance). In other cases, the fisher registry exists as part of a broader registry, such as the one for vessels: The vessel registry contains a list of vessel owners (defined as fishers) who registered their vessels but are not themselves fishers per se.

This guidance document distinguishes between registration and licensing, as the registration process results in acknowledging that a person is a professional fisher (a person who makes a living from fishing or from fishing-related activities), while licensing results in the official authorization of the fisher to fish in a specific context (e.g. limitation in gear, fishing zone, species). In addition, in some contexts, fishing licensing might be attached to vessel ownership.

Fishers can benefit from being recognized by government institutions or the private sector as individuals making a living from fishing (being registered) because it can facilitate their access to services, including social protection programmes. Yet, fishers might be reluctant to ask for a fishing licence for it can be denied, effectively putting them out of business (as they would officially be infringing on national laws that require licensing to fish).

In the small-scale fishery sector, the registration process usually also results in issuing an authorization to fish, a situation where the difference between registration and licensing is blurred. In this context, registration as authorization to fish could be seen as a fishing licence although it does not impose restrictions on the fisher (limited to species, fishing zone, gear).

national and provincial levels, should have far reach and use tailor-made communication to overcome issues such as illiteracy and remoteness of communities, which are some of the biggest obstacles to the implementation of fisher registries

This document provides guidance to countries and key stakeholders on how to develop or adapt their fisher registries to best reach and encompass information of all fishers along the value chain. In Section 2, the document discusses the definition of what a fisher registry is and the rationale for making it interoperable with wider social information systems, such as social protection ones. Section 3 explains the different variables in and steps to designing a fisher registry, while Section 4 considers its implementation and operationalization. Section 5 addresses the key issue of interoperability between the fisher registry and other social protection systems. Finally, the appendices include the list of codes used in the registry, a data dictionary for the proposed data model under the implementation, and an example of user interfaces implementation in fisher registry software, such as the FAO Calipseo Information System.

2. What is a fisher registry and why do we need one?

2.1. Definition of fisher registries and fishers

Registries are used globally for the collection of official records relating to people or assets and are an essential tool to inform legislation and policies.

A fisher registry is an administrative tool implemented according to legal provision in national fisheries acts for any individual to be registered, and which allows a fisher to conduct any professional fishing activity as a fisher. Registration as a fisher can be requested under the fisheries act for any fishing vessel owner, any fishing vessel crew member or any individual wanting to fish for commercial purposes. In general, household members fishing for their living (subsistence fishery) are not required to be registered by law.

The national fishery act usually defines the concept of who classifies as a fisher with more or less restrictions. The International Labour Organization also has its own international definition of fishers (ILO, 2007), restricted to workers on-board vessels. These guidelines consider a fisher in a broader sense, as fishing can be done from the shore without a boat using a handline or a beach seine, for instance.

Box 3. Who does the registry cover?

Fisher

A fisher is a person employed or engaged in fishing activities on-board a fishing vessel or from the shore. The definition of a fisher includes the vessel owner, vessel crew, person holding an active fishing licence or any household member engaged in fishing for a living.[1]

Harvest fishing activities are identified according to the International Standard Industrial Classification of All Economic Activities (ISIC) standards agreed for use by United Nations Member States by which measures of economic activity can be compared (in the System of National Accounts). According to the ISIC, harvesting activities include capture fisheries, i.e. the hunting, collecting and gathering activities directed at removing or collecting live wild aquatic organisms (predominantly fish, molluscs and crustaceans) from oceanic, coastal (marine fisheries as per ISIC code 0311) or inland waters (as per ISIC code 0312) (United Nations, 2008).[2]

Fishworker

Pre-harvest segment of fisheries: All persons employed (as per definition of "employment") in activities connected to pre-harvest fishing, such as (i) building of ships and floating

[1] https://www.ilo.org/dyn/normlex/en

[2] United Nations. 2008. *International Standard Industrial Classification of All Economic Activities (ISIC), Rev. 4*. Statistical Papers Series M, No. 4, Rev. 4. New York. https://unstats.un.org/unsd/publication/seriesm/seriesm_4rev4e.pdf

Box 3 continued.

structures (ISIC code 3011); and (ii) repair of other equipment, which includes repair of fishing nets (including mending), as per ISIC code 3319 C (United Nations, 2008).[2]

Post-harvest segment of fisheries: All persons employed (as per definition of "employment") in activities connected to post-harvest fishing, such as: (i) processing and preservation of fish, crustaceans and molluscs, as per ISIC code 1020; (ii) wholesale of food, beverages and tobacco (which includes wholesale of fishery products), as per ISIC code 4630; and (iii) retail sale of food in specialized stores, including fish, other seafood and products thereof, as per ISIC code 4721 (United Nations, 2008).[2]

Box 4. Fisher registry

Maintained by national fisheries authorities, a fisher registry is a list of individuals who have applied to obtain rights or authorization to conduct fishing-related activities as defined through national legislation. The registry is preferably an electronic one, which collates information on the applicants and provides analysis to fisheries managers. The fisher registry might include fishworkers, according to national legislation. It identifies who participates in the sector, what they do and where they are located.

In most cases for small-scale fishers, the registration process both qualifies them to fish and grants them rights to fish.

In some cases – such as certain fisheries requiring special equipment or targeting specific fish or in most large-scale fisheries – fisher registration can also issue a fishing licence. In that case, the registration process aims to certify that individuals are qualified to fish, and the issued fishing licence grants them fishing rights and privileges in two separate administrative processes (ILO, 2007).[1]

[1] ILO. 2007. *C188 Work in Fishing Convention, 2007 (No. 188)*. Accessed 15 October 2022. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C188

1. Fisher registry as an instrument for fisheries management

A lack of registration, either of fishers or vessels, hinders the development of the fisheries sector, especially for small-scale fishing communities, who are more prone to being underreported and marginalized. Fisher registration is also often a first essential step to fishing authorization (simple registration or more restricting licences), which is an important component of fisheries management and sustainable resource utilization.

Part of this effort goes towards the improvement of national monitoring, control and surveillance (MCS) programmes. Under the guiding principles of the SSF Guidelines, countries should ensure the establishment of MCS systems or promote the application of existing ones applicable to and suitable for small-scale fisheries while also striving to improve the registration of the fishing activity. Similarly, small-scale fishers should support MCS systems and provide the information required for the management of the activity to state fisheries authorities. The first step to a successful MCS programme is to understand who is engaging in this activity and where.

2. Fisher registry linkage to other existing registries: interoperability

The fisheries sector operates within a wider environmental, economic and social system, and its impacts contribute to meeting interconnected societal values and objectives. In line with this, coherence between social, economic and environmental policies, whether of fisheries and social protection, is key to ensure that the impacts of both contribute to meeting said shared values and objectives.

Social protection is a mechanism aimed at reducing poverty and vulnerability, which can facilitate fishers' access to basic services such as education and health, as well as to insurance programmes, including pension systems and climate risk insurance. Overall, social protection programmes have been shown to increase beneficiaries' adaptive capacity to respond to covariate and idiosyncratic shocks. Therefore, enabling coherence between social protection and fisheries management policies and programmes is crucial to ensure that social protection programmes reach the sector, support compliance with management strategies, and anticipate and prevent potential trade-offs in fishers' livelihoods.

Box 5. What is social protection?

According to the FAO Framework of Social Protection (2017), social protection "comprises a set of policies and programmes that addresses economic, environmental and social vulnerabilities to food insecurity and poverty by protecting and promoting livelihoods."[1] These policies and programmes can be qualified under three types of programmes: social assistance, social security and labour market interventions.

[1] FAO. 2017. *FAO Social protection framework: promoting rural development for all.* Rome. https://www.fao.org/3/i7016e/i7016e.pdf

Making fisher registries interoperable with social protection information systems opens the door to include fishers and fishworkers into social protection programmes. On the one hand, it enables the identification, targeting and enrolment of fishers into existing social protection programmes, which reduces transaction costs both to fishers when they apply to programmes and to staff and government systems by reducing paperwork related to eligibility requirement verification and enrolment (Barca *et al*., 2021). On the other hand, it informs government authorities in charge of social protection systems about the composition, nuances and needs of the fisheries sector either to inform the design of specific sectoral social protection programmes or to adapt existing ones to better reach and engage with the sector. The sharing of information allows for creating an individual fisher profile, which includes information on the fisher's activity and socioeconomic and demographic conditions, such as vessel and asset ownership, geographical location, type of technology and gear used, and resource species caught. Once gathered, this collective information enhances fishers' visibility to policymakers, and therefore also feeds back into programme design to meet the needs, conditions and capacity of engagement of fishers.

Integrating fisher registries into social protection information systems can serve as a dynamic gateway because if registries are continuously updated fishers can also be systematically considered for eligibility in diverse social protection programmes based on their changing needs and conditions (Leite *et al*., 2017). Updated registries enhance the accuracy of the information provided and support the management of inclusion and exclusion errors in programmes (Barca *et al*., 2021). In addition, interoperability facilitates fishers' and fishworkers' access to multiple social protection programmes, thus becoming a common gateway or one-stop shop.

Box 6. Integrated social protection information system

Integrated social protection information system: "A system to manage the sharing of flow of information between and across registries, including fisher registries and social registries from social protection programs and beyond. This is done through the use of common practices and unique identifiers (Barca and Chirchir, 2020). "[1]

A key feature to enhance the efficiency of registries is their software's interoperability with the broader national information and communications technology. Interoperability refers to the "capability of the software to maintain standards that allow it to be linked to other government platforms, services, databases and registries" (Barca and Chirchir, 2020, p. 11).[1]

[1] Barca, V. & Chirchir, R. 2020. *Building an integrated and digital social protection information system.* GIZ. https://www.giz.de/de/downloads/giz2019-en-integrated-digital-social-protection-information-system.pdf

Despite the need for interoperability at the national level, the large number of ministries, departments and other government agencies involved in the marine sector creates the potential for administrative complexity, which also has an impact on the registration of vessels and fishers. For this reason, it is important to establish, at the national level, a mechanism for interagency coordination and for data sharing through an integrated information and communications technology (ICT) system that is interoperable among different areas of work in the country.

3. Design of a fisher registry

This section aims to list minimum data requirements to build a fisher registry, as well as common information collected from fishers during the registration process. The proposal approach is modular, with core modules common to all fisher registries and optional modules to complement information managed in the registry to serve additional objectives (e.g. resilience to climate change, social protection and MCS).

The information needed to build a fisher registry falls into three categories. Each category has minimum mandatory data (essential) and additional optional data:

- personal details
- role in fisheries
- social information

In addition to these three core domains, additional information can be requested for different purposes:

- education and training
- indirect role in fisheries
- vessel details

Please note that an item number is added to each data element presented in the guidelines to facilitate translation of items in different languages.

3.1. Personal details – Core module

This section is crucial, as the information helps to uniquely identify a fisher/fishworker in the secondary fishery sector.

It comprises two main components: personal information and a unique national identifier, the nature of which is dependent on the country to establish.

Usually, the combination of a first name, family name and date of birth should be enough to specifically identify a person. Ideally, a unique administrative identifier (e.g. national ID number, social security number) should be provided by applicants, especially in the context of interoperability with other systems.

Table 1 presents core information needed to start building a fisher registry, namely information necessary to specifically identify a fisher.

Table 1. Personal information as core fisher registry information

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
1.		**PERSONAL INFORMATION**		
1.1	**Picture**	Photo (face)	M	ID photo – 5 cm × 5 cm
1.2	**Gender**	Individual's gender	M	Male, female, other
1.3	**Title**	Individual's title	M	Mr, Mrs, Dr, etc.
1.4	**First name**	Individual's first name given at birth	M	
1.5	**Middle name**	Individual's second name given at birth	O	
1.6	**Last name**	Individual's last or family name	M	
1.7	**Maiden name**	Individual's name before marriage	O	
1.8	**Suffix**	Individual's name suffix	O	It could be honorary, such as LL.D.; academic, such as PhD; or related to generational title, such as Jr, Sr, I, II, etc.
1.9	**Date of birth**	Individual's date of birth with a defined format (for instance, DD/MM/YYYY)	M	DD/MM/YYYY
1.10	**Location of birth**	Individual's place of birth. Can be linked to the country administrative unit	O	
1.11	**Country of birth**	Individual's country of birth	M	Country 3 Alpha ISO Code
1.12	**Current nationality**	Individual's current nationality	M	Country 3 Alpha ISO Code
1.13	**Nationality at birth**	Individual's nationality at birth	O	
1.14	**Address**	Individual's address with elements as defined below		Refer to EU INSPIRE Data Specification on Addresses (INSPIRE Thematic Working Group Addresses, 2014)
1.14.1	Address street name or PO Box	Individual's address street name or PO Box	M	
1.14.2	Address Zip/Postal Code	Individual's address Zip/Postal Code	O	
1.14.3	Address City/ settlement/location	Individual's address city/ settlement	M	
1.14.4	Address country	Individual's address country	M	Country 3 Alpha ISO Code
1.15	**Telephone**	Home telephone number*	O	With the International dial code International Telecommunication Union E.123 standard
1.16	**Mobile phone**	Mobile phone number*	O	With the International dial code International Telecommunication Union E.123 standard

Table 1 *(Cont.)*

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
1.17	**Fax**	Fax number	O	With the International dial code International Telecommunication Union E.123 standard
1.18	**Email**	Individual email address	O	Format according to International Telecommunication Union E.123 standard
1.19	**Associated documents to be provided**	Address proof, copy of ID (for birth and nationality) or passport	O	
2	**Unique national identifier**	It is either a unique lifetime personal ID delivered by national authorities or an ID number (passport number, national ID card, driver's licence) with a limited life span: this will allow interoperability of registries	O	World Bank guide to unique identifier to define a unique ID number**
	Type of identifier	Type of document	O	National ID card, social security card, driver's licence, passport
	Identifier number	The unique individual identifier number – format varies from one country to another	O	The actual number
	Associated documents to be provided	identifier number proof (social security card, copy of passport, etc.)	O	

* One of the two telephone numbers is mandatory.

** https://id4d.worldbank.org/guide/unique-id-numbers.

3.2. Role in the primary fishery sector – Core module

This section deals specifically with registering the individual in the fishery primary sector (production) as a fisher. Section 3.3 defines social information to be included oin the fisher registry. Section 3.4 deals with registering an individual as part of the secondary sector (indirect role in fisheries).

These guidelines define a fisher as a person employed or engaged in fishing activities on-board a fishing vessel or from the shore. This definition encompasses the vessel owner, vessel crew, person holding an active fishing licence, or any household member engaged in fishing for a living or for pleasure (recreational/sport fisheries).

To be enrolled in the registry, the individual must declare that either he or she has a vessel (Item # 3.4), is a crew member (Item # 3.5) or is engaged in fishing activities (operating gear without a vessel) (Item # 3.6).

Table 2 presents core information that qualifies the individual as a fisher, including subsistence or recreational if required to be registered by law.

Table 2. Information on the fisher's direct role in fisheries

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
3.		**INDIVIDUAL DIRECT ROLE IN FISHERIES**		
3.1	**Existing registration number/fisher ID**	If the fisher has already been registered, his/her fisher ID or registration number is stored here	O	According to national formatting
3.2	**Registration date**	Date of registration when issued by fisheries authorities	O	DD/MM/YYYY
3.3	**Status of individual in fisheries sector**		M	Active, inactive, retired, deceased
3.4	**Owner of vessel**	Does the individual own a fishing boat? Y/N	M	Checkbox
3.4.1	**Vessel information declared by owner**	If yes, the owner needs to provide all the below information	O	
3.4.1.1	**Vessel name**	Name of vessel	O	
3.4.1.2	**Vessel registration number**	Official registration number by maritime authorities or registration number by fisheries authorities	O	According to national formatting
3.4.1.3	**Vessel type**	Type of vessel	O	As defined nationally, or refer to the ISSCFV*
3.4.1.4	**Length overall**	Vessel length overall	O	LOA definition**
3.4.1.5	**Power**	Engine total power	O	In HP (horsepower) or kW
3.4.1.6	**Primary/main gear**	Main vessel gear (e.g. gillnet) or list of main gear (e.g. gillnet, traps)	O	List of national gear, or refer to the ISSCFG***
3.4.1.7	**Date of purchase of vessel**	Date of purchase of vessel	O	DD/MM/YYYY
3.5	**Crew member**	Is the individual a crew member? Y/N – if Y, below information is mandatory	M	Y/N
3.5.1	**Vessel name employing individual**	Name of the vessel employing the individual as part of its crew	O	
3.5.2	**Vessel registration name**	Official registration number by maritime authorities or registration number by fisheries authorities of the vessel employing the individual as part of its crew	O	According to national formatting
3.5.3	**Date of first engagement as crew**	Date when individual was first recruited as crew	O	DD/MM/YYYY
3.5.4	**Part-time or full-time crew member (on a yearly basis)**	Is the individual crew member full time (F) or part time (F) over the past year	O	P or F
3.6	**Individual engaged in fisheries without a vessel**	If individual is not owner or crew, he/she can be engaged in fisheries from the shore		Y/N

Table 2 continued.

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
3.6.1	**Gear operated**	Gear name		ISSCFG*** or national classification of gear
3.6.2	**Since when engaged in fisheries sector**	Date of the first engagement of individual in the fisheries sector		DD/MM/YYYY
3.6.3	**Part-time or full-time crew member (on a yearly basis)**	Is the individual engaged part time (P) or full time (F) in this fishing activity over the past year	O	P or F
3.7	**Individual registered business**	Is the individual registered as an individual business in the country? This may be a requirement to own a vessel for instance	O	Y/N
3.7.1	**Business registration number**	Individual business registration number		
3.7.2	**Value-added tax number if any**	Value-added tax number of the registered business		[XX]iiiiiiiii****
3.7.3	**Date of business creation**	Date of creation of the registered business		
3.8	**Why are you a fisher?**	How/why did you initiate in this activity?		

* https://www.fao.org/3/cb5201en/cb5201en.pdf

** https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishery-fleet/en. LOA refers to length overall

*** https://www.fao.org/3/bt988e/bt988e.pdf

**** XX is the country code (FR for France) and iiiiiii, a sequence of numbers, usually 9 to 10 digits for European countries.

3.3. Social Information – Core module

This module aims to capture the minimum social information from the individual registered as a fisher, including details on emergency contacts (Table 3).

Table 3. Social information on the fisher registered as a fisher

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
6.	**Individual's family detail**			
6.1	**Marital status**	Select marital status	M	Single, married, widowed, divorced, separated, registered partnership. See Eurostat Glossary for some examples*
6.1	**Number of children/ dependants (list of children)**			

Table 3 continued.

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
6.1.1	**Number of children**		M	
6.1.2	**Number of dependants (list of children)**		O	
6.1.3	**How many are enrolled in school?**		O	
6.2	**Emergency contact name**	Name of contact person in case of emergency	O	
6.2.1	**Emergency contact number**	Telephone or mobile phone of contact person in case of emergency	O	
6.3	**Enrolment/ affiliation to association or cooperative**	Is the individual affiliated with a fisher association or a cooperative?	O	Y/N
6.3.1	**Name of affiliation**	Name of association or cooperative		
6.3.2	**Date of affiliation**	Date of enrolment/affiliation		DD/MM/YYYY

* https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Marital_status#:~:text=There%20are%20several%20types%20of,in%20certain%20cases%2C%20registered%20partnership

3.4. Role in secondary fishery sector module – Optional module

This module aims to complement information on individuals working in the secondary fishery sector (for instance, to aid the registration of intermediaries and processors) to better monitor pre-harvest and post-harvest components (Table 4).

Table 4: Information on the individual's indirect role in fisheries

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
4.	**INDIVIDUAL INDIRECT ROLE IN FISHERIES**			
4.1	**Other role in fisheries**		M	Y/N
4.1.1	**If other role, which role(s)**	List the different roles of this individual with date of entry and whether he/she is working full time or part time	O	Mechanic Intermediaries Vendor Fish dryer Processing plant owner Other (please specify)
4.1.2	**Working part time or full time**	Part time or full time for this role	O	
4.1.3	**Date of starting in the role**	When did the individual start in the role?	O	DD/MM/YYYY

3.5. Education and training – Optional module

This module aims to complement information on individuals related to their level of education and training in fisheries: The goal is to build an overall understanding of the level of education of fishers according to their type of engagement in the sector (owner, crew, smallholder fisher or other roles in the sector) to define plans for reinforcement of capacities (Table 5).

Table 5: Education and training information on the fisher

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
5.		**INDIVIDUAL EDUCATION AND TRAINING**		
5.1	**General education level**	Select level of general education	M	No schooling completed. For other levels, see ISCED 2011 classifications*
5.2	**Date of graduation, if any**	Date of graduation for the above-selected level of education	O	DD/YY/MMMM
5.3	**Education in fisheries**	Does the individual have background training in fisheries? Y/N (can be traditional training by older fishers/parents in the community)	M	Y/N
	Type of education	Academic/traditional training (by community)	O	
5.3.1	**Level of education**	If academic, level of education in fisheries	O	
5.3.1.1	**Location of education**	Name of institutions where received education	O	
5.3.1.2	**Date of graduation**	Date of graduation in academic fisheries training	O	DD/MM/YYYY
5.4	**Mandatory training in fisheries**	Has the fisher completed mandatory training in fisheries?	M	Y/N
5.4.1	**Training type**	List of mandatory trainings	O	Specific to country
5.4.2	**Date of training**		O	DD/MM/YYYY
5.4.3	**Duration of training**		O	
5.5	**Other training in fisheries**	Has the fisher completed any other training in fisheries?	M	Y/N
5.5	**Training type**	List of trainings	O	Specific to country
5.5.1	**Date of training**		O	DD/MM/YYYY
5.5.2	**Duration of training**		O	

* https://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf

3.6. Information on socioeconomic conditions relevant for social protection interoperability – Optional module

This module aims to capture additional socioeconomic information important for the development of interoperability mechanisms with social protection programmes and databases (Table 6).

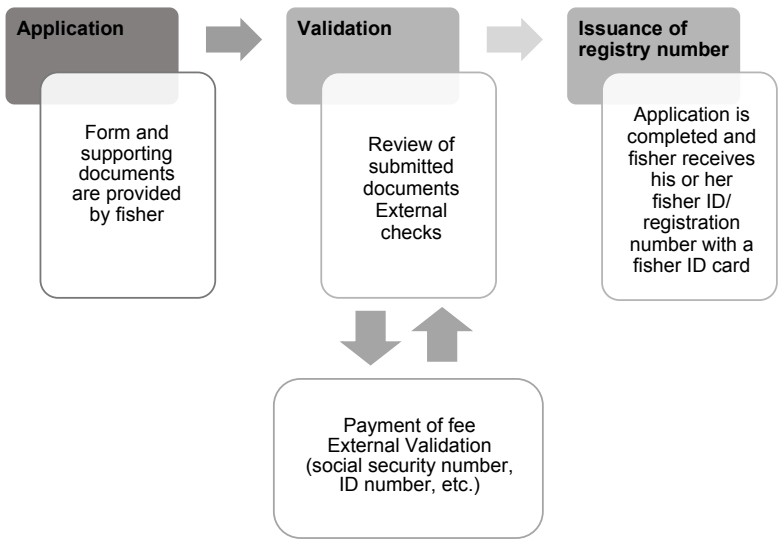
Table 6: Social protection information on the fisher

Item #	Name	Description	Mandatory (M) or optional (O)	Format/classification
6.		**INDIVIDUAL SOCIAL PROTECTION INFORMATION**		
6.1	**Health system**	Is the individual associated with national health insurance?	M	Y/N
6.2	**Social security**	Is the individual part of any contributory social security regime (i.e. pension or health insurance)?	M	Y/N
6.2.1	**Which one(s)**	Indicate regime	O	List specific to country
6.3	**Social protection benefits**	Does the individual receive any social protection benefits, such as cash transfers?	O	Y/N
6.3.1	**Which one(s)**	Indicate benefits	O	List specific to country
6.4	**Insurance subscription**	Is the individual enrolled in a private insurance plan?	M	Y/N
6.4.1	**Which type**	Indicate which type of insurance	O	Pension Health Vessel insurance against accidents Other

3.7. Fisher registration workflow

The above information collected from the fisher constitutes the first step of the fisher registry workflow, which usually involves three steps: fisher application; validation of submitted information (validation that the applicant is a fisher or if the registry encompasses pre-harvest or post-harvest sector workers); and issuance of a registration number (Figure 1).

Figure 1. Fisher registry application workflow



4. Implementation and operationalization of the fisher registry

4.1. Technical implementation

4.1.1. Introduction

The following are the steps typically followed for standard registry implementation:

- Creation of the national fisher registry application form based on a selection made from registry guidelines information modules, according to national needs and scope, and with consideration to possible links to other registries (such as social protection).
- Definition of the national fisher registry workflow for issuance/renewal of registration number.
- Design and implementation of corresponding information technology tools.

Once the technical implementation of the registry has been completed, the registration can be operationalized through local deployment, pilot and roll-out to the entire country (Section 4.2).

The following sections present these different steps in further technical detail and provide some recommendations on how to address the challenges (such as fisher engagement) for successful implementation.

4.1.2. Defining the fisher registry application form

The first step in the implementation process is to understand a country's needs in terms of fisher registration and consequently selecting the relevant modules listed in the guidelines, so as to establish the fisher registry information to be requested of the applicant.

A paper form is prepared as a summary of the required information. An example is shown in Figure 2.

4.1.3. Definition of national fisher registry workflow

As described in Figure 1, a workflow is defined at the national level to request application submissions, to validate information, and finally to issue or renew fisher IDs.

The following lists the steps of a standard workflow:

- Once the application form is submitted, fisher information is reviewed and validated by the responsible officer (extension officer, registry officer) with potential field control by extension officers.
  - Supporting documentation may be required (such as a copy of an ID, proof of residence, proof of ownership of a vessel, and proof of employment).
  - If a fisher pays a fee, a receipt is submitted. If all submitted information/documentation is cleared by the fisheries authorities and other institutions (validation of ID number for instance), a fisher registration number or an ID can be issued.

Figure 2. Example of paper application form in the fisher registry

Fisher / Vessel Owner application form

1. Personal detail

1.1. Prefix: Mr / Mrs / Dr / other: .....

1.2. First Name : ..... 1.3. Middle Name: .....

1.4. Last Name: ..... 1.5. Married Name:.....

1.6. Date of birth: DD / MM / YYYY 1.7.Country of birth: .....

1.8. Gender: M / F / Others

1.9. Current Nationality: ..... 1.10. Nationality at birth :

2. Address

2.1.: Street Name: .....

2.2. City / Settlement: ..... 2.3. City Zip Code: .....

2.4. Country: .....

2.5. Telephone: ..... 2.6. Mobile Phone: ..... / .....

2.7. Fax: ..... 2.8. email: ..... @ .....

3. Identifier

3.1. Identifier type: ..... 3.2. Identifier Number: .....

4. Role in Fisheries

4.1.Areyou a fisher? Yes □/ No □ 4.2. Fisher ID: .....

4.3. First Registration date: DD / MM / YYYY 4.4. Do you work Full time □/ Part time □?

4.4. Are you a Vessel Owner 4.5. Vessel registration #[1]: Vessel 1: ..... / Vessel 2: .....

4.6. Do you have another role in Fisheries ?

□Mechanic

□Middleman

□Vendor

□Other (to be refined): .....

4.7. Education in Fisheries

□Background trainingin Fisheries

□university 1

□marine school2

□etc...

5. Other Social Information

5.1. Maritalstatus:single□married □widowed □divorced □

5.2. Number of Children

5.3. Next of Kin

Last Name	First Name	Date of birth

Last Name	First Name	Address / Telephone	Relation

5.4. Generaleducation:Primaryschool□Secondary school□College □

1. Fill out vessel details in the vessel information form.

- A fisher ID or registration number can be valid for a defined period of time or be valid for life, dependent on national legislation.
- A fisher ID card should be provided to the individual to have a simple and convenient way to prove that the fisher is registered.

It is recommended that a mechanism be put in place to update the registry in cases where an individual is no longer active in the fishery sector, as well as an ad hoc system for registration of new fishers, which also allows for updating their details.

Once registered, fisher information can be shared/exchanged or reconciled with other agencies:

- It can be shared/exchanged with national Coast Guard agencies for control at sea, with port authorities for safety at sea (list of fishers potentially at sea with next of kin to be contacted), and with banks or insurance companies (with strict non-disclosure agreements in place to ensure confidentiality of data) to facilitate access to loans and/or insurance.
- It can be reconciled with integrated social protection information systems, which house individual programmes, such as social security, pension and health insurance programme information.

Any sharing of information must be carried out following strict data exchange agreement and, if any, national or regional data protection acts, such as the EU General Data Protection Regulation (European Commission, 2016).

4.1.4. Design and implementation of corresponding information technology tools

Once the data and information to be collated in the fisher registry and the workflow are defined, the next step is to develop or adapt a fisher registry to the national context.

The section below presents the creation of a tool from scratch; however, solutions to manage fisher registries have already been developed, such as the individual registry tool in FAO Calipseo.

Box 7. What is Calipseo?

Calipseo is an open-source web application for national fisheries information systems to manage administrative data, collect fisheries dependent data, store all data in a secured way, compute collected data into statistical indicators, and exchange or disseminate statistics for analysis.

Source: https://www.fao.org/fishery/en/statistics/software/calipseo.

The design of software starts with an analysis of the country's needs, then developing the design of a data model and the features required to manage data. In a strict software engineering project that aims to design such an electronic registry information system, the project will start with a business analysis, followed by the drafting of use cases that will define data flow, users and how users interact with the system to manage data. Unified Modeling Language (UML) formalism exists to describe these different steps. To simplify the approach for fisheries officers, a presentation of data models and interfaces are provided separately, although they are built together from the use cases.

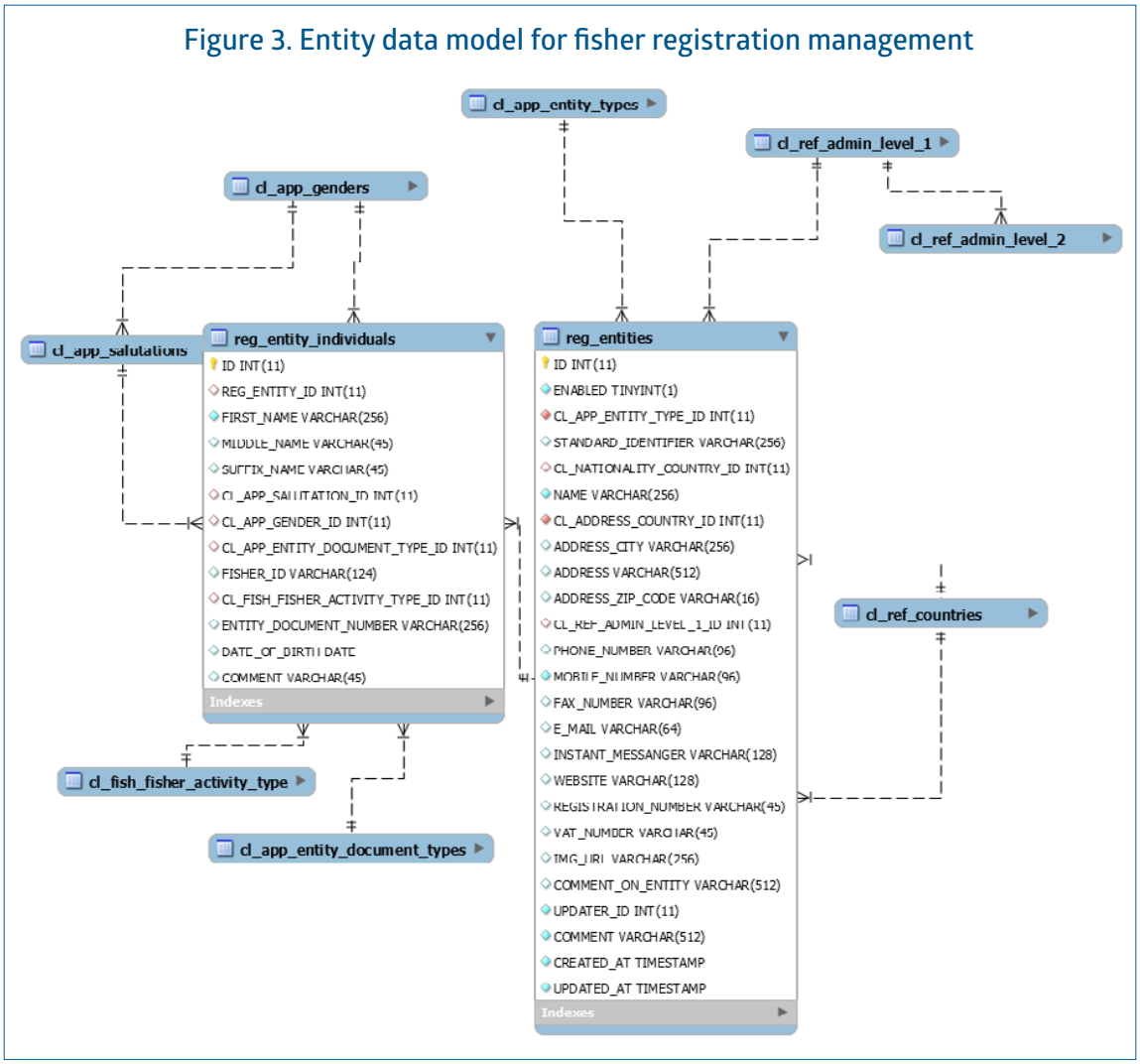
4.1.4.1. Data model and corresponding classification

4.1.4.1.1. Data model: concept of entity

The following data model implements the concept of entity.

A fisher is by essence an individual. As defined in Section 2.1, a fisher is an individual managing a fishing operation or owning a fishing vessel. The data model in Figure 3 uses the term entity rather than individual. The rationale behind this concept of "entity" is that the individual and company have a number of common data elements (name, address, telephone, etc.). If one wants to extend the model to manage companies, it will be done using this entity. This extension is mentioned here, as this is typically the case in broader central fisheries registration systems, which would manage the registration of fishers (the scope of this document) as well as the registration of fisheries companies as the owners of fishing vessels (not in the scope of this document). With the implementation of entity, a scalable data model is proposed.

Figure 3. Entity data model for fisher registration management



4.1.4.1.2. Existing standards for data model

As much as possible, the proposed data model for the fisher registry is based on standard data models:

- The address standard can implement the European Commission INSPIRE directive on addresses: INSPIRE Data Specification on Addresses – Technical Guidelines (https://inspire.ec.europa.eu/id/document/tg/ad)
- United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) vessel model (https://circabc.europa.eu/ui/group/9d6098eb-e128-45ae-a4ca-5703b31d8257/library/4ee77dd5-a311-4c76-b45c-c09061ecf132?p=1&n=10&sort=modified_DESC)
- Concept of a unique identifier (unique ID): World Bank guide to unique identifier (https://id4d.worldbank.org/guide/unique-id-numbers)

4.1.4.1.3. Data model: standard code lists to manage fisher attributes

As presented in Section 3.1, a fisher has a number of attributes defining him or her as an individual (e.g. gender, nationality) and as a fisher (role in fisheries). These are linked to lists of defined elements, which can change from one country to another, which can evolve for one country in time or which can be standardized for all countries, either because international standards classifications exist (nationalities, countries) or because the country has a limited number of items and regional organizations; for example, Eurostat proposes a comprehensive list of items (marital status, for instance).

The best practice is to control these lists of defined elements in tables in the data model to: (i) more easily roll out the model in one country; (ii) facilitate maintenance (create/update/delete) of these items; and (iii) standardize these elements to facilitate their use for analysis (building a pyramid of age by gender). In other words, any drop-down list in an electronic form for a fisher registry should be stored in the data model as a table.

Appendix 1 presents standard lists of items for fisher registry attributes or fields in the different modules.

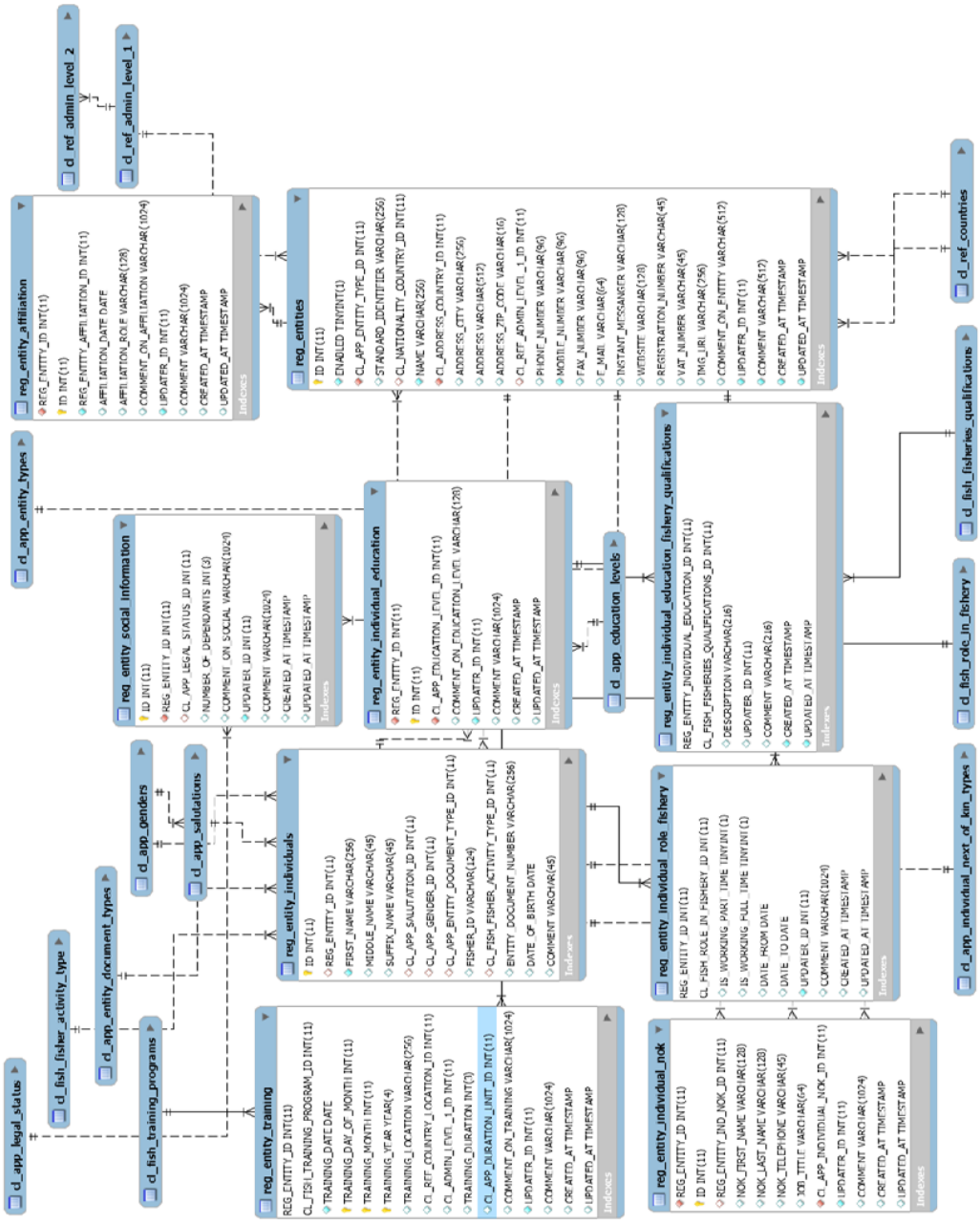
4.1.4.1.4. Proposal for Fisher Registry data model

Figure 4 presents an example of a data model for a fisher registry.

Two central tables manage all registry core information: (i) reg_entities (all common information between individual and company); and (ii) reg_entity_individuals (all specific information for the individual). Joint tables store additional social and economic information for either entity or individual. Finally, a number of code list tables with reference data provide the necessary levels of flexibility to implement the model in different national contexts.

Additional tables could be added to store fisher licensing information (however, this is outside the scope of this document).

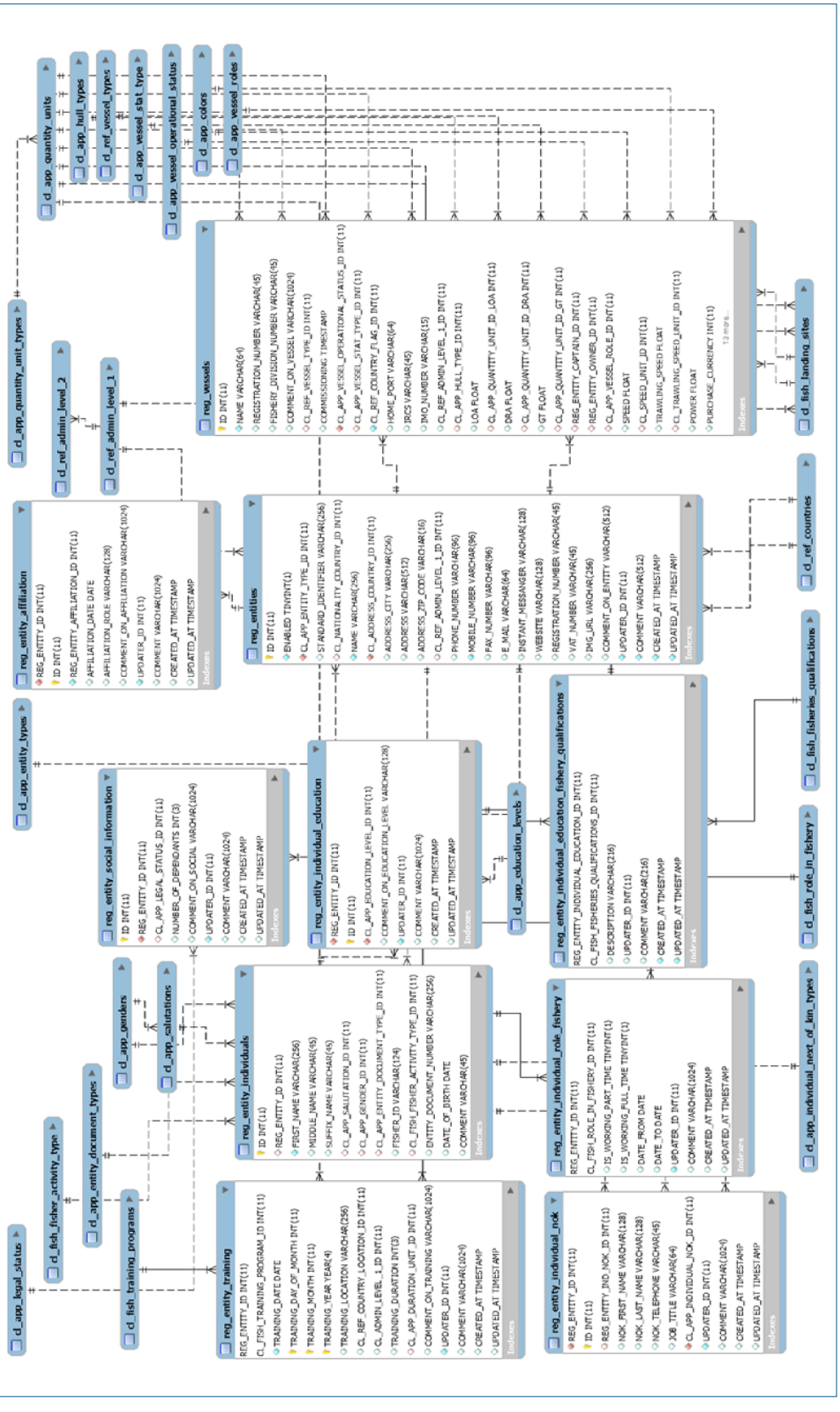
Figure 4. Fisher registry data model



Appendix 2 presents the complete data dictionary of this model for IT developers (Figure 5).

Note that in both Figure 4 and Figure 5, *Note*: foreign keys and user tables were removed for visibility purposes in both figures 4 and 5.

Figure 5. Extended data model with management of vessels (simple model)



4.1.4.2. Fisher reglstry user interfaces

User interfaces are tools that any user will browse through to manipulate data stored on the data model.

This section aims to propose a quick introduction to designing and testing user interfaces. IT experts have provided more details in Appendix 3 and Appendix 4 with a proposal of mock-ups and examples of implementation.

The success of the implementation will depend upon the close collaboration between the officer in charge of fisher registration (who has knowledge of the business process) and the IT team (who has knowledge in implementing user interfaces in an IT application according to business requirements).

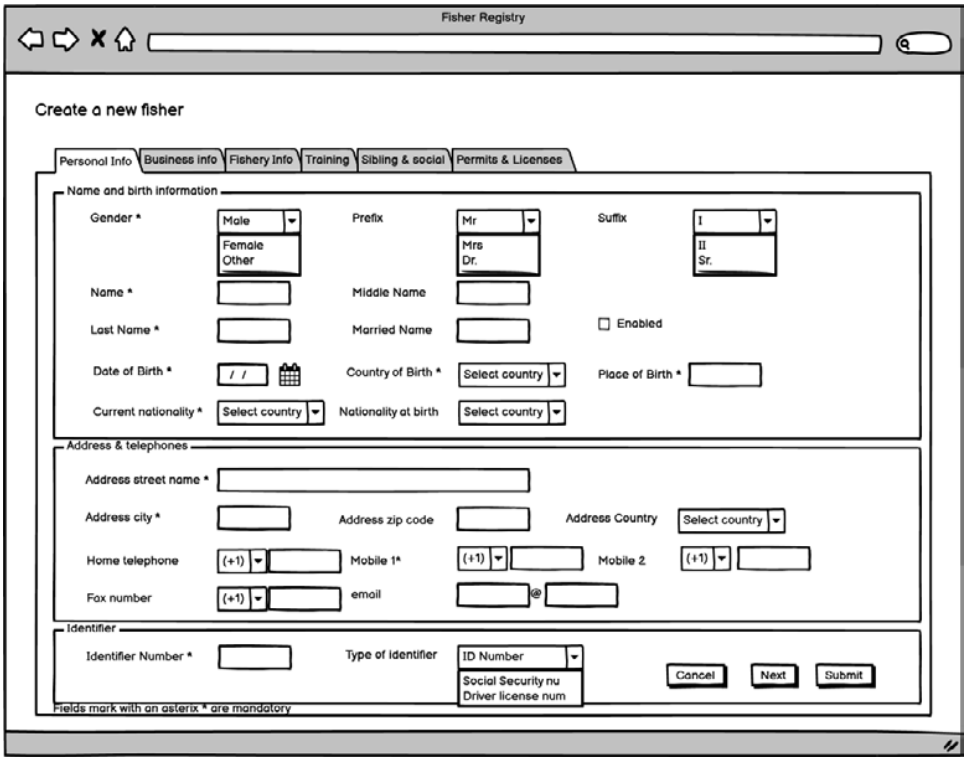
4.1.4.3. Principle in designing user interfaces mock-up

The purpose of creating mock-ups is for IT developers to understand how data should be managed in the form and the different scenarios each button in the mock-up will trigger. Formally, according to UML standards (OMG, 2017), use cases should be drafted for each user interface describing content, behaviour and dependencies with other use cases. The business analyst or the officer in charge of managing the fisher registration process should complete this task.

In the case of simple management of the fisher registry, the process is simplified: Appendix 3 presents user interfaces needed to browse the list of fishers and to create/edit a fisher (two main use cases).

Figure 6 shows an example of a user interface for creating a file of a new fisher or editing one of an existing fisher. The mock-up implements personal details – the core module is described in Section 3.1.

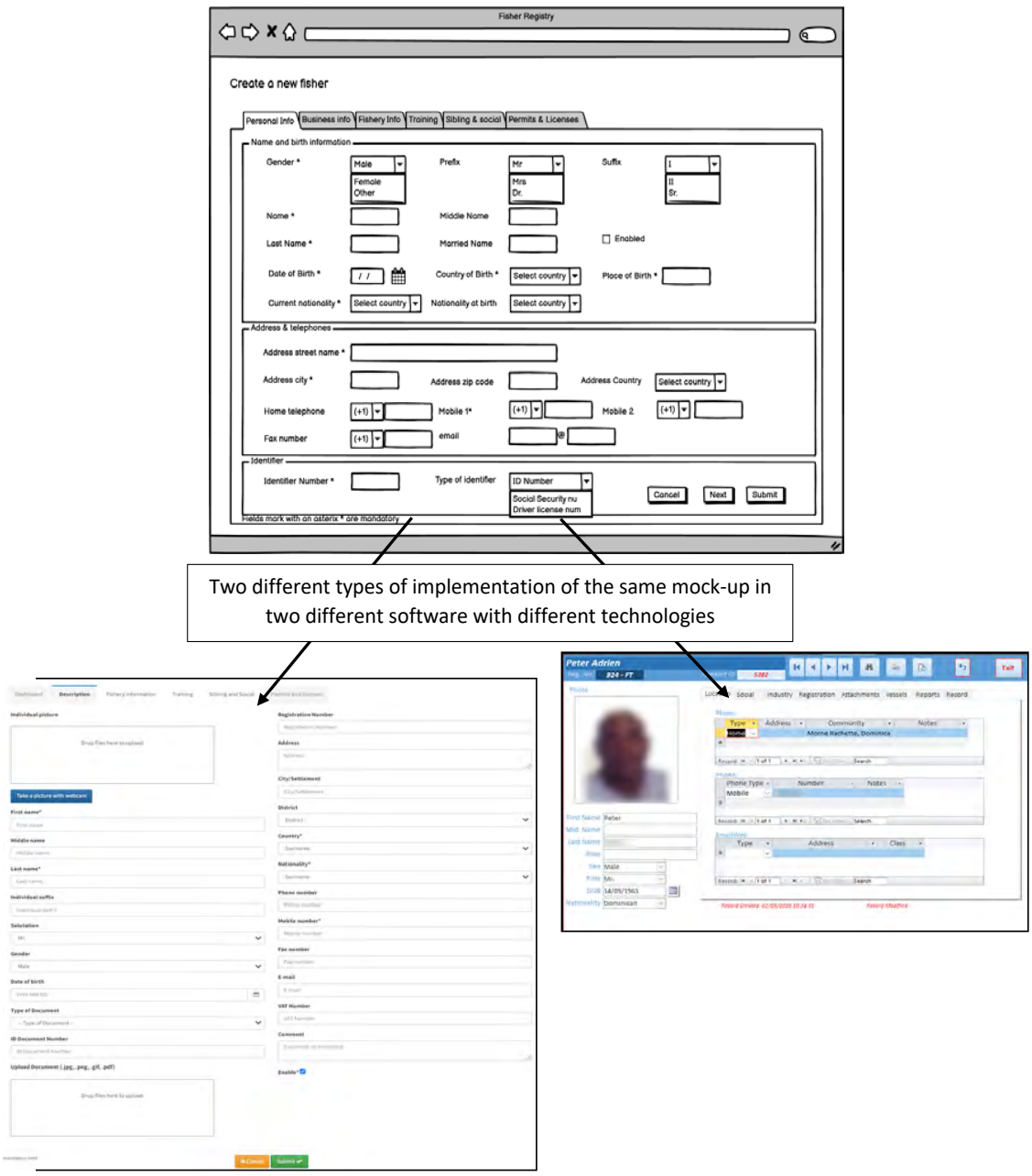
Figure 6. User interface mock-up – creation – licence information



The driving principle is that the proposed mock-up is not linked to a given graphical design or look and feel. It only presents the information to be entered in the form and should describe the behaviour of the different action buttons (cancel, next, submit).

This mock-up should be designed by the officer in charge of the fisher registry for the IT team.

Figure 7. Examples of different user interfaces for the same business requirement



4.1.4.4. Example of user interface implementation

Once the mock-ups are designed, the IT team implements them either as a web-based application or a mobile application. Figure 7 presents two examples of the implementation of the registry, one in a web interface, the other in a Microsoft Access (MS Access) database.

After the IT team finalizes this implementation, it is reviewed and validated by the officer in charge of fisher registration to ensure that the deliver software/mobile application is in line with the described features in the mock-up.

Appendix 4 presents different screenshots of different parts of the form mock-up into concrete software graphical user interfaces.

4.2. Operationalization of the fisher registry

4.2.1. Technical deployment of the fisher registry at the national level

With the description of data models and interfaces presented in previous sections, either a new system can be developed or an existing platform, such as Calipseo, can be adopted to manage registries.

In the process of developing the application, two components should be carefully addressed:

- the hosting solution; and
- the interoperability with other platforms.

The first step to an interoperable information system is to have: (i) an ICT infrastructure that can house all the registries being used by different national institutions; and (ii) a common software that can manage, link, process and analyze the data from diverse registries into information for different purposes, such as generating several beneficiaries lists for different social protection programmes. Additionally, the software used needs to be interoperable and connect the whole-of-government information architecture. In this manner, and through the use of software, fisher registries can be made interoperable with the integrated social protection information system.

Similarly, interoperable integration systems must have the appropriate human resources who have the required IT skills and can manage databases and navigate the IT infrastructure, who can manage the programme infrastructure, including the delivery chain of social protection programmes and their coherence with fisheries management strategies, who can analyze the information to feed into different programme design and implementation, and who can support coordination, data sharing and engage in capacity development around the registry and information system functions and intricacies (Barca and Chirchir, 2020, p. 13).

4.2.2. Interoperability with other systems

There are different solutions to interoperability at the national level depending on existing systems.

Two cases can be considered: Either a national central administrative system is in place with a unique identifier for registration, or several or no administrative systems are in place managing many (or no) registries.

In the first case, which is quite rare, a unique identifier is granted to an individual and is used as a unique reference to manage all administrative data.

More often, several platforms exist, each with a unique identifier to the individual (e.g. social security number, tax number, ID/driver's licence number): Either the user is provided a central hub where he or she can associate this different registration number with one unique identifier to connect to these platforms (this requires human intervention) or a mechanism is in place when data exchange is required to share minimum information for the system to uniquely identify the individual known in these registries (this is done automatically).

In most countries, the second option will need to be considered: Data exchange or connection between registries will require defining criteria to make sure an individual registered in registry A with certain information provided can be automatically recognized as the individual registered in registry B.

The following options outline how to ensure this mapping and the attached conditions.

First, a system administrator must ensure that this automatic mapping is allowed by law or decree. A data protection act can prevent the administration from cross-checking information to preserve confidentiality of information: For instance, health information should not be shared with the national insurance system. The data protection act may also define information that can or cannot be shared.

Once cleared, the second condition is to assess the unique identifier granted by the administration to an individual. This unique identifier should not expire. A national ID card or a passport that should be renewed every so often (ten years) may have a different number each time it is renewed (as is the case in France).

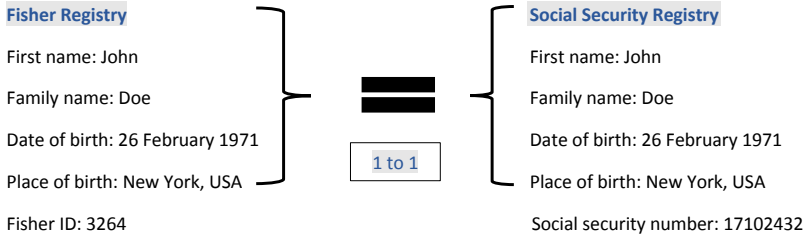
Typical unique identifiers can be a social security number, tax number, pension number, national ID number, driver's licence number, ID card number (if number remains identical when renewed) and fisher ID.

Third, information that makes an individual unique in the country must be defined. The ideal case is that the same unique identifier (unique ID number) is shared across all databases. This number will be used in the application programming interface (API) to exchange information.

In other cases, names/birth information will be needed: A person is likely to be unique in terms of his or her first name, last name (family), and date and place of birth. The bigger the country is, however, the greater the risk of perfect homonyms (same first/last name, same date and place of birth). In a country such as France (67 million inhabitants, INSEE, 2022), perfect homonyms are very rare but still occur. In large countries such as India, the risk is more urgent. Usually, parent details are requested when applying for registration: This will provide additional information. If parent names are the same, the additional details of date and location of birth of the parents will be sufficient.

At the system level, if the above criteria for uniqueness are retained, perfect homonyms should be tested, and human action required in case of duplicates. Other criteria should be added (comparison of parents' names) upon availability of information in the registry.

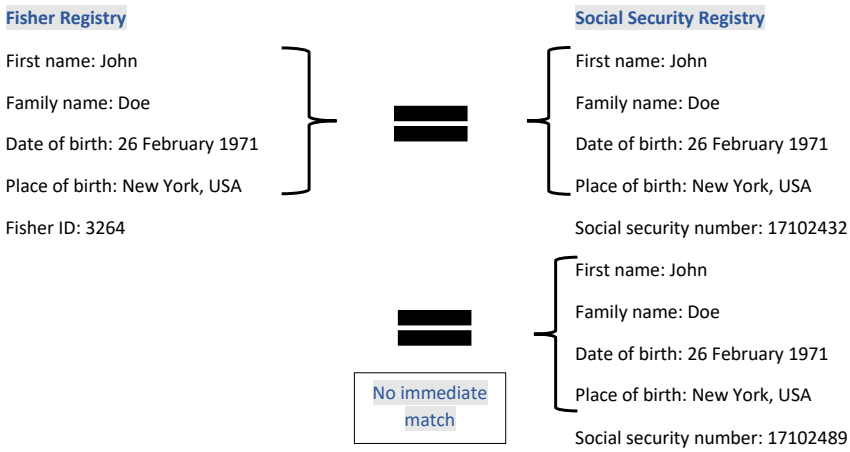
Case 1: Direct mapping, as only one individual has the same personal information in all databases



Fisher ID: 3264 = social security number: 17102432

Data exchange between systems is possible using either ID in the API.

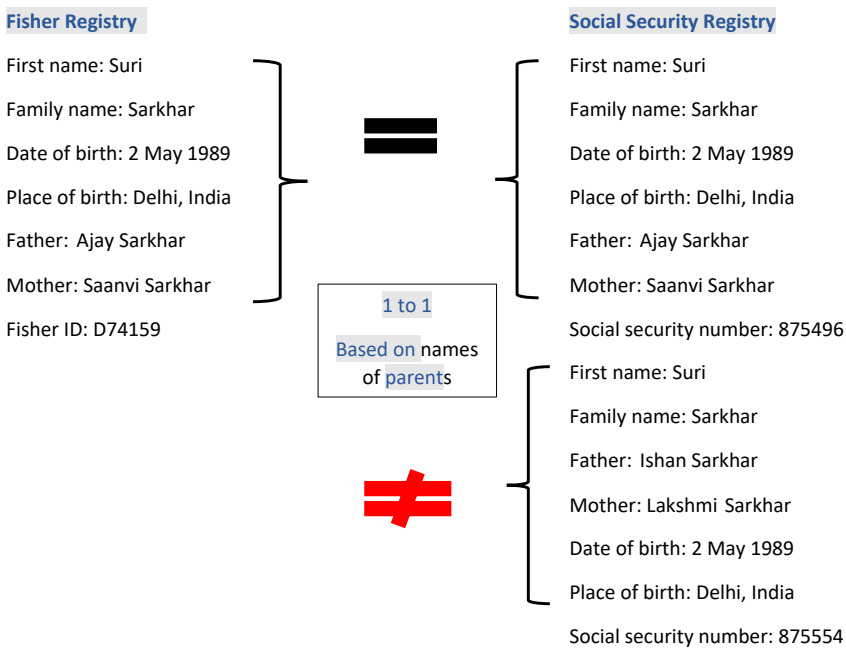
Case 2: No possible direct mapping, as more than one individual has the same personal information in all databases



Fisher ID: 3264 cannot be associated with the social security number.

Human action is required to create the mapping.

Case 3: Direct mapping, as more than one individual has the same personal information in databases, but databases have enough detailed information to arrive at a unique mapping



Fisher ID: D74159 = social security number: 875496

Data exchange between systems is possible using either ID in the API.

As described above, direct mapping depends on the type of information available in each database. Prior to developing any API for data exchange, one should carefully review the information stored in the systems and come up with clear criteria for automated mapping.

4.2.3. Piloting

At this stage, the system is ready to be tested in the field. A six-month period is recommended to ensure efficient testing of the fisher registry implementation. If connected to other registries, a period of one year is recommended.

This piloting phase is the opportunity to:

- test the reliability of the system and fix any issues that may arise;
- identify any new/missing feature that developers could add in an agile approach to IT development;
- adapt the system to local constraints (moving optional fields to mandatory fields to extend coverage of the registry);
- test interoperability with other systems; and
- prepare outreach campaigns aimed at fishers and fishing communities to advocate for registration and associated expected benefits.

Prepare a national registration campaign: As a first step, streamlining of the process could be achieved by "mobile registration units", where extension officers or other relevant officials visit communities and carry out the registration process *in situ*, including the issuance of an ID card. This would reduce the burden on fishers, both time and financial, and limit logistic obstacles that could prevent fishers from travelling to registration offices.

4.2.4. Engaging fishers for successful registration

One of the known key issues when rolling out such a registration process (not including licensing schemes) is the reluctance of fishers to be listed in databases, and therefore known, by governmental agencies. There are many reasons why fishers are reluctant, including the general mistrust in institutions, a worry that access to resources will be limited or blocked, the possibility of being taxed, and not wanting to share personal information. The first instrument of mandating registration is a proper legal framework. Another useful practice is to strictly separate the registration system from the taxation system.

Lastly, fishers and fishing communities should receive clear and complete information on the benefits of being registered and of having their fishing activity recognized as an official source of income and livelihood (this is especially true if the registry is extended to the pre-harvest and post-harvest sectors).

These are some examples of the benefits that registration can bring to fishers and fishworkers:

- Access subsidies and others benefits
  - Access to tax-free or reduced tax commodities (fuel, gear)
  - Simplified access to insurance/bank services
- Enrolment in social security programmes
- Enrolment in fisher lists to receive support in case of damages and losses from shocks and stressors or to submit claims regarding fishing quotas

Outreach and education strategies to enhance fishers' registration

The registration of fishers along the value chain should be carried out regularly; yet, the questionnaires conducted show that this is not always the case. However, even when registration is done regularly, the outreach might not be sufficient. Among the causes for the reluctance of workers along the value chain to register are low levels of trust in government institutions, registration/licensing fees and a lack of enforcement. There may also be little difference in fisheries legislation between industrial and small-scale and subsistence fisheries, and therefore the fees nor the documentation needed are adjusted according to the level of fishing or the volume and value of the catch, with the financial burden usually falling on poor and more isolated fishing communities. In addition, low literacy levels compound the obstacles found in extending registration.

While one solution is to engage fishing communities with outreach and education programmes, wider-reaching solutions are required to also include migrant fishers who might lack appropriate legal documentation. For example, if fisher registries are linked to integrated social information systems, then this would open the door for the institutions responsible for immigration and citizenship to streamline the process of integrating foreign fishers into the national workforce. Similarly, providing incentives to fisher registration such as enhanced access to social protection programmes can skew the scale towards registration. A coordinated approach of adjusted requirements, community outreach and incentives are all needed for a significant increase in the number of registered fishers.

4.2.5. country roll-out

Once piloting is completed and all technical issues have been addressed, the system can be rolled out to the entire country.

The key point for this step is sustainability. Typically, the above steps are implemented in a project approach. It is crucial that the deployed system receives regular maintenance, including long-term hosting solutions as well as technical capacity to fix any issues. It is also essential that new officers are trained in the use of the system in case of staff turnover.

Long-term sustainability will result from the buy-in from fishers and fishing communities, who will observe that the registration process creates opportunities to further develop their business activities or to access social benefits from which they were previously excluded.

5. Interoperability with social protection systems

A fisher registry can be linked to other registries and made interoperable with, for instance, the national social protection information system, to better respond to the needs of the sector by enabling free information flow, which not only dynamically includes fishers into available beneficiary lists of social protection programmes but also mainstreams fishers' needs and conditions into the design of social protection programmes.

The interoperability of several registries requires the correct institutional setting, including legal and political support, and technical context. With regard to the institutional setting, fisher registries and their interoperability with other integrated systems such as social protection ones need to be embedded into policy and legislation, which is attached to the budget, and which sets clear procedures for data collection, sharing and management. With regard to the budget, it needs to include the coverage of the costs of developing the system and its uptake, such as hardware, software and operational expenses; data collection costs; maintenance of the ICT infrastructure; and data analytics, including outreach, communications and recertification (Barca and Chirchir, 2020). In addition, the interoperability of fisher registries needs to be supported throughout each step of the social protection delivery chain. This chain is composed of four steps: assess, enroll, provide and manage (World Bank, 2022). When fisher registries are set up to be interoperable with the steps, both social protection programmes and fisher registry schemes can reap benefits and improve efficiency.

The first step of the delivery chain – to assess – entails outreach to, registration of, and assessment of the needs and conditions of potential beneficiaries. This step is conducted through mobile team visits, local offices and online initiatives, which collect information on beneficiary identification, socioeconomic characteristics and other social needs. Fisher registries can be used to support this step of the delivery chain, as they can provide information about fishers along the value chain and ensure that their needs are mainstreamed into the design of social protection programmes. Information from a fisher registry can be integrated via the use of a unique identifier, such as the national ID number, and collated with other registries, such as social and civil registries or tax systems, to generate a beneficiary registry database, based on eligibility criteria. This would also ensure data quality and validation and avoid problems, such as inclusion or exclusion errors or double-dipping.

From an administrator's perspective, linking the fisher registry to social information systems can reduce human and financial resources, since intake and registration entails expensive processes of outreach to communities, implementing questionnaires and censuses, and managing data for validity and collating that data according to eligibility requirements. By creating one entry point for information, these processes can be mainstreamed, thus reducing costs and ensuring the systematic inclusion of communities that might not be contacted due to cost constraints. Similarly, articulation between the fisher registry and social information systems can enhance coherence between fisheries management and social protection, as it better synergizes the needs and aims of each sector, and, based on this, it can support the delivery of complementary benefits, such as unemployment benefits during closed seasons or productive inclusion strategies to generate alternative livelihoods in areas where marine-protected areas have been implemented.

The second step of the social protection delivery chain – to enroll – regards determining the eligibility requirements to access the programme, targeting mechanisms and the benefits package, carrying out enrolment decisions, and notifying and on-boarding beneficiaries. This step can also be informed by the fisher registry, especially when detailed socioeconomic and demographic conditions are collected, as this information can inform social protection programmes about both fisher needs as well as their contributory capacity, periodicity of income, and potential barriers of access such as migration status or limited income sources. This will allow the institutions responsible for implementing social protection programmes to account for and adjust their enrolment processes so that fishers and fishworkers are not left behind.

In addition, interoperable fisher registries will allow for better identification of those who have been affected by a disaster, or who could benefit from anticipatory support, by collating different registries. In particular, having a dynamic inclusion in the fisher registry – meaning that fishers can update their information on demand to reflect a change in their situation, and are therefore able to register for social protection or disaster risk response programmes where they now meet the eligibility requirements – is key to better respond to shocks. For instance, if a disaster hits the fisheries sector, the fisher registry, through its interoperationalization with the social protection system, could inform the beneficiary list of social protection programmes and directinclude fishers into programmes that will improve their adaptive capacity and mitigate their engagement with negative coping strategies caused by a shock.

Making the fisher registry interoperable with social information systems will also reduce transaction costs for fishers and fishworkers and increase their inclusion into social protection programmes. Customarily – although there are now more efforts to digitize and interoperationalize registry systems – each social protection programme has a different delivery chain, and the fisher registry also has its own set of assessment and enrolment criteria. Practically speaking, this means that fishers and fishworkers will have to adhere to different requirements to access each programme and navigate a bureaucratic complex network that increases transaction costs for them and that might create a barrier of access to social protection programmes. By making fisher registries interoperable with social information systems, fishers will be able to access a wide array of programmes through a common intake and registration gateway, thus overcoming administrative barriers of access, reducing transaction costs, and generating an incentive for those employed in the sector to register as fishers, as it could increase their access to social benefits.

The third step of the social protection delivery chain involves the provision of benefits and/or services. Similar to the above rationale for making the fisher registry interoperable with social information systems, the former can mainstream the needs, conditions and capacity of fishers and fishworkers so that these can be accounted for in the delivery of benefits, whether through digital banking, in-person collection or mobile phones.

Finally, the last step of the delivery chain concerns the management of any grievances, compliance and updating of information, and the notification of exit decisions and case outcomes. The interoperability of the fisher registry with the social information system can share information about the changing socioeconomic conditions of the beneficiaries, make sure that they are always eligible for the programme, and improve oversight and control of the system. Additionally, interoperability can simplify the user's experience of grievance mechanisms, as it can provide a common gateway for several programmes.

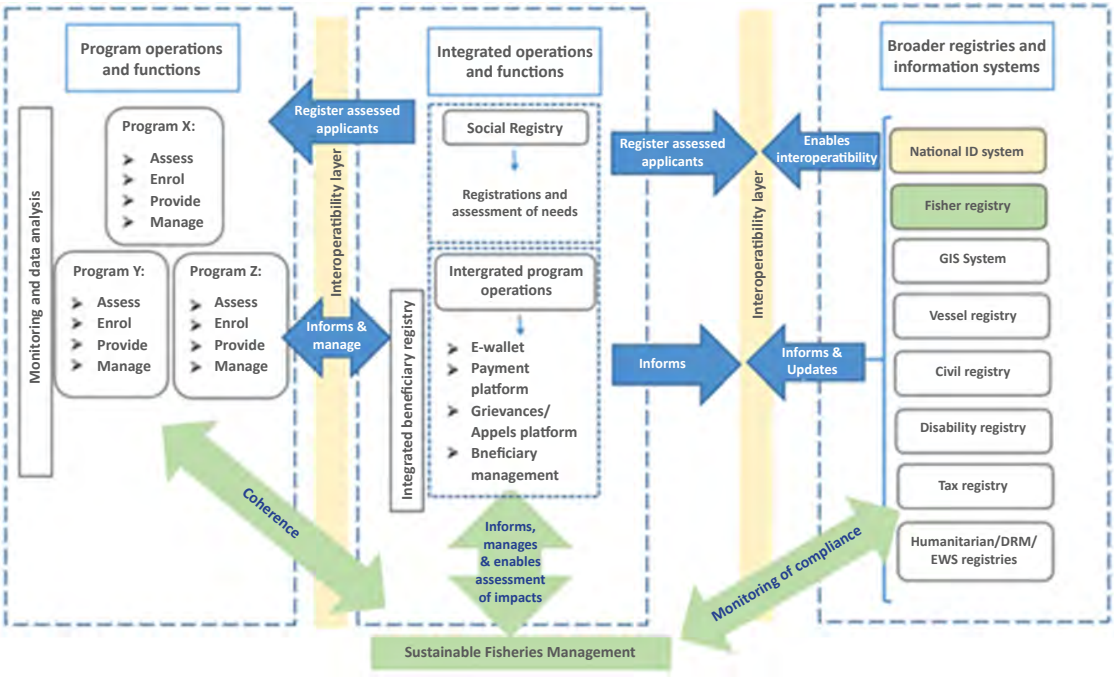
The delivery chains of social protection programmes make up one part of the integrated social protection information system. The system has three pillars: (i) programme operations and functions, where delivery chains of social protection programmes are housed; (ii) integrated operations and functions; and (iii) broader registries and information systems. The first pillar holds different social

protection programmes, each with their specific objectives and delivery chains, including programme-specific beneficiary lists. The second pillar holds social registries that integrate functions of outreach, registration and assessment of needs and conditions across many programmes and collect and process that information at the beneficiary level, which is then used to both feed programme-level beneficiary registries and validate information. This pillar also houses integrated programme operations, such as unified payment, grievances/appeals and beneficiary management platforms that support operations at the programme level (under pillar one). The third pillar, in turn, pulls information from several registries and information systems, such as fisher registries, to inform and update social registries and mainstream beneficiaries into the programmes under pillar one, as needed. Figure 78 attempts to illustrate this dynamic.

The three pillars inform sustainable fisheries management, as they can enable coherence by coordinating social protection programmes under pillar one to support fisheries management, such as unemployment benefits during closed seasons. The integrated social registry and programme operations under pillar two inform, manage and enable assessment based on the conditions of fishers and how fisher management strategies could impact them and help to better identify the needs of the sector to enhance compliance with management strategies. Lastly, the interoperability between the fisher registry and broader information systems can allow the monitoring of compliance with fisheries management strategies.

Figure 8. Integrated social protection information system and its interlinkages with fisheries management

(Adapted from Barca and Chirchir, 2020)



Box 8. Fishermen Welfare Fund (Mauritius)

The main fisheries-targeted social protection policy in Mauritius is the Fishermen Welfare Fund Act 2000, which establishes a national Contributory Scheme for Bank Fishermen Regulations 2006. The fund is a social assistance programme that seeks to promote the socioeconomic development of registered fishers and their families and provide high-quality and cost-effective services to fishing dependent communities. It comprises a variety of sub-programmes and benefits, including one-off unconditional cash transfers, subsidies and scholarships.

To access the fund, beneficiaries need to be registered as artisanal fishers. To do so, they must submit an application using the national identity card (a universal card that all citizens of Mauritius have), provide a catch record and partake in an eight-day course delivered by the Fisheries Training and Extension Centre.

Since being registered as a fisher is a requisite to apply for and join the Fishermen Welfare Fund, the former is interoperable and thus informs the Fund's registration and beneficiaries registry. This set up highlights the importance of linking fisher registries with other government programmes to ensure the inclusion of fishers to better account for their needs in policy design.

Personal communication with Josheena Naggea.

References

Barca, V. & Chirchir, R. 2020. *Building an integrated and digital social protection information system.* GIZ. https://www.giz.de/de/downloads/giz2019-en-integrated-digital-social-protection-information-system.pdf

Barca, V., Hebbar, M., Cote, A., Schoemaker, E., Enfield, S., Holmes, R. & Wylde, E. 2021. *Inclusive information systems for social protection: intentionally integrating gender and disability*. https://socialprotection.org/sites/default/files/publications_files/SPACE_Inclusive%20information%20systems%20for%20social%20protection_FINAL.pdf

European Commission. 2016. *Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation)*. https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R0679&from=FR

FAO. 1995. *Code of Conduct for Responsible Fisheries*. Rome. 41 pp. https://www.fao.org/3/v9878e/V9878E.pdf

FAO and GIZ. 2023. Farmer registries and social protection information systems: harnessing interoperability to improve outcomes for rural populations. Rome. https://socialprotection.org/sites/default/files/publications_files/230222_giz_sosi_pub-05_v_10%5B34%5D.pdf

FAO. 2015. *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication*. Rome. https://www.fao.org/3/i4356en/i4356en.pdf

ILO (International Labour Organization). 2007. *C188 Work in Fishing Convention, 2007 (No. 188)*. Accessed 15 October 2022. https://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C188

INSEE. 2022. *Estimation de la population au 1er Janvier 2022*. Web page. Accessed 29 September 2022. https://www.insee.fr/fr/statistiques/1893198#consulter

INSPIRE Thematic Working Group Addresses. 2014. *INSPIRE Data Specification on Addresses – Technical Guidelines*. https://inspire.ec.europa.eu/file/1728/download?token=K1Jh4B5h

Leite, P., George, T., Sun, C., Jones, T. & Lindert, K. 2017. *Social registries for social assistance and beyond: a guidance note & assessment tool*. Social Protection & Labor Discussion Paper No. 1704.

OMG (Object Management Group). 2017. *Unified Modeling Language Version 2.5*. A specification defining a graphical language for visualizing, specifying, constructing, and documenting the artifacts of distributed object systems. https://www.omg.org/spec/UML

World Bank. 2022. *Sourcebook summary. Chapter 2: Overview of the delivery systems framework*. Washington, DC, World Bank. https://openknowledge.worldbank.org/server/api/core/bitstreams/4098a9ad-81f0-590f-8e06-afc01408f12a/content

World Bank Group. https://openknowledge.worldbank.org/bitstream/handle/10986/28284/117971-REVISED-PUBLIC-Discussion-paper-1704.pdf?sequence=1&isAllowed=y

APPENDICES

Appendix 1

List of codes used in the registry

Country iso code: ISO 3166-1 Standard – https://www.iso.org/iso-3166-country-codes.html

International dial code: https://www.itu.int/rec/T-REC-E.123-200102-I/en

Other codes

Marital status

Eurostat proposes a definition of marital status (https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Marital_status) and a comprehensive list of marital status:

- Single
- Married
- Widowed
- Divorced
- Separated
- Registered partnership

Education levels

Through its Institute for Statistics, UNESCO (http://uis.unesco.org) has defined a standard list of education levels: the ISCED 2011 classifications (https://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-isced-2011-en.pdf). This classification is used by the World Bank for its education statistics.

The proposed list of levels is the following:

- ISCED 0 = Early childhood education
- ISCED 1 = Primary education
- ISCED 2 = Lower secondary education
- ISCED 3 = Upper secondary education
- ISCED 4 = Post-secondary non-tertiary education
- ISCED 5 = Short-cycle tertiary education
- ISCED 6 = Bachelor's degree or equivalent tertiary education level
- ISCED 7 = Master's degree or equivalent tertiary education level
- ISCED 8 = Doctoral degree or equivalent tertiary education level

For vessel description

- Vessel type: See the Coordinating Working Party on Fishery Statistics (CWP) handbooks for the definition: https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishery-fleet/en, and for the classification: The International Standard Statistical Classification of Fishery Vessels (ISSCFV): https://www.fao.org/3/cb5201en/cb5201en.pdf.
- Types of gear: See the CWP handbooks for the definition: https://www.fao.org/cwp-on-fishery-statistics/handbook/capture-fisheries-statistics/fishing-gear-classification/en, and for the classification: International Standard Statistical Classification of Fishing Gear (ISSCFG): https://www.fao.org/3/bt988e/bt988e.pdf
- Hull type: Standards do not exist for hull type.

The following list has been created based on the experience in implementing vessel registries for a number of FAO Members.

Table A1: list of hull types

Code	Name
1	Wood
2	Fibreglass
3	Steel
4	Aluminium
5	Fibreglass/wood
6	Fibreglass/aluminium
7	Other

Appendix 2

Data dictionary for proposed data model

Naming convention

All registry tables are prefixed with **reg_**

All classifications are prefixed with **cl_app_ (code list)**

All common reference data are prefixed with **cl_ref_**

All tables have a date stamp for creation and update, with a reference to the user creating/updating each record. Selected date format in the registry implementation phase should be compliant with the management of time zones.

In the list of tables below, the tables for the fisher registry data model are in **boldface** font (management of individuals working as fishers).

cl_app_colours	reference data for Vessel
cl_app_company_position_types	reference data for Company
cl_app_education_levels	**reference data for Individual**
cl_app_entity_document_types	**reference data for Individual**
cl_app_entity_types	**reference data for Individual**
cl_app_genders	**reference data for Individual**
cl_app_hull_types	reference data for Vessel
cl_app_individual_next_of_kin_types	**reference data for Individual**
cl_app_legal_status	**reference data for Individual**
cl_app_quantity_unit_types	reference data for Vessel
cl_app_quantity_units	reference data for Vessel
cl_app_salutations	**reference data for Individual**
cl_app_vessel_operational_status	reference data for Vessel
cl_app_vessel_roles	reference data for Vessel
cl_app_vessel_stat_type	reference data for Vessel
cl_fish_fisher_activity_type	**reference data for Individual**
cl_fish_fisheries_qualifications	**reference data for Individual**
cl_fish_landing_sites	**reference data for Individual**
cl_fish_role_in_fishery	**reference data for Individual**

Table continued.

cl_fish_training_programs	**reference data for Individual**
cl_ref_admin_level_1	**reference data for Individual**
cl_ref_admin_level_2	**reference data for Individual**
cl_ref_countries	**reference data for Individual**
cl_ref_vessel_types	reference data for Vessel
reg_entities	**reference data for Individual**
reg_entity_affiliation	**reference data for Individual**
reg_entity_companies	reference data for Company
reg_entity_individual_education	**reference data for Individual**
reg_entity_individual_education_fishery_qualifications	**reference data for Individual**
reg_entity_individual_nok	**reference data for Individual**
reg_entity_individual_role_fishery	**reference data for Individual**
reg_entity_individuals	**reference data for Individual**
reg_entity_social_information	**reference data for Individual**
reg_entity_training	**reference data for Individual**
reg_vessels	reference data for Vessel

The tables below can be enriched with more labels in languages other than the six official United Nations languages.

Table A2 shows examples of additional languages for Asia.

Table A2: additional multilingual labels for code list tables (classifications)

Name	Data type	Nullable	PK	FK	Default	Comment
I18N_TH	VARCHAR(256)	No	No	No	NULL	Label in Thai
I18N_VT	VARCHAR(256)	No	No	No	NULL	Label in Vietnamese
I18N_LA	VARCHAR(256)	No	No	No	NULL	Label in Lao
I18N_ID	VARCHAR(256)	No	No	No	NULL	Label in Indonesian
I18N_KH	VARCHAR(256)	No	No	No	NULL	Label in Cambodian
I18N_BD	VARCHAR(256)	No	No	No	NULL	Label in Bengali

Table: cl_app_colours

Table comments

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
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CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
HEX	VARCHAR(6)	No	No	No	NULL	Hex code for colour
IMAGE_COLOUR	VARCHAR(256)	No	No	No	NULL	Image to show colour in form
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_company_position_types

Table Comments

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
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RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese

Table: cl_app_company_position_types

Table Comments

Name	Data type	Nullable	PK	FK	Default	Comment
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I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_education_levels

Table comments	List of education level of the country

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ENABLED	TINYINT(1)	Yes	No	No	'1'	Is this table item enabled?
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DESCRIPTION	VARCHAR(512)	No	No	No	NULL	Table item description
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I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
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I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
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UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_entity_document_types

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
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RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
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Table: cl_app_entity_document_types

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
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I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_entity_types

Table Comments	

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CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
IS_COMPANY	TINYINT(1)	Yes	No	No	'0'	
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_genders

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
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ENABLED	TINYINT(1)	Yes	No	No	'1'	
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RANKING	INT(6)	Yes	No	No	'1'	

Table: cl_app_genders						
Table comments						
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
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DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_hull_types						
Table comments	Vessel hull types					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_individual_next_of_kin_types

Table comments	Definition of next of kin types

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		Table item unique ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	Is this table item enabled?
CODE	VARCHAR(16)	Yes	No	No		Table item code
RANKING	INT(6)	Yes	No	No	'1'	Table entry ranking (for specific sorting)
NAME	VARCHAR(64)	Yes	No	No		Table item name
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	Table item description
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_legal_status

Table comments	Legal status (married, divorced, etc.)

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
CL_COUNTRY_ID	INT(11)	Yes	No	No		
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_quantity_unit_types

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No		
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_quantity_units

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
CL_QUANTITY_UNIT_TYPE_ID	INT(11)	Yes	No	Yes		
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_salutations						
Table comments						
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
CL_GENDER_ID	INT(11)	No	No	Yes	NULL	
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_vessel_operational_status						
Table comments	**The vessel operational status code list**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		The vessel operational status code list ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	CHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(128)	Yes	No	No		
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
I18N_TH	VARCHAR(256)	No	No	No	NULL	Label in Thai
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_vessel_roles	
Table comments	**Vessel role UN/CEFACT model**

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_app_vessel_stat_type	
Table comments	**The definition of the Bahamas statistical type for vessel**

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		The definition of the Bahamas statistical type for vessel
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	CHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(128)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_fish_fisher_activity_type						
Table comments	**Table captures an individual activity employment type**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		Table item unique ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	Is this table item enabled?
CODE	VARCHAR(16)	Yes	No	No		Table item code
RANKING	INT(6)	Yes	No	No	'1'	Table entry ranking (for specific sorting)
NAME	VARCHAR(64)	Yes	No	No		Table item name
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	Table item description
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_fish_fisheries_qualifications						
Table comments	**Stores qualifications in fisheries**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		Table item unique ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	Is this table item enabled?
CODE	VARCHAR(16)	Yes	No	No		Table item code
RANKING	INT(6)	Yes	No	No	'1'	Table entry ranking (for specific sorting)
NAME	VARCHAR(64)	Yes	No	No		Table item name
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	Table item description
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_fish_landing_sites

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	TINYINT(1)	Yes	No	No		
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
CL_REF_ADMIN_LEVEL_1_ID	INT(11)	Yes	No	Yes		Here in the Bahamas, this is the island
LONGITUDE	VARCHAR(128)	No	No	No	NULL	
LONGITUDE_UNIT_ID	INT(11)	No	No	Yes	NULL	
LATITUDE	VARCHAR(128)	No	No	No	NULL	
LATITUDE_UNIT_ID	INT(11)	No	No	Yes	NULL	
UPDATER_ID	INT(11)	Yes	No	No	'0'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: cl_fish_role_in_fishery

Table comments	List of roles of individuals in the fishery sector

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		Table item unique ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	Is this table item enabled?
CODE	VARCHAR(16)	Yes	No	No		Table item code
RANKING	INT(6)	Yes	No	No	'1'	Table entry ranking (for specific sorting)
NAME	VARCHAR(64)	Yes	No	No		Table item name
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	Table item description
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese

Table: cl_fish_role_in_fishery	
Table comments	List of roles of individuals in the fishery sector

Name	Data type	Nullable	PK	FK	Default	Comment
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_fish_training_programmes	
Table comments	List of training programmes in the country

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		Table item unique ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	Is this table item enabled?
CODE	VARCHAR(16)	Yes	No	No		Table item code
RANKING	INT(6)	Yes	No	No	'1'	Table entry ranking (for specific sorting)
NAME	VARCHAR(64)	Yes	No	No		Table item name
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	Table item description
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_ref_admin_level_1	
Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish

Table: cl_ref_admin_level_1

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_ref_admin_level_2

Table comments	

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
CL_REF_ADMIN_LEVEL_1_ID	INT(11)	Yes	No	Yes	'0'	
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_ref_countries

Table comments	The countries' code list

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		The countries' code list ID
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	CHAR(2)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(128)	Yes	No	No		

Table: cl_ref_countries						
Table comments	**The countries' code list**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
ISO_3_CODE	CHAR(3)	No	No	No	NULL	
ISO_2_CODE	VARCHAR(2)	No	No	No	NULL	
DIAL	VARCHAR(4)	No	No	No	NULL	
UNI	VARCHAR(4)	No	No	No	NULL	
FAOSTAT	VARCHAR(4)	No	No	No	NULL	
GAUL	VARCHAR(6)	No	No	No	NULL	
SHORT_NAME	VARCHAR(64)	No	No	No	NULL	
OFFICIAL_NAME	VARCHAR(128)	No	No	No	NULL	
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: cl_ref_vessel_types						
Table comments						
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CODE	VARCHAR(16)	Yes	No	No		
RANKING	INT(6)	Yes	No	No	'1'	
NAME	VARCHAR(64)	Yes	No	No		
DESCRIPTION	VARCHAR(512)	No	No	No	NULL	
I18n_DEFAULT	VARCHAR(256)	Yes	No	No		Default label
I18N_EN	VARCHAR(256)	No	No	No	NULL	Label in English
I18N_FR	VARCHAR(256)	No	No	No	NULL	Label in French
I18N_ES	VARCHAR(256)	No	No	No	NULL	Label in Spanish
I18N_PT	VARCHAR(256)	No	No	No	NULL	Label in Portuguese
I18N_NL	VARCHAR(256)	No	No	No	NULL	Label in Dutch
I18N_AR	VARCHAR(256)	No	No	No	NULL	Label in Arabic
I18N_RU	VARCHAR(256)	No	No	No	NULL	Label in Russian
I18N_CH	VARCHAR(256)	No	No	No	NULL	Label in Chinese
IS_ARTISANAL	TINYINT(1)	No	No	No	NULL	Is this vessel type for the artisanal sector?
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: reg_entities						
Table comments	**Common information for any type of entity (individual, company, institution, NGO, etc.)**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		
ENABLED	TINYINT(1)	Yes	No	No	'1'	
CL_APP_ENTITY_TYPE_ID	INT(11)	Yes	No	Yes	'0'	
STANDARD_IDENTIFIER	VARCHAR(256)	No	No	No	NULL	An identifier, such as unique national registration number or blue number in addition to a national number
CL_NATIONALITY_COUNTRY_ID	INT(11)	No	No	Yes	'0'	
NAME	VARCHAR(256)	Yes	No	No		
CL_ADDRESS_COUNTRY_ID	INT(11)	Yes	No	Yes	'0'	
ADDRESS_CITY	VARCHAR(256)	No	No	No	NULL	
ADDRESS	VARCHAR(512)	No	No	No	NULL	
ADDRESS_ZIP_CODE	VARCHAR(16)	No	No	No	NULL	
CL_REF_ADMIN_LEVEL_1_ID	INT(11)	No	No	Yes	'0'	Can be the island (the Bahamas, Trinidad) or province or other
PHONE_NUMBER	VARCHAR(96)	No	No	No	NULL	
MOBILE_NUMBER	VARCHAR(96)	Yes	No	No		
FAX_NUMBER	VARCHAR(96)	No	No	No	NULL	
E_MAIL	VARCHAR(64)	No	No	No	NULL	
INSTANT_MESSANGER	VARCHAR(128)	No	No	No	NULL	Instant messenger ID, such as WhatsApp, LimeChat, etc.
WEBSITE	VARCHAR(128)	No	No	No	NULL	
REGISTRATION_NUMBER	VARCHAR(45)	No	No	No	NULL	
VAT_NUMBER	VARCHAR(45)	No	No	No	NULL	Value-added tax number for an individual or a company
IMG_URL	VARCHAR(256)	No	No	No	NULL	
COMMENT_ON_ENTITY	VARCHAR(512)	No	No	No	NULL	
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	Yes	No	No		
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP	

Table: reg_entity_affiliation						
Table comments	**List of affiliation for an entity (to a cooperation, to an association, etc.)**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
REG_ENTITY_ID	INT(11)	Yes	No	Yes		Reference to the affiliated entity
ID	INT(11)	Yes	Yes	No		Table item unique ID
REG_ENTITY_AFFILIATION_ID	INT(11)	Yes	No	No		Reference to the affiliation entity

Table: reg_entity_affiliation	
Table comments	List of affiliation for an entity (to a cooperation, to an association, etc.)

Name	Data type	Nullable	PK	FK	Default	Comment
AFFILIATION_DATE	DATE	No	No	No	NULL	Starting date of the affiliation
AFFILIATION_ROLE	VARCHAR(128)	No	No	No	NULL	Role at/with affiliation entity
COMMENT_ON_AFFILIATION	VARCHAR(1024)	No	No	No	NULL	Any comment/note on the affiliation
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: reg_entity_companies	
Table comments	Specific information for a legal entity

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
REG_ENTITY_ID	INT(11)	No	No	Yes	NULL	
ACRONYM	VARCHAR(32)	No	No	No	NULL	
DATE_OF_CREATION	TIMESTAMP	No	No	No	NULL	
REG_ENTITY_FOCAL_POINT_ID	INT(11)	No	No	Yes	NULL	
FOCAL_POINT_TEL_NUMBER	VARCHAR(20)	No	No	No	NULL	
FOCAL_POINT_DEPARTMENT	VARCHAR(45)	No	No	No	NULL	
FOCAL_POINT_EMAIL	VARCHAR(45)	No	No	No	NULL	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
FOCAL_POINT_POSITION_TYPE_ID	INT(11)	No	No	Yes	NULL	

Table: reg_entity_individual_education	
Table comments	Record of levels of education of one individual

Name	Data type	Nullable	PK	FK	Default	Comment
REG_ENTITY_ID	INT(11)	Yes	No	Yes	'1'	Captures individual entity ID
ID	INT(11)	Yes	Yes	No		Table item unique ID
CL_APP_EDUCATION_LEVEL_ID	INT(11)	Yes	No	Yes		Reference to the education level
COMMENT_ON_EDUCATION_LEVEL	VARCHAR(128)	No	No	No	NULL	next of kin () Comment on the education level selected if any
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: reg_entity_individual_education_fishery_qualifications						
Table comments	**Joint table to store individual education fishery qualifications**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
REG_ENTITY_INDIVIDUAL_EDUCATION_ID	INT(11)	Yes	Yes	Yes		Individual education ID
CL_FISH_FISHERIES_QUALIFICATIONS_ID	INT(11)	Yes	Yes	Yes		Fishery qualification ID
DESCRIPTION	VARCHAR(216)	No	No	No	NULL	
UPDATER_ID	INT(11)	No	No	No	NULL	
COMMENT	VARCHAR(216)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	

Table: reg_entity_individual_nok						
Table comments	**Next of kin of an individual in the fishery sector**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
REG_ENTITY_ID	INT(11)	Yes	No	Yes	'1'	Captures individual entity ID
ID	INT(11)	Yes	Yes	No		Table item unique ID
REG_ENTITY_IND_NOK_ID	INT(11)	No	No	Yes	NULL	
NOK_FIRST_NAME	VARCHAR(128)	No	No	No	NULL	f the next of kin (NOK) is not known in the registry, use this field (free text entry) of his/her first name. If known in the registry, automatically uploaded from the NOK_IDnext of kin ()
NOK_LAST_NAME	VARCHAR(128)	No	No	No	NULL	If the NOK is not known in the registry, free text of his/ her family name. If known in the registry, automatically uploaded from the NOK_ID
NOK_TELEPHONE	VARCHAR(45)	No	No	No	NULL	Next of kin telephone
JOB_TITLE	VARCHAR(64)	No	No	No	NULL	Next of kin job title
CL_APP_INDIVIDUAL_NOK_ID	INT(11)	Yes	No	Yes		
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: reg_entity_individual_role_fishery						
Table comments	**Roles of an individual in the fishery sector**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
REG_ENTITY_ID	INT(11)	Yes	Yes	Yes	'1'	Captures individual entity ID
CL_FISH_ROLE_IN_FISHERY_ID	INT(11)	Yes	Yes	Yes		
IS_WORKING_PART_TIME	TINYINT(1)	No	No	No	'0'	Is the individual working part time in this role?
IS_WORKING_FULL_TIME	TINYINT(1)	No	No	No	'0'	Is the individual working full time in this role?
DATE_FROM	DATE	No	No	No	NULL	Date of entry in this role in fishery
DATE_TO	DATE	No	No	No	NULL	Date of end of activity in this role
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: reg_entity_individuals						
Table comments	**Specific information for an individual**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
ID	INT(11)	Yes	Yes	No		
REG_ENTITY_ID	INT(11)	No	No	Yes	NULL	
FIRST_NAME	VARCHAR(256)	Yes	No	No		
MIDDLE_NAME	VARCHAR(45)	No	No	No	NULL	
SUFFIX_NAME	VARCHAR(45)	No	No	No	NULL	
CL_APP_SALUTATION_ID	INT(11)	No	No	Yes	NULL	
CL_APP_GENDER_ID	INT(11)	No	No	Yes	NULL	
CL_APP_ENTITY_DOCUMENT_TYPE_ID	INT(11)	No	No	Yes	NULL	Type of document collected to justify the individual ID
FISHER_ID	VARCHAR(124)	No	No	No	NULL	
CL_FISH_FISHER_ACTIVITY_TYPE_ID	INT(11)	No	No	Yes	NULL	
ENTITY_DOCUMENT_NUMBER	VARCHAR(256)	No	No	No	NULL	ID number (passport number, ID card number, etc.)
DATE_OF_BIRTH	DATE	No	No	No	NULL	
COMMENT	VARCHAR(45)	No	No	No	NULL	

Table: reg_entity_social_information	
Table comments	Social information on entities

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		Table item unique ID
REG_ENTITY_ID	INT(11)	Yes	No	Yes		Reference to the entity (mostly individual)
CL_APP_LEGAL_STATUS_ID	INT(11)	No	No	Yes	NULL	Reference to the marital status of individual
NUMBER_OF_DEPENDANTS	INT(3)	No	No	No	NULL	Number of dependants an individual has
COMMENT_ON_SOCIAL	VARCHAR(1024)	No	No	No	NULL	Any comment/note on the social information
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: reg_entity_training	
Table comments	List of attended training programmes by entities

Name	Data type	Nullable	PK	FK	Default	Comment
REG_ENTITY_ID	INT(11)	Yes	Yes	Yes		Reference to the entity (mostly individual)
CL_FISH_TRAINING_ PROGRAM_ID	INT(11)	Yes	Yes	Yes		Reference to the training programme
TRAINING_DATE	DATE	Yes	No	No		Starting date of the training
TRAINING_DAY_OF_MONTH	INT(11)	Yes	Yes	No	'1'	Starting day of the training
TRAINING_MONTH	INT(11)	Yes	Yes	No	'1'	Starting month of the training
TRAINING_YEAR	YEAR(4)	Yes	Yes	No	'2022'	Starting year of the training
TRAINING_LOCATION	VARCHAR(256)	No	No	No	NULL	Location of the training
CL_REF_COUNTRY_ LOCATION_ID	INT(11)	No	No	No	NULL	Country of the training location, as it is not always conducted in the country
CL_ADMIN_LEVEL_1_ID	INT(11)	No	No	No	NULL	Location administrative level 1 (island, province, district or other depending on the country)
TRAINING_DURATION	INT(3)	No	No	No	NULL	Duration of the training
CL_APP_DURATION_UNIT_ID	INT(11)	No	No	Yes	NULL	Unit of duration of the training (most of the time in days)
COMMENT_ON_TRAINING	VARCHAR(1024)	No	No	No	NULL	Any comment/note on the training
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(1024)	No	No	No	NULL	

Table: reg_entity_training	
Table comments	List of attended training programmes by entities

Name	Data type	Nullable	PK	FK	Default	Comment
CREATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

Table: reg_vessels	
Table comments	UN/CEFACT FLUX vessel domain: entity containing the identification and characteristic information of a ship or boat

Name	Data type	Nullable	PK	FK	Default	Comment
ID	INT(11)	Yes	Yes	No		
NAME	VARCHAR(64)	Yes	No	No		Vessel name
REGISTRATION_NUMBER	VARCHAR(45)	No	No	No	NULL	
FISHERY_DIVISION_NUMBER	VARCHAR(45)	No	No	No	NULL	
COMMENT_ON_VESSEL	VARCHAR(1024)	No	No	No	NULL	
CL_REF_VESSEL_TYPE_ID	INT(11)	No	No	Yes	NULL	
COMMISSIONING	TIMESTAMP	No	No	No	NULL	
CL_APP_VESSEL_OPERATIONAL_STATUS_ID	INT(11)	Yes	No	Yes		The code indicating the operational status for this vessel transport means, such as in service/commission, broken up, total loss, continued existence in doubt, laid up
CL_APP_VESSEL_STAT_TYPE_ID	INT(11)	No	No	Yes	NULL	Statistical type for the Bahamas
CL_REF_COUNTRY_FLAG_ID	INT(11)	Yes	No	No		
HOME_PORT	VARCHAR(64)	No	No	No	NULL	
IRCS	VARCHAR(45)	No	No	No	NULL	International radio call sign
IMO_NUMBER	VARCHAR(15)	No	No	No	NULL	
CL_REF_ADMIN_LEVEL_1_ID	INT(11)	No	No	No	NULL	
CL_APP_HULL_TYPE_ID	INT(11)	No	No	Yes	NULL	
LOA	FLOAT	No	No	No	NULL	
CL_APP_QUANTITY_UNIT_ID_LOA	INT(11)	No	No	Yes	NULL	
DRA	FLOAT	No	No	No	NULL	
CL_APP_QUANTITY_UNIT_ID_DRA	INT(11)	No	No	Yes	NULL	
GT	FLOAT	No	No	No	NULL	
CL_APP_QUANTITY_UNIT_ID_GT	INT(11)	No	No	Yes	NULL	
REG_ENTITY_CAPTAIN_ID	INT(11)	No	No	Yes	NULL	
REG_ENTITY_OWNER_ID	INT(11)	No	No	Yes	NULL	Owner of the boat
CL_APP_VESSEL_ROLE_ID	INT(11)	No	No	Yes	NULL	The code specifying the role of this vessel transport means

Table: reg_vessels						
Table comments	**UN/CEFACT FLUX vessel domain: entity containing the identification and characteristic information of a ship or boat**					
Name	**Data type**	**Nullable**	**PK**	**FK**	**Default**	**Comment**
SPEED	FLOAT	No	No	No	NULL	The speed measured for this transport means vessel
CL_SPEED_UNIT_ID	INT(11)	No	No	Yes	NULL	Unit for the speed measured for this transport means vessel
TRAWLING_SPEED	FLOAT	No	No	No	NULL	The trawling speed measured for this transport means vessel
CL_TRAWLING_SPEED_UNIT_ID	INT(11)	No	No	Yes	NULL	Unit for the trawling speed measured for this transport means vessel
POWER	FLOAT	No	No	No	NULL	
PURCHASE_CURRENCY	INT(11)	No	No	No	NULL	Currency with which vessel was purchased
PURCHASE_DATE	TIMESTAMP	No	No	No	NULL	Date at which vessel was purchased
NB_FULL_TIME_CREW	INT(11)	No	No	No	NULL	
NB_PART_TIME_CREW	INT(11)	No	No	No	NULL	
CL_APP_POWER_UNIT_ID	INT(11)	No	No	No	NULL	
CL_APP_ENERGY_TYPE_ID	INT(11)	No	No	No	NULL	
CL_APP_COLOUR_INSIDE_ID	INT(11)	No	No	Yes	NULL	
CL_APP_COLOUR_OUTSIDE_ID	INT(11)	No	No	Yes	NULL	
CL_FISH_HOME_PORT_LANDING_SITE_ID	INT(11)	No	No	Yes	NULL	
CL_FISH_REG_PORT_LANDING_SITE_ID	INT(11)	No	No	Yes	NULL	
UPDATER_ID	INT(11)	Yes	No	No	'1'	
COMMENT	VARCHAR(512)	No	No	No	NULL	
CREATED_AT	TIMESTAMP	Yes	No	No	CURRENT_TIMESTAMP	
UPDATED_AT	TIMESTAMP	No	No	No	CURRENT_TIMESTAMP	

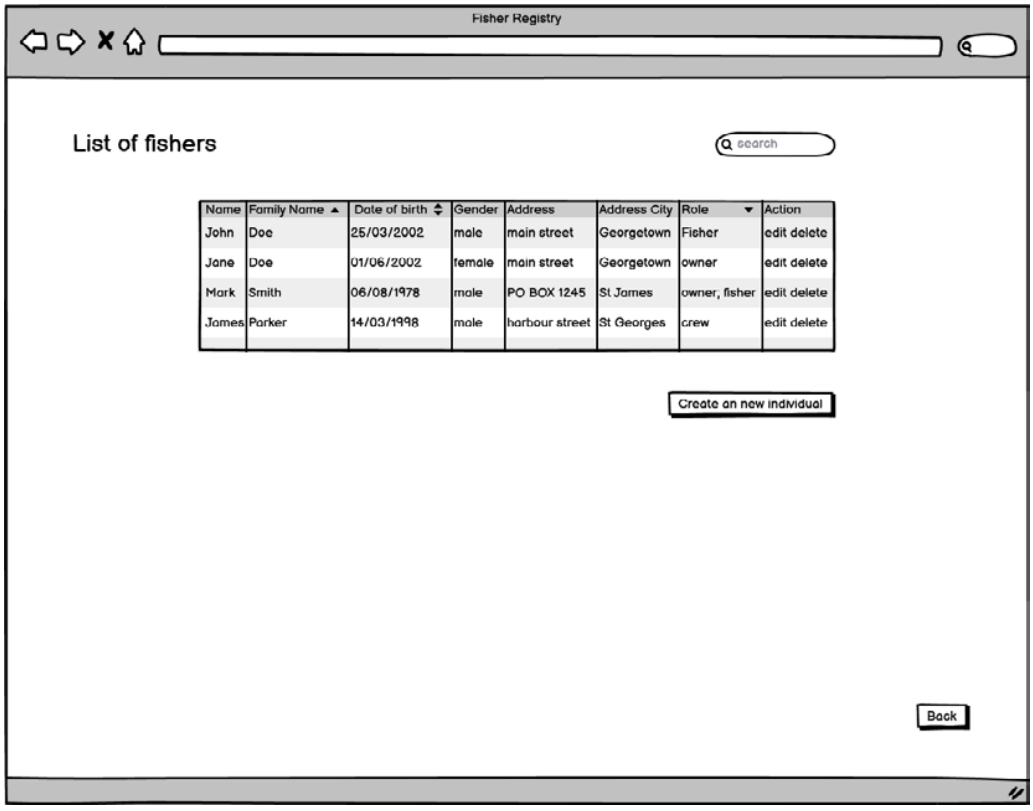
Appendix 3

Proposal for user interfaces prototypes

This appendix targets IT developers: From the business specifications described in Section 3, the following two use cases are proposed to access the list of fishers and to create one fisher. Prior to these two use cases, an initial one should be considered for the user to connect (login) to the system. This login use case is not described, as it is a quite common one in any IT application.

Use case 1: Accessing the list of fishers

Figure A1: User interface mock-up – list of fishers



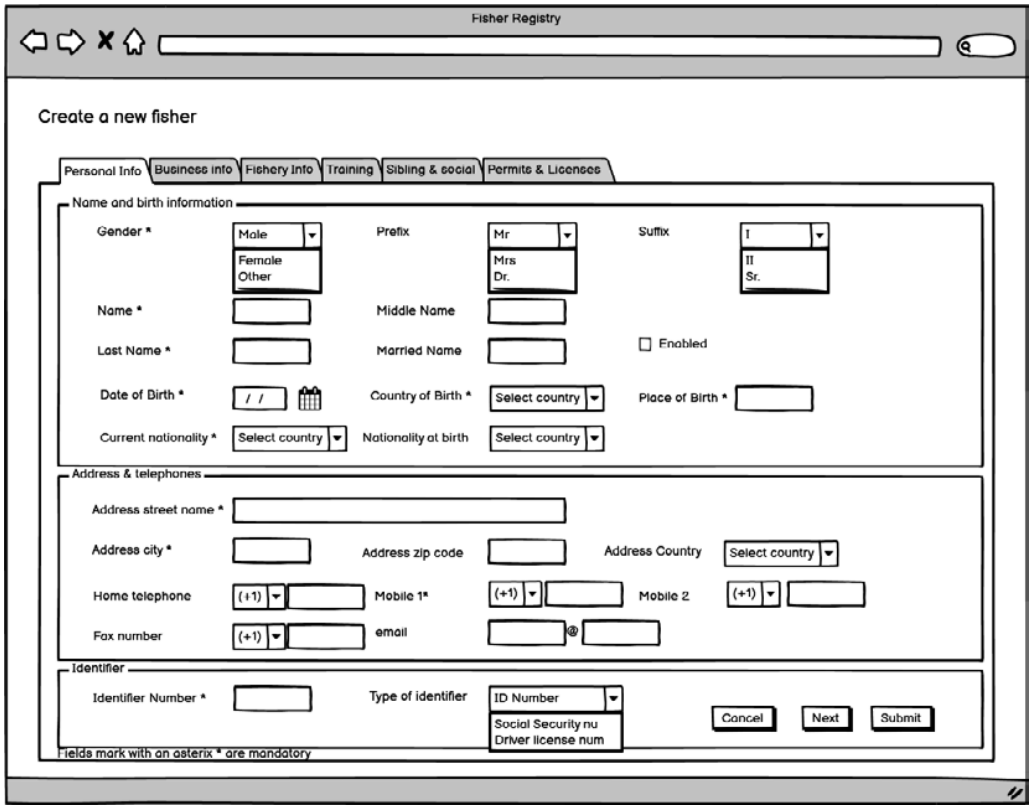
The list of fishers offers the user either to search for a fisher and then edit information or delete the entry (most of the time it is a logical deletion – the fisher is flagged as not active in the sector), or to create a new entry. Interfaces to edit or create a new entry are the same in layout. In creation, the form is empty; in editing mode, the form is preloaded with all the fisher information.

The search should reveal any fisher record matching the search: If, for example, “Newcastle” is searched for, the fisher with the name of “Newcastle” or the town of “Newcastle” should appear on the list.

When the user clicks on “Create a new fisher” as well as clicking on edit for a given fisher, the following interface is shown empty in creation and filled with existing information when “edit” is clicked.

Use case 2: Creating a fisher

Figure A2: user interface mock-up – creation – personal information



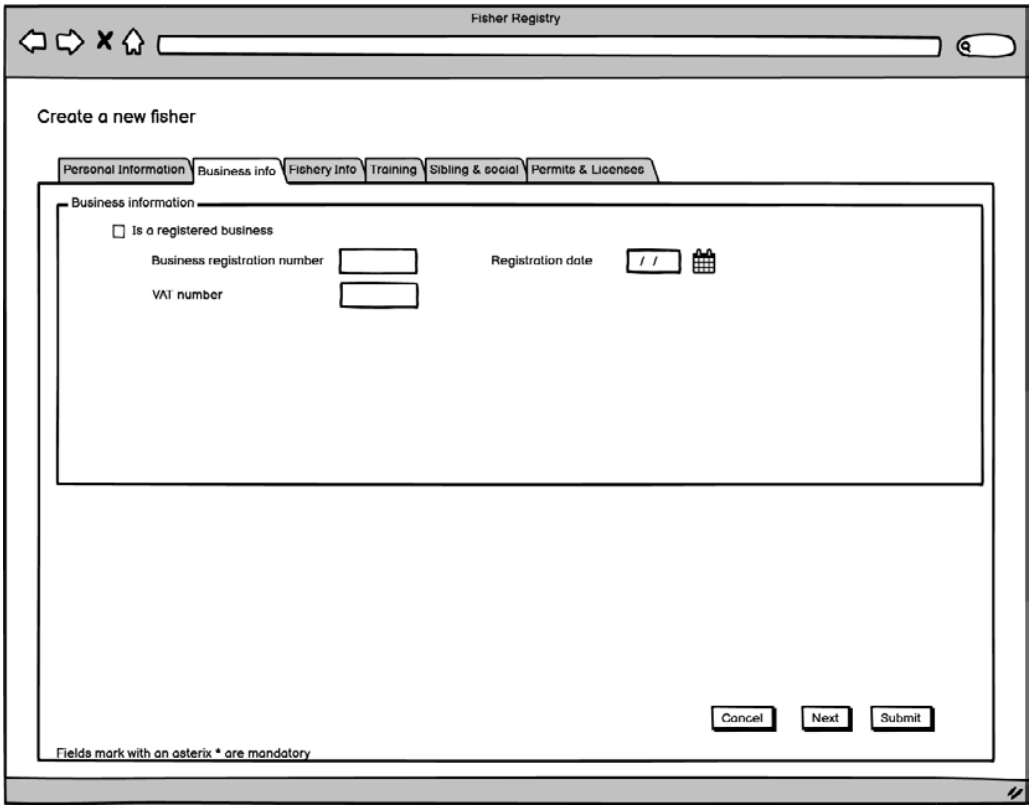
All mandatory fields are marked with an asterisk.

The upload of an ID document could be added to this interface.

The user clicks either on “Next” or on one of the tabs to go to the next set of information. The user can also choose “Submit” this individual when there is no fisher information available; however, this is not recommended as fisher information is crucial here.

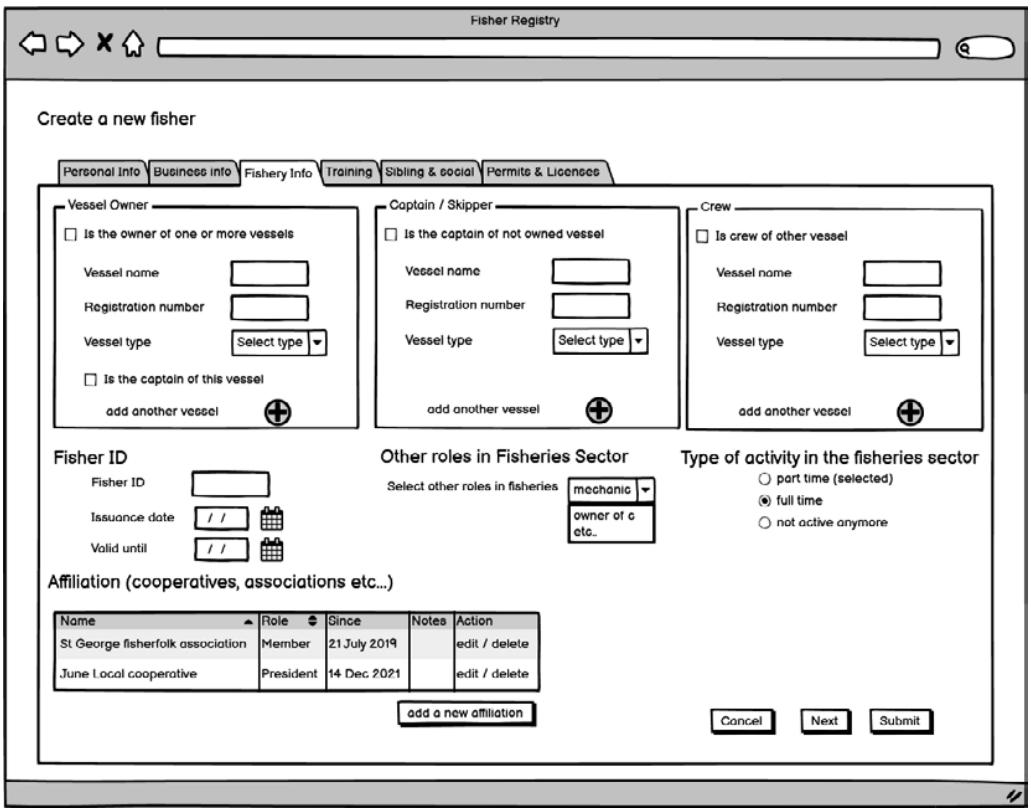
Clicking on cancel will bring the user back to the list of fishers of use case 1.

Figure A3: User interface mock-up – creation – business information



This interface is quite simple with details on the business if the fisher is registered as a business.

Figure A4: User interface mock-up – creation – role in fishery information



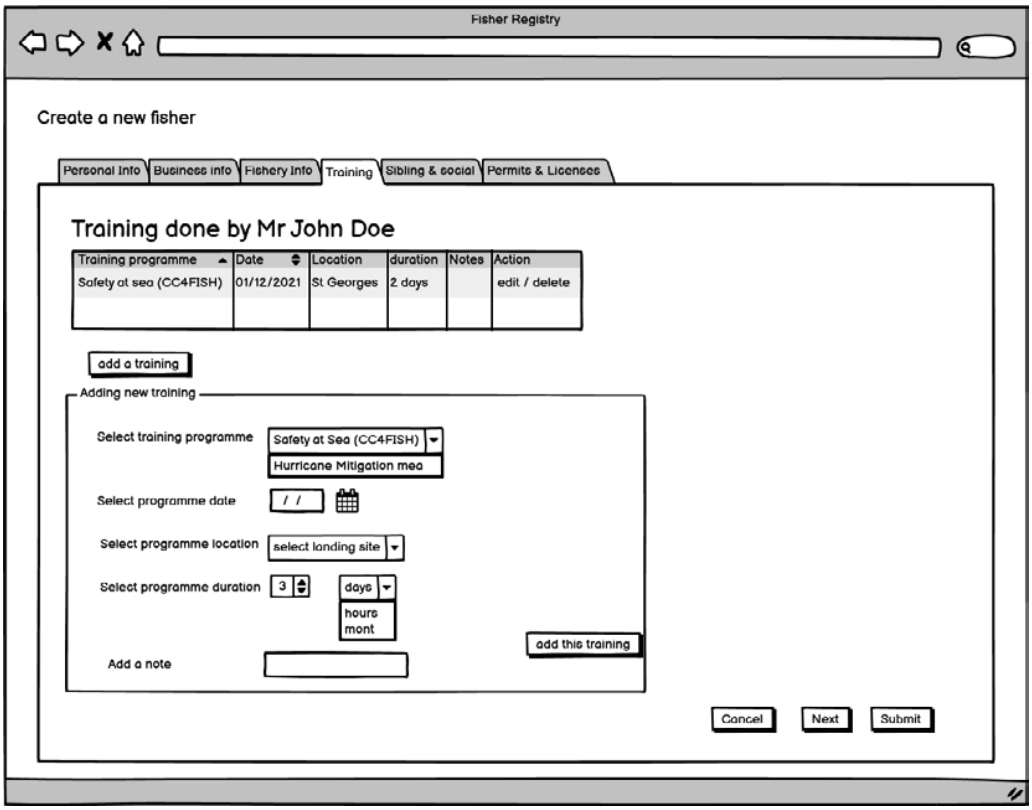
This interface is key for the management of the fisher registry based on personal information.

Here, the user can assign one or more vessels owned by the individual, or for which he or she is captain or crew member.

A fisher ID can be granted. Another tab offers the possibility to create a fishing licence for this individual. It is important to highlight the concept of a fisher being defined by his or her link with a vessel (ownership) and/or a licence (access to resources).

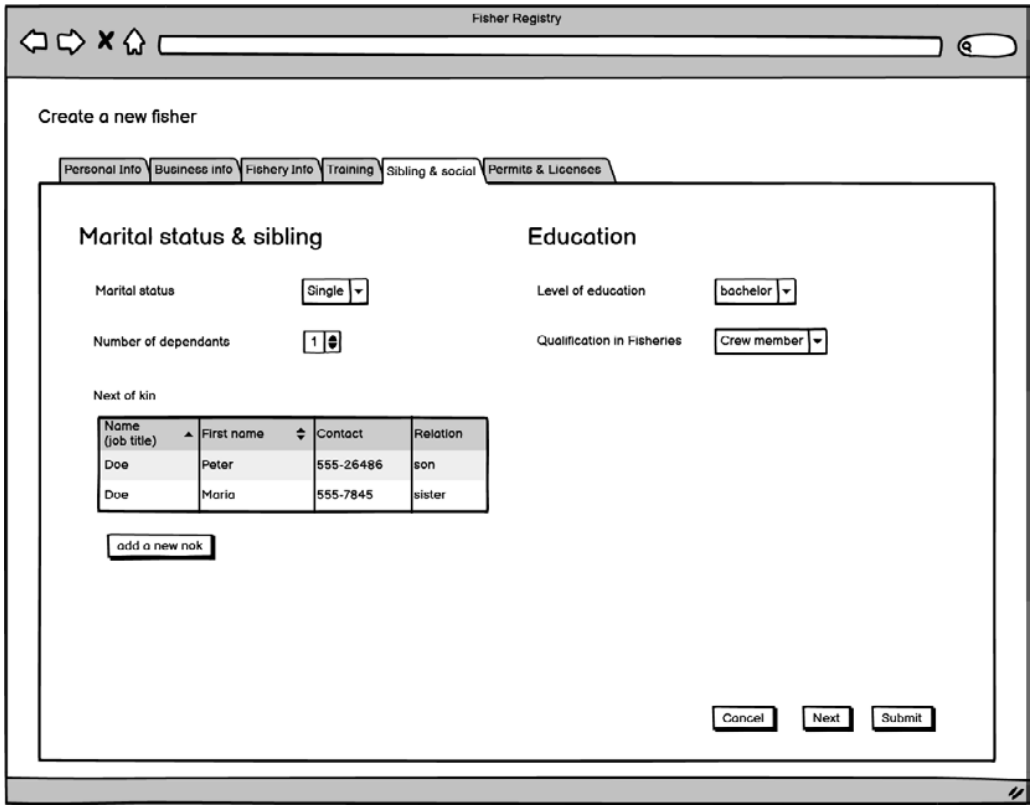
Additional information can be entered to refine the individual's role in the fishery sector (other roles, affiliation to entities).

Figure A5: User interface mock-up – creation – training information



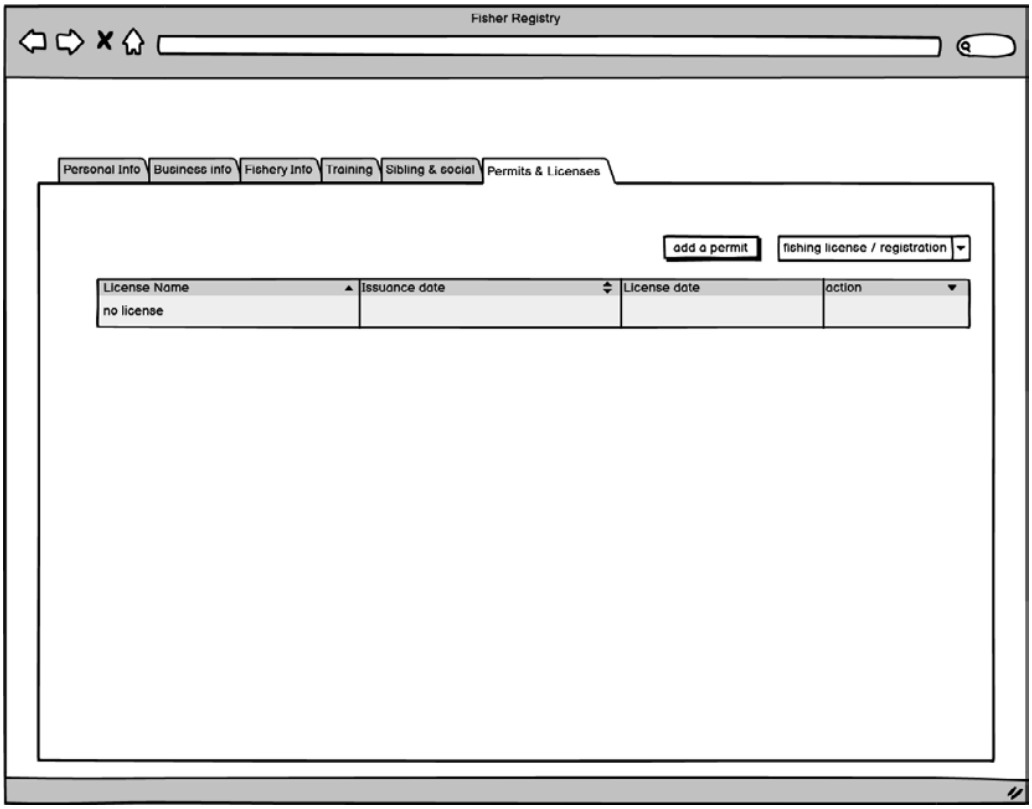
This tab offers the user the possibility to assign training programmes to this fisher.

Figure A6: User interface mock-up – creation – sibling and social information



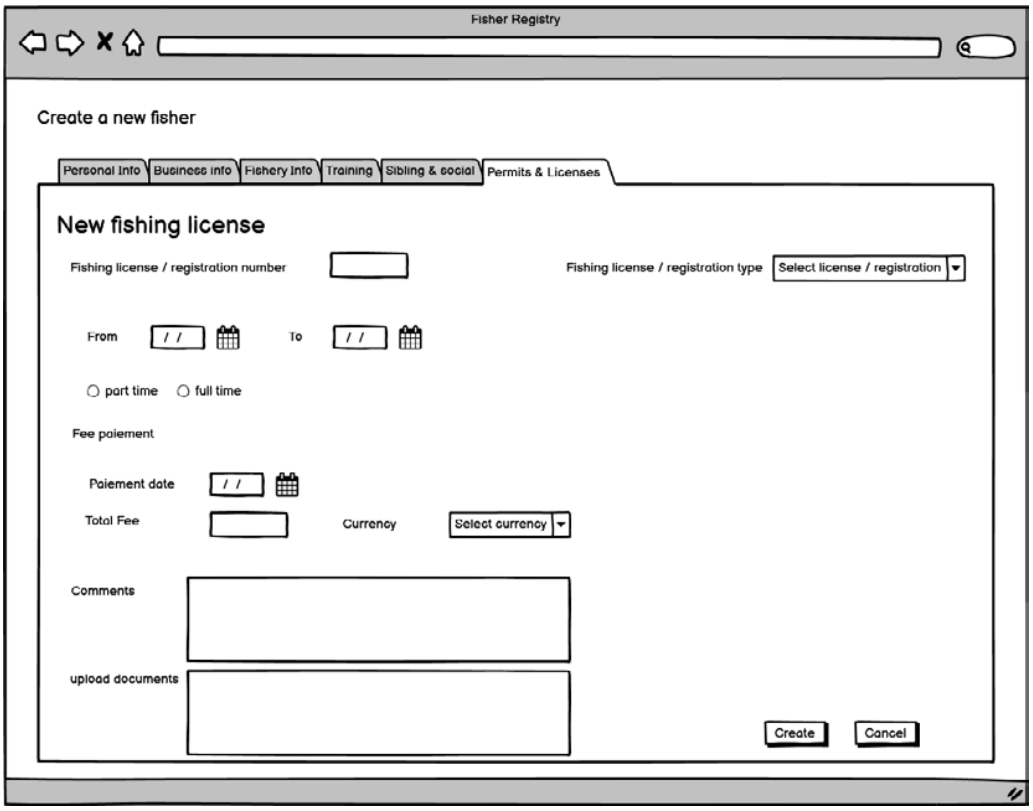
This tab provides an entry point to record social information (marital status, number of dependants), education information (level of education, qualification in fisheries) and emergency contact information. Emergency information is crucial to be able to contact relatives or friends of the fisher in case of an emergency.

Figure A7: User interface mock-up – creation – licence information



This component is not directly described by the fisher registry guidelines. It is shown as a possible extension of the registry to manage issuance of fishing licences as a fishery act could describe.

Figure A8: User interface mock-up – creation – licence details



This is one proposal of fishing licence information. It is presented as an example. Further extension of these fisher registry guidelines should provide more details on management of fisheries licences for fishers.

Appendix 4

Example of user interfaces implementation in fisher registry software – the FAO calipseo registry

Calipseo individual registry

Figure A9: Example of list of individuals, including fishers (FAO Calipseo platform)

► List of individuals

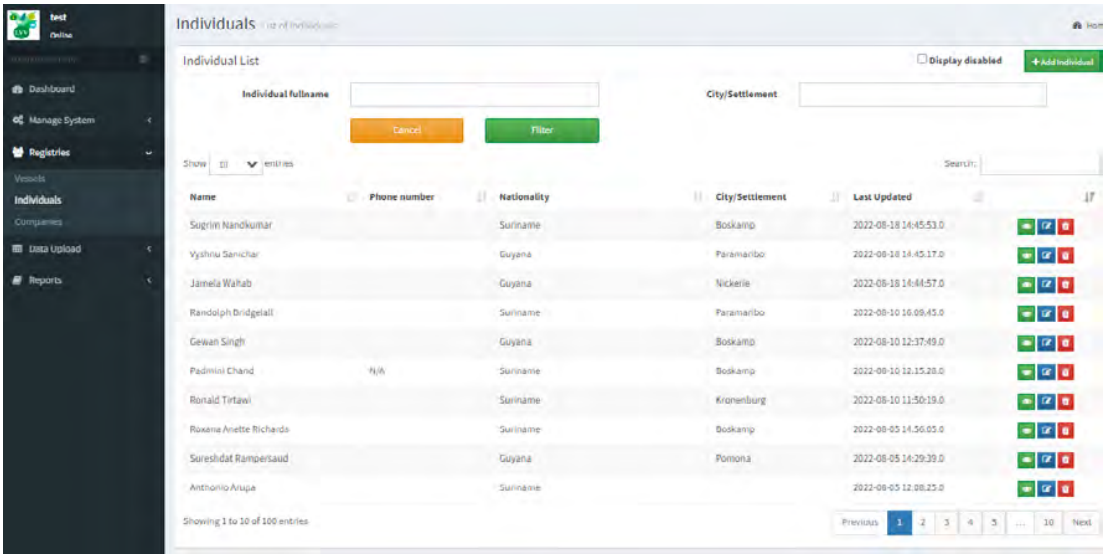


Figure A10: Example of individual personal data, including fishers (FAO Calipseo platform)

► Individual interfaces

- Personal data

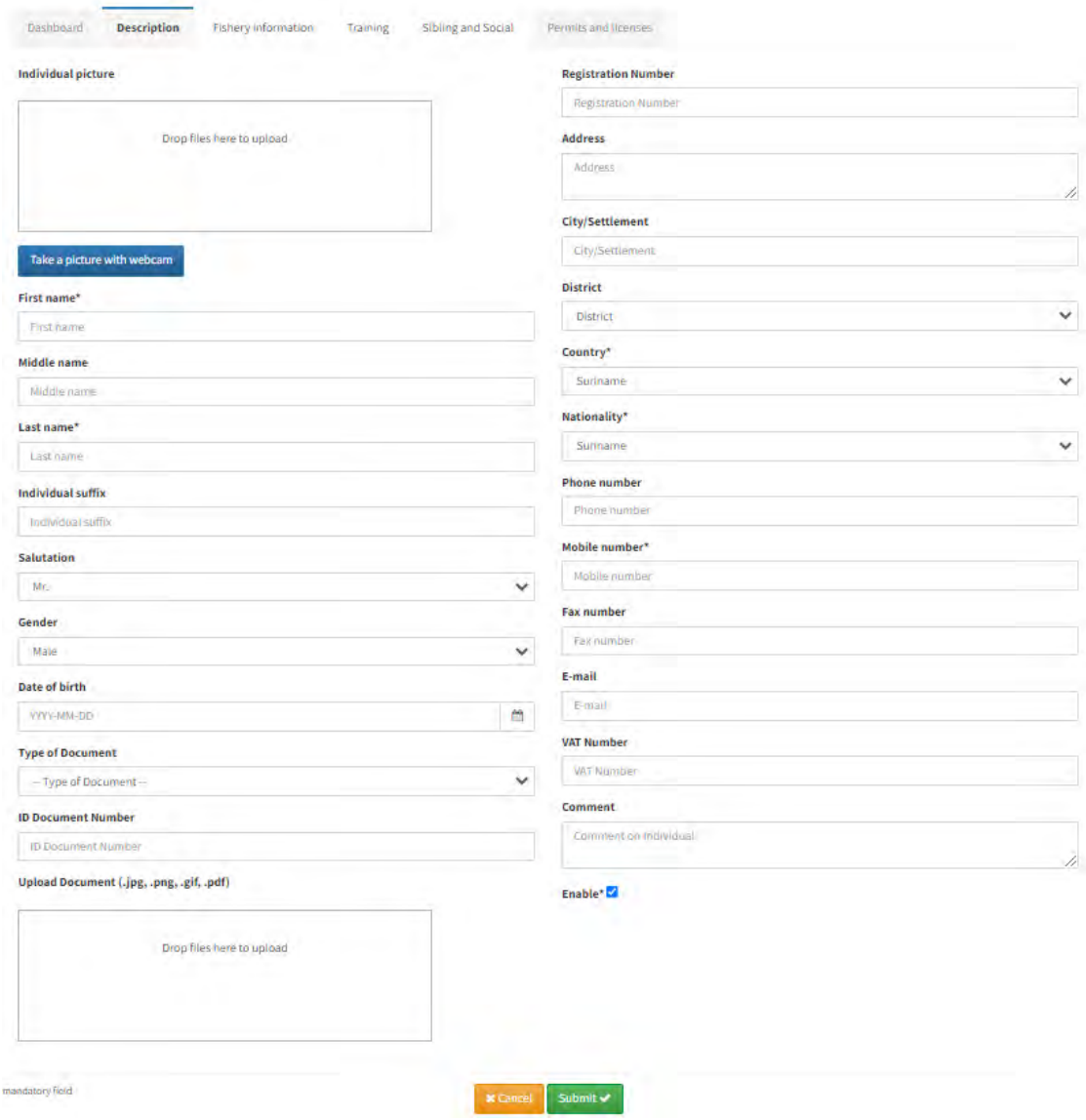


Figure A11: Example of individual fishery role, including fishers (FAO Calipseo platform)

- Role in fishery

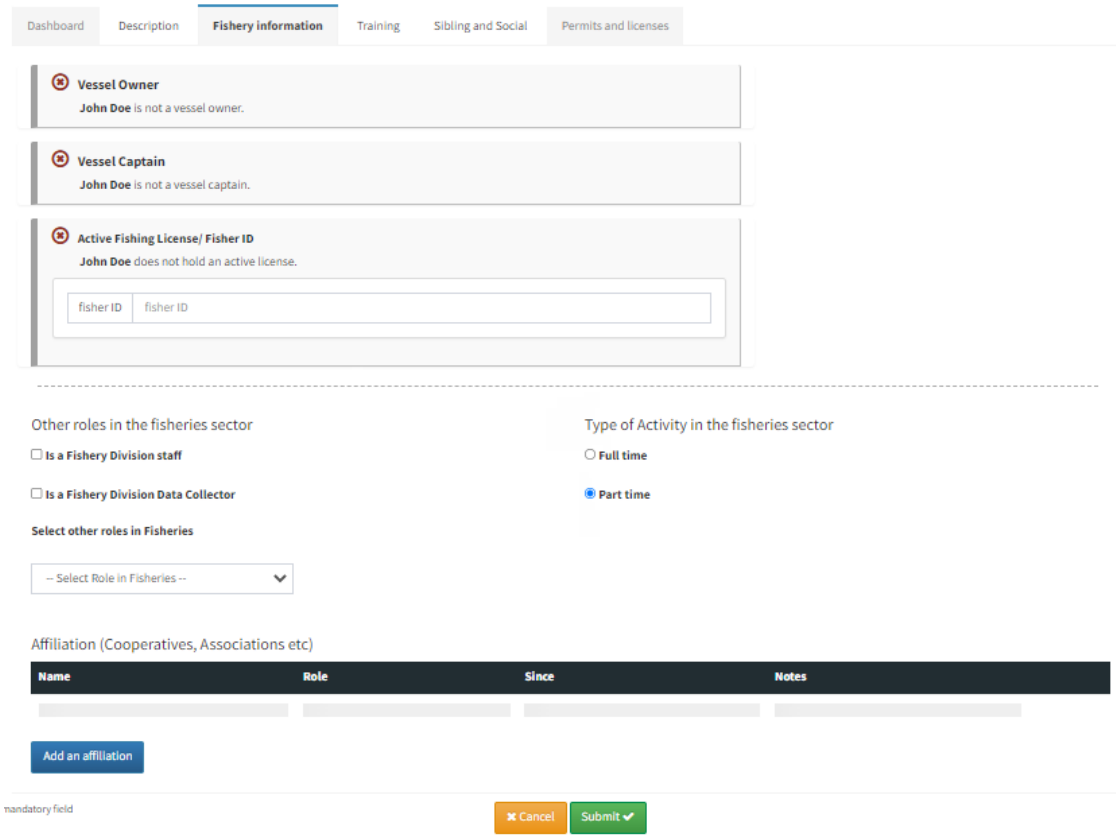


Figure A12: Example of individual training, including fishers (FAO Calipseo platform)

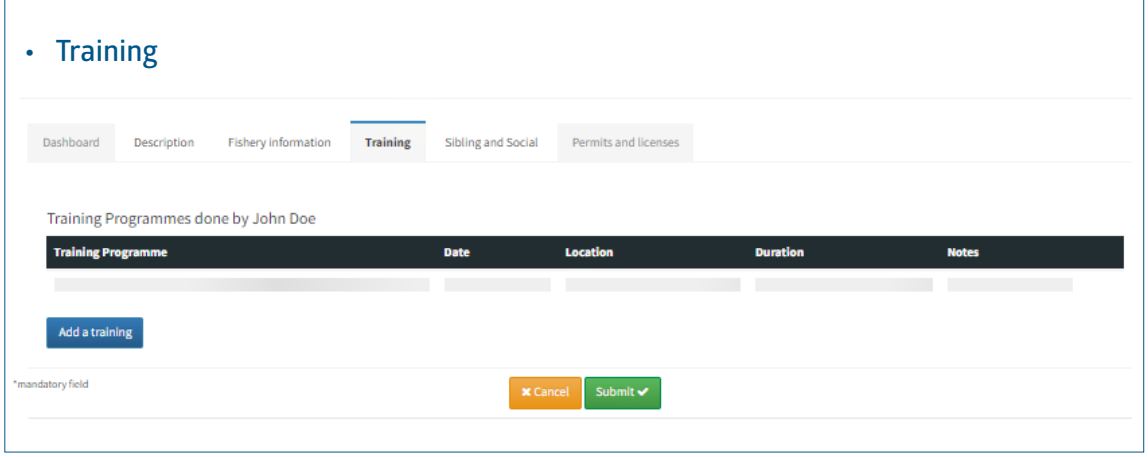
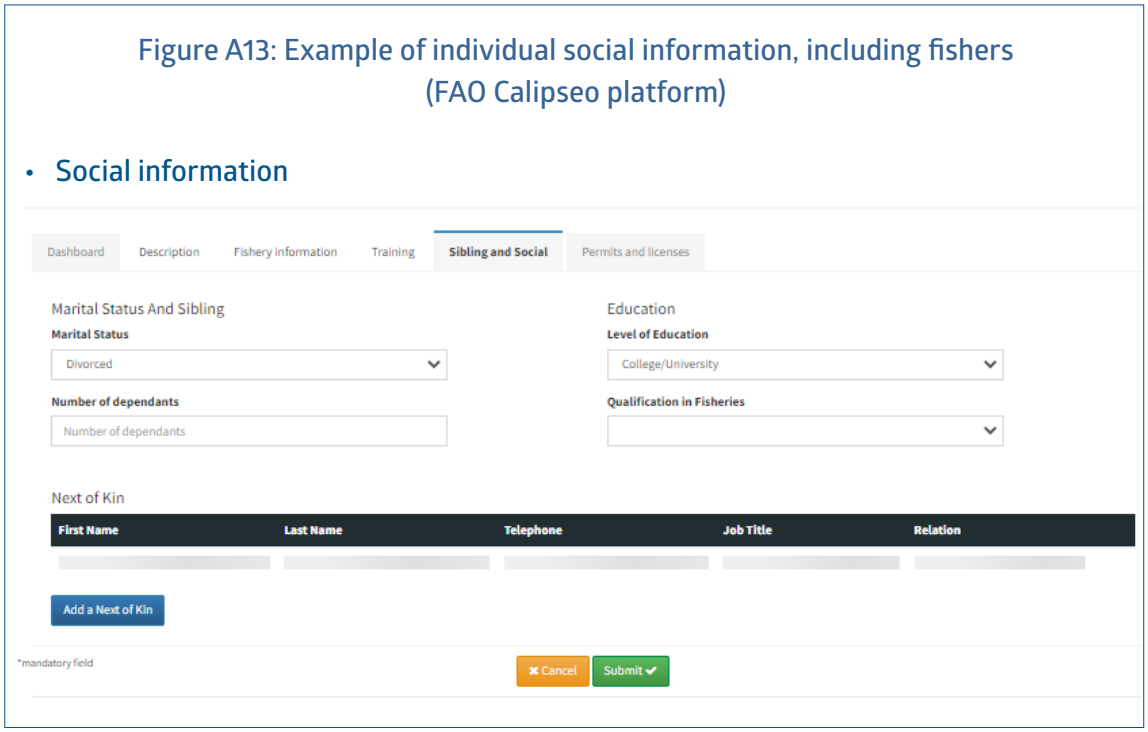


Figure A13: Example of individual social information, including fishers (FAO Calipseo platform)



Example of MS Access implementation: Case of Dominica MS Access (courtesy of Dominica Fisheries Division Ministry of Agriculture and Fisheries, Blue and Green Economy).

The following screenshots present a different way of implementing the fishers' registry in an MS Access database. It has user-friendly interfaces.

Figure A14: Example of Dominica MS Access fisheries database

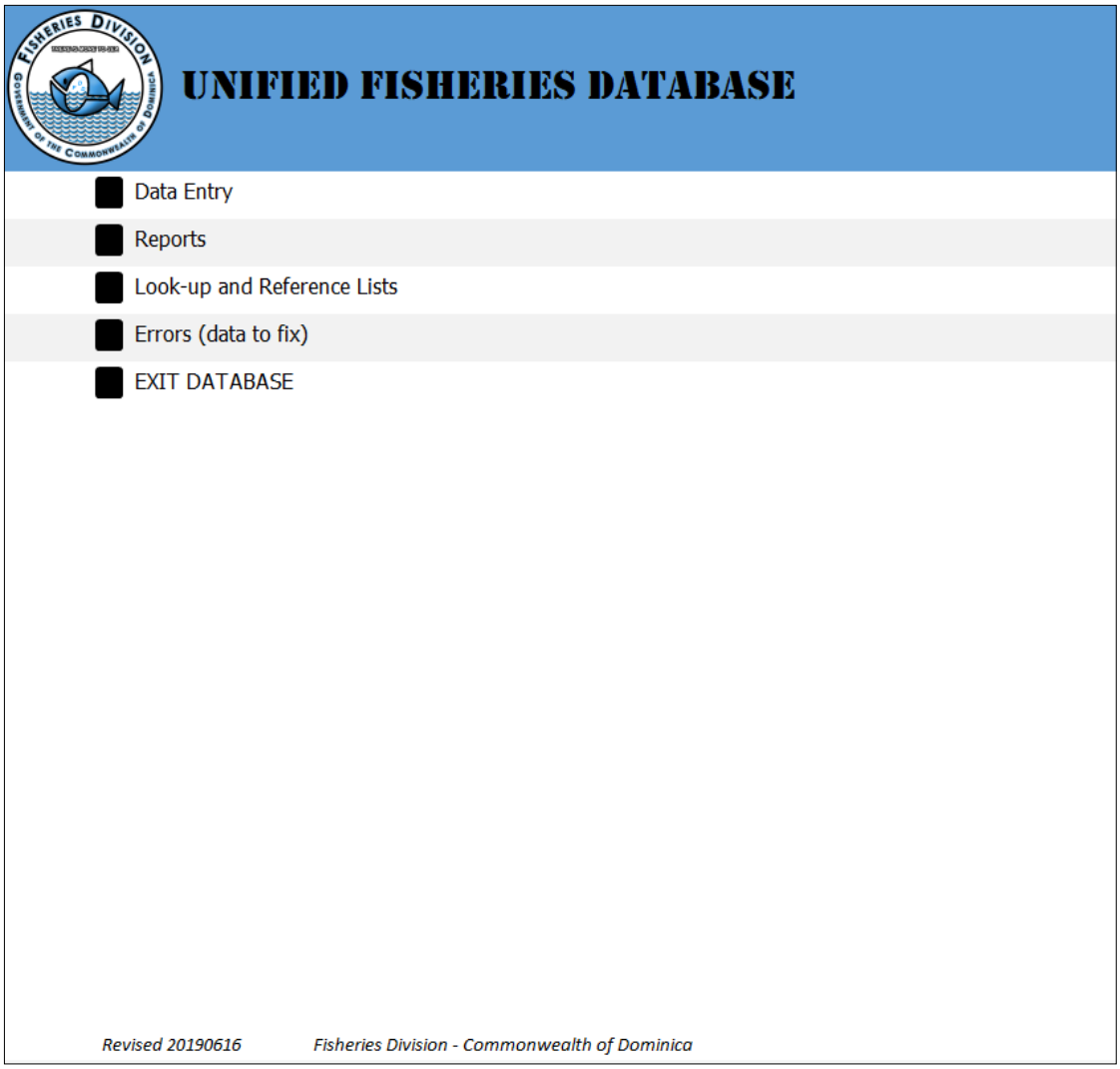


Figure A15: Example of list of fishers (boat owner) – Dominica MS Access fisheries database

Boat Owners

Open Selected | Browse All | Add New

conID	Last Name	First Name	Alias	Sex	Reg No	Role
3781					-	Boat Owner
3200		Sea World			-	Boat Owner
1081		Aldrick	Boggy	Male	40 - PT	Boat Owner
5239		Felix	ACME	Male		Boat Owner
5437		Felix	ACME	Male	97 - PT	Boat Owner
2815		Joseph		Male	10 - PT	Boat Owner
1605		Grahama		Male	39 - FT	Boat Owner
4874		Angela		Female	18 - INO	Boat Owner
1607		Curtis	Marbouya	Male	7 - PT	Boat Owner
3668		Joseph	Mc Lean	Male	4 - FT	Boat Owner
4074		Shana		Female	39 - IN	Boat Owner
1146		Albernatchie		Male	35 - FT	Boat Owner
221		Bernard Randel	R.A.	Male	1 - PT	Boat Owner
1933		Eusfield John	Suseky	Male	8 - PT	Boat Owner
5775		Grantley		Male		Boat Owner
200		Neville	Wappie	Male	8 - FT	Boat Owner
758		Oliver, Manuel		Male	77 - PT	Boat Owner
5774		Grantley		Male		Boat Owner
5282		Peter		Male	4 - FT	Boat Owner
1797		Rabess		Male	9 - FT	Boat Owner
48		Augustine		Male	84 - FT	Boat Owner

Figure A16: Example of fisher information – Dominica MS Access fisheries database

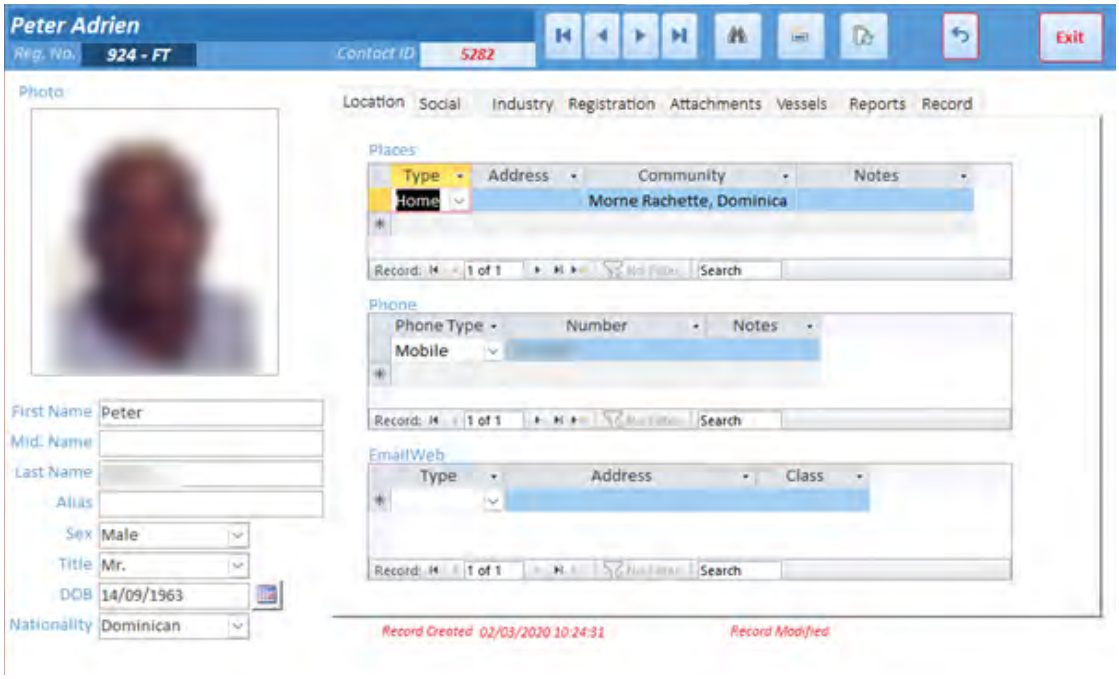


Figure A17: Example of fisher social information – Dominica MS Access fisheries database

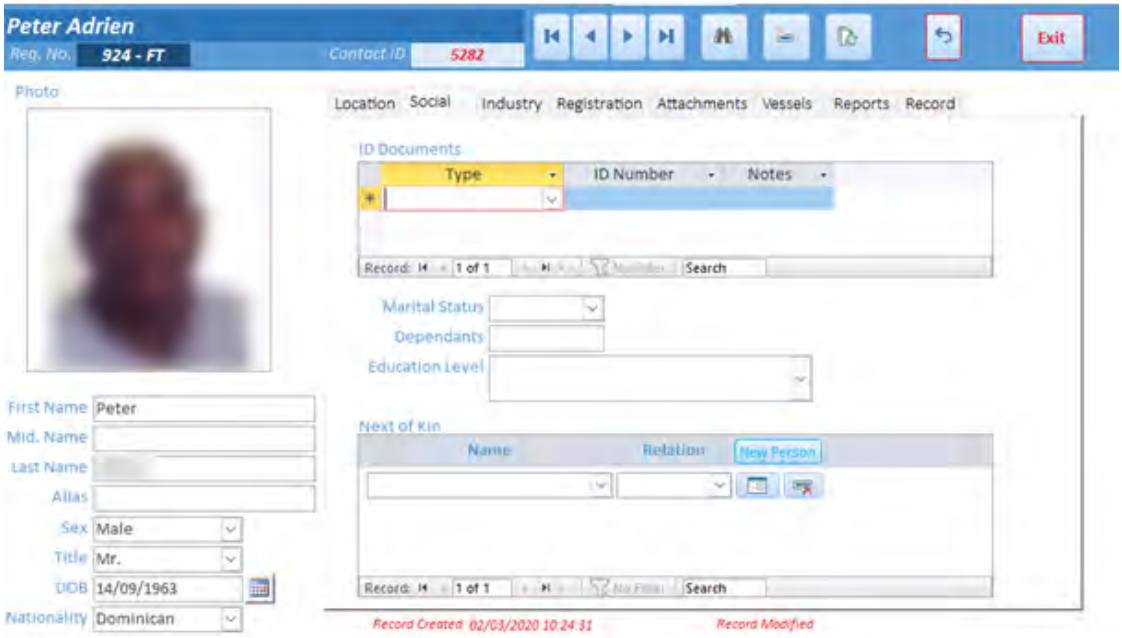
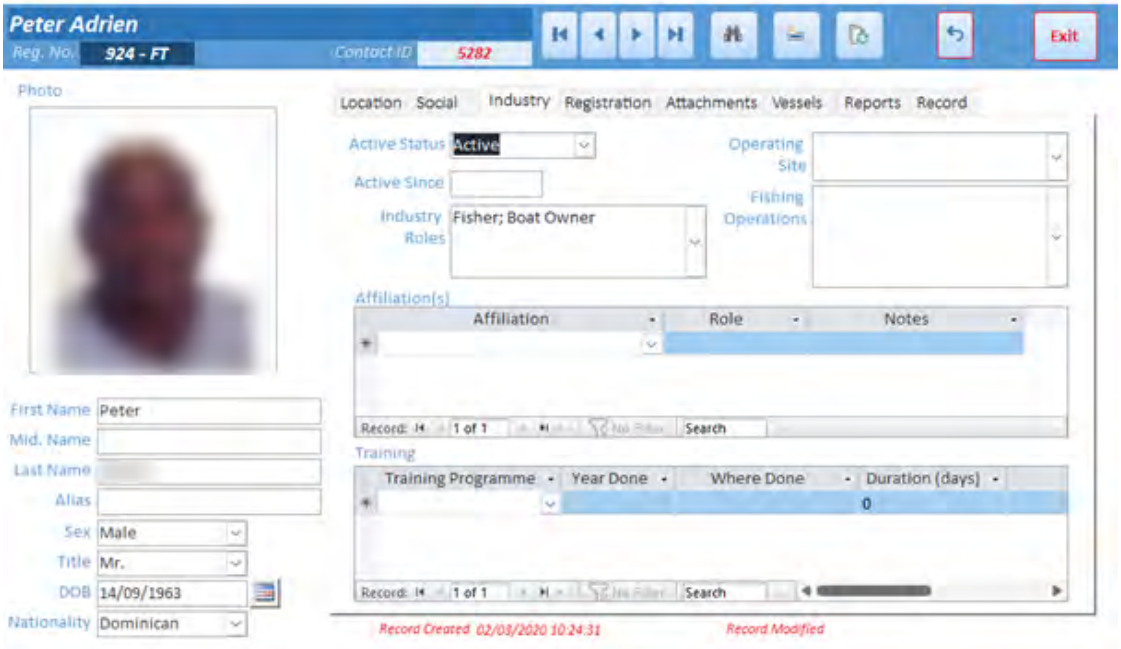


Figure A18: Example of fisher roles – Dominica MS Access fisheries database



Small-scale and artisanal fisheries are vital for global food security, poverty reduction, and sustainable resource management. Despite their importance, these communities often face marginalization. Empowering both men and women in fisheries can lead to improved socioeconomic outcomes and sustainable development.

Implementing fisher registries is crucial for enhancing fishers' visibility to national governments, facilitating access to benefits including social protection, collecting comprehensive data on fishers and fishworkers and aiding policy formulation. However, existing registry programmes face challenges such as low registration rates and lack of inclusivity.

This guidance document aims to assist countries in establishing effective fisher registries tailored to their specific contexts. Key elements include defining fisher registries, designing them to be interoperable with other social protection information systems, and implementing and operationalizing them effectively.

Interoperability with other systems is crucial for maximizing the benefits of fisher registries. Clear communication between stakeholders and flexibility in implementation are essential for success.

Overall, this document serves as a practical tool for governments and stakeholders to develop or improve fisher registries, with detailed sections on design, implementation, and interoperability, along with appendices providing technical information and examples.

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