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Social Data in Fisheries – update of the national profiles (STECF-23-14)

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Abstract

Commission Decision of 25 February 2016 setting up a Scientific, Technical and Economic Committee for Fisheries, C(2016) 1084, OJ C 74, 26.2.2016, p. 4–10. The Commission may consult the group on any matter relating to marine and fisheries biology, fishing gear technology, fisheries economics, fisheries governance, ecosystem effects of fisheries, aquaculture or similar disciplines. This report further develops the methodologies for the collection and analysis of social data in fisheries. In particular it addresses alignment of the use of social indicators between STECF reporting and alignment with other developments such as in PGC ECON and ICES WGSOCIAL. The report details the development of an analytical framework for social data, such as community- and national profiles, and introduces criteria for social notions as social justice, vulnerability and dependence. Additionally, the report evaluates responses of the Member States towards the European Commission's (EC) questionnaire of January 12th, 2022 about the implementation of Articles 16 (6) and 17 of Regulation (EU) No 1380/2013.

SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF) - Social Data in Fisheries – update of the national profiles (STECF-22-14)

Request to the STECF

STECF is requested to review the report of the STECF Expert Working Group meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF general comments

The main task of EWG 22-14 was to advance work on the development of National profiles, social indicators and the methodologies for the collection and analysis of social data in fisheries. In particular, it addressed alignment of the use of social indicators between different STECF reports (in particular between the annual economic report and the reporting on the social data call) as well as other Working Groups such as in RCG ECON and ICES WGSOCIAL. The report details the development of an analytical framework for social data, such as Community and National profiles, and introduces new criteria for social concepts such as social justice, social capital, vulnerability, and dependency. Additionally, the report evaluates responses of the Member States (MS) towards the DG MARE questionnaire of January 12, 2022, on the implementation of Articles 16 (6) and 17 of Regulation (EU) No 1380/2013 (CFP Basic Regulation) on the allocation of fishing opportunities.

EWG 22-14 met virtually, from the 7th until the 11th of November 2022 and was attended by 20 experts of which two were STECF members (co-chairs), two observers and two members from JRC. STECF considers that the EWG adequately addressed the TORs.

STECF notes that while there was an interest from experts to join the Social Data EWG, the representation of the social science expertise in other STECF EWGs and in the STECF Committee remains limited. Social scientists focussing on the management of marine resources can already be found in other fora (e.g., RCG ECON, ICES WGSOCIAL, Center for Maritime Research[1]) and links between STECF and those other fora already exist.

STECF identified a number of tasks described below to further the development of social assessments. Several of these tasks could be completed via ad hoc contracts.

STECF notes that the process of developing and operationalising a framework for the analysis of the social dimension of the CFP has been taken a step further with the work done by EWG 22-14. Important discussions were held on the framework, definition, methodology and operationalisation of National and Community Fishing profiles. As these profiles will be the backbone of the analysis of developments in the social domain of fisheries, their further development is of utmost importance.

STECF notes that to ensure that the profiles are fit for purpose, it is important for DGMARE to involve the end-users and/or stakeholders in the development process.

STECF notes that there is a need to align the definitions and methodologies used, both across the different fora currently developing social indicators (i.e., RCG ECON and ICES WGSOCIAL) and across the different STECF reports. STECF notes that expertise in social science is needed to facilitate this work.

[1] https://marecentre.nl/

STECF comments on specific TORs

TOR 1: Assessment of the model of the National Profile as result of the Fishn'co project

STECF notes that to play an important role in understanding the social importance of fisheries in the Member States, the proposed National Fisheries Profiles (NFPs) need to be in a format as suggested by EWG 22-14, that allows for a proper analysis while adequately covering the diversity of cases found across Member States. It should also allow for easy interpretation of collected social data and a basis for comparison across Member States, which can then be reviewed and updated when new information becomes available.

STECF notes that a web-based profile rather than a pdf document, would allow easier linking to data presented (and analysed) elsewhere and easier updates of (parts of the) data, as well as easier comparability between Member States.

STECF observes that the Dutch NFP developed under the FISHN'CO[2] project provides a solid basis for further development of NFPs. STECF agrees with the modifications suggested by the EWG to the structure of the Dutch NFP to improve its utility.

These include the addition of:

- a short (max 5 pages) executive summary to the NFP covering the core aspects of the underlying chapters.
- an analytical assessment of the state of the fishing sector in the country, based on both the data and the trends, opportunities and constraints.
- chapters on the General description of society and on the Governance system
- the social and cultural value of fisheries in the chapter 'Social, cultural and economic aspects of fisheries'.

STECF notes that in order to properly assess whether the new proposed structure of NFP is appropriate in a variety of contexts, two additional NFPs should be prepared, ideally covering a diversity of fishery types (e.g., North & South, ICES region & Med, country with one or several seas, industrial and small-scale fisheries).

TOR 2: Alignment in the methodology and preparation of National Profiles with the development and output in the fora of RCG ECON and ICES WG SOCIAL

STECF notes that in several fora (STECF, RCG ECON, ICES) discussions are being held on the methodology and indicators required for the collection of social data and the preparation of National and Community profiles. Based on the work completed in those fora, EWG 22-14 has made several suggestions for alignment of the National profiles across the related fora.

STECF notes, that there is a need to focus on the purpose that these profiles are serving and not just on the development of the methodology and data needs to complete them.

STECF notes that the definition of the concept of "Fishing Community" is crucial in the development of Community profiles, and hence National profiles. ICES WGSOCIAL and WGECON have used landing ports as a proxy for the concept of fishing communities in Ecosystem Overviews since such information is already available in the Regional Data Base of ICES (RDB).

STECF notes that landing ports only consider one dimension of a fishing community, (i.e., the place where fish is landed). A better definition of fishing communities could include other aspects, such as the port of registration, historical socio-cultural significance or the presence of other activities linked to fisheries. Inclusion of these aspects would improve the definition of Community Profiles and thus, their use for social impact assessment under the CFP. In addition, landing port may not be the most appropriate unit for future analyses for Mediterranean Community Profiles as the number of landing places is very high in the Mediterranean Sea.

[2] https://www.fisheries-rcg.eu/fishnco/.

TOR 3: Assess whether the data produced with the National Profile are fit for analysing the social effects of fisheries management measures

STECF notes that a main task of the EWG in analysing social impacts of fisheries policy was to engage with social scientists from academia and the different bodies of the EU and ICES. This collaboration had the common aim of coordinating efforts towards better supporting social aspects and implications of fisheries management.

STECF notes that the current set of social data being collected under the EUMAP (EU data collection framework), and their level of aggregation, limits the possibility of analysing social phenomena and issues that significantly affect social sustainability and resilience. This is especially the case when these are regionally or locally sensitive. This is particularly true for analyses of outermost regions.

STECF notes that adding social variables at a disaggregated level (regional or local in addition to national level) to the EUMAP to compute social indicators would facilitate a more thorough and in-depth analysis.

TOR 4: Explore the compatibility of the social indicators with the data call for the annual economic report

STECF notes that, currently, the definitions of the social variables in Table 9 of the EUMAP, provided in the DCF guidance (https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/social) prepared and updated by RCG ECON, are inconsistent with the definitions of the variable group "employment" that is included in the list of economic variables (EUMAP tables 7 and 10). For example, while onshore activities paid from income on vessels are included in both calls, the description of onshore activities diverge. The same activities need to be included in both calls.

STECF notes that the compatibility of the social indicators with the data call for the Annual Economic Report could be improved by clearly detailing some of the definitions in the guidance documents for social variables among which include that the target population of both data collections should be the same; the definition of employment should be consistent; data should refer to the same time frame; and the segmentation of the population should be the same and at least disaggregated by marine (finfish), freshwater (finfish) and shellfish segments.

STECF notes that EWG 22-14 has provided a number of proposals for development of the EUMAP social variables, for example relating to definitions of paid and unpaid labour and to provide a more detailed split in age classes for the 'Employment by age' variable (see table 12 of the EWG report).

STECF considers that, noting the wide diversity between Member States, the correct definition of social variables implies a clear understanding of the underlying (legal) aspects. This includes the classification of employment status (e.g., what is considered to be self-employment or "share-fisher" in different Member States, or the legal ages of retirement) or level of education (the definition of vocational training varies in the national education systems).

STECF notes that EWG 22-14 identified two possible options for the presentation of the social data currently collected in the frame of EUMAP table 9. The social variables could be presented in one single report dedicated to the social variables of the three sectors (fisheries, aquaculture, and processing) to be prepared once every three years, or in separate sections included in the Economic Reports for each sector (as is currently the case). In both options, the presentation of social data could be delivered once every three years because, according to the EUMAP, social data should be collected every three years.

STECF notes that for both options to present social data (as separate sections in the economic reports or in a standalone social report) additional input is required. If the approach of publishing social data in the AER is chosen, the structure of the social chapter and appropriate content in each of the economic reports should be further detailed, clarified and/or revised. If a standalone document is to be developed the social data call structure, data presentation, the format of the report and additional sources of data need to be developed further.

STECF notes that while both options have their advantages and disadvantages in the longer term, the standalone option may be more appropriate over time as more social data can be collected and more social information can be provided together with the variables from EUMAP Table 9.

TOR 5: Advise on further actions to be taken for the development of social indicators.

STECF notes that there is a need for social indicators for use by other STECF working groups. For example, in the EWG 20-05 Report - Criteria and indicators to incorporate sustainability aspects for seafood products in the marketing standards under the Common Market Organisation (CMO) - social sustainability is discussed extensively.

STECF notes that part of the process of operationalising a framework for social indicators is the further development of the current and additional social indicators. STECF notes that the EWG proposed a number of actions in order to facilitate the process of developing social indicators. Two parallel actions are proposed to progress the operationalising of the social dimension: a) to launch a stepwise process that ensures relevance and credibility of the indicators to be developed; b) to implement short-term actions that take advantage of ongoing developments such as in RCG ECON and ICES WGSOCIAL. This process could be organised in 4 steps:

- A scoping exercise with policymakers and advisory bodies (including ACs) and across STECF EWGs to scope the questions that need to be answered with the data collected (e.g., social sustainability indicators needed to incorporate sustainability aspects for seafood products in the marketing standards under the Common Market Organisation have to be covered by the social data collection) and determine the specific policy relevance of individual concepts and indicators.
- Develop a conceptual framework which positions the social indicators in the suit of fisheries indicators (ecological, environmental, economic), providing the linkage for integrative trade-offs, analysis, and advice.
- Implement a validation of the methodology and data proposed.
- Select the final set of criteria to be embedded based on other ongoing activities such as the ICES WGSOCIAL systematic review and the EWG 22-14 findings under TOR 1 to 4.

STECF notes that the EWG proposed the following steps in order to make further advances in the long-term development of social indicators that can be used for fisheries policymaking and management:

- In addition to the conceptual validation of current methodological and data considerations, develop operational indicators for concepts such as social justice, social capital, dependency and vulnerability.
- Include specific variables and indicators (such as on vulnerability and dependency) as part of the development of the country and community profiles as soon as relevant indicators for the concepts have been conceptually and methodologically developed.

TOR 6: Assess the types of criteria applied by the member states for the implementation of Article 17 of the CFP Regulation

STECF notes that the system of allocation of fishing opportunities used by Member States varies significantly. For many Member States the basis and criteria for the allocation of fishing opportunities was put in place many years ago and is fixed.

STECF observes that for those fishing opportunities that are being annually allocated, Member States are using a variety of criteria in the context of the entire national fisheries management system. This makes the comparison between Member States rather complex.

STECF notes that whereas Article 17 specifically states that "Member States shall endeavour to provide incentives to fishing vessels deploying selective fishing gear or using fishing techniques with reduced environmental impact, such as reduced energy consumption or habitat damage" these

criteria are not widely applied for allocation of fishing rights and, in the case of energy consumption, not used at all by Member States.

STECF notes the complexity of defining precisely whether a criterion is social or economic (e.g., employment) and their highly contextual dependency (i.e., variables such as employment can be classified as social or economic depending on the context).

STECF notes that concerning the transparency of the system of fishing opportunity allocations, this varies widely between Member States. In some, the process for sharing fishing opportunities and the final allocation is widely discussed with different stakeholders and officially published, in others it is only shared by the national administrations with the fishing sector.

TOR 7: Develop a questionnaire to consult the Member States on the criteria applied for the allocation of the fishing opportunities

STECF notes that from the responses received from Member States, it appears that the current DGMARE questionnaire[3], does not provide the level of guidance to obtain the answers required to analyse the allocation criteria. The length and detail of answers varied widely between Member States.

STECF notes that "environmental criteria" or "social and economic criteria" are not clearly defined in the questionnaire, nor in the text of Article 17. This may have led to differences in the interpretation by Member States.

STECF notes that EWG 22-14 developed a draft template for an on-line, structured questionnaire. The questionnaire is kept as short as possible, to facilitate a high response rate. The main flow of the questionnaire is set around closed questions (tick-boxes) that lead the respondent in some cases to further clarifications and to a subject-specific final page on which more open questions need to be answered.

STECF notes that the questionnaire has to be implemented within the Commission's Web-environment, in different languages, which, next to technical requirements also has a number of regulatory requirements.

STECF conclusions

STECF concludes that the capacity of STECF to address social science ToRs needs to be increased by identifying social scientists in the different fora working on fisheries (e.g., RCG ECON, ICES WGSOCIAL, Center for Maritime Research[4]) and involving them more in STECF. This could be achieved by inviting social scientists as experts to the relevant STECF meetings. Additionally, in selecting future STECF committees, DG MARE may want to reflect whether further expertise in social science (governance, political science, sociology) is needed to actively contribute to the inclusion of the social dimension in STECF's work.

ToR 1 and 2 - Conclusions on NFP importance and purpose

STECF concludes that the work on identifying fishing communities and assigning data to them should be considered a priority under the CFP in order to be able to assess the socio-economic impact of policy on fishing communities.

STECF concludes that the purpose that the NFPs serve needs to be defined in consultation with end-users and stakeholders.

ToR 3 - Conclusions on coming steps on NFP development

[3] European Commission's (EC) questionnaire dated January 12th, 2022 about the implementation of Articles 16 (6) and 17 of Regulation (EU) No 1380/2013.

[4] https://marecentre.nl/.

STECF concludes that in order for NFP's to be fit for purpose the following short term and long-term actions need to be undertaken:

- The modifications suggested by the EWG 22-14 to the format of the NFP need to be tested in at least two additional MS cases, varying in type of fisheries (prepared via ad hoc contracts).
- The NFP should be produced as web-based profiles rather than as a pdf document.
- Following developments in ICES WGSOCIAL and WGECON, STECF suggests starting the process of fishing community identification by using ports as proxy in the national profile while continuing the development of the methodology on community and national profiles together with ICES.
- The data needs for NFP development (such as information on ports) need to be identified and the EUMAP and ICES data calls should be aligned.

ToR 4 - Conclusion on reporting of social data

STECF concludes that presenting the social data, indicators, and analyses in a standalone report rather than as part of different STECF EWG report is preferable. A standalone report allows the accommodation of an expected growing demand for social assessments. However, the final choice depends on the aims and needs of the end-users.

ToR 5 - Conclusions on data needs with action list

STECF concludes that in order to achieve progress in operationalising the social dimension of assessments, the further development of social indicators is needed. To facilitate the process of developing social indicators and to ensure the relevance and credibility of those indicators, the following actions are required:

- Develop a table of comparison of the (legal) issues affecting the classification of the current social variables across MS as a proper background for the revision of the guidance document on social variables by RCG ECON (prepared via an ad hoc contract).
- Add relevant variables to compute indicators of social sustainability and resilience to the EUMAP those need to be collected at a disaggregated level (regional or local).
- Organise a scoping exercise on the policy questions that need to be answered and the data and indicators needs with policy-makers and advisory bodies (including ACs) and across STECF EWGs, including the data needed for NFP development.
- Develop a conceptual framework which positions the social indicators in the suit of fisheries indicators (ecological, environmental, economic), providing the linkage for integrative trade-offs analysis and advice.
- Provide clear data definition, methodological framework and assessment of the use of the data (to be) collected, and align those between calls, across Member States and with ICES and RCG ECON.
- Implement a validation protocol of the methodology and data proposed.
- Plan the collection of new data and the addition of variables in the EUMAP in the future (based on previous scoping and methodological development actions).

In addition, STECF concludes that, in the long term, the development of social indicators should capture concepts such as social justice, social capital as well as dependency and vulnerability. The last two should be included in NPFs as soon as they are operational.

ToRs 6 and 7 - types of criteria used for allocation of fishing opportunities

STECF concludes that to adequately assess the systems of fishing opportunity allocation, transparency on the allocation rules and the final allocation is needed, for example, through Member States publishing them.

STECF concludes that the main criterion used to allocate fishing opportunities are historic catch rights. The environmental and social criteria are hardly used and have a limited impact on the final allocation.

STECF concludes that examples of socio-economic criteria as currently used by some Member States could be provided as guidance for other Member States in the operationalisation of Article 17.

STECF concludes that the regulatory requirements of the EU Commission need to be addressed in the operationalisation and implementation phases of the consultation of Member States on the criteria applied for the allocation of the fishing opportunities.

STECF concludes that the further development of the online questionnaire about the implementation of Article 17 should be carried out through collaboration between the Commission's IT services, DGMARE and (STECF) expertise in the field of social science (via an ad hoc contract).

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REPORT TO THE STECF

Social Data in Fisheries – update of the national profiles (EWG-22-14)

Virtual meeting, 7-11 November 2023

This report does not necessarily reflect the view of the STECF and the European Commission and in no way anticipates the Commission's future policy in this area

1 INTRODUCTION

This report on the social dimension of the CFP is the third report in a series of STECF reports operationalising the social dimension of the CFP and in particular the development of an analytical framework and indicators to provide data and information to assess the social aspects of the CFP. In particular the report addresses four specific areas. The first being an assessment and update of the National profiles. The second part addresses the alignment of methodology and definition of social indicators across STECF reporting and also with RCG ECON and ICES WGSOCIAL. The third part addresses the further development of a set of relevant social indicators. The fourth part addresses the responses of the Member States towards the European Commission's (EC) questionnaire of January 12th, 2022 about the implementation of Articles 16 (6) and 17 of Regulation (EU) No 1380/2013 and the further development of a relevant questionnaire.

The report has been produced by experts from DG JRC and a group of experts convened under the Scientific, Technical and Economic Committee for Fisheries (STECF). The group consisted of 20 independent experts. The list of experts can be found in section 8.

1.1 Terms of Reference for EWG 22-14 Social Data in Fisheries – update of the national profiles

Background information
One of the objectives of the Common Fisheries Policy[5] (the CFP Regulation) is to promote social sustainability. The current legal framework refers to labour conditions, health and safety, as well as to job creation and training, social inclusion and a fair standard of living. Fisheries throughout Europe have undergone major structural changes, leading to important social consequences for both individual fishers as well as for fishing communities. In a number of fishing communities and regions of the EU, the social importance of the fisheries sector outweighs its direct economic contribution.

The collection of data for calculating the social indicators for **the EU fishing fleet, aquaculture and fish processing industry** is required under the Data Collection Framework (Regulation (EU) 2017/1004 on the establishment of a Union framework for the collection, management and use of data in the fisheries sector and support for scientific advice regarding the CFP). The multiannual program for data collection (EU MAP) (Decisions (EU) 2021/1167 and 2021/1168) specifies social variables to be collected every three years from 2018 onwards:
- Employment by gender;
- Full Time Employment (FTE) by gender;
- Unpaid labour by gender;
- Employment by age;
- Employment by education level;
- Employment by nationality;
- Employment by employment status;
- Total FTE National.

This data is collected within the Annual Economic Data Call.
STECF Expert Working Group (EWG) 19-03 reviewed the social data in the EU fisheries sector collected under the Data Collection Framework (DCF / EU-MAP) in 2018. The EWG 19-03 report provided a comprehensive overview of the social data collected under the EU MAP for the EU fishing sector on the social and demographic characteristics of the labour force both at EU and Member States level over the year 2017. It discussed potential improvements and refinements in the collection of social data in EU fisheries.

[5] REGULATION (EU) No 1380/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013

STECF EWG 20-14 was tasked with building upon the findings of EWG 19-03. The EWG was requested to further develop the methodology for
1) the collection of social data in fisheries, to be applied for the collection of social data for the data call 2021
2) the subsequent analysis and
3) the use of these data.

Additionally, the EWG was tasked with assessing the impact of the CFP and the implementation of its Articles 5.2 (access to waters) and 16 and 17 (fishing opportunities) on the social situation of small-scale coastal fishers and their communities.
STECF PLEN 20-03 concluded that if the suggestions for National and Community profiling of the fishing sector would be operationalised, as recommended under EWG 20-14,this would indeed allow for more data and information to become available to implement assessments of the social impacts of fisheries management measures. The EWG 20-14 report provides a first detailed description and methodology which would enable the construction of both National and Community profiles. To further expand this deliverable, STECF concludes that there is a necessity to produce clear and unified definitions of concepts and variables used. This unification should be achieved across all bodies currently involved in the development of social indicators such as STECF, RCG ECON and ICES WGSOCIAL[6].

The objective of the EWG 22-14 will be closely related to the work previously implemented by EWG 19-03 and EWG 20-14 on improvements of data collection. The work of the EWG 22-14 will also target elements of EWG 20-14 as national profiles and article 17 of the CFP Regulation. A final element targeted in this EWG (and previously) addresses the impact of the CFP (measures), which will build upon the work established in the various scientific groups on this specific matter.

Aside from further developing the national profiles, the STECF EWG is requested to **assess the different social criteria applied by the Member States for the implementation of article 17 of the CFP**: as was requested in STECF EWG 20-14. The Commission is currently receiving new replies from the Member States on the implementation of this article. The STECF EWG 22-14 is also requested to further develop the questionnaire the Commission has previously prepared to consult the Member States on the application of Article 17.

Building upon the conclusion of STECF PLEN 22-02, the EWG 20-14 report, the RCG ECON 2021[7] report, and the national profile pilot study resulted from the FISHN'CO deliverable 3.4 (on the Netherlands), the STECF EWG 22-14 is requested to carry out the following tasks:
1. Perform a first assessment of whether the model of the national profile as result of the FISHN'CO study, together with the reflection document, delivers data and information in a useful fashion. The EWG shall provide recommendations for further developing other national profiles (e.g. through ad hoc contracts).

2. Initiate recommendations for **alignment** in the methodology and preparation **of national profiles** with the **development and output in the fora** of RCG ECON and ICES WG SOCIAL. This unification should be achieved across all bodies currently involved in the development of social indicators such as STECF, RCG ECON and ICES WGSOCIAL[2].

3. Initiate the assessment of the extent to which the produced data are fit for analysing the **social effects of fisheries' management measures**. The EWG is invited to identify the work already carried out by WGSOCIAL and RCG ECON and associate its efforts facilitating the above-mentioned

[6] For completeness sake, GFCM developments should be cross-checked in this discussion.

[7] As well as 2022 report, if this is available at the time the EWG 22-14 takes place.

analysis. Attention must be given that the work of EWG is in line but does not overlap with the work of WG and RCG.

4. Explore the compatibility of the social indicators with the **data call for the Annual Economic Report**. Propose further developments to facilitate the compatibility and/or integration of the social and economic aspects, including distribution of data among data calls and EWG reports.

5. Advise on further actions to be taken for the **development of social indicators**. As an example, further develop indicators for Reliance and Resilience, as suggested by EWG 19-03

6. Using information provided by the Member States, **assess the types of criteria applied** by the Member States for the implementation of article 17 of the CFP Regulation. Furthermore, assess whether, and if so, **how criteria of social nature have been applied** and clarify whether the **other criteria presented by MS correspond to the respective economic or environmental type**.

7. The EWG is requested to **develop a questionnaire** to consult the Member States on the criteria applied for the allocation of the fishing opportunities, e.g. based on further development of the questionnaire the Commission has previously prepared The questionnaire shall be completed by the Member States on an annual basis. It shall ensure increased transparency and build a better understanding on the way the Member States allocate their fishing opportunities. For this reason, the questionnaire must be clear, detailed and structured to ensure that the Member States provide sufficient and precise information, without the need for follow-up contacts.

2 ASSESSMENT OF THE MODEL OF THE NATIONAL PROFILE AS RESULT OF THE FISHN'CO PROJECT (TOR 1).

2.1 Introduction

The first task of ToR1 was to assess whether the Dutch national fisheries profile (NFP), based on the template provided by EWG 19-03 delivered data and information in a useful fashion.

To assess whether the information is delivered in a useful matter, it is helpful to summarize the objectives of NFPs. As part of this, having a brief understanding of the historical process and objectives of National Fisheries Profiles is useful. Following this, based on the compiled NFP and the analysis found in the Dutch reflections document, suggested changes to the template and methods are detailed.

2.2 Objectives

The objectives behind the compilation of NFP include having a multi-layered approach with a shared structure enabling comparison of trends and change across MS. The NFPs also provide historical background and specific contextual information, showing the variability among MS and emphasising the most salient social, institutional and legal aspects. NFPs also provide added value, such as providing data for ad hoc work, e.g. for community profiling and impact assessment.

2.3 History and timeline of discussions on NFPs

The work to compile National Fisheries Profiles stems from a long history of efforts to obtain information on social issues related to fisheries management (e.g., EC Non-Paper on future of the DCF, EWG 12-15 and STECF's PLEN-12-03). In these early years, the term 'social' was conceived primarily as meaning "social effects of economic developments in fleets". The meaning of social, however, is broader and the developments seen in social data collection and the work of STECF on profiles is reflective of these efforts to better reveal this broader meaning. Indeed, the work today meets PLEN-12-03's observation on the importance of work on social aspects and its encouragement to the European Commission to address important questions of the future development of the fishing sector and the development of coastal communities.

A first step in the goal of addressing the social dimension of the CFP began with addition and collection of social variables, such as through the 2018 DCF/PGECON workshop on social variables and ensuring smooth transition between data collection regulations (DCF to EUMAP).

Regulation No 2017/1004, the EU multiannual programme for the collection of fisheries and aquaculture data, introduced the collection of social variables for the EU fishing fleet under the Data Collection Framework (EU MAP). The collection of this social data was a recognition that effective fisheries management and policy development is dependent on having a good understanding of the social importance of fisheries and of social processes developing over time.

The STECF Expert Working Group (EWG) 19-03 met following this to i) review social data in the EU fisheries sector collected under the Data Collection Framework (DCF) in 2018, (ii) provide an EU level overview and national chapters describing the data, and (iii) discuss potential improvements and refinements in the collection of social data in EU fisheries.

EWG 19-03 observed that (i) the social variables thus far were merely demographic variables, useful for social analysis but not yet social indicators; (ii) that these national chapters would be needed to have a better contextual understanding of the social variables which vary greatly among MSs; and (iii) following from (i) more data was needed as well as some of the data now produced would require disaggregation in order to be more useful for social analysis.

EWG 19-03 also noted that the social importance of the fisheries sector often outweighs its direct economic contribution. Lack of comprehensive data and scientific analysis on the social aspects of the CFP compromises the usefulness and impact of policy assessments.

The EWG 19-03 also produced a stand-alone social-related chapter (in the annex) in the 2019 AER of the fishing fleet. This EWG also held general discussions on the limitations and analysis of these data, with discussions to expand the social analysis to a wider context to include topics such as community profiling, social structures, and expanding the social analysis and coverage to include more qualitative measurements.

In EWG 19-03 Pilot Studies from MSs were presented to inform discussions on the possibility of MSs conducting more detailed community profiling or social impact assessments (as suggested in the EWG 18-15 Expansion of CFP indicators report).

An introduction to how such profiles and assessments could be conducted was included in the full EWG 19-03 report, with suggestions for the development of future initiatives, including National Fisheries profiles and creating better links with WGSOCIAL (of ICES). Based on this, a first template (template I) was drafted in an ad hoc contract by Alyne Delaney.

These initiatives were taken further in the STECF-20-14 (Social dimension of the CFP). In this report, there is acknowledgement by the EC that in a number of fishing communities and regions of the EU, the social importance of the fisheries sector outweighs its direct economic contribution. Thus, there is an increasing awareness that more attention should be paid to the social dimension of fisheries. Concerning the development of methodologies for the expansion of the social analysis to include national profiles and specific fishing community social profiles, STECF (20-14) noted that the EWG (19-13) suggested a detailed template for the national profiles with a comprehensive list of descriptors based on a template developed through an ad hoc contract, and an outline of potential data sources. As for the Community profiles, which is a much more detailed, and hence labour-intensive undertaking than the compiling of national profiles, the EWG report provides guidance to MS who wish to conduct community profiles. As a result of discussion, STECF (20-14) developed template II. Template II focuses on a streamlined way on variables that could be collected with mostly existing data. Template II therefore does not only provide the variables, but also the data sources, as well as the specification the report not to exceed 5 pages.

STECF (20-14) also observed that the proposed Community Profiles are a necessary addition to the National Profiles. They will generate data to analyse a more-long term and more profound impact of measures on the fishing communities.

This history led to the formation of the ToRs for EWG 22-14, including assessing the model for National Fisheries Profiles, based on template I, resulting again in an improved template III based on empirical research conducted with template I. Template II meanwhile was not considered anymore in the process, because template III compiled by STECF (20-14) is the most recent form[8].

2.4 Purpose of National fisheries profiles

Following a first assessment of the Dutch NFP as test case, it was realised that a discussion in plenary was needed to discuss different potential purposes of the NFP, as depending on which uses were foreseen, different proposals for improvement would be made. The different foreseen purposes of the NFP were:

(i) First and foremost, in order to meet European Union fisheries management regulations, social data and knowledge of the social state of the fisheries are needed. Until recently, no social data were compiled for fisheries at the European level through the Data Collection Framework. Though data are now collected, these are currently limited to quantitative, demographic indicators.

Experience with the data collected so far has shown that it was difficult to interpret some of the data without having at least the national level context within which to place it, resulting in further

[8] In Figure 1 below and in Annex 2 structure and details of the NFP are presented.

objectives, that should be covered by national profiles. These objectives are the results of the discussions started by EWG 20-14 and continued in EWG 22-14.

(ii) National fisheries profiles also give a general background to understand fisheries in the member state by providing a brief description of some salient social, institutional and legal elements for MS.

(iii) National fisheries profiles enable proper analyses and interpretation of collected social data. Social data can contextualize fisheries within the respective MS and allow for reflection on national features. This contextualization of indicators and findings is required to assess specific (developments of) social aspects.

(iv) NFPs will allow to compare fisheries sectors among MS: relevant comparison often reveals the real value and use of social data as it, amongst others, shows how the common fisheries policy can have different outcomes in different contexts.

(v) Additionally, NFP that are repeatedly implemented (as recommended) allow for analyses of the respective fisheries for trends as well as for change. This way, trends can be recognized and, if appropriate, management can react to them.

(vi) NFPs can serve as a background document for a Social Impact Analysis (SIA) of fisheries management.

Depending on the different objectives, different depths of data for the NFP are required. Additionally, depending on the type of data needed, varying expertise is required. Data for a brief summary can be collected using existing statistics, such as, EUROSTAT etc. (see also the data sources table in STECF 2020-14). However, data that will ask for the correspondence with national agencies, also requires national expertise for interpretation.

During plenary discussions in the EWG it was decided - to the extent possible- to accommodate all of these different purposes for national profiles. To solve the conundrum between having a short versus a detailed profile, the EWG landed on having (see the section proposed changes).

STECF (20-14) observed that the further development of National Fisheries Profiles and Community Profiles was appropriate and progress was made in defining a methodology and format apt for implementation by MSs.

One of the roles of EWG 22-14 is to provide the proof of concept of NFP. The submitted Dutch NFP provided an opportunity to analyse the strengths and weaknesses of the NFP template, with some changes proposed.

2.5 Proof of Concept—the FISHN'CO NFP Experience

RCGECON 2021 recommended the development of National Profiles by the Fishn'Co project, but no reference to guidance documentation was mentioned. Following discussion in RCG ECON, the Netherlands was selected as a case study for the 1st NFP, mainly for pragmatic reasons as the researchers are the chair of WP1 of the Fishn'Co project and had time available to take on the task. During spring 2022 the guidelines were sought and the Delaney (2020) (Template I)was found and presented as the basis of the National Profile during the RCGECON 2022 together with the information from EWG 19-03 social variables. No comments were received on the chosen method and no information was provided about the updated guidelines (Template II) in the STECF EWG 20-14.

The Dutch case of filling in template I for the NFP resulted in a document of 69 pages. It had taken 80 hours to fill in the template.

2.6 Reflections on the Process

The work on the FISHN'CO (Dutch) case provided an opportunity to assess the template through reflecting on the process. Two of the first questions which arose were "for what purpose?" and "for whom?" is the NFP. The purpose impacts what data are collected. For example

a) If NFPs are to *help interpret the social data* beginning to be gathered through the data call– what then are the relevant contextual data / is the information to describe? For

example, when discussing educational level, it is useful to understand what these levels mean in the different countries in the context of the country. Also contextualizing the meaning of apprentices, interns, family labour (versus child labour) etc.

b) But if the purpose of the NFP is to *give general background to understanding fisheries in the country*, then more detail is needed. For example, "Governance" is a container concept and more space is needed for more comprehensive descriptions.

In terms of the form, considering the NFP as "web based documents" – linked to data sources and information compiled elsewhere—is useful. Also, the use of the template uncovered duplication and confusion over how much details should go into which section.

In terms of topics, it was found that some concrete topics needed to be added or excluded to avoid heterogenous interpretation across the profile. Choices were made by the author(s) as to which information was to be included, and which information to leave out. In addition, the level of detail was also determined by the author(s). For consistency, it may be better to specifically request information on a number of topics, and leave the possibility to include additional information to the respective authors.

It was found that economic data was easy to find, yet social and cultural data and governance information is less readily available. Also, data on the larger scale fishing fleets is more readily available than data on small scale fleets.

2.7 Proposed changes to National Fisheries Profile template:

As written in EWG 20-14, NFP should be updated every 3 years.

A summary of the main suggested changes to the template headings are as follows:

1. Use the first chapter (National fisheries profile – executive summary) as an executive summary of the national profile. This should not exceed 5 pages, and should be both a high-level summary of the core aspects of the underlying chapters as well as an analytical assessment of the state of the fishing sector in the country, based on both the data and the trends, opportunities and constraints. It should be noted that this suggestion of an analytical assessment is contrary to STECF EWG 20-14 (Table 7.1,p. 75) which stated that this 5-pager should be a "fact sheet."
2. Since this first chapter is an executive summary, the structure should be as such that no new information is described (only) in this chapter.
3. The Chapter 'General description of society' should be added to the template, which also includes explaining specific context for social indicators (e.g., age of retirement, social security situation, market situation, etc.)
4. A Governance system chapter should be added (rather than having it as part of describing the fisheries sector).
5. Finally, in the chapter 'Social, cultural and economic aspects of fisheries' the social and cultural value of fisheries (under fisheries in the national societal context) should be included.

Added sections will enable better understanding of the societal aspects still missing in the NFP. As recommended (EWG 20-14), NFPs should be used in concert with Community Profiles. Given that Community Profiles are not yet developed it is especially important to strengthen the societal aspects of NFP while at the same time, the boundaries between National Profiles and Community Profiles must not be blurred. The subgroup did not look into the process of the further development of the community profiles.

Figure 1 (below) provides a visual representation of the proposed changes to the NFP template. A version with subheadings as they were developed for the Dutch version is presented in the Annex 1.

An additional, suggested change involves the format of the NFP. The EWG found that having the NFP profiles as a web-based "document", would be better than as a paper document. A web-based format allows for linking with data sources that are available online. An example of how that could be structured can be found with EUROFOUND's online country profiles[9].

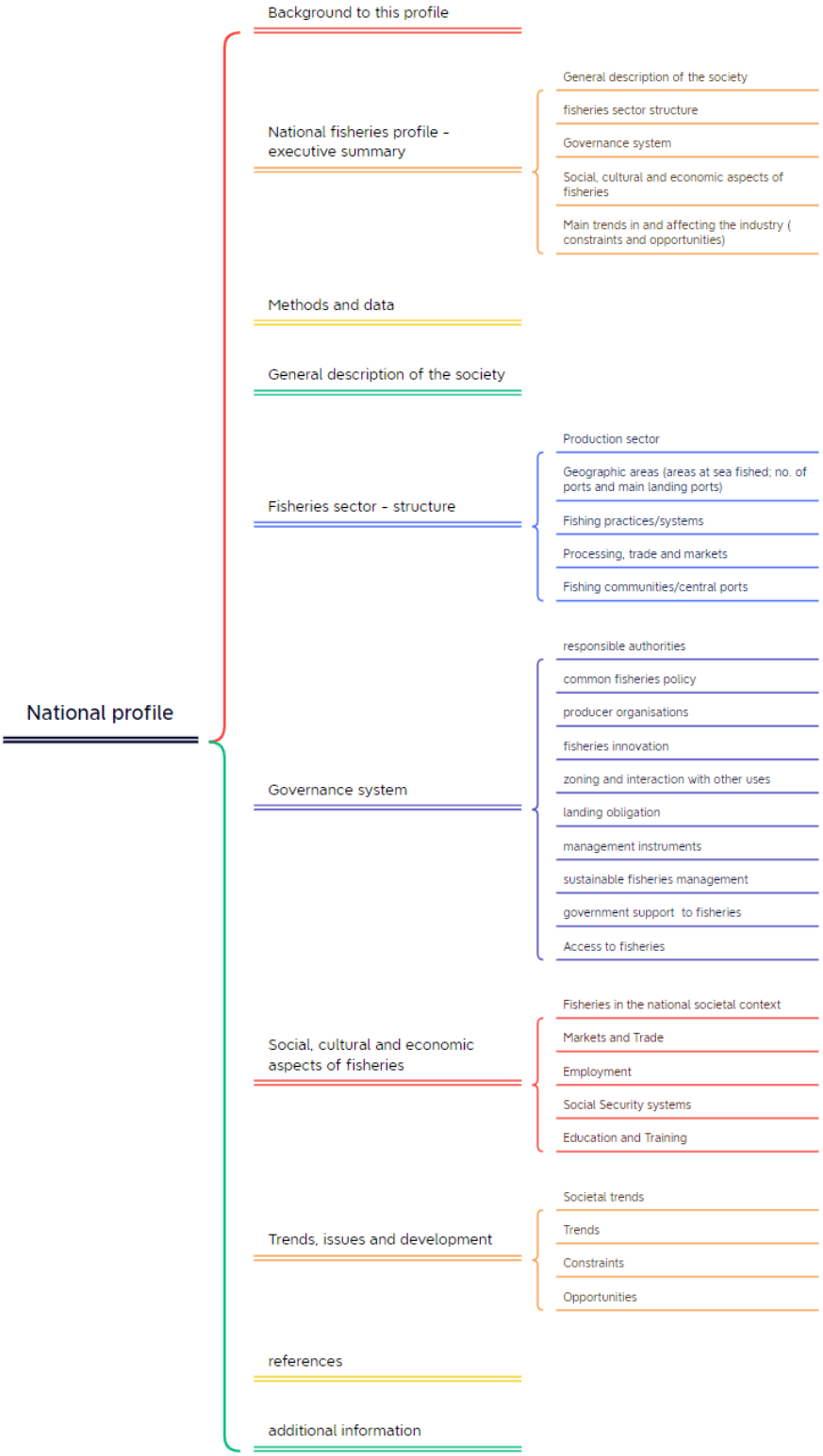

Figure 1: Structure National Fisheries Profile

[9] https://www.eurofound.europa.eu/country

2.8 Recommendations for further development of a system of NFPs

The second task of ToR1, following an assessment of whether the Dutch national profile delivered data and information in a useful fashion, was to provide recommendations for the further development of other National Fisheries Profiles.

To reiterate, a web-based compilation of the data with links to the data would be useful, as the most up-to-date information can then be found, despite the time (3 years) between NFP updates.

The previous section proposed specific changes to the NFP template. The EWG 22-14 also has suggestions for developing NFPs across the MSs, in this case for covering costs associated with the development of NFPs:

1. Ad hoc contracts
2. Extra funding from National Programme (DCF 2025)
3. FP contract in the scientific fields of fisheries and aquaculture
4. STECF EWG set up to update National Fisheries Profiles and review Community Profiles

It is advised that at least two other contrasting (to this Dutch NFP) profiles be made to further assess whether the template and guidelines are clear and fitting for other contexts than the Dutch case.

In addition, the EWG would like to reiterate that the expertise required for profiling is a social scientist trained in qualitative and quantitative methods, as the profiling includes social, cultural and economic information and data and societal issues and concepts. Furthermore, national fisheries expertise is needed to interpret the data and understand the context. Finally, if the scientist writing the profile is not working in a national lab with direct access to the needed fisheries data, access to this data should be arranged.

3 ALIGNMENT IN THE METHODOLOGY AND PREPARATION OF NATIONAL PROFILES WITH THE DEVELOPMENT AND OUTPUT IN THE FORA OF RCG ECON AND ICES WG SOCIAL (TOR 2).

This TOR focuses on *"Initiate recommendations for **alignment** in the methodology and preparation **of national profiles** with the **development and output in the fora** of RCG ECON and ICES WG SOCIAL. This unification should be achieved across all bodies currently involved in the development of social indicators such as STECF, RCG ECON and ICES WGSOCIAL (For completeness sake, GFCM developments should be cross-checked in this discussion.)"*

The task of aligning the national profiles to the needs of different fora was divided by end-user to facilitate the methodology of analysis. The method chosen was a review of texts (including reports and presentations) produced by the different fora and an extraction and classification of the developments and outputs that were mentioned, according to whether they would benefit from specific national context information (as provided, currently or potentially, by national profiles).

EWG 22-14 approached the end-user material in a particular order to ease the learning process, from the fora with a more direct relation to the national profile (explicit mention and recommendations in their texts) to the least related (no mention). Under this criterion RCG ECON workshop on social issues had explicit recommendations on national profiles, while STECF EWG reports only had a few or indirect recommendations and the ICES reports had even fewer. GFCM development of social indicators was only considered tangentially, as no relation to national profiles could be specified with the few social variables collected. The list of documents analysed is displayed in table 1 below. Due to resources restrictions in the EWG sub-group, not all documents could finally be analysed, but a sufficient coverage of RCG ECON, STECF and ICES was nevertheless possible.

Table 1: Documents relevant for the identification of needs for alignment of national profiles with the work of scientific for a involved in social indicators

Fora	Document	Year	Authors	*Analysed at EWG*
RCG ECON	Social WS report	2021	RCG ECON	Yes
RCG ECON	Greek case study presentation at social WS and peer reviewed article	2021	RCG ECON	Yes
RCG ECON	Croatian case study presentations at WS social and EAFE 2019	2021	RCG ECON	Yes
STECF	EWG 20-05 on CMO and sustainability report	2020	STECF	Yes
STECF	EWG 22-15 on Balance of fishing opportunities and fishing capacity	2021	STECF	Partially
STECF	EWG 18-15 on CFP monitoring	2018	STECF	No
STECF	Additional ad-hoc requests	-	STECF	No
ICES WGSOCIAL	ICES WGSOCIAL scientific report 2020	2021	WGSOCIAL	Yes
ICES IEASG	Celtic sea Ecosystem Overview	2021	WGSOCIAL, WGEAWESS, WGECON	Yes

The summary table "**Table 2: Recommendations for alignment between national profiles and work of related fora**" presents the alignment of national profiles and the fora involved in using/ developing social indicators. The heading "Methodology" comprises a description of the variables (EU MAP) or items (National Fisheries Profiles) that would be needed for the work of the mentioned for a, together with a justification based on EU policy needs and some information on source of the recommendation (see Table 2 below) and suggested information collection method. Finally, the group discussed how the coordination with other bodies for the preparation of the national profiles could take place in practice (see "Preparation" in Table 2 below).

Table 2: Recommendations for alignment between national profiles and work of related fora

Fora	RCG ECON		ICES WGSOCIAL		STECF		GFCM	
National profiles	development	output	development	output	development	output	development	output
Methodology	Exploration of suitability of EU MAP data for analysis. Development of individual-based data collection strategy Design of additional variables	Identification of the role of women in both the onshore and offshore sector with the aim of better targeting policies to them (e.g. training, insurance etc…) eventually wage discrimination Suggestions for improvement of national profiles	Further developments on definition and use of ports as unit for social analysis by WGSOCIAL need to be coordinated with drafting of NFP to increase salience of the information	WGSOCIAL output on fishing community definition in the EO can benefit from more detailed information on national port databases details delivered through the national profiles	Further development of social sustainability criteria for the future food sustainability work at EU level needs to stay in pace with development in national profiles	Social sustainability indicators (EWG 20-05) Dependence indicators (EWG 22-15) can benefit from context information in national profiles	n.a.	Currently social variable work less advanced as in other fora
Preparation	Coordination through contacting RCG ECON (social ISSG) whenever nat. prof. work is to be undertaken (e.g. through e-mail with chairs)	Uptake by MS of Nat prof for their social analysis based on EUMAP data?	Coordination through contacting WGSOCIAL whenever nat. prof. work is to be undertaken (e.g. through e-mail with chairs)	Uptake by WGSOCIAL of Nat prof for their social analysis	Coordination through contacting STECF Bureau whenever nat. prof. work is to be undertaken to update on possible needs from related EWG	Uptake by STECF EWG of Nat prof for their social analysis	Coordination through contacting GFCM socio-economic subgroup whenever nat. prof. work is to be undertaken (e.g. through e-mail with chairs)	Uptake by MS of Nat prof for their social analysis based on EUMAP data?

3.1 RCG ECON

The EWG approached the alignment of methodologies by looking at RCG ECON work on current **social variables**, on expansion of variables, (e.g. categorising on-shore activity) and on social analysis: "*During the discussion on unification of concepts (ToR 1) the group of experts at the WS identified data items that may have very different structure across member states and would benefit from a certain regional coordination. The WS considered that the data items identified constituted necessary developments of existing categories in the National profiles (see EWG 20.14, p. 75-77).*" The work on social variables by the RCG yielded concrete recommendations on what to include in the national profiles and where to include it. However, it has to be born in mind that the work of RCG ECON was done exclusively by economists, the only discipline present at the WS (together with biologist). A summary of the WS recommendations can be found in Table 3 below.

Table 3: Information required for alignment between national profiles and RCG ECON (EUMAP) variables

Information to be included in national profiles
Fisher status and SS implications **Foreign workers living in their home country but working in another MS** – national situation and potential for dumping in labour conditions **Definition of SSF** when different from EU definition Description of how child labour is protected, in regulation and its implementation Types of vocational training, when it is required, **relation to other fields** (aquaculture, mechanics/ technology, processing, sales, tourism…) that may allow diversification of job opportunities

Source: RCGECON ISSG Social variables Workshop on social variables, on line August 2021

The RCG ECON WS reviewed the National profiles format and concluded that there was a concrete place where information needs could be located in the profiles:

"More specifically, the data items in need of regional coordination would fit in the main block of National profiles, block 3 on "Focus on social and economic aspects of fisheries". This block of the National profiles contains already subcategories on "Employment and labour aspects", "Social security systems" and "Education and training".

RCG ECON WS Social work on social data analysis was based on two case studies, one from Greece (presented by Stamatis Mantziaris) and another one from Croatia (presented by Svjetlana Visnic). Additional work suggested by the RCG ECON related to the community profiles was identified by analysing these case studies. (extent of which existing data fits the requirements of these analyses is tackled in ToR3 further below).

Table 4: RGC ECON suggestions for further development Community Profiles

Nat prof item	why it is important (at EU level)	What we can do with that	Suggested Data source	National Data issues	Link with EU policies' targets	CS
vocational training	Professional mobility, diversification of activities: diverse skills/ qualifications enable greater mobility Income diversification: support professionalism e.g. safety: in case safety on board courses are not obligatory (in every MS?), data on vocational training regarding safety procedures is relevant and indicative	Levels and types of vocational training could indicate a potential for fishers to stay/leave the sector or to diversify the activities and reduce economic vulnerability.	Survey/ Questionnaire Interview experts "Social partners at EU level" Literature research of legal text, stakeholder analysis (in case there are non-regulated vocational training providers?)	Wide range of vocational training. Additional work is needed on classification and deeper analyses. Funding of training, conditions of access (on line training, duration etc) Nat profile: - Legal possibilities of/requirements for vocational training (what it allows or not). - Stage of work life when vocational training takes place (start, LLL) - Compatibility of training for working in other economic sectors, conditions for compatibility - Compatibility with requirements in other MS, conditions for compatibility - Availability for foreign crew (both start and LLL)	Social vulnerability Transparency and working conditions	HR
additional income sources	Fisheries dependence --> Economic vulnerability of population, Potential for diversification, Pluriactivity/ Side job	Assess the level of social/economic vulnerability/resilience	Survey/ Questionnaires	Nat prof: - Nat regulations on enabling conditions for side jobs, limitations (SS, taxes…) - Existence of side jobs in practice, depending on: --fleet segment --additional sector	socioeconomic sustainability and resilience Gathering marine litter programmes	GR
Generational turnover/ fisher succession	Enable newcomers --> prevent ageing/promote generational renewal; family workers - social security Enhance succession rate can offer professional opportunities to vulnerable social groups, such as unemployed youth and women poor generational renewal has been identified as a key issue for the EU policy that undermines the sustainability of the fisheries sector and the revitalisation of rural areas	To predict long term socio-demographic trends and recognize needs of sector	Survey/Questionnaires Literature research of regulations and national scientific literature	Normative: Nat prof section on access Existence and effectiveness of (national) support measures for succession Positive: Potential for succession in your vessel/firm. This is also a measure of confidence in the future, job satisfaction	social sustainability (intergenerational aspects) ((resilience e.g. COVID))	HR

Nat prof item	why it is important (at EU level)	What we can do with that	Suggested Data source	National Data issues	Link with EU policies' targets	C S
				Where do you see that potential? e.g. no of children of fishers … Number of years in the fishery?		
market channels of landings	to map value chain and the differences among segments/areas, as EU fisheries value chains are often very different (from very complex and globalised to very short and local)	to explore in depth value chain per segment/comparative analysis to identify risk areas for vulnerability/ resilience, to analyse ecological/economic/social sustainability	Survey/Questionnaires Literature research (e.g. EUMOFA country/species reports)	National profile: basic description of most common fisheries v.c. in the MS	Crisis support measures? farm to folk strategy; food security Sustainability	G R

3.2 STECF

There are several STECF expert working groups that have been involved in work with social indicators, or indicators of ecological and/or economic nature that could also be used as social indicators. The work on the national profiles should also be aligned with the developments and outcomes of these STECF EWGs. According to the wording of ToR 2 *"unification should be achieved across all bodies currently involved in the development of social indicators such as STECF"*

3.2.1 STECF work on social sustainability (EWG 20-05 Report CMO on sustainability of fish products)

The EWG 20-05 Report CMO on sustainability of fish products featured a discussion on social sustainability indicators. Though considered useful for the analysis, it was beyond the scope and resources of the current EWG to provide a definition for social sustainability. The EWG general discussion on this topic when starting the analysis of the work of EWG 20-05 yielded nevertheless the conclusions that 1) a definition of social sustainability would be needed to align national profiles with indicators mentioned in the EWG work and that 2) a definition is at the moment contested (see e.g. Barclay 2012 for a discussion, among others, on the appropriation of tailored definitions by ad-hoc policy uses). The establishment of a definition of social sustainability was also beyond the resources of the EWG CMO 20-05, as the group had to spread its efforts between fisheries and aquaculture (with mentions of fish processing), social sustainability was only a third of the set of tasks (which included also ecological and economic sustainability) and also the least developed (as of most recent implementation of social data collection in the EU and social certification in general).

EWG 22-14 analysed the *possible* alignment of national profiles with the work of STECF 20-05 CMO with the same approach employed for the RCG ECON subsection immediately above. Three experts, including social, CMO and data collection expertise reviewed the CMO report and extracted the information in the agreed format, completing it with the other information demanded by ToR 2. The results of the analysis can be found in Table 5 below.

Table 5: possibilities for aligning national profiles work with STECF work

NFP item	why it is important (at EU level)	What we can do with that	Suggested Data source	National Data issues	Link with EU policy targets
Labour conditions National profiles would need to provide information on whether the MS has implemented EU Directive 2017/159 and signed ILO Convention 188, and how these legal texts are enforced in practice	Human rights	Inclusion, human welfare and avoiding discrimination (forced labour, slave labour, child labour) Ethnographic data (collecting data through face-to-face interviews by meaningful case studies) may provide social variables at the more disaggregated stock level, thus providing data at smaller scale with more realistic features. This data can be added to the data produced by country. "unpaid labour". An improved definition at least at EU level of unpaid labour would be necessary to obtain a useful indicator of less-protected labour, including forced labour.	Information on ratification would most probably be available through electronic sources, while information on implementation would require expert knowledge in the field. The ILO convention only refers to fishing activities (processing activities follow ILO rules for industries), so again ratification and implementation of ILO rules for industries should be checked separately.	Not all MS have ratified the ILO 188 convention, which is slightly different in its scope to the related EU directive ((2017/159). Implementation of the convention at MS level might be different.	EU Council directive (2017/159) REPORT of STECF-20-05
Citizenship - Presence of diverse citizenship in relation to Intergenerational succession	To assess intergenerational turnover features in countries where fishing is declining	To forecast the continuation of fisheries in the future, and its future trends Not only citizenship but also whether they are owners or employees could be connected with citizenship (and related to community)	Presence of diverse citizenship in relation to Intergenerational succession and can be researched through reviewing related peer reviewed and national grey literature.	There are differences between MS (E.g. Romania, Bulgaria in comparison to Spain and France) on the introduction of foreign fishers for succession purposes. The national situation can be pictured in the national profiles, to flag it, and then analyse it with EUMAP data (see ToR 3) and community profiles	"Fishers for the future" EP
Vocational training	To identify the diversification of job opportunities.	To analyse the education in more details than the current education levels.	National grey literature and expertise	Different opportunities for diversification in general and in times of crisis in particular at each MS. The information in the national profiles should include regulatory restrictions/ support as well as existence of job opportunities	REPORT of STECF-20-05

NFP item	why it is important (at EU level)	What we can do with that	Suggested Data source	National Data issues	Link with EU policy targets
Social security	Unemployment remuneration	To ensure livelihoods	It must be applied to the whole value chain, from the vessel (unit of production, extractive) to the processing, marketing and distribution (parts of the community). At EU level, there is an attempt to systematically include this aspect in the National fishery profile, recommended by STECF 20-03 (endorsing conclusion of STECF EWG 20-15).	Different legislation depending on MS e.g. on social security coverage, inclusion of partner, compatibility of coverage for activities in different subsectors	voluntary guidelines for SSF, FAO STECF 20-03, 20-15
Freedom of association and collective bargaining	Market flexibility	To improve competition of vulnerable social groups (e.g. SSF)	This aspect has also been included in the list of necessary information to draft National fishery profiles, recommended by STECF 20-03 (endorsing conclusion of STECF EWG 20-15)	More data on conditions for participation, including for women depending on MS, competition authorities (e.g. NL)	REPORT of STECF-20-05 STECF 20-03, 20-15
Remuneration	Discrimination on remuneration occurs between harvest and postharvest activities that cannot be detected because it is aggregated data	Harvest and post-harvest remuneration discrimination affect women as they are mostly working in post-harvesting. This information will enable to assess the reality of production costs. Also, it is a way to weigh the differences along value chain labour conditions	RCG ECON has already recommended that MS include employment in some post harvesting activities (but only those strictly linked with fishing operations) in their remuneration statistics for the fisheries sector, but this recommendation has not been widely implemented. Data and information could be obtained through e.g. primary/secondary national sources when available (e.g. national/regional surveys)	National profiles would need to inform on parts of the value chain not yet covered (fleet, processing, the aquaculture) but also relevant for other EU policies (e.g. Farm to fork) and highlight discrimination in them.	RCG ECON Farm to fork strategy of EU

The work on social sustainability in marketing standards as well as that on economic sustainability has been discontinued as the EWG 22-12 and 22-13 only considered ecological sustainability, albeit with two separate EWG (on fisheries and aquaculture respectively). Future developments pointing at a renewed inclusion of social and economic sustainability factors in marketing standards as part of a broader framework of food sustainability certification in the EU were mentioned at the EWG 22-14.

3.2.2 Balance indicators framework from the STECF

The regular STECF EWG on balance between fishing opportunities and fishing capacities (e.g. EWG-22-15) fulfils a legal obligation under Art. 22 of Regulation (EU) No 1380/2013 on the Common Fisheries Policy. EWG 22-14 has identified that the indicators used to analyse this balance, though

not initially meant for it, can also fulfil certain functions when evaluating social dependence of fleets. This is due to the fact that, though balance indicators are not specifically social (social indicators existed but were abandoned) some ecological and economic indicators can be useful for social analysis. More work on the use of this indicators was done by the current EWG subgroup analysing ToR 5, with relation to dependence indicators. The possible alignment of national profiles with the work on dependence has been analysed when looking at the work of ICES WGSOCIAL under the current ToR 2 (section 3.2.3 below).

The relevant indicators from the STECF EWG on balance between fishing opportunities and fishing capacities (e.g. EWG- 22-15) would be

- Labour productivity/ livelihoods: analysing contribution to value added per labour unit
- Stock dependence/ vulnerability: analysing dependence of fleet segments – tied to a port/fishing community, see section on ICES work below- on concrete fish stocks/ fishing areas

3.2.3 STECF EWG 18-15 Report on CFP monitoring

This report, also fulfilling a legal obligation to monitor progress of the CFP, (based on Article 50 of the Common Fisheries Policy (CFP; Regulation (EU) No 1380/2013) moves beyond the strict regulatory requirements to anticipate reporting needs through economic and social indicators. In this way EWG 18-15 initiated the discussion on dependence and resilience indicators which has been further carried out in the current EWG under ToR 5, and could potentially benefit from an alignment with national profiles.

3.2.4 Other ad-hoc petitions to STECF plenary

Work of STECF that may benefit from social indicators (e.g. management plans/ new measures evaluations) have not been analysed for lack of resources at the current EWG

3.2.5 Conclusions on alignment of national profiles with STECF work

National profiles need to align mostly with future work of STECF on social sustainability for marketing standards, which touch upon the largest number of social impact issues. Other work from STECF that would benefit from alignment would be the study of dependence indicators (see ToR 5 in the current report).

3.3 ICES WGSOCIAL

Under EUMAP social data is aggregated to the national level. The ICES Working group for Social Indicators (WGSOCIAL) has been working on other levels of analysis, more significant from a social sciences perspective. The basic level of analysis for WGSOCIAL has been the fishing community (see ICES 2018 for an exploration of the concept). To align the paths of enquiry of both EUMAP and ICES we will look at the use of port data by WGSOCIAL as proxy for fishing communities and the need for additional information that this ICES approach would present for the EU fisheries national profiles. Additionally we will look at other exercises carried out with indicators at regional level (Galicia) and at a generic level (FAO).

3.3.1 Defining port as a proxy for fishing community: Celtic Sea

WGSOCIAL executed a first exercise by developing a methodology to allocate landings at port level, in a first attempt to approximate fishing communities (defined as place-based and proxied as ports) and their dependence on fisheries (in this case on volume of landings).

Conceptual approach

WGSOCIAL was formed in 2018 as part of the ICES strategy to include more social sciences in its structure (including other WGs such as the Working Group on Economic Issues, WGECON). WGSOCIAL (membership of around 80 at the time of writing) comprises social scientists and

interdisciplinary researchers. For the period 2018-2020 the group had as its Term of Reference (ToR B) the following:

*"To identify and report on culturally relevant social indicators and community data gaps that point to **priorities for data collection**, research, institutional needs, and training in all ICES Member Countries; and **where possible propose systems to collect missing data**."*

The ToR also includes the background below:

*"To **aid prioritization of data collection to enable qualitative and quantitative analyses of social issues for ecosystem overviews** and integrated ecosystem assessments **and future advice requests**. The ToR also links to ICES Data Centre."* [emphasis added to reflect overlap with EWG ToR 2-3]

This WGSOCIAL ToR B has been extended to the period 2021-2023 with a similar wording.

The ecosystem overviews (EO) mentioned in the ToR B above are the most recent ICES advice product in the direction of ecosystem-based management. See https://www.ices.dk/advice/ESD/Pages/Ecosystem-overviews.aspx for more in-depth information on the EO. These overviews have their own methodology, called the EO pipeline (ICES 2019-WKEO3 2019), through which socio-economic data has first been introduced in the Celtic Sea EO as a pilot study in December 2021, through the initiative of WGSOCIAL. In the near future it is foreseen to also perform this exercise for the North Sea EO.

In the workflow of WGSOCIAL, the EO fit as a first step to start building social indicators of dependence, which is also an objective of the current EWG (see section on ToR 5). Inside the EO framework a first data exercise for the Celtic Sea ecosystem (Advice 2021 5) was performed with the objective of checking whether it was possible to identify data on fishing ports. This approach was not without pitfalls, as it was discovered early that ICES was using data of commercial ports, which in fact do differ quite significantly from fishing ports (see Figure 2 below). The data exercise performed by WGSOCIAL and WGEAWESS[10] was then included under the "Pressures" heading of the ICES ecosystem overview, under the subheading "Selective extraction of species" and a lower subheading on "Socio-economic Indicators of commercial fisheries".

To consider a dependence indicator, two of the first things that need to be taken into account are dependence of "whom"on "what". In this case the "whom" would be a fishing community (or proxy for it), while the "what" would be landings. The definition of a fishing community has been explored by the literature (e.g. Clay Olson 2008), mostly in the US and UK. Discussing the definition of fishing community was also one of the first tasks of WGSOCIAL after its creation in 2018 (WGSOCIAL 2018). Some reasons why the port of landings was chosen as proxy definition of a fishing community can be seen in the list below (from ICES 2020 WGSOCIAL).

> "1. The link with society gets a clear face and place: fishing ports;
> 2. The EO maps are improved with a common approach and useful content (fishing being a top sector and pressure) and can link with the relevant ICES Fisheries Overviews;
> 3. Defining fishing ports can serve as a first step towards defining fishing communities on EO maps;
> 4. Defining fishing ports throughout the EO is a good exercise to understand the challenges of arriving at a common definition and methodology EU wide, whilst taking local context into account;
> 5. Fishing ports as geographical locations can then also serve as anchor points for other social and economic data (e.g. employment, landings values, economic dependence and profitability). "
> (ICES 2021)

The decision to consider landings as object of dependence ("what") was documented in the latest WGSOCIAL report:

" WGSOCIAL and WGECON propose to use landings value to assign main port of landings to each vessel and disaggregate economic indicators to specific regions in the future. Despite some difficulties (e.g. diversification of operations and landings in multiple ports by some vessels, market

[10] Working Group on Ecosystem Assessment of Western European Shelf Seas.

gravitation, vessel level estimation needs, and restrictions in sample size), this approach seems to be the most pragmatic and opens wider possibilities to analyse fishing communities at the regional level by incorporating a wider range of economic and social indicators." (ICES 2020 – WGSOCIAL annual report)

The suitability of landings as a definition of relevant port for the analysis of a fishing community for the different countries was checked by members of WGSOCIAL and it was found appropriate in all cases. One example of displaying landings information from a port perspective in an interactive way can be found for the UK at the Seafish website under the name of UK Fleet Enquiry Tool (https://public.tableau.com/profile/seafish#!/vizhome/FleetEnquiryTool/1Overview).

Data approach

As a first step in the data exercise describe above, WGSOCIAL checked the port database being used by ICES with the fishing ports database. The differences between main cities, administrative ports and ports of landings are considerable and can be appreciated in Figure 2 below (ICES 2020).

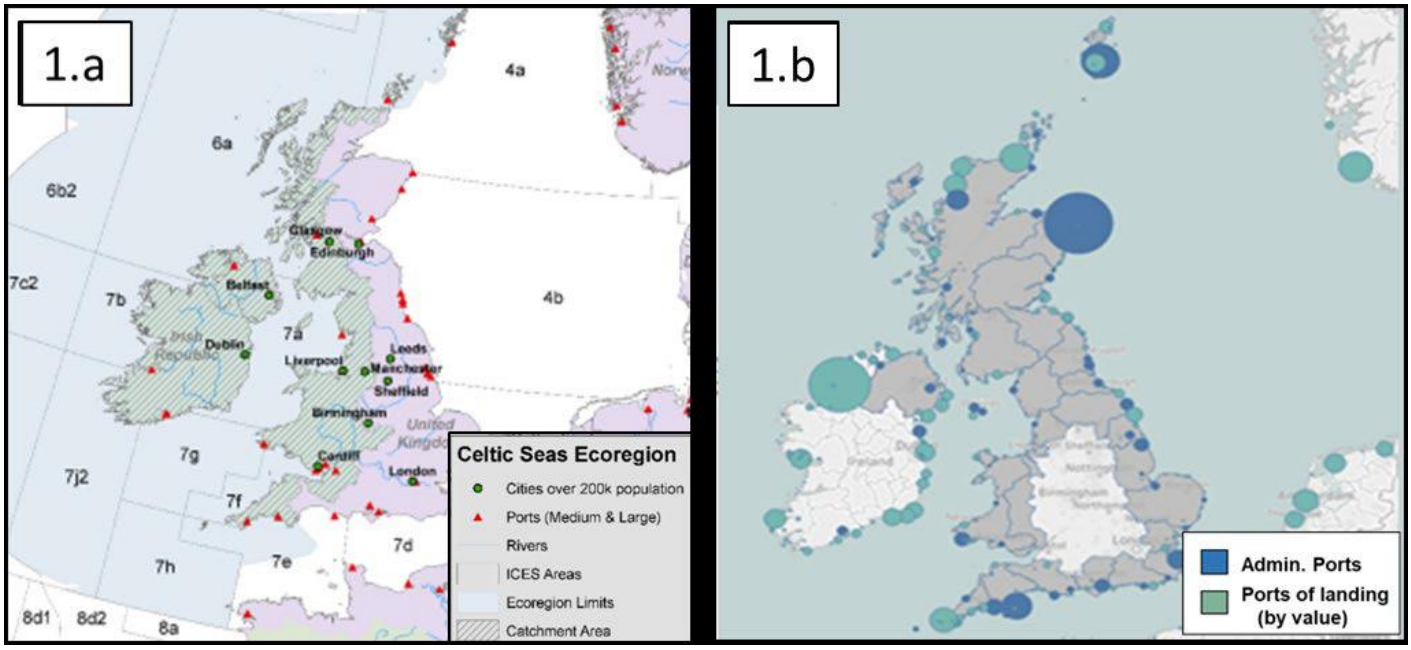

Figure 2: Differences between Commercial ports (1.a) and Fisheries' ports (1.b); Source: ICES 2020

The process followed by WGSOCIAL to explore the current data availability for the ports data exercise is described in the WG 2020 annual report as follows:

"*WGSOCIAL members reviewed a number of potential data sources for improving the EO maps, including the 'Coastal Community' maps published by the Joint Research Council (JRC) of the EU Fisheries and Aquaculture Socio-Economics group, and data collected under the EU Data Collection Framework (DCF) legislation.* ***No suitable, reliable and accurate data source was found****. For example, for numerous countries* ***the JRC data underestimated or overestimated the number of ports known/reported nationally****. Landings and effort data published and requested by STECF under the DCF data calls* ***does not report the data by port, but is aggregated by species, FAO Area level 3-4 and DCF Fleet segments***

For these reasons, WGSOCIAL believes the best way forward is through a data call via the Regional Data Base (RDB) FishFrame. Through conversations with the ICES Data Centre and Secretariat, and reviewing RDB documents, ***the RDB includes the information required to associate geographical land-based ports to marine-based fishing activity and landings location****, and to further provide understanding and insight into the cross-ecoregional dependence of fishing. WGSOCIAL proposes that the following data be requested from the RDB for each ICES country:*

- *Landings (tonnes and value);*
- *Landing country;*
- *Harbour;*
- *Vessel flag country;*
- *Year;*
- *Species;*
- *Vessel length category;*
- *Area;*
- *Statistical rectangle (where no confidentiality issues exist).”*

Source: ICES WGSOCIAL 2020 p. 6-7)

EWG 22-14 notes that several of the data mentioned above could gain from a more specified definition. For example: Harbour, does this concern home port or port of landings? Also, the indicator Vessel Flag country needs some clarification as to whether this indicator is to link vessels to quota of the flag state or to link the vessel to a specific community. The Area indicator likewise needs specification, for example: Fishing Area.

The final result for the EO (as of the December 9th 2021 version) can be seen below (ICES 2021):

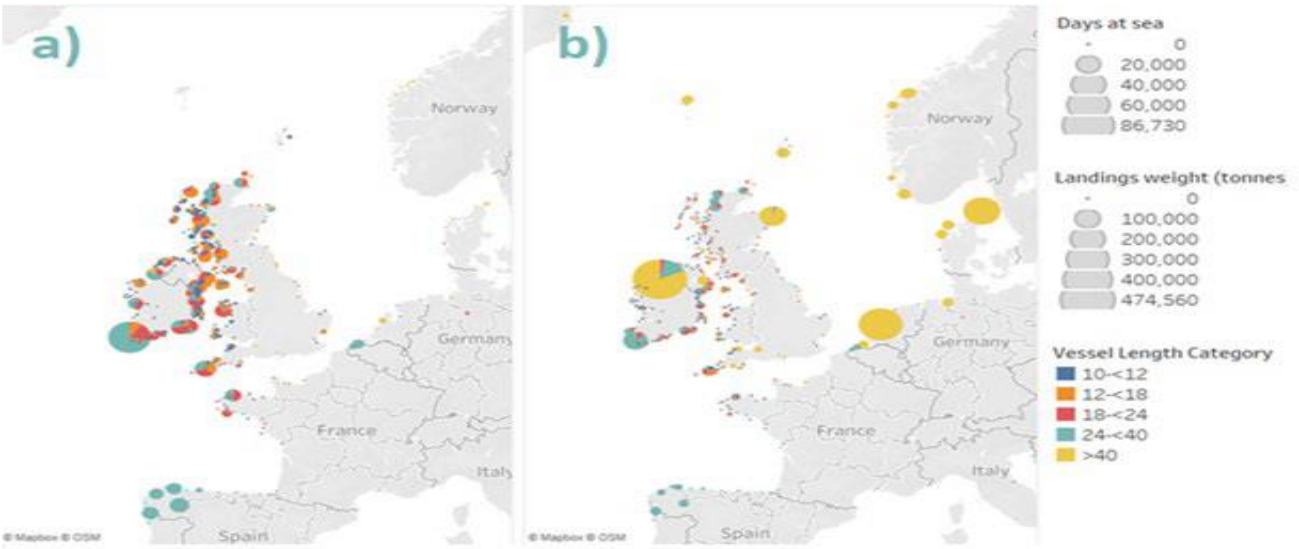

Figure 3: Fishing effort (days-at-sea; panel a, left) and landings by weight (panel b, right) for each port with vessels operating in the Celtic Seas ecoregion (2017–2019). Note: days-at-sea were estimated for Ireland based on hours fished.

The basic analysis in the EO (mostly just one paragraph) presents the differences in spread of the effort (fig 4a) and the landings (fig. 4b), the diversity of fishing nations involved and the relevance of fishing countries outside the political borders of the area (which cover 33% of effort and 43% of landings in weight). Summing up, 47% of catches were landed into ports in the UK and Ireland, while 53% was landed elsewhere. (ICES 2021).

Some limitations of this analysis are that SSF (vessels < 10 m) are not included due to lack of data, and that days-at-sea may be estimated differently depending on country (and represent different magnitudes of effort depending on the type of gear). Additionally, certain fishing communities might be best defined by other geographical/ conceptual scales, which would need to be listed in the national profiles and specified at the level of community profiles (e.g. cultural dependence on fisheries defining a fishing community etc.).

Conclusion from EO conceptual and data exercise

The EWG recommends to include information on national databases of ports in the national profile, to align the national profiles with the current exercises being carried out by WGSOCIAL. This Information on national port databases would include details on the criteria under which the national data bases are built (based on e.g., flag/landings/maritime transport of goods/ tourism/ recreational fisheries), information on structure of national fleet register (e.g., which sections they have, for instance separate section for recreational fisheries) and any other details needed to establish ports as proxies of fishing communities. This information would be useful to WGSOCIAL to continue on its pursuit of defining place-based fishing communities for its area of influence.

At the same time, a better definition of fishing communities as the one achieved with these exercises would improve the definition of community profiles and thus their use for social impact assessment under the CFP. Therefore the current EWG recommends, in addition to including information on ports in the NFP, the establishment of coordination between the ICES Data call proposed by WGSOCIAL and the EU MAP data calls. This could be made at the level of regional coordination meetings (RCG) for the landings data (for the different marine regions, see Article 9(2) of the Regulation (EC) No 2017/1004 on the EU Data collection Framework, DCF) and the Regional Coordination Group for Economic Issues (RCGECON) for economic and social variables.

3.3.2 Exercise with NOAA indicators at regional level (Galicia, Spain)

Case study work from WGSOCIAL in Galicia (Spain) has been performed for dependence indicators based on NOAA methodology (Colburn et al 2017) and using regional data from the Galician government (as opposed to EUMAP data, see ICES 2020). The analysis has been possible due to the existence of landings data at port level from the department of fisheries of the Galician regional government (www.pescadegalicia.gal), with additional indicators on social variables also at port level available through the Galician regional statistical office (www.ige.eu). Some of the preliminary conclusions show for example a lower rate of emigration in communities more engaged in fisheries.

The availability of national and/or regional landings and social data at port level outside the EUMAP as well as where/how to reach it would be useful additions to the national profiles, in case this is not already covered by the ICES data call mentioned above (for the landings) or through a higher disaggregation level of the EUMAP (for the social data). Additional exercises exploring regional data are being implemented in WGSOCIAL for the United States, Portugal, the Netherlands and Sweden.

3.3.3 Review of social indicators together with FAO

A review of social indicators has also been undertaken by members of WGSOCIAL in cooperation with an FAO study (FAO 2022 in press), which would need to be monitored by subsequent STECF EWG on social data/RCG ECON ISSG on social data to decide whether the WGSOCIAL analysis would benefit/require from attention on the side of the fisheries national profiles

3.4 GFCM

The EWG members with expertise in GFCM commented that the development of social variables in that context is less advanced than in the CFP. Therefore, it would be useful to keep contacts so that GFCM and national profiles development can be coordinated. The best way to carry out these contacts would be by people responsible for national fisheries profiles reaching out to GFCM when there are chances of updating their content.

3.5 Conclusions

There is a need to focus not only on the methodology and data needs for national profiles, but also on the purpose that these profiles are serving and their performance. Streamlining the efforts to support the development of social methodologies and analyses among the fora involved, as there are urgent social issues to be addressed by policy (e.g., disappearance of fishing communities, strong competition with other uses of space, lack of generational turnover) which would benefit

from a well prioritised social analysis. In this sense, the work on identifying fishing communities (first as ports) and assigning data to them can be considered a priority for policy needs, as it constitutes a first step for the introduction of indicators such as dependence and resilience. The adaptation of the content of national profiles to these needs can therefore be a useful contribution to the alignment of the work of EUMAP and ICES and therefore a gain in efficiency in the execution of social analysis with the limited resources available (time and expertise).

4 ASSESS WHETHER THE DATA PRODUCED WITH THE NATIONAL PROFILE ARE FIT FOR ANALYSING THE SOCIAL EFFECTS OF FISHERIES' MANAGEMENT MEASURES. (TOR 3)

The need for a more extended social analysis in the fisheries sector and the fishing communities, in general, and for fisheries' management measures in particular, has already been brought up by STECF (e.g., the social impact of the landing obligation policy; social effects of the COVID-19 pandemic, to name but a few) and is reflected in many policy aims and societal goals.

In addition, the suggestion to include *"a brief section on socio-economic aspects, considering the new social data and economic links with the main fishing communities, where relevant",* was demanded at the 2019 AER meeting. However, the group acknowledged its inability to include this kind of analysis due to a lack of quantifiable information at the time. The expert group completing the next year's AER (the year 2020) included measures to mitigate the adverse social effects of the COVID-19 pandemic in the Nowcast results for 2019 and 2020. The mitigating measures for the pandemic were enumerated at the national level and referred both to policy measures (e.g., subsidies) and adaptations from the side of fishing firms (e.g. expansion of direct sales).

The EWG progressed towards identifying the work already carried out by ICES WG SOCIAL and RCG ECON. To do this, the experts built upon the work of those bodies identified under ToR 2.

- RCG ECON already started this assessment in relation to concrete Case Studies.
- ICES WG SOCIAL as well in relation to the ports data exercises, the Galician case study and the review of social indicators (see TOR 2).
- So did STECF e.g., in the CMO meeting trying to analyse social sustainability of fisheries and aquaculture products.

In order to implement the analysis other subgroups of EWG 22-14 were also consulted. The field of social effects of fisheries' management measures is broad. According to the literature topics needed are grouped in different social science agendas, which span from conflict to inter and transdisciplinary work. A classification by the MARE Manifesto (Bavinck and Verrips 2020) categorises these topics as:

1) methodologies and approaches;
2) urgent marine social science topics;
3) suggestions for governance research;
4) suggestions for the science-policy-society interface

Main expertise of the members of EWG 22-14 lies in topics of governance and the competition for space with other maritime sectors and the risk to the survival of current fisheries given the prevalent current challenges of e.g., energy crisis, generational turnover and closed areas for conservation purposes). Additional literature (such as Symes & Hoefnagel 2010, Urquhart et al 2011, Bavinck, Jentoft, Scholtens 2018 and Arbo et al 2018) deepened this analysis, where for example Arbo et al. centred the discussion on the dichotomy "development (Blue growth) vs conservation" and the possible contribution of the social sciences, which includes "formulating governance alternatives, anticipating future trends, imagining desirable futures, and facilitating socially just processes and outcomes".

The experts agreed that the main contribution of EWG 22-14 to the process of analysing Social impacts of fisheries policy is to unite a group of social scientists from academia and the different bodies of the EU and ICES with the common aim of coordinating efforts towards a better policy support, albeit with an open approach from the specific perspective of the diverse social science disciplines themselves. In this way:

- open communication canals
- identify current needs, strategic needs and tactical steps.

4.1 RCG ECON

EWG 22-14 provides a follow-up of the studies presented in the RCG ECON social subgroup focusing on the usefulness of a higher resolution/disaggregation level of social data collection. Up until now, social variables are compulsory only at the MS level. However, more detailed social data collection can be very useful in order to conduct a social analysis of the fisheries sector. Moreover, this higher resolution level and the addition of new social variables can accommodate a to-the-point design, a better implementation, and a more precise evaluation of various EU policy schemes.

This is also highlighted in "*Fishers for the future: Attracting a new generation of workers to the fishing industry and generating employment in coastal communities (2019/2161(INI))",* a text adopted by the European Parliament (EP) for the 2019-2024 period (P9_TA(2021)0386) on 16 September 2021. More specifically, this report stresses the necessity for:

a) better information and profiling of the active population in the fisheries sector,
b) better working and living conditions on board to improve safety,
c) better training and ensuring that training is recognized at EU level,
d) ensuring gender equality in access and employment in this sector,
e) promoting professional fishing activity and generational renewal in the sector.

The report also underlines in several parts the need for a greater and more demanding and detailed social data collection scheme in fisheries, but also throughout the whole fisheries value chain, e.g.: "aggregation of statistical data within the broad fishing sector can hide or camouflage situations and variations, with a negative effect for the sectors".

Regarding the ageing population, the text from the EP points out that "as with fisheries management and adaptation of measures taken, the management, monitoring, and implementation of actions should be differentiated based on geographical area, fishing fleets and fishing gear used". Moreover: "for future STECF reports on social data to include new elements for analysis with the integration of indicators linked to overarching social objectives within the CFP, in particular on worker protection, education and training, earnings and safety, and adequate geographic scale, lower than country level, considering the need to know the regional and local realities" However, currently this disaggregation level is only optional under the EU-MAP.

EWG 22-14 recognizes that, in general, many social variables can potentially add to the social analysis of fisheries and can be useful in analysing social phenomena and issues that significantly affect social sustainability and resilience, especially when they are regionally/locally sensitive. Among them, variables that can be used as proxies for revealing issues such as working conditions, safety on board, retirement schemes, social insurance, and vocational training, are not only compatible but, in fact, necessary for a better and to-the-point policy design. However, EWG 22-14 also recognizes that the feasibility of collecting all, or some, of the above variables under the EU-MAP umbrella, should be carefully examined before providing any recommendations.

As mentioned before, social data collection can accommodate EU policies. For example, the new European Maritime, Fisheries, and Aquaculture Fund (EMFAF) is going to significantly improve the working, living, and safety conditions on EU vessels. In this way, EMFAF contributes to the sustainability of fisheries and the blue economy, contributing to the implementation of UN Sustainable Development Goal 14. Moreover, given that the EMFAF aims to contribute to the full implementation of the CFP, fishers must be properly trained and certified, requiring a portion of the funding to be earmarked for the training and certification of existing and incoming fishers. This is also pointed out by the ocean literacy direction of the EU policy that emphasizes the need for digital literacy and the digitization of fishing activity. The objectives mentioned above require (and justify) the collection of social data regarding working conditions and vocational training among MSs.

In addition, generational renewal is a concept very high on the agenda of EU policies, which is also considered in the new 2021-2027 EMFAF. More specifically, the EMFAF is going to assist and support young fishers who will purchase a vessel for the first time. Generational renewal policies must also consider the objectives of the European Green Deal, Farm to folk strategy and the need to ensure a digital transition in the blue economy. In this sense, it is not only necessary to attract young people to fishing but also to ensure that they are well-informed and properly trained. In this way, youngsters can contribute to the development and social cohesion of their local communities,

especially in the most isolated coastal and island regions and those with fewer job opportunities. Given the above directions, the EMFAF can enable young people to work for economic, social and environmental change in these areas while also enhancing the role of women in this sector by providing mobility and employment opportunities throughout the EU without difficulties or restrictions regarding recognition of their skills and training.

In addition, the gender equality strategy for 2020-2025 requires that the relevant EU funds support actions to promote women's participation in the labour market and work-life balance, encourage investments in care facilities, support female entrepreneurship, and fight gender segregation. In this sense, social data collection can go deeper into the role of women in fisheries by providing a clearer picture of their working conditions, employment status and living conditions, in general. However, this is something that, at least, requires a lower disaggregation level of social data collection (in this sense, the age, education, and employment status by gender can be revealed).

Regarding national employment in the fisheries sector, following the European Economic and Social Committee's opinion on the social dimension of fisheries, it is essential to develop general principles and operational guidelines for fair labour market services in the fishing sector since non-EU fishers are essential in order to maintain activity in the sector in several regions. In this regard, the Commission and the Member States should promote the guidelines on the decent employment of migrant fishers developed in 2020 by the European social partners in the fisheries sector. This is another example of why more disaggregated data is needed, in order to reveal the profile of non-EU fishers.

In table 6 below a summary of the benefits of a more extended social data collection scheme. Starting point was the presentation of two case studies (Greek and Croatian case) as presented during the RCG ECON workshop on social issues (see Appendix of the RCG ECON workshop report on social issues). Both studies utilize employee-level data. In this way, the data collected allows the combination of social variables and between social and other variables (such as economic and transversal) and thus, the implementation of a more thorough and in-depth analysis. The Greek case refers to two studies; a quantitative analysis to unravel the role of women in fisheries and a comparative analysis of the societal value that various fleet segments produce. The Croatian case refers to an in-depth analysis of vocational training in Croatian fisheries.

Overall, employee-level data enabled a multidimensional approach. Although based on the fishing fleet, this data could also be analysed on a local/regional level, considering a home port of a vessel and pointing out the potential issues of geographical marginality of remote coastal and island regions and social issues that arise from it. Some difficulties mentioned in these studies include the larger effort demanded of firms with many employees when employee-level data is used and the need for expertise for a qualitative approach (in the Croatian case a social scientist cooperated voluntarily).

Apart from the higher resolution/disaggregation level of data, the usefulness of new social variables is also pointed out throughout these studies (e.g., variables regarding vocational training and market distribution of landings, see Table 6).

Table 6: Summary of the benefits of a more extended social data collection scheme

Data	why it is important (at EU level)	What we can do with that	Data source	National Data issues/ Ethics issues	Link with EU policies' targets	CS
Higher resolution /disaggregation level, e.g., data collection per employee	• provide the base for analysis in crucial issues for the EU policy, such as gender, youth etc. • provide the opportunity to evaluate social effects of	• Combine social variables (e.g. gender and education); • combine social with economic data (labour productivity per gender, per education level etc.); • higher than MS spatial resolution (e.g., GSA level, or even higher);	Survey/ Questionnaires	difficulties to collect accurate data, esp. in big vessels because of more heterogeneity (migrant workers etc.) Difficult also for larger companies in aquaculture and processing BUT they also have a specialized administration with more resources. A compromise would be	Various EU policies targeting, among others, social sustainability such as: CFP and EMFAF; gender equality strategy for 2020-2025, etc. Also, the higher disaggregation resolution level is	Both

Data	why it is important (at EU level)	What we can do with that	Data source	National Data issues/ Ethics issues	Link with EU policies' targets	CS
	management measures	• perform more complex analysis (e.g., efficiency analysis) and • analysis per social indicators groups (e.g. gender, age groups etc.)		to work with a sample in those cases. Difficulties to collect additional, disaggregated data because of existence of secondary data and need for a CBE (~more often in EU northern MS) Specific social problems are not identified when data is only in an aggregated way, and thus policy issues cannot be addressed. Aggregated data seems to be useless and demotivates data collectors.	specifically mentioned in the "Fishers for the future" European Parliament report	
vocational training	• Professional mobility, diversification of activities: diverse skills/ qualifications enable greater mobility • Income diversification: support professionalism • safety: in case safety on board courses are not obligatory (in every MS?), data on vocational training regarding safety procedures is relevant and indicative	Levels and types of vocational training could indicate a potential for fishers to stay/leave the sector or to diversify the activities and reduce economic vulnerability.	Survey/ Questionnaires	Wide range of vocational training. Additional work is needed on classification and deeper analyses. National profile: - Legal possibilities of/requirements for vocational training (what it allows or not). - Stage of work life when vocational training (start, Life Long Learning) - Compatibility with other economic sectors - Compatibility with requirements in other MS This collection of info might be initiated by an ad-hoc contract, and then the info would be summarized, displayed and updated in the national profiles	Social vulnerability	HR
attitudes to education	Considering the importance of education and training; fishers' attitudes on education could indicate needs on types of additional training, especially in the fishing fleet, where the most dominant type of enterprises are small family businesses with few employees that cover all professional, administrative and safety procedures and tasks, often having hard time following all the requirements.	Provide a list of appropriate training needed in a sector	Survey		social sustainability: education and training	HR
motivation in fisheries	Although motivation itself is not of special interest, a survey on motivation could reveal multi-dimensional dependency in fisheries related to regional and local scale and distinguish more precisely fishing communities, explore the potential for mobility and individual and sector	find out more about the key drivers in industry.	Survey			HR

Data	why it is important (at EU level)	What we can do with that	Data source	National Data issues/ Ethics issues	Link with EU policies' targets	CS
	resilience (attachment/social and emotional connection to this type of work) and					
No of accidents on board		Evaluate safety on board	EMSA (but only for length>15m)?		Fishers for Future, EMFAF	HR

4.2 STECF

Some STECF groups have already started dealing with social effects of fisheries or fisheries management. EWG 20-05 on sustainability of fish products worked on market instruments for fisheries management (a potential sustainability certification, including social sustainability). EWG 18-15 on CFP monitoring on the contrary tried to anticipate how economic and social indicators could help analyse achievement of the objectives of the CFP, which would include the social effects of the EU fisheries policy. The work of both working groups was prospective, and therefore no proof of concept has been performed to see if the social indicators are fit for purpose.

The analysis in this section is therefore based on potential needs for new variables, given the insufficiency identified at the STECF working groups to perform fisheries social analysis with existing data.

4.2.1 STECF work on social sustainability (EWG 20-05 Report CMO on sustainability of fish products)

In addition to certain issues that needed specific national information which could be located in national profiles, EWG 20-05 extracted some recommendations for the collection of additional data when dealing with improving the social sustainability of fish products through inclusion of sustainability criteria in the CMO (see table 7 below).

Table 7: Suggestions for additional EUMAP social variables as extracted from the EWG 20-05 report

EUMAP Data collection	*Why is it important at EU level*	*What we can do with that*	*Data source*	*National data issues*	*Link with EU policy targets*
Ownership of/ work in vessels by citizenship	To assess intergenerational turnover features in countries where fishing is declining, (local participation in fisheries is often replaced by migrant workers)	To forecast the continuation of fisheries in the future, and its future trends not only citizenship but also whether they are owners or employees could be connected with citizenship (and related to community)	Intergenerational succession and Citizenship can be researched through **reviewing related peer reviewed literature**. Through **more disaggregation of variables (e.g. nationality per age**) we can flag succession issues (different for integrated migrants for older generations or for newcomers) that would than need to be researched with other social science methods.	There are differences between MS (E.g., Romania, Bulgaria in comparison to Spain and France)	"Fishers for the future" EP

EUMAP Data collection	*Why is it important at EU level*	*What we can do with that*	*Data source*	*National data issues*	*Link with EU policy targets*
(More) disaggregated socio-demographic data	Not only to disaggregate substantial data to measure labour conditions but to understand it in the frame of community sustainability	Start to assess community sustainability. avoidance of bad practices without harming the sustainability of the community. To detect what has to be changed on communities	EU MAP **survey/ interviews** Furthermore **Ethnography** gives the possibility to triangulate observations, surveys and, if necessary, face-to-face interviews to investigate in-depth labour problematics	Some EU MS already collect socio-demographic data at the fleet level while this is not compulsory.	REPORT of STECF-20-05
Generational turnover	This can be an indicator of the expectations of the fishers, their attitude towards the fishery and many other qualitative aspects that are key to the survival of a community beyond wages. These aspects would need further analysis from the social sciences (e.g. anthropology, ethnology).	Start to assess current and (possibly) future participation in the fishery	**EMFAF** is setting up measures for newcomers. Wait/ ask to see if they collect this data. Ask in **EUMAP how long fisher**s have been in the fishery. To collect **number and age of newcomer**s to the fishery will help to identify future trends in generational turnover	National profiles could inform on whether there any national data already on implementation of succession support programs, or, at least, on initiatives planned/ put in practice (see previous section).	EMFAF REPORT of STECF-20-05 “Fishers for the future" EP

4.2.2 STECF EWG 18-15 on CFP monitoring

EWG 18-15 on CFP monitoring performed an exploratory exercise on social indicators for dependence and resilience. The issues of dependence and resilience are further discussed under TOR 5. However, already here it can be said that adding two additional variables to the EUMAP, age of skipper and age of crew, would be related to the generational turnover issue exposed in the section immediately above (see Tables 8 and 9 below).

Table 8 EWG 18-15 CFP monitoring: Table 6.8 Table 6.7 – Indicators proposed to monitor dependency or reliance of coastal communities on fishing activities.

Indicator	Currently available	Currently reported in CFP progress report
Total number of people active in fishing industry - Fisheries - Ancillary - Processing	Fisheries: Yes from the AER Ancillary: Partially from a study conducted in 20166 Processing: Yes from the processing report	No
Total income from fisheries Total community income	Not at community level, but data are being collected by MS	No

Table 9: EWG 18-15 CFP monitoring: Table 6.8 – Indicators proposed to monitor resilience/confidence.

Indicator	Currently available	Currently reported in CFP progress report
Age vessel/fishing equipment	Yes	No
Age skipper	New DCF variable	No
Age crew	New DCF variable	No
Total net investment	Yes	No

4.3 ICES WGSOCIAL

The use of economic and social indicators (e.g., those of EWG balance of fishing capacity and opportunities for addressing dependence and resilience) by WGSOCIAL, would not need additional EUMAP data, but it would nevertheless require compatible levels of disaggregation among variables, at best at port/ fishing community level.

Other ICES groups with a social science component, as the Working Group on Balancing Economic, Social and Ecological Objectives, WGBESEO. This WG would benefit from additional information on social objectives, that would also be useful for social impact assessment, as they could be used as benchmarks for analysing the social effects of fisheries' management measures. However, the difficulty of identifying these objectives in legal and grey literature texts is acknowledged, complicating their collection under the EUMAP.

5 EXPLORE THE COMPATIBILITY OF THE SOCIAL INDICATORS WITH THE DATA CALL FOR THE ANNUAL ECONOMIC REPORT (TOR 4).

5.1 Introduction

The EUMAP[11] requires MS to collect and provide several data regarding employment and social variables (table 1). For each set of data, a "guidance document" is available on the JRC data collection web site. The guidance documents are prepared and updated by RCG ECON (former PGECON) and for each variable they specify the definition, the proper methodology and further suggestions to allow a clear understanding of the variables and a better consistency among Member States.

Table 10 – summary of the EUMAP variables on employment and social aspects for the fleet, aquaculture and processing sectors

EUMAP table	Variables	Frequency of data collection	Frequency of Data call and STECF report	Guidance document
Tab 7 Fleet economic variables *Variable group*: Employment	Paid labour, Unpaid labour, Full-time equivalent (FTE), Total hours worked per year (optional)	annual	annual	GUIDANCE DOCUMENT FOR THE FISHING FLEET Living document https://datacollection.jrc.ec.europa.eu/documents/10213/994708/EUMAP_guidance_FLEET.pdf/a97f2d95-3fa1-43d8-8aea-0ad796bb65bd Last update: PGECON 2020
Table 10 Economic variables in the aquaculture sector *Variable group*: Employment	Paid labour, Unpaid labour, Full-time equivalent (FTE), Number of hours worked by employees and unpaid workers (optional)	annual	Every 2 years	GUIDANCE DOCUMENT FOR THE AQUACULTURE Living document https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/aqua Last update: PGECON 2020
Processing sector (not mandatory)[12] *Variable group*: Employment	Number of persons employed, Full-time equivalent (FTE), Number of hours worked by employees and unpaid workers (optional)	annual	Every 2 years	GUIDANCE DOCUMENT FOR THE FISH PROCESSING Living document https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/proind Last update: PGECON 2020

[11] COMMISSION DELEGATED DECISION (EU) 2021/1167 of 27 April 2021 establishing the multiannual Union programme for the collection and management of biological, environmental, technical and socioeconomic data in the fisheries and aquaculture sectors from 2022

[12] List of variables reported in the MasterCodeList in line with Annex V to the PGECON 2020 report (COMMISSION IMPLEMENTING DECISION (EU) 2022/39 of 12 January 2022 laying down rules on the format and timetables for the submission of national work plans and annual reports on data collection in the fisheries and aquaculture sectors, and repealing Implementing Decisions (EU) 2016/1701 and (EU) 2018/1283)

Table 9 Social variables for the fishing and aquaculture sectors The same variables are also relevant for the fish processing sector	Employment by gender FTEs by gender Unpaid labour by gender Employment by age Employment by level of education Employment by nationality Employment by employment status	every three years, counting from 2017 as the first reference data year	In 2022, social variables (for the reference year 2020) have been requested together with the economic variables (AER data call and Aquaculture data call). For the processing sector, social variables (for the refence year 2017) were requested in the 2021 data call The 2022 STECF reports on fleet (AER), aquaculture and processing sector include a chapter with an analysis of the social variables.	GUIDANCE DOCUMENT FOR THE SOCIAL VARIABLES Living document https://datacollection.jrc.ec.europa.eu/guidelines/socioeco/social Last update: PGECON 2020 template fields for data call: https://datacollection.jrc.ec.europa.eu/dc/fleet/datatype

EWG 22-14 noted that the final updates in the Guidance documents for the social variables have been made by PGECON 2020. Therefore, subsequent proposals for changes to the definitions were not included in the documents. In order to the information about definitions and methodology updated in a timely manner, chairs of RCG Econ intersessional working groups should provide to the RCG ECON plenary meeting the summary or list of updated definitions, if any. The Guidance documents for the social variables should be updated by the RCG ECON chairs based on the RCG ECON agreement and appropriate recommendation.

EWG 22-14 highlighted the current situation and systemized previous suggestions. The comparability of two data sets for economic and social variables from the EUMAP table 7, table 9 and table 10 was discussed. The main issues to be considered in terms of compatibility of the social indicators with the data call for the Annual Economic Report are:

1. The target population should be the same

   the guidance document for the social variables clearly states that "data should be raised to the total population. Employment data reported in the social data calls should be consistent with the data reported under the Fleet and Aquaculture data calls".

2. The definition of employment should be consistent

   By employment is meant to cover the total number of persons who have worked onboard the vessel, irrespective of the total number of hours. People working only onshore, who are paid from the income of vessels should be included if their activity has a direct link with the fishing operations.

   While this definition seems to be coherent among the 2 frameworks, it has to be considered that "on shore activities" are not described nor listed in a unique way. It should be ensured that the same activities are included in the fleet variables and in the social indicators. This issue is particularly relevant when at national level different bodies are involved in the collection of the 2 sets of data, or different data sources are being used.

3. Data should refer to the same time frame

   The guidance document for the fleet data call specifies that "the total number of persons should be estimated as an annual average". The same provision is not reported for the social variables. For the social variables it is only recognized that the trade-offs of providing the data for the whole year or a particular date in the year should be further investigated so that duplications are avoided (e.g., when fishers are moving from one vessel to another during the year) or cover the whole year to include seasonal patterns.

4. The segmentation of the population should be the same

Fleet economic data are reported by the segments listed in table 8 of the EUMAP, while aquaculture economic data are reported by the segments listed in table 11 of the EUMAP. For the social variables (table 9) no segmentation is foreseen by the EUMAP. The guidance document for the social variable recommends to stratify employment data for the social data call related to the EU fleet by supra region, geo-indicator, fishing activity (SCF, LSF and DWF) and *main fleet segments*, when possible. For the employment data for the social data call related to the EU aquaculture sector, it is recommended to follow the same segmentation as for the aquaculture data call when possible, or at least to disaggregate by *marine (finfish), freshwater (finfish) and shellfish*.

If the segmentation is not aligned, economic and social data sets could be compared only by total national values or by the higher level of aggregation provided for the 2 datasets (for instance SCF, LSF and DWF if social data are provided at this level).

EWG 22-14 analysed the present social variables requested by the EUMAP (table 9) and advised on possible improvements. This task considered as a starting point for discussion the findings and suggestions from the RCG EECON WS Social in 2021 (table 2).

Table 11 – main issues related to the DCF social variables (table 9 EUMAP) and possible improvements

	Issue	EWG advice
Gender	Include an additional variable for the Unpaid labour by gender broken down by work done at sea or on-shore	The additional variables are interesting from a social perspective. In particular, the information of unpaid labour on-shore by women is a key information particularly for the Small Scale Fishery. However, EWG is aware of the difficulties to actually gather this type of information. RCG Econ could eventually further investigate the feasibility for the collection of these additional variables.
	Include an additional variable for the employment of women that work only on-shore	
	Include an additional variable for the legal status of unpaid labour of women	This information is related to the EU directive 2010/41 on assisting spouses and partners. EWG considers that the legal status of women would better fit in the national profiles where official sources of information (national administrations in charge of the implementation of EU directive 2010/41) could be included. Once this exercise will be finalized in the national profiles, there could be a reassessment of the value to routinely collect this information within the DCF.
Level of Education	Include an additional category in the classification for the "vocational training"	EWG agrees that vocational training should be included (in agreement with RCG Econ Social WG 2021 and STECF EWG 20-14). However, EWG is aware that the present categories applied in the DCF context are in line with the International Standard Classification of Education (ISCED 2011) that does not incorporate vocational training. In addition, there is a high heterogeneity among countries regarding several aspects of vocational training (such as content, duration etc.). Therefore, EWG agrees with RCG Econ Social WG 2021 that as

		first step concise information on how the national vocational system works and deviations of the national education systems from the standard classification should be added to the national profiles.
Age	Split the age class 40-64 into 2 categories 40-54 and 55-64	The EWG considers that it would be beneficial to split the age class 40-64, as also suggested by STECF EWG 20-14, to provide greater accuracy in terms of supporting the decision-making process. Splitting the categories will inform on the share of fishermen close to retirement; in this respect different retirement ages are actually prevalent in MSs and this information could be included in national profiles and matched with the proposed categories for age. The EWG also considered that the suggested categories are coherent with the ones used by EUROSTAT in the context of population statistics (40-44 / 45-49 / 50-54 / 55-59 / 60-64) EWG also considers that the additional splits are in line with the GFCM DCRF requirements.
Employment Status	Definitions and consistency among MSs to be improved	The guidance on social variables requests to report this variable at least by two categories: "Owner" (vessel owner involved in vessel activity/operation) and "Employee" (all engaged workers onboard, excluding owners). It is also said that it is possible to disaggregate on a voluntary basis between full and part time employees. EWG agrees with RCG_ECON WS Social 2021 that the present guidance should be improved. EWG suggests to consider the following points: - Employment status has to be reported only for paid labour - It is essential to disaggregate the number for employment into number of employees full time and number of employees part time. This is crucial information from a social point of view and it can only be retrieved from this variable. - In order to identify the more appropriate categories, the ESA account system should be used as a reference. In particular, the definition of "self-employed persons" has to be taken into account. - The categorization of "share fishers" is crucial. Different national legislations should be scrutinized in order to check for possible harmonization.

5.2 Conclusions

EWG 22-14 concludes that the compatibility of the social indicators with the data call for the Annual Economic Report could be improved by better specifying some of the definitions in the guidance documents for social variables.

The on-shore activities should be considered in the employment figures. The definition of on-shore activities should be operationalised and, ideally, be listed. From the definition, those activities should have a direct link with the fishing operations. Several working groups (EWG 19-03, RCG Econ social WS 2021) already attempted to produce such list and, on the basis of their findings, it could be considered that such list should include the following core activities: maintenance of means of production (nets, vessel, etc.); landing and stowage of the catch; processing; distribution and/or marketization of the product. EWG considers that this exercise has to be finalized and RCG Econ should amend the guidance documents accordingly.

It has also to be considered that in order to increase the compatibility with the social variables, "Employment by gender" should be changed into "Paid labour by gender" in order to be consistent with the revised EUMAP (that is no more asking for the "engaged crew" but for "paid labour" in addition to "unpaid labour") and also to complement the variable "Unpaid labour by gender" that is already included in table 9 of EUMAP. To address this point, EUMAP should be amended.

The social variables with specifications on employment (FTEs by gender, Employment by age, Employment by level of education and Employment by nationality) should cover "paid" as well as "unpaid" labour. At present, the guidance for social variables is ambiguous which may lead to different interpretations by MS in reporting data.

Apart from these points, EWG 22-14 suggested some additional improvements for the guidance document on social variables (table 3).

Table 12 – EWG proposals for improvement in the provision of EUMAP social variables

Current variables	**Proposals for changes**
Employment by gender	This variable should be changed into: Paid labour by gender (EUMAP revision)
FTEs by gender	To be specified that this variable should include paid and unpaid labour (revision of guidance document)
Unpaid labour by gender	No revision
Employment by age	To be specified that this variable should include paid and unpaid labour Split the age class 40-64 into 2 categories 40-54 and 55-64 (revision of guidance document)
Employment by level of education	To be specified that this variable should include paid and unpaid labour (revision of guidance document)
Employment by nationality	To be specified that paid and unpaid labour have to be included (Revision of guidance document)
Employment by employment status	Categories for reporting to be amended considering EWG suggestions

The RCG ECON WS on Social variables 2021 also highlighted some additional variables that would increase the relevance of the social data collection, in particular in relation to the gender issue. The EWG recognizes their importance but also considers the need to have a clear methodological framework and an assessment of their use value before their inclusion in the routinely data collection within the DCF.

The correct provision of social variables implies the clear understanding of underlying legal aspects regarding several issues (classification of self-employees, share-fishermen, ages of retirement, legal status of spouses, vocational training within the frame of national education systems, etc.). The EWG therefore considers that an ad hoc contract could set a table of comparison of legal issues as a proper background for the revision of the guidance document on social variables by RCG ECON. EWG is also aware that the guidance documents will be included in the Regional Work Plan for economic and social issues that is at the moment under discussion. While the guidance documents for the economic variables are already finalized, additional work is needed on the guidance document for social variables, as highlighted by EWG 22-14.

5.3 Options for Social Data collection

EWG 22-14 identified two possible options for the social data collected in the frame of EUMAP table 9 presentation. The variables could be presented in one single report covering the three sectors (fisheries, aquaculture and processing) dedicated mainly to the social variables, or in separate sections included in the Annual/Biannual Economic Reports for each sector. The discussed PROS and CONS per each option are listed below:

Option 1

According to this option, the social data will be requested every 3 years as part of the sectors' economic data calls and the analysis will continue to be presented in chapters in the relevant Economic reports.

Table 13: Social data as part of AER; PROs and CONs

PROS	**CONS**
Economic reports can use social aspects as dimension in the analysis.	Lack of the availability of the expertise for social variables during the relevant meetings.
Social and economic data submission technically fulfils the EUMAP requirements for collection of social variables listed in table 9.	Overloaded agenda for the meeting in which the Annual economic report is produced.
Social information provided in AER once every three years.	The content of the social chapter needs to be clarified.
Common approach is followed for three sectors in terms of analysis and presentation of social data in the reports.	There will be no comparison between the social data across the three sectors.
Consistent time frames between social and economic data sets.	
The employment data in the economic and social data sets could be cross checked during the meetings and resubmitted in case of necessity.	
Social chapters in each of the three reports could increase the visibility of data and reach a wider audience.	

The continuation of the current strategy to provide social data in separate sections of the fleet annual economic report and the reports for the aquaculture and fish processing could keep the link between economic and social data and to contribute in more precise analysis for the socioeconomic situation in each sector.

Another benefit of keeping the social data within the reports is that it allows comparison of both data sets (economic and social), which not only ensures the higher quality of the information and minimises the discrepancies but also gives an opportunity to the MS to resubmit their data sets in due time, if there is a necessity.

If the collection/reporting of the social variables continues to be once in every three years it will not affect the work load so significantly during the annual meetings for the fleet economic report, In this option the reporting and publication of the social data for the fleet will be done in time and not be postponed due to the collection or reporting of the data for the other two sectors.

According to the EWG 22-14 discussion the main CONS are that there is a lack of the expertise for the social data, a possible solution could be if experts with relevant experience in social area/science/analysis are invited in the meetings.

Option 2

Separate data call for the EUMAP variables in Table 9 once every three years for all three sectors (fleet, aquaculture, fish processing) and produce a stand-alone social report.

Table 14: Separate data call Social data; PROs and CONs

PROS	**CONS**
Availability of the expertise for social variables.	The link with economic data could be lost.
Common approach for three sectors. The quality checks can be applied and improved.	Not enough social data for presentation in a separate report.
Complete analysis of social data.	Timing for the availability of the social data and data calls should be harmonised (could be a key problem for having a separate report).
The inter links between three sectors can be deeper analysed.	Structure of the report is unclear.
Additional sources of data could be used.	Total population for social data should be checked with economic data.
	Delay in data submission for social data (data calls for aquaculture and fish processing requested once every two years).
	New data call should be developed for social data submission.

One of the main benefits of having a separate report dedicated only to the social data collected for the fisheries, aquaculture and processing sectors is that it could include more detailed information for the social data available from other data sources. It could provide detailed comparison between the three sectors.

EWG 22-14 discussed that for the preparation of the report, an additional data call should be established. There is a need for further investigation of the added value and possible constraints of this, but as main problems were listed the additional workload, the need for the development of the new data call, insufficient number of variables and lack of historical data.

With regards to the timeframe of the social report EWG 22-14 noted that if there will be 1 data call for all social variables, it will not correspond to the time series provided under the economic report due to the different frequencies of the economic and social data collection as well as time frames for the producing the reports for aquaculture and fish processing. For example the social data for the fleet for reference year 2020 was submitted during the fleet socioeconomic data call 2022 and it was published in the same year. The social data for the aquaculture for reference year 2020 was submitted in September 2022, and could be available in the beginning of 2023. The social data for 2020 in fish processing can be submitted and published in 2023 at earliest, depending on the exact month in which the data call will be launched (if it is at the end of 2023, the report will be published in 2024).

If the social data is presented in a separate report some of the economic variables should also be provided in order to make a complete overview and to cross check the consistency between the two data sets.

5.4 Conclusions

The EWG 22-14 agreed that both options can be applied for the social data presentation and have their benefits and drawbacks. However, the final choice depends on the aims and needs of End-user and the availability of the MSs to have an additional data call.

If Option 1 is chosen and the current approach is kept, the structure of the social chapter and appropriate content in each of the economic reports could be clarified and/or revised. This revision can be implemented by an expert by way of issuing an ad-hoc contract.

For Option 2 ad-hoc contracts could be an opportunity for the development of the Social data call structure, data presentation, the format of the report, finding a time slot for the data call and additional sources of data. Option 2 can be more preferable for the future presentation of the social data when more social information can be available and provided together with the variables from EUMAP Table 9. However, the stand alone report should have a very good connection with the Annual Economic Report. The definitions of all common variables and total population should be the same between all data calls and reports.

6 ADVISE ON FURTHER ACTIONS TO BE TAKEN FOR THE DEVELOPMENT OF SOCIAL INDICATORS. (TOR 5)

6.1 Introduction

The capability to measure the fisheries' social dimension is pivotal to achieving the European Union's goals stated in the CFP (art.2). This entails understanding and assessing human behaviour, the consequences of human behaviour and the human dependence and/or dependence and/or interlinkage with the ecosystem.

Several initiatives worldwide have substantially advanced the state of the art (Jepson and Colburn, 2013; Stephenson et al., 2018, ICES WG SOCIAL, 2018, 2020; ICES WGSEDA). WGSOCIAL is an interdisciplinary community of practice launched in 2018 within ICES that works on a general and a place/space-specific understanding of the social aspects, concerns and knowledge of marine resource use and governance. WGSOCIAL has conducted a systematic literature review soon to be released by FAO (in press): **Socio-economic indicators used to monitor and evaluate the sustainability of fisheries management: a scoping review**. The group is also tackling debates on core concepts (e.g., the definition of fisheries community) and running pilot case studies to explore the feasibility of conceptual and methodological approaches [e.g., Spain, Portugal, Netherlands and Norway).

In addition, ICES WGSEDA addresses the Social and Economic Dimensions of Aquaculture. WGSEDA has tested the operationalization of a set of social dimensions based on categories and indicators of the UN Sustainable development Goals (see Krause et al., 2020). Their findings are instrumental in understanding core topics, in particular the social license to operate and the social acceptability of aquaculture.

The US NOAA's approach to the social dimension combines community profiles, social indicators and oral history archives. In the US the work on social indicators has been an iterative process since 2010, driven by the goal to develop social impact assessments. The operationalization of the social dimension has specific features: 1. uses secondary data sources, which ensures replicability and feasibility under time constraints but may limit the capability to include critical variables in the analysis; 2. allows cross-community and cross-regional comparison; 3. selects variables and metrics that are goal-dependent (originally intended to measure the impact of extreme weather events).

These initiatives share a comprehensive and integrative understanding of the social dimension, paying attention to singular dimensions (e.g., demography as an explicit social dimension, governance as an institutional dimension) and combinations or potential combinations of social, institutional and economic dimensions (e.g., well-being, livelihoods, capabilities, fairness, adaptive capacity, impacts). Addressing combined dimensions addresses the limitations of narrower analytical perspectives in measuring social variables. For instance, the "well-being approach" (Coulthard, Johnson and McGregor, 2011) uses a three-dimensional model to measure the quality of life which, besides the financial conditions, addresses social support and subjective metrics of happiness (Armitage et al., 2012; Reyes-García et al., 2016).

Social data aim to improve the evidence base for policy-making, acting as a bridge between science and policy. Scientists can propose robust and sound indicators and metrics. However, selecting indicators is a political process. Downplaying the normative dimension of working with indicators and failing to understand the selection as part of the policy cycle often leads to limited and/or opportunistic use of indicators.

In suggesting further actions to be taken for the development of social indicators, the following issues have been taken into account:

- The limitations of the current EUMAP in terms of social data (see TOR 4).
- The difficulties of expanding the social variables within the EUMAP in the short-term.
- The on-going development of other analytical tools (national profiles and community profiles).

- The complementarity of secondary sources of information and the potential of new sources of information (e.g., social media).
- The need to balance harmonization and comparison across Member States with capturing context-dependent factors.
- The need to understand the linkages across dimensions (social, economic and environmental).

6.2 A roadmap for developing social indicators

EWG 22-14 proposes two parallel actions to achieve progress in operationalising the social dimension: a) to launch a stepwise process that ensures relevance and credibility of the indicators to be developed; b) to implement short-term actions that take advantage of ongoing developments.

Designing a stepwise process responds to the fact that indicators need an underlying conceptual framework. The process is similar to the five-step process for the inclusion of new topics in ecosystem overviews (ICES, 2021) and integrates elements from the front running initiatives summarized in the introduction (NOAA) as well as efforts in conceptualizing and operationalising human well-being for ecosystem assessment and management (Breslow et al, 2016).

The framework provides a logic for selection of indicators, addresses methodological implications (e.g., unit of analysis), provides technical support (definitions, metrics) and considers linkages and interdependences with other dimensions (see Sebastien et al., 2014 and also TOR 4). Ideally, the processes will include four consecutive stages;

1. A scoping exercise with policy-makers and advisory bodies (including ACs): what questions need to be answered? The policy relevance of the indicators will be stated.
2. Conceptual framework. The framework sets social indicators in the suit of fisheries indicators (ecological, environmental, economic), providing the linkage for integrative analysis and advice.
3. Conceptual validation, methodological and data considerations.
4. Selection. Grounded in the WGSOCIAL systematic review (FAO, 2022, EWG findings and TOR 1 and 2.).

The practicalities of developing this process will require further debate, time and resources. In the meantime, specific actions can be implemented, mainly using the community- and national profiles to run pilot tests and exploratory exercises. Expert judgement has been used to select a preliminary list of variables that could be part of these exercises.

The preliminary list focuses on critical variables to measure the fisheries' social dimension. On balancing their relevance with the feasibility to implement short-term actions, some components have had to be excluded. Due to their role in successful fisheries governance, the topics of social justice and social capital were explicitly addressed.

Social justice (who gets what against whom, when and how; Jentoft et al, 2022; Bennet, 2022; Germon-Duret et al., 2022) entails resource allocation and access to the marine space, for which the Blue Economy agenda foresees increasing competition between uses and users. Concepts such as ocean grabbing (dispossession or appropriation of use, control or access to ocean space or resources from prior resource users, rights holders or inhabitants, see Bennet et al., 2015) aim to capture ongoing phenomena, which will require to be measured and analysed. While acknowledging the need to address the aspect of social justice, the EWG considers that the current information and data available are insufficient for a systematic analysis. The foreseen developments in gathering data from art.17 (TOR 6 and 7) and other complementary sources of information (data from the MS Marine Spatial Plans) could be a starting point.

Likewise, social capital (norms and social networks) is a cornerstone of fisheries' social dimension. Existing evidence of the effects of available social capital on socio-economic performance of a fishery (see Grafton, 2005, among others), requires an additional research effort. Measuring social capital will allow for a better understanding of concepts such as conflict resolution and reinforcing the resilience of fisheries communities. The EWG suggests that further research should be carried out on this topic.

The actions to be developed in the short term address the following domains: working conditions, participation, reliance/dependence and resilience. It is worth noting that none of the domains and variables considered is recommended for inclusion in the EUMAP at this stage. Foreseeably, the output of the pilot tests in community- and national profiles and the development of other initiatives (WGSOCIAL) will provide the ground to suggest systematic data collection under the DCF in the mid-term.

Short-term actions should maintain sight of the overarching aim, including indicators that enable temporal and spatial comparison, can be applied at multiple scales, and contribute to standardising fisheries' social dimension operationalisation.

The preliminary analysis of the domains of working conditions, participation and fisheries behaviour is summarized in table 6. During the discussions, potential data considerations in measuring specific variables were flagged (e.g., the need for surveys or interviews or the limitations of secondary data sources). The pilot cases and exploratory exercises will provide a better understanding of the implications and potential paths to overcome them.

Concerning secondary data sources, the EWG highlights the potential opportunity the use of big data and social media. Insights on fishing behaviour or social engagement can be obtained for both commercial fisheries (e.g., VMS data provide valuable information on fishing behaviour, see O'Farrel et al., 2017 and Schadeberg et al., 2021) and recreational fisheries (using pictures or content analysis; see Sbragaglia et al., 2022).

Table 15: List of initial variables to be considered.

Domain	Variable	Relevance	Recommendations
WORKING CONDITIONS	Health (physical and mental)	Medium	To be considered for future developments
	Job satisfaction (subjective perception[13])	High Generational renewal	To be included in the community- and national profiles. The methodological approach entails context-dependent factors (e.g., cultural values)
PARTICIPATION	Participation in management (objective/subjective) Agency Autonomy	High	To be included in community- and national profiles
FISHERIES BEHAVIOUR	Habits (reasoned routines directed towards a certain objective (e.g. profit, respect, pride or existential needs). Values (anthropocentric, ecocentric) Preferences, incentives, etc.	High	Community profiles will allow to test the methodological approaches. Generalizations could be extracted and added to national profiles at a later stage.

[13] Difference between objective and subjective indicators point to a descriptive indication of what is being measured: facts or perception.

6.3 Addressing reliance and resilience

Reliance (dependence) and resilience are key concepts to measure impacts of policy on fisheries communities. Previous expert groups (EWG 18-15, 19-03, 20-14) called for operationalization of indicators for resilience and resilience of fishing communities, based on indicator material available from the DCF and other sources (national general statistics). Their recommendations in considering specific factors (e.g., community support, place, involvement in Fisheries) have been considered as a starting point.

6.3.1 Dependence (Reliance)

In the literature, the concepts of reliance and dependence are used interchangeably. Despite some nuances[14], using dependence facilitates the communication and understanding across stakeholders and hence is proposed for the working definition.

Dependence is a multidimensional concept associated to economic, social and cultural factors. Dependence measures the extent to which actors, businesses, sectors and communities depend on fisheries– the significance of fisheries related activities is determined by the degree to which one depends on these activities for income, status, identity and culture.

This definition allows to measure dependence at different units of analysis (sector, community, region, nation, EU). Likewise, community can be defined from the on-set, using e.g., place-based, community of practice (WGSOCIAL, 2020).

Table 16: Definitions of reliance/dependence [non exhaustive-list]

Source	Definition
EWG18-15 Reliance	Relating to the extent to which the social and economic circumstances of actors, businesses, sectors and communities rely on fisheries – the significance of fisheries related activities is determined by the degree to which one relies on these activities for income, status and culture
Dependency (Ross, 2013)	Economic: often defined trough employment figures Policy: Access to resources Social: shared bonds, values, knowledge Cultural: identity, commitment to fishing, language traditions
Dependence (Suris-Regueiro and Santiago, 2014)	Economic: value of fishery output at basic prices (Output bp), Gross Value Added at basic prices (GVA bp), Gross Primary Income and total employment generated, both with regard to the number of people as well as full-time equivalent employment (FTE).
Humphrey 1995, Bailey Marshall et al. 2007	Social factors (such as descriptions of the level of attachment to the occupation, employability, family characteristics and attachment to place), economic factors (business characteristics, approach, debt and income) and environmental factors (nature of the interaction with the resource, level of specialisation, local skills and knowledge).

[14] Reliance refers to the state of depending on or trusting in something or someone, while dependence is the situation in which you need something or someone all the time, especially in order to continue existing or operating (Cambridge Dictionary).

NOAA Reliance combined with engagement (Jepson and Colburn, 2013)	Commercial fishing engagement measures the presence of commercial fishing through fishing activity as shown through quota holders and vessel landings. A high rank indicates more engagement. Commercial fishing reliance measures the presence of commercial fishing in relation to the population of a community through fishing activity. A high rank indicates more reliance.

For the short-term actions, the EWG proposes to use the commercial dependence index as elaborated by NOAA as a first step. The index portrays the importance or level of dependence of coastal communities on commercial fishing activities, considering a range of complementary measures related to fishing activity that covers both engagement and *dependence* (reliance in the original; Jepson and Colburn, 2013). The index is also available for recreational fisheries. Given the importance of recreational fisheries in the EU context and the diversity of situations at country and community level, the recreational fisheries dependence index could be an asset for specific pilot tests in community- and country profiles.

Focusing only on the commercial dependence index (Jepson and Colburn[15], 2013; NOAA): **commercial fishing engagement** measures the presence of commercial fishing through fishing activity as shown through permits, fish dealers, and vessel landings. A high rank indicates more engagement; **commercial fishing dependence** measures the presence of commercial fishing in relation to the population size of a community through fishing activity. A high rank indicates a higher degree of dependence.

The commercial dependence index uses value of landings per capita, number of commercial permits per capita, number of dealers per capita, number of commercial permits per capita and percentage employed in agriculture, forestry and fisheries. Each variable is divided by the population and is either multiplied by a constant (e.g., 1,000) or used as is and reflects the amount of fishing activity in relation to the size of the population.

Table 17: Commercial Fisheries Dependence index

Commercial Fishing Reliance Index
Value of landings per capita
Number of commercial fishing permits per capita
Dealers with landings per capita
Percent in agriculture, forestry and fishing
Commercial Fishing Engagement Index
Value of landing
Number of commercial fishing permits
Dealers with landings
Weight of Landings

[15] The description of the index draws liberally and at times directly upon Jepson and Colburn (2013)

Source: Jepson and Colburn (2013).

The operationalization of the variables is closely linked to the definition of community. For instance, Himes-Cornell and Kasperski (2016) limit engagement and resilient variables to residents.

Further work is required to define a dependence index for aquaculture (and processing), noting that the dependency is mainly related to: a) on the supply chain side: e.g., raw materials, energy, networks, materials for plant engineering. Attention should be paid to dependency intra EU MSs and Extra-EU MSs; b) on the commercial/market side, dependency mostly relates to the low diversification at end-markets level (for example Greece depends heavily on the Italian market for sales of finfish, the central European market depends on Italian freshwater finfish, etc.). Dependency intra EU MSs.; c) on the national level, it could be important to collect data about the availability of infrastructures that support aquaculture: e.g., slaughtering centres, purification centres, processing centres in the supply chain with producers, cold store logistics.

6.3.2 Resilience

The changes and shocks that may impact the fisheries' communities are diverse and associated with different impact scales and affected populations. Key concepts to assess the ability to deal with shocks are resilience and vulnerability (Seara, Clay, Colburn, 2016). Resilience is about the ability to respond to shocks, to either return to pre-shock state or transform to a new state, which is based on pre-existing conditions. Due to the inherent relationship between vulnerability and resilience, the EWG proposes to advance in the measurement of the first and work on an operational definition of the latter.

Social vulnerability captures demographic and socioeconomic characteristics of local populations that increase or attenuate the impacts of hazard events (Cutter et al., 2009; Emrich and Cutter, 2010). However, vulnerability definitions vary based on the event, disturbance or phenomena against it is measured (e.g. climate change, natural hazards, poverty). Table 9 and Table 10 summarize definitions used in previous discussions and in the literature. However, to avoid the conceptual trap in the development of initial indicators, the EWG follows the suggestion by Jepson and Colburn (2013) of focusing on the identification of pre-event existing social conditions that are likely to affect the impact of disruptive events.

Table 18: Definitions of vulnerability [non-exhaustive list]

Source	**DEFINITION**
EWG 20-14	Vulnerability has multiple definitions, depending on the context (e.g., climate change, natural hazards, poverty and limited food security). Vulnerability research is often used to identify the characteristics of a community (or population) that influence the social burden of risk and "susceptibility of a given population, system, or place to harm from exposure to the hazard…" (Cutter et al. 2009:2). Further, social vulnerability is centred in both demographic and socioeconomic characteristics of local populations that increase or attenuate the impacts of hazard events (Cutter et al. 2009).
Adger, W. N. (2006)	Vulnerability, in the context of social and environmental changes, is defined as the state of susceptibility to be harmed from perturbations
Wisner et al., 2004	Social vulnerability refers to potential harm to people. It involves a combination of factors that determine the degree to which someone's life and livelihood are put at risk by a discrete and identifiable event in nature or in society. Social vulnerability refers to the characteristics of a person or group in terms of their capacity to anticipate, cope with, resist and recovery from the impact of a natural hazard.
Buckle et al., 2001, Cutter	The social vulnerability of communities represents their ability to resist and recover from exposure events

et al., 2008.	
IPCC Climate Change 2014	Vulnerability is defined as the propensity or predisposition to be adversely affected
McCarthy, J. J. et al. (2001)	Vulnerability is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its Sensitivity, and its Adaptive Capacity

Table 19. Definitions of resilience [non-exhaustive list]

SOURCE	DEFINITION
EWG 18-15	relating to the extent to which actors, businesses and communities are resilient to, for example, changes in policy, the health of the stocks and market forces – the longevity of the fishing industry and those associated with it is determined by its resilience, and thereby its adaptability to external change
EWG 19-03	Both natural and social sciences emphasize that a system can have multiple stable states and that disturbances can force communities to shift from one state to another and still maintain their functional characteristics or be resilient (e.g., Peterson et al. 1998; Folke 2006). Social scientists usually emphasize a system's ability to cope and adapt to change, but social systems cannot be easily separated from ecological systems. The concept of "**social-ecological resilience"** attempts to capture this interaction (Walker et al., 2004). What is clear is that the interactions between the human and non-human environment have synergistic aspects and may adapt or transform over time (Folke, 2006).
Marshall and Marshall (2007)	Comprises four key characteristics: (1) the perception of risk associated with change; (2) the ability to plan, learn and reorganise; (3) the proximity to the thresholds of coping; and (4) the level of interest in change

For the short-term actions, the EWG suggests the development of a vulnerability index that builds on the one used by NOAA (first 4 set of variables detailed in EWG 20-14; Jepson and Colburn, 2013), while reformulating and considering additional ones based on context-dependent factors. The index is a preliminary attempt to address the issue, for which further work will be needed through exploratory studies. Further work is needed to analyse the potential overlaps between the dependence and the resilient index, as well as to what extent the latest captures the different approaches currently tackling the social dimension of fisheries.

It is suggested the draft vulnerability index to be composed of:

- **Personal disruption**: represents factors that disrupt a community member's ability to respond to change because of personal circumstances affecting family life or educational levels or propensity to be affected by poverty. A high rank indicates more personal disruption and a more vulnerable population.
- **Population composition**: shows the presence of populations who are traditionally considered more vulnerable due to circumstances often associated with low incomes and access to fewer resources. A high rank indicates a more vulnerable population.

- **Poverty**: commonly used indicator of vulnerable populations. A high rank indicates a high rate of poverty and a more vulnerable population.
- **Labour force**: characterizes the strength and stability of the labour force and employment opportunities that may exist. A high rank means likely fewer employment opportunities and a more vulnerable population.
- **Housing characteristics**: is a measure of infrastructure vulnerability and includes factors that indicate housing that may be vulnerable to coastal hazards. A high rank means a more vulnerable infrastructure and a more vulnerable population. On the other hand, the opposite interpretation might be that more affordable housing could mean less vulnerability for some populations.
- **Social network**: is a measure of the social structure of the community (place-based; community of practice or else) that indicates integration. A higher rank means a less vulnerable society.
- **Support to fishing communities**: is a measure of public and community support and aims to characterize the level of institutionalized support specific to the fishing community (place-based; community of practice, or else). A higher rank means a less vulnerable fishing community.
- **Professional mobility potential**: is a measure of the capability to switch jobs within a community. A higher rank means a less vulnerable population.
- **Public services and facilities**: is a measure of the availability of essential services for the functioning of a community. It also aims to capture the degree of connection of isolation. A higher rank means a less vulnerable community.

The operationalization of this index needs further attention, especially relating to its definition, rationale and metrics.

Table 20: Resilience index [preliminary approach]

Variable
Personal Disruption Index
Percentage unemployed
Crime index
Percentage with no diploma
Percentage in poverty
Population Composition Index
Percentage immigrant population
Percentage female single headed households
Percentage population 0-5 years
Poverty Index
Percentage receiving assistance
Percentage of families below poverty level
Percentage over 65 in poverty
Percentage under 18 in poverty

Labour Force Structure Index*
Percentage females employed
Percentage population in the labour force
Percentage of self-employed workers
Percentage populations receiving social security benefits*
Housing Characteristics Index*
Median rent in Euros
Median mortgage in Euros
Median number of rooms
Housing Disruption Index
Percentage change in mortgage
Percentage change in home values
Percentage of owners with monthly housing costs of ≥35% of income
Social network
Number of fisheries organizations (any time and legal entity).
Number of fisheries Local Action Groups (FLAGs)
Percentage of people affiliated/engaged in community groups
Support to fishing communities
Percentage of public departments/services focused [only] on fisheries
Percentage of NGOs with fisheries programs
Percentage of other civic society organizations with fisheries programs
Professional mobility potential
Level of education [to be reformulated]
Percentage of companies outside the fisheries sector in the area [to be reformulated]
Public services and facilities
Number of schools, banks, etc. [to be reformulated]
Facilities within a given distance: train, bus, etc. [to be reformulated]

Scores reversed to ensure directional continuity with other scales* (Jepson and Colburn, 2013).

6.4 Recommendations

Further advances in the development of social indicators that can be used for fisheries policy-making and management entail:

- A scoping exercise with policy-makers and advisory bodies (including ACs): what questions need to be answered? Which data on the social dimension of fisheries are required?
- Further development of the Conceptual framework of social data. The framework sets social indicators in the suit of fisheries indicators (ecological, environmental, economic), providing the linkage for integrative analysis and advice.
- Conceptual validation, methodological and data considerations. For example develop operational indicators for concepts such as social justice, dependence and vulnerability.
- To include specific variables and indicators (such as on vulnerability and dependence) as part of the development of the country and community profiles as soon as relevant indicators for the concepts have been operationalised.
- Streamlining the efforts of STECF, RCG ECON and ICES working groups on the social dimension does not require additional structures or networks, but requires bringing the current expertise and processes together. This will require sufficient expertise on the social dimension to be available to STECF.

7 ASSESS THE TYPES OF CRITERIA APPLIED BY THE MEMBER STATES FOR THE IMPLEMENTATION OF ARTICLE 17 OF THE CFP REGULATION (TOR 6)

7.1 Introduction

EWG 22-14 assessed responses of the Member States towards the European Commission's (EC) questionnaire dated January 12th, 2022 about the implementation of Articles 16 (6) and 17 of Regulation (EU) No 1380/2013. In general, most countries maintain historic catches as the basic criterion for the distribution of fishing opportunities.

The systems for assigning fishing rights in Europe have a long tradition. Basically starting at the application of Total Allowable Catches (TACs; 1970s) as a criterion for limiting catches in certain fisheries as a result of fishing pressure and biological development of stocks. The CFP principle of relative stability has a very clear link with the historical catches of each MS. As this principle has been used to establish the distribution of catches between member states since the founding of the EU CFP, it is not surprising that it has also been an essential element in the distribution of fishing opportunities within each country. Only the increasing swapping of quotas or transfer of fishing opportunities among MS (Hoefnagel et al., 2015[16]) shows that inside the inflexible EU allocation system a slight transition towards more flexibility takes place in face of a changing social and ecological environment e.g., the migration of fish stocks caused by climate change.

The allocation of fishing opportunities, according to the principle of relative stability has taken the form of a basic criterion for the distribution of catches in the MS. Some countries had, prior to the coming into effect of Article 17 already established allocation systems, as is the case of the Netherlands, which introduced the system of individual quotas in 1976 (and of individual tradeable quotas (ITQs) in the 1980s) (Hoefnagel & de Vos, 2017), at an even earlier date.

In this context, the application of regulation (EU) No 1380/2013 has been faced with various practical problems that have clearly limited its effective impact on regulations. On the one hand, those countries that had an elaborate system of ITQs or allocation of individual quotas do not seem to have modified their system in light of the considerations of the European regulation. On the other hand, countries with a less closed and annually reviewable system (i.e. Spain) have introduced certain elements that bring their regulation closer to the criteria of article 17 of the CFP. In any case there is a limited prevalence of these new criteria, almost testimonial at times. In general, most countries maintain historic catches as the basic criterion for the distribution of fishing opportunities. MS allocate most of their fishing opportunities referring to a historical ratio of catch shares or landing levels. The legitimisation to allocate fishing opportunities does not originate from applying specific social, economic or environmental criteria. The definition of TACs for certain resources has not stopped growing in recent years, and this has been accompanied by the assignment of fishing rights to specific fleets. Even in areas such as the Mediterranean, where the application of TACs is not historically developed/grown, this trend has come from agreements within large international organizations such as International Commission for the Conservation of Atlantic Tunas (ICCAT). This process takes off with special relevance towards 2007-2008, with the restrictions on the capture of bluefin tuna (*Thunnus thynnus*), the allocation of quotas to the EU, to member states, and within them to specific fleets.

Initial recitals of the CFP (REGULATION (EU) No 1380/2013) are very explicit about the "conservation of marine biological resources and the management of fisheries targeting them" (recital 2) and contribute to the "... protection of the marine environment, to the sustainable management of all commercially exploited species, and in particular to the achievement of good environmental status by 2020" (recital 11). In this context, the emphasis placed in Art 17 on environmental criteria for allocating fishing opportunities is not surprising; the allocation of fishing opportunities should be in line with the general focus allocated on environmental issues. "Moreover and in contrast to social and economic criteria, there are examples of environmental criteria given in Art 17: "Within the fishing opportunities allocated to them, Member States shall endeavour to

[16] Hoefnagel, Ellen; de Vos, Birgit & Buisman, Erik (2015) Quota swapping, relative stability, and transparency. Marine Policy (57), 111-119.
Hoefnagel, E., & de Vos, B. (2017). Social and economic consequences of 40 years of Dutch quota management. Marine Policy, 80, 81-87. doi:http://doi.org/10.1016/j.marpol.2016.09.019.

provide incentives to fishing vessels deploying selective fishing gear or using fishing techniques with reduced environmental impact, such as reduced energy consumption or habitat damage." Furthermore, Art 17 is aligned with the UN Sustainable Development Goals, and the European Green Deal intended to develop a sustainable blue economy in the European Union.

Many of fishing opportunities' allocations described in MS responses do not consider social, economic or environmental criteria as laid down in Article 17 of Regulation (EU) No 1380/2013. As an example, Poland's response refers to this fact in brief: "2) the historical fishing base of individual fishing vessel owners" [is considered, when allocate fishing opportunities].

It can be queried whether the principle of using historic track records is an economic (survivor principle: if a firm is already there, it has a good control about its profit-loss-balance), a social (construction of privileged accesses to resources to those who had already access) or even an environmental (annual declared catch volumes based on scientific advice to achieve Maximum Sustainable Yield (MSY)) criterion.

There are a few exceptions from using the historic catch rates as principle for fishing opportunity allocation. As an example, Belgium responded to allocate fishing opportunities among its fishing fleet according to the engine power and number of sea voyages (days at sea). Further, small-scale fisheries (SSF) have the privilege of free fishing as is the case for most of the MS in the Mediterranean and Black Sea.

The operationalisation of Art. 17 in the distribution of fishing opportunities looks limited in many European countries. Note to the reader, when in the text below reference is made to a particular Member State (MS) it refers to the answers provided by the MS in response to the questionnaire as send out by the Commission.

7.2 Use of Environmental criteria

In general, the use of environmental criteria in allocating fishing opportunities, as argued in Art. 17, is limited in most MS. For example, Art. 17 cites some specific environmental criteria that member states could use: reduced habitat damage, reduced energy consumption and somehow selective fishing gear. The use of criteria about energy consumption look primarily absent from the responses of MS to the questionnaire (some exceptions are Romania, Sweden and France). This is logic considering the limited research and guidance on this issue. A few countries use habitat damage criteria (e.g., Lithuania and Malta), and the selectivity of fishing gears appears more frequently in the responses of MS. For instance, in fishing opportunities allocation, fishers using low-impact gears (gill nets) are getting higher fishing opportunity allocation than fishers using bottom gears (Denmark). Using low-impact gears was the criterion for allocating the Bluefin tuna quota increase in three countries (Malta, Greece, France).

The future ban on bottom trawling within the six nautical miles' zone is considered in Ireland to provide ecosystem benefits for nursery areas and juvenile fish stocks. When allocating fishing opportunities for turbot, Romania gives a higher score to boats that fish at a greater distance from the shore and are equipped with an Electronic Reporting System and VMS monitoring to protect areas known to be used by juveniles.

A points-based system for quota allocation has been used by several Member States. In essence, fishing practices considered to be of low(er) impact or using specific equipment / gears which facilitate improved environmental practices are given more points. However, none of the MS using such a point system disclosed in their reply to the questionnaire how the point system works in full, and it is unclear how many points each criterion receives. Besides that, the weight of each of these criteria needs to be explicit in the allocation of fishing opportunities in order to allow for evaluation of the system.

7.3 Use of Social and Economic Criteria

There is limited evidence of the use of social criteria in the allocation of fishing opportunities by MS. Using a point system, some MS, like Bulgaria, incorporate the use of a technical indicator, by considering the length of the fishing vessels (with preference given to vessels with less than 10 meters length), as a social criterion in support of small-scale fisheries and by promoting

employment of crew between 18-30 years old. Spain uses social criteria in some fisheries based on dependence on the fishery (i.e., on big eye tuna), by calculating for each fleet a percentage of the total landed catches. This case shows interactions between social, economic and environmental criteria. The main criteria of the allocation of Bluefin tuna quota in French Atlantic areas are the age of fishers (young fishers receiving a larger share in the fishing opportunities) and the use of low impact gears.

Some MS merge social and economic criteria. For example, Germany aggregates the terms economic and social to "socio-economic" and argues that the principle of relative stability would be the precondition for guaranteeing long-term "economic activities of a fishing undertaking" [planning security for investments; note by author], which would be in line with the "best possible supply to the market".

Most MS use historical catch records as principal allocation mechanism and interpret this to be an economic criterion. The fact that the distinction between environmental, economic and social criteria is not clearly defined, not in the CFP nor in the literature, may explain the fact that answers of the MS to the Article 17 questionnaire are very diverse. In practice we see that some MS justify their policies on social criteria as illustrated by the examples below.

Access to fisheries and fishing opportunities

Retaining part of the quota annually can be a way for a MS to ensure that an opportunity is given to 'outsiders' to enter the system. Lithuania for example, withholds a small part of its fishing opportunities (1% for the Baltic Sea fleet, 5% for the distant fleet) to be sold through an auction, mainly to ensure a possibility for starting fishers or the expansion of existing companies. Germany allocates 5 per cent of the fishing opportunities for start-ups and leaves the principle of historical landings, which can be evaluated as social criteria to support newcomers in the fisheries sector. Withholding part of the quota gives a greater leverage for MS to allow for the non-allocation of quotas for conservation purposes. Another example is France, where newcomers to a fishery can start fishing on part of the quota held as a national reserve. While doing so they can after some time join a regional Producer Organisation (PO) which is in France the main conduct through which quota are being allocated.

Sustaining fisheries communities

An increased allocation of fishing opportunities for bluefin tuna was utilized to sustain small scale fisheries communities and vulnerable small islands in Malta and Greece. Portuguese fisheries' communities impacted by the end of the fisheries agreement with Morocco were advantaged in the allocation of fishing opportunities for mackerel. Also, fair distribution of sardine quotas between PO and non-PO members was also a target of the fisheries authorities. In Ireland, the decision to manage quotas at national level had as objective to avoid concentration of quotas and sustain inshore communities' development.

7.4 Transparency

On the feature of transparency, there are two aspects that need to be considered: transparency on the process of the allocation system and transparency on the final allocation of fishing opportunities. Also what needs to be taken into account is whether the transparency is achieved at the level of the fisheries sector only, or that the transparency is extended to the general public.

Transparency of the allocation system

Transparency when it comes to the way fishing opportunities are allocated is linked primarily with the publication of the methodology used to allocate the fishing opportunities and the option of conducting public consultations. In a number of countries, such as for example France, Italy and Bulgaria, the mechanism of the allocation system is included in the legal framework, and hence published. This allows all interested parties to be informed about the process as well as be able to debate it. In other countries, such as Cyprus, the criteria used are not publicly available but are communicated to the relevant fisheries association.

Denmark is an example of a MS with a very transparent system of the allocation of fishing opportunities. The fishing allocation system was implemented prior to coming into operation of

Article 17. Allocation of fishing opportunities takes into consideration the coastal fleet of vessels of less than 17m length based on two criteria, environmental (low impact gears) and economic (income less than 225 000 Kr per year). Also, there is a national committee, which includes a diverse range of stakeholders such as the fishing industry, NGOs, administration and scientists, which is responsible to meet at a regular basis in order to monitor the system. This procedure of a frequent (monthly) meeting quota commission is also applied in Belgium.

Transparency of the final allocation

Transparency of final allocations of fishing opportunities among member states varies. In some MS final allocations are made public by publishing the final allocation on a government website (for example in Lithuania) whilst in some cases, the final allocations are published at the level of the final fishing concession holder (Estonia) or vessel (Spain). Similarly, Member States, such as e.g., Sweden, publish allocation decisions and subjects the process to consultation and a risk assessment. In Cyprus and Germany decisions are shared with the fishing community but are not made publicly available.

7.5 Conclusion

The system of allocation of fishing opportunities by Member States is very case specific. For many MS the initial allocation of fishing opportunities has taken place many years ago and is rather fixed. For those fishing opportunities that are annually being allocated the MS are using a variety of criteria, which, of course, are to be perceived in the context of the entire national fisheries management system. This makes comparison between MS rather complex.

The majority of criteria used to allocate fishing opportunities are historic catch rights. In some cases MS state the use of environmental and/or social criteria as the basis for fishing opportunity allocation. However, the environmental and social/economic criteria are in reality not used often and the attributed weight of the criterion in the allocation of opportunities appears rather modest in most cases.

One can argue on the difference between economic and social criteria. For example, economic criteria can be considered a sub-set of social criteria. From the analysis it emerges that where MS state that the criteria used for fishing opportunity allocation were either of an environmental nature or of a social nature, are in fact correct.

However, whereas Article 17 specifically states that *"Member States shall endeavour to provide incentives to fishing vessels deploying selective fishing gear or using fishing techniques with reduced environmental impact, such as reduced energy consumption or habitat damage"* this criterion is not widely applied, especially with respect to energy consumption. Perhaps the lack of proper analysis of the energy footprint of most EU fisheries makes this specific criterion especially difficult to operationalize.

As for the transparency of the system of fishing opportunity allocation this varies widely between the MS. In some MS the process for allocation is officially being published, in others shared with the fishing sector. In some countries the final allocation of fishing opportunities is officially published, where in others it is only shared with the fishing industry.

Related to aspects of transparency is the participation of stakeholders in the allocation process. In some MS the allocation of fishing opportunities is being discussed between government, the industry, interest groups (e.g., NGOs) and scientists. In other MS these discussions happen in a more closed community between government and industry.

7.6 Recommendations

Noting the complexity of defining precisely what social/economic criteria are and their highly contextual dependency it is not recommended to further pursue this discussion within STECF. It is recommended, in order to provide some guidance for MS in the operationalisation of the CFP Article 17 to provide examples of social/economic criteria as currently in use by some MS.

It could be helpful to provide examples in Article 17 of what is meant when dealing with social, economic or environmental criteria and provide directions for possible implementation of the

allocation of fishing opportunities by a MS without limiting the flexibility needed for the MS as it would be the case with a fixed definition of the criteria.

Concerning the transparency of the system of allocation of fishing opportunities, both for the process used as for the final allocations of fishing opportunities it is recommended to direct specific questions to the MS in the questionnaire on implementation of Article 17.

8 DEVELOP A QUESTIONNAIRE TO CONSULT THE MEMBER STATES ON THE CRITERIA APPLIED FOR THE ALLOCATION OF THE FISHING OPPORTUNITIES (TOR 7).

EWG 22-14 was provided with the template of the current questionnaire and the responses provided by the MSs. The questionnaire consists of 6 open questions. Noting the responses given by the MSs it appeared that the questionnaire did not provide the level of guidance to obtain the answers required. The length and detail of answers varied widely between MS. Also, criteria of environmental nature or social and economic nature are not clearly defined in the questionnaire, nor in the text of Article 17. This may have led to differences in the interpretation of the questionnaire by MSs.

In addition to this, whereas the final rate of response is high (22 MS), EWG 22-14 was informed that obtaining responses was in some cases difficult. Also, answers provided in some cases needed further clarification. This led to the request for the new questionnaire to be clear, detailed, and structured to ensure that the Member States provide sufficient and precise information, without the need for follow-up contacts.

EWG 22-14 advises to develop an on-line, structured questionnaire. An outline of the structure and questions are provided in annex 3. EWG 22-14 is aware of the fact that the questionnaire has to be implemented within the Commission's Web-environment, which, next to technical requirements also has a number of regulatory requirements. These requirements need to be addressed during the operationalisation and implementation phase.

The questionnaire is kept as short as possible, to facilitate a high response rate. Also, it exclusively addresses the implementation of Article 17. It is expected that a detailed description of the fisheries management system of each MS is being provided by the National Profile. This questionnaire will be implemented annually.

The main flow of the questionnaire is set around closed questions (tick-boxes) that lead the respondent in some cases to further clarifications and to a subject-specific final page on which more open questions need to be answered. Weighing the ease of filling out the questionnaire and the ease of analysing the results, EWG 22-14 opts for the first. This implies, e.g., that details of whether a certain criterion for allocation of fishing opportunities was used for a specific fleet, species, region or area is obtained in an open-question rather than by using pre-defined roll-out options. Providing the roll out options is of course technically feasible, but would increase the complexity of the questionnaire.

EWG 22-14 advises that the further development of the on-line questionnaire is done in close concert between the Commission's IT services, DGMARE and STECF expertise in the field of social science e.g., via an ad hoc contract.

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11 List of Annexes

Electronic annexes are published on the meeting's web site on:
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List of electronic annexes documents:

EWG-22-14 – Annex 1 - Table Structure National Profile
EWG-22-14 – Annex 2 - Draft Terms of Reference Ad Hoc Contract Social report structure
EWG-22-14 – Annex 3 - Draft on-line questionnaire Implementation Art 17.

12 List of Background Documents

Background documents are published on the meeting's web site on:
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List of background documents:

EWG-22-14 – Doc 1 - Declarations of invited and JRC experts (see also section XX of this report – List of participants)

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