

## Oman Indian oil sardine fishery

### MarinTrust whole fish assessment

Assessment by MarinTrust from February 2023, updated to MarinTrust Standard version 3 by Jo Gascoigne, March 2024, **further updated with additional information, December 2025 and February 2026 (these updates in red)**. Should be read together with MarinTrust (2023) (the MarinTrust version 2 assessment) which provides full details of analyses.

#### 1. Scope

|                      |                                                                                                          |
|----------------------|----------------------------------------------------------------------------------------------------------|
| Management Authority | Sultanate of Oman                                                                                        |
| Main species         | Indian oil sardine ( <i>Sardinella longiceps</i> )                                                       |
| Fishery Location     | FAO Area 51 (Indian Ocean West), Oman EEZ                                                                |
| Gear type            | beach seine, purse seine, encircling gillnets<br>Omani gear codes FG(net), FG(small pelagic net), FG(CN) |

#### 2. Summary of outcome

| Overall outcome |                                                                   | GAP                                                                             |
|-----------------|-------------------------------------------------------------------|---------------------------------------------------------------------------------|
| Clauses failed  |                                                                   | Reason for fail                                                                 |
| M1.1.3          | Fisher access to information                                      | Assessor has no information                                                     |
| <b>M1.2.3</b>   | <b>Legal dispute resolution</b>                                   | <b>Assessor has no information</b>                                              |
| <b>M1.2.4</b>   | <b>Legal rights of subsistence fishers</b>                        | <b>Assessor has no information</b>                                              |
| <b>M1.3.2</b>   | <b>Scientific advice on stock / ecosystem status</b>              | <b>Unclear if this exists</b>                                                   |
| M1.3.3          | Transparent and independent scientific advice                     | <b>Advice is not publicly available</b>                                         |
| M1.4.1          | Management principles of sustainability and precaution            | Use of precautionary approach in management unclear                             |
| M1.5.1          | Stakeholder participation                                         | Extent and frequency of consultations unclear                                   |
| M1.5.2          | Transparency of decision making                                   | <b>Most information on advice and decision-making is not publicly available</b> |
| M1.5.3          | Management review                                                 | Assessor has no information                                                     |
| M2.1.3          | Scale of monitoring, control and surveillance                     | Assessor lacking information                                                    |
| M2.2.2          | Systematic non-compliance                                         | Concerns are reported                                                           |
| M2.3.1          | Documentation and transparency of levels of compliance            | <b>Information is not publicly available</b>                                    |
| M2.3.2          | Fishery cooperation with management                               | Assessor has no information                                                     |
| M2.3.3          | Catch reporting and tracing for traceability and exclusion of IUU | Assessor has no information                                                     |
| <b>A1.1</b>     | <b>Landings data for sardines</b>                                 | <b>No information on species composition</b>                                    |
| A1.2            | Sufficient information for stock assessment for sardines          | No information on species composition                                           |
| <b>A2.1</b>     | <b>Systematic periodic stock assessments</b>                      | <b>Does not seem to exist, insufficient species-level information</b>           |
| <b>A2.2</b>     | <b>Stock status relative to reference points</b>                  | <b>Does not seem to exist at species level</b>                                  |
| A2.3            | Estimation of appropriate level of removals                       | Not available?                                                                  |
| A2.4            | Internal or external review of assessment                         | No assessment?                                                                  |
| A2.5            | Stock assessments public                                          | No assessment?                                                                  |
| A3.1            | Mechanism to restriction fishing mortality                        | Not in place                                                                    |

|        |                                                           |                                                    |
|--------|-----------------------------------------------------------|----------------------------------------------------|
| A3.2   | Removals at recommended level                             | Not in place                                       |
| A3.3   | Fishing stopped when stock below Blim                     | Not in place – no reference points                 |
| A4.1   | Stock status                                              | Unclear                                            |
| B      | Risk analysis for jacks and Indian mackerel               | Estimates of B and/or F are not publicly available |
| E1.1.1 | ETP species interacting with the fishery known            | Assessor has no information                        |
| E1.1.2 | ETP interactions reported and recorded                    | Assessor has no information                        |
| E1.1.3 | Fishery impacts on ETP species known                      | Assessor has no information                        |
| E1.2.1 | No negative impact of the fishery on ETP spp              | Assessor has no information                        |
| E1.3.1 | Measures to protect ETP species                           | Assessor has no information                        |
| E1.3.2 | Measures are working                                      | Assessor has no information                        |
| E2.1.2 | Information on time / place / scale of fishing operations | Assessor has no information                        |
| E2.2.1 | Fishery impact on habitats                                | Impacts unlikely but need to confirm               |
| E3.1.1 | Main elements of ecosystem known                          | Assessor has no information                        |
| E3.1.3 | Impact of fishery on ecosystem                            | Need information on stock status                   |
| E3.1.2 | Fishery not having impact on ecosystem                    | Unclear                                            |
| E3.3.1 | Measures to protect ecosystem                             | Stock-level measures needed first                  |
| E3.3.2 | Measures are working                                      | See above                                          |

### 3. Species composition of fishery

At present, we have no direct information from the fishmeal factories as to the species composition of the raw material. This analysis is therefore based for now on information on the total catch of small pelagics in Oman, taken from the previous version of this assessment (MarinTrust 2023) (which used information from the Statistical Yearbook for 2021). Updated for data from Fisheries Statistical Yearbook 2023.

On this basis, out of a total small pelagic catch of 442,222 t in 2023, the species composition was as follows:

- Oil sardine (*Sardinella* spp.; see below) – 58%
- Small jacks (species unknown; see below) – 21.7%
- Anchovy (various species; see below) – 3.4%
- Indian mackerel (*Rastrelliger kanagurta*) – 13.1%
- Mulletts (species unknown) – 3.0%
- Needlefish (*Hemiramphus* spp.) – 0.3%
- Other – 0.2%

Oman divides fisheries into three categories: artisanal, coastal and industrial. The data split by fishery show that 99.9% of the catch of oil sardine came from the artisanal fishery; proportions catch taken by the artisanal fishery in 2023 are as follows:

- Oil sardine (*Sardinella* spp.) – 99.9%
- Small jacks (species unknown; see below) – 31.6%
- Anchovy (various species; see below) – 100%
- Indian mackerel (*Rastrelliger kanagurta*) – 99.9%
- Mulletts (species unknown) – 99.5%
- Needlefish (*Hemiramphus* spp.) – 100%
- Other – 96.9%

This assessment therefore uses data from the artisanal fishery.

Note from February 2026: Since 2023, several large Turkish seiners started to operate in Omani waters (from the port of Duqm). We do not yet have data about their catch composition, but it seems from discussion with the factories that it is all or nearly all oil sardine, taken from the area around Duqm.

Data are given on catch by species, which suggests that the 'oil sardine' catch is made up of the following species:

- *Sardinella longiceps*: 67.5%
- *S. albella*: 1.4%
- *S. gibbosa*: 31.1%

By multiplying these percentages with 68.4% of the total artisanal small pelagic catch for oil sardine in general, we arrive at the following catch statistics:

| Species                     | artisanal catch t | % of artisanal catch |
|-----------------------------|-------------------|----------------------|
| oil sardine                 | 257256            | 68.4                 |
| <i>Sardinella longiceps</i> |                   | 46                   |
| <i>Sardinella albella</i>   |                   | 0.96                 |
| <i>Sardinella gibbosa</i>   |                   | 21.3                 |
| Indian mackerel             | 58102             | 15.5                 |
| anchovy                     | 15090             | 4.0                  |
| small jacks                 | 30379             | 8.1                  |
| mullet                      | 12995             | 3.5                  |
| needlefish                  | 1332              | 0.4                  |
| other                       | 903               | 0.2                  |

However, the coast of Oman covers two quite different marine ecosystems; the Arabian (Persian) Gulf (Oman north) and the Arabia Sea (NW Indian Ocean) (Oman south). These are each covered by three Governorates: Musandam, Al Batinah and Muscat for Oman north, and Al Sharqiyah, Al Wusta and Dhofar for Oman south. The FIP participants do not source from any fisheries operating in Oman north – all the product comes from the three governorates in the Oman south ecosystem. Since fisheries species composition (as well as gears and operation) are different in the two areas, the data were broken down by area.

Landings of small pelagics 2023 (t) by governorate:

| Governorate | sardine | Indian mackerel | anchovy | jacks | mullet | needlefish |
|-------------|---------|-----------------|---------|-------|--------|------------|
| Musandam    | 770     | 2041            | 2407    | 1970  | 66     | 1159       |
| Batinah     | 5778    | 7033            | 10875   | 6691  | 15     | 79         |
| Muscat      | 2146    | 6281            | 1709    | 5697  | 221    | 41         |
| Sharqiyah   | 81379   | 16424           | 43      | 8455  | 3927   | 29         |
| Al Wusta    | 117509  | 24176           | 33      | 7544  | 3679   | 26         |
| Dhofar      | 49644   | 3108            | 0       | 5     | 4978   | 0          |

The data for Oman south for 2023 are as follows:

| Species         | landings (t) | %    |
|-----------------|--------------|------|
| sardine         | 248532       | 77.4 |
| Indian mackerel | 43708        | 13.6 |
| anchovy         | 76           | 0.0  |
| jacks           | 16004        | 5.0  |
| mullet          | 12584        | 3.9  |
| needlefish      | 55           | 0.0  |

Therefore we conclude that the anchovy are not relevant to the FIP sourcing.

#### 4. Species categorisation

The species categories has not changed from version 2 to version 3; i.e. Type 1 species are ‘target’ species and should make up a minimum of 95% of fishery; Type 2 species are non-target. Category A species are Type 1 species with a species-specific management regime, while Category B species are Type 1 species without; Categories C and D are the same for Type 2 species.

At least 95% of the catch should be considered as Category A or Category B. We therefore categorise the oil sardine as A, Indian mackerel and jacks as B and mullet, needlefish and ‘other’ as D.

The species table (Table 5 in MarinTrust 2023) is updated below.

Table 3: Species categorisation table (LC = least concern)

| Species         |                               | IUCN category | MT category | References                |
|-----------------|-------------------------------|---------------|-------------|---------------------------|
| Sardine         | <i>Sardinella longiceps</i>   | LC            | A           | Di Dario and Munroe 2020  |
|                 | <i>S. gibbosa</i>             | LC            | A           | Santos et al. 2018        |
|                 | <i>S. albella</i>             | LC            | A           | Di Dario 2018             |
| Jacks           |                               |               | B           |                           |
| Indian mackerel | <i>Rastrelliger kanagurta</i> | LC            | B           | Collette and Pollard 2023 |
| Mullet          |                               |               | D           |                           |
| Needlefish      | <i>Hemiramphus</i> spp.       | LC*           | D           |                           |
| Other           |                               |               | D           |                           |

\*All species of *Hemiramphus* assessed by IUCN are LC, but there are other similar genera

For the jacks, information is insufficient to identify species, although MarinTrust (2023) give *Atule mate* and *Selar crumenophthalmus* as examples.

#### 5. Assessment

##### M1. Management Framework

| M1.1 There is an organisation responsible for managing the fishery |                                                                                           |      |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------|------|
| M1.1.1                                                             | The management and administration organisations within the fishery are clearly identified | Pass |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                 |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| M1.1.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The functions and responsibilities of the management organisations include the overall regulation, administration, science and data collection and enforcement roles, and are documented and publicly available | Pass |
| M1.1.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Fishers have access to information and/or training materials through nationally-recognised organisations                                                                                                        | GAP  |
| <p>M1.1.1: The organisation responsible for managing the fishery is the Ministry of Agriculture, Fisheries and Water Resources (MAFWR) as established by Sultanate of Oman Royal Decree 92/2020.</p> <p>M1.1.2: The Decree 92/2020 sets out the structure, functions and responsibilities of MAFWR, including regulation, science and data collection and enforcement (see MarinTrust 2023 for details). Sultan Qaboos University (SQU) also has a scientific role. The roles are clear – the level of monitoring and scientific information available is evaluated further below.</p> <p>M1.1.3: We currently have no information on this.</p> |                                                                                                                                                                                                                 |      |

| M1.2 Fishery management organisations are legally empowered to take management actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                  |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| M1.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | There are legal instruments in place to give authority to the management organisation(s) which can include policies, regulations, acts or other legal mechanisms | Pass |
| M1.2.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Vessels wishing to participate in the fishery must be authorised by the management organisation(s)                                                               | Pass |
| M1.2.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | The management system has a mechanism in place for the resolution of legal disputes                                                                              | Pass |
| M1.2.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | There is evidence of the legal rights of people dependent on fishing for food or livelihood                                                                      | Pass |
| <p>M1.2.1: The MAFWR is empowered by Royal Decree 92/2020 to issue regulations and take action to protect fish stocks. The MAFWR is also empowered by other fisheries legislation, particularly Royal Decree 53/1981, promulgating the Law of Maritime Fishing and the Protection of Aquatic Living Resources.</p> <p>M1.2.2: All fishers, whether part- or full-time, must have a license, although the licence is not specific to any particular fishery (Al Jufaili 2020).</p> <p>M1.2.3: According to the Ministry, there is a mechanism through fishermen's associations; failing that fishers may appeal to the Permanent Secretary or Minister. The Living Aquatic Resources Law sets out clearly the powers of the Ministry which should reduce the possibility for disputes.</p> <p>M1.2.4: Article 19 of the Living Aquatic Resources Law states that the Ministry should support and develop artisanal fishing, and create job opportunities for Omani citizens in fishing and related work.</p> |                                                                                                                                                                  |      |

| M1.3 There is an organisation responsible for collecting data and (scientifically) assessing the fishery                                                                                                                                                                                         |                                                                                                                                           |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|------|
| M1.3.1                                                                                                                                                                                                                                                                                           | The organisation(s) responsible for collecting data and assessing the fishery is/are clearly identified                                   | Pass |
| M1.3.2                                                                                                                                                                                                                                                                                           | The management system receives scientific advice regarding stock, non-target species and ecosystem status                                 | Pass |
| M1.3.3                                                                                                                                                                                                                                                                                           | Scientific advice is independent from the management organisation(s) and transparent in its formulation through a clearly defined process | GAP  |
| <p>M1.3.1: Royal Decree 92/2020 places responsibility for fisheries research with the MAFWR. In practice, much of the research reviewed for the purposes of this assessment was produced by the Department of Marine Science and Fisheries at Sultan Qaboos University. There may or may not</p> |                                                                                                                                           |      |

be a formal relationship between the two but there are close links. Talking to both parties, their roles seem to be clear.

M1.3.2: MarinTrust (2023) notes that it is unclear at present how MAFWR solicits, receives and takes account of all research findings – further information is needed. From discussion with fisheries scientists at SQU, it seems that there is a process where they receive fisheries data from the Ministry on an annual basis and use it for stock assessments and other analyses, which are then presented back to the Ministry. SQU is also conducting research on the ecosystem.

M1.3.3: Scientific advice from SQU is independent, and there seems to be a clear process, as noted above, but it is not publicly available.

M1.4 The fishery management system is based on the principles of sustainable fishing and a precautionary approach

|        |                                                                                                                                                                                                                                                                                                 |     |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| M1.4.1 | In reaching a determination for M1.4, the assessor should consider if the following is in place: A policy or long-term management objective for sustainable harvesting based on the best scientific evidence and a precautionary approach is publicly available and implemented for the fishery | GAP |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|

According to MarinTrust (2023), the strategic objectives of the MAFWR include ‘Management and development of agricultural, fisheries and water resources to ensure their sustainability...’, and ‘Managing and ensuring the abundance of food and water stocks’ (Google translation). The stated objective of the long-term plan for fisheries management in Oman is a ‘World class profitable and environmentally sustainable fisheries sector’ (See MarinTrust 2023 for details and references). We do not have any information about the precautionary approach, however. The Living Aquatic Resources Law does not include any specific objectives.

M1.5 There is a clearly defined decision-making process which is transparent, with processes and results made publicly available

|        |                                                                                                                                                                                                            |     |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| M1.5.1 | There is participatory engagement through which fishery stakeholders and other stakeholders can access, provide information, consult with, and respond to, the management systems’ decision-making process | GAP |
| M1.5.2 | The decision-making process is transparent, with results made publicly available                                                                                                                           | GAP |
| M1.5.3 | The fishery management system is subject to periodic internal or external review to validate the decision-making process, outcomes and scientific data                                                     | GAP |

M1.5.1: According to MarinTrust (2023), the long-term vision for fisheries management in Oman (2015) sets out the intent to implement a consultation mechanism. According to the Ministry, consultation happens mainly through fishermen’s associations (both formal meetings and less formal communications), as well as on social media. We have not yet had the opportunity to engage with fishermen or fishermen’s associations.

M1.5.2: Scientific advice is not publicly available, nor are meeting minutes

M1.5.3: Unclear at present

## M2. Surveillance, Control and Enforcement

M2.1 There is an organisation responsible for monitoring compliance with fishery laws and regulations

|        |                                                                                                                                             |      |
|--------|---------------------------------------------------------------------------------------------------------------------------------------------|------|
| M2.1.1 | There is an organisation responsible for monitoring compliance with specific monitoring, control and surveillance (MCS) mechanisms in place | Pass |
| M2.1.2 | There are relevant tools or mechanisms used to minimise IUU fishing activity                                                                | Pass |

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|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| M2.1.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | There is evidence of monitoring and surveillance activity appropriate to the intensity, geography, management control measures and compliance behaviour of the fishery | GAP |
| <p>M2.1.1: The organisation responsible for monitoring compliance with fisheries laws and regulations is the Department of Fisheries Control and Licensing within the MAFWR.</p> <p>M2.1.2 and M2.1.3: In 2022, 2,757 sets of fishing equipment were confiscated (including boats, engines, nets and other devices), along with 3.5 tonnes of fish, according to reports cited in MarinTrust (2023), so there are clearly tools in place, as well as surveillance and control, but to what extent it is effective is unclear.</p> |                                                                                                                                                                        |     |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                            |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------|
| M2.2 There is a framework of sanctions which are applied when infringements against laws and regulations are discovered                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                            |      |
| M2.2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | The laws and regulations provide for penalties or sanctions that are adequate in severity to act as an effective deterrent | Pass |
| M2.2.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | There is no evidence of systematic non-compliance                                                                          | GAP  |
| <p>M2.2.1: Chapter 5 of Royal Decree 53/1981 sets out the sanctions for breaches of fishery laws and regulations. These include fines, imprisonment, confiscation of gear, vessel, and catch, and revocation of fishing license. The Decree also provides for the doubling of sanctions for repeat violations.</p> <p>M2.2.2: 5000 violations of fisheries regulations were reported in 2022 by the Department (according to MarinTrust 2023), so there is considerable non-compliance, although at least some is detected by the monitoring system. According to MarinTrust (2023), widespread non-compliance is a concern expressed by stakeholders.</p> |                                                                                                                            |      |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                            |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| M2.3 There is substantial evidence of widespread compliance in the fishery, and no substantial evidence of IUU fishing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                            |     |
| M2.3.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The level of compliance is documented and updated routinely, statistically reviewed and available                                                          | GAP |
| M2.3.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Fishers provide additional information and cooperate with management/enforcement agencies/organisations to support the effective management of the fishery | GAP |
| M2.3.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | The catch recording and reporting system is sufficient for effective traceability of catches per vessel and supports the prevention of IUU fishing         | GAP |
| <p>M2.3.1: <b>As far as we can tell, it is not publicly-available</b></p> <p>M2.3.2: Unclear</p> <p>M2.3.3: Unclear. Note, however, that Oman has a catch certification system which is sufficient to allow export of fisheries products to the EU. MAFWR is the competent authority. There is, therefore, a traceability system in place, although to what extent it can be bypassed is unclear.</p> <p><b>Note that the fishery is made up of a large number of small, artisanal vessels (26533 in total across the whole artisanal fishery for 2023, according to the Statistical Bulletin), making traceability to vessel level quite challenging.</b></p> |                                                                                                                                                            |     |

#### Species requirements: Category A species

|                                          |                                                                                                        |      |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|------|
| A1. Data collection (Category A species) |                                                                                                        |      |
| A1.1                                     | Landings data are collected such that the fishery-wide removals of this species are known              | Pass |
| A1.2                                     | Sufficient additional information is collected to enable an indication of stock status to be estimated | GAP  |

A1.1: Landings data are collected and published in the annual statistical bulletin (see above). However, landings are recorded as 'sardine', and it is not clear whether there is any sampling to provide species composition of the 'sardine' catch (reportedly made up of three species). **However, in the most recent statistical bulletin (2023), data are provided on the artisanal catch by species, which allows the division of 'sardine' catch into component species (as set out above).**

A1.2: Reportedly there is work on stock assessments, using data such as size and CPUE, but it is unclear whether this is systematic, and to what extent it is species specific.

| A2. Stock assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                  |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| A2.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | A stock assessment is conducted at least once every 3 years (or every 5 years if there is substantial supporting information that this is sufficient for the long-term sustainable management of the stock) and considers all fishery removals and the biological characteristics of the species | Pass |
| A2.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The assessment provides an estimate of the status of the biological stock relative to a reference point or proxy                                                                                                                                                                                 | Pass |
| A2.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The assessment provides an indication of the volume of fishery removals which is appropriate for the current stock status                                                                                                                                                                        | GAP  |
| A2.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The assessment is subject to internal or external peer review                                                                                                                                                                                                                                    | GAP  |
| A2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The assessment is made publicly available                                                                                                                                                                                                                                                        | GAP  |
| <p>A2.1: There has been considerable work over the years (see summary and details in MarinTrust 2023) but it seems to be ad hoc as to the area and species grouping considered, and it is not clear how it feeds into the management of the fishery. <b>However, according to SQU, there is a process whereby the annual statistics are provided, they conduct stock assessments and provided that information back to the Ministry to feed into management decision-making.</b></p> <p>A2.2: The issue of 'biological stock' is difficult for Oman, because all the species of sardine are thought to be migratory (although the assessor is unclear to what extent stock structure and migratory pathways are understood). According to MarinTrust, MSY reference points have been estimated, but by species group (small pelagics) rather than by species. <b>More recently, SQU has reportedly been using a range of data-limited methods to estimate different reference points, including for sardine.</b></p> <p>A2.3: Unclear – <b>the assessment reports are not publicly available</b></p> <p>A2.4 and A2.5: The assessments cited by MarinTrust (2023) are publicly-available, peer-reviewed papers, <b>but the more recent assessment reports are not publicly-available.</b></p> |                                                                                                                                                                                                                                                                                                  |      |

| A3. Harvest strategy                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                   |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| A3.1                                                                                                                                                                                                                                                                                                                                                                                             | There is a mechanism in place by which total fishing mortality of this species is restricted                                                                                                                                                                                                      | GAP |
| A3.2                                                                                                                                                                                                                                                                                                                                                                                             | Total fishery removals of this species do not regularly exceed the level indicated or stated in the stock assessment. Where a specific quantity of removals is recommended, the actual removals may exceed this by up to 10% ONLY if the stock status is above the limit reference point or proxy | GAP |
| A3.3                                                                                                                                                                                                                                                                                                                                                                                             | Commercial fishery removals are prohibited when the stock has been estimated to be below the limit reference point or proxy (small quotas for research or non-target catch of the species in other fisheries are permissible).                                                                    | GAP |
| <p>A3.1: A licence is required to access the fishery, but reportedly this does not impose any restrictions as to catch, gear or effort. The fishery is in essence open access.</p> <p>A3.2: <b>We have not so far been able to review the most recent stock assessment</b></p> <p>A3.3: As far as we know there is no limit reference point <b>agreed by management</b>, nor any such rules.</p> |                                                                                                                                                                                                                                                                                                   |     |

| A4. Stock status                                                    |                                                                                                                                                                                                                                                                                                                                                |     |
|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| A4.1                                                                | The stock is at or above the target reference point; OR IF NOT: the stock is above the limit reference point or proxy and there is evidence that a fall below the limit reference point would result in fishery closure; OR IF NOT: the stock is estimated to be below the limit reference point or proxy, but fishery removals are prohibited | GAP |
| There is a recent stock assessment, but we do not know what it says |                                                                                                                                                                                                                                                                                                                                                |     |

### Species requirements: Category B species

Category B species are jacks and Indian mackerel (moved from Category D in update December 2025 – see above).

These are scored using a risk assessment, based on biomass or fishing mortality relative to reference points or the long-term mean. However, we do not have any of this information for any of these species at present.

### Species requirements: Category D species

Category D species are:

|                 |                               |
|-----------------|-------------------------------|
| Jacks           |                               |
| Anchovy         |                               |
| Indian mackerel | <i>Rastrelliger kanagurta</i> |
| Mullet          |                               |
| Needlefish      | <i>Hemiramphus</i> spp.       |

Only minor changes have been made to the analysis for Category D species between the MarinTrust standard versions 2.2 and 3, which according to MarinTrust analysis should not have an impact on the outcome. The scoring is therefore reported here, with details given in MarinTrust (2023).

- ~~Indian mackerel: PASS~~
- ~~Jacks: PASS~~
- Mullet: PASS
- Needlefish: PASS

### E1. Impact on ETP species

For this ecosystem section it is relevant to establish what are the main gears used by the fishery. According to the statistical bulletin for 2023, and taking data from the artisanal fishery and the Oman south area (Al Sharqiyah, Al Wusta and Dhofar), the catch of oil sardine comes from different gear types as follows:

- FG(net) – small outboard vessels using nets of type so far unspecified: 38%
- FG(sp net) – the above vessels using nets specific for small pelagics (i.e. likely seines): 40%
- FG(CN) – the above vessels using a net code only applied in Dhofar: 12%
- LA(net) – larger inboard dhows using some kind of nets: 3.6%

- BSN – beach seine: 6.3%

Note that the various net codes applying to the FG vessels could be different variants, or different interpretations by enumerators of the same thing; this is so far unclear. It is clear, however, that the vast majority of the product (>90%) comes from small, open vessels with outboard engines, using nets of some kind.

| E1.1 Information on interactions between the fishery and ETP species is collected                                                                           |                                                                                                                                      |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|-----|
| E1.1.1                                                                                                                                                      | ETP species which may be directly affected by the fishery have been identified                                                       | GAP |
| E1.1.2                                                                                                                                                      | Interactions between the fishery and ETP species are recorded and reported to management organisations                               | GAP |
| E1.1.3                                                                                                                                                      | Collection and analysis of ETP information is adequate to provide a reliable indication of the impact the fishery has on ETP species | GAP |
| As far as we know, the fishery does not interact with ETP species, but there does not seem to be any formal reporting or other information to confirm this. |                                                                                                                                      |     |

| E1.2 The fishery has no significant negative impact on ETP species |                                                                                                                                       |     |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-----|
| E1.2.1                                                             | The information collected in relation to E1.1.3 indicates that the fishery does not have a significant negative impact on ETP species | GAP |
| See above                                                          |                                                                                                                                       |     |

| E1.3 There is an ETP management strategy in place for the fishery |                                                                                                                                          |     |
|-------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-----|
| E1.3.1                                                            | There are measures applied to the fishery which are designed to manage the impacts of the fishery on ETP species                         | GAP |
| E1.3.2                                                            | The measures are considered likely to achieve the objectives of regional, national and international legislation relating to ETP species | GAP |
| As far as we know, there are no measures in place                 |                                                                                                                                          |     |

## E2. Impact on the habitat

| E2.1 Information on interactions between the fishery and marine habitats is collected                                                                                                                                                                                                                                    |                                                                                                                                              |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|------|
| E2.1.1                                                                                                                                                                                                                                                                                                                   | Habitats which may be directly affected by the fishery have been identified, including any habitats which may be particularly vulnerable     | Pass |
| E2.1.2                                                                                                                                                                                                                                                                                                                   | Information on the scale, location and intensity of fishing activity relative to habitats is collected                                       | GAP  |
| E2.1.3                                                                                                                                                                                                                                                                                                                   | Collection and analysis of habitat information is adequate to provide a reliable indication of the impact the fishery has on marine habitats | Pass |
| The fishery uses pelagic gear and therefore logically does not have any impact on habitats. However, it would be useful to have full details of gear and operations before ticking this all off as a Pass, so E2.1.2 is set as a gap, as a placeholder to ensure that operational information is collected and reviewed. |                                                                                                                                              |      |

| E2.2 The fishery has no significant impact on marine habitats                |                                                                                                                                           |     |
|------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|-----|
| E2.2.1                                                                       | The information collected in relation to E2.1.3 indicates that the fishery does not have a significant negative impact on marine habitats | GAP |
| See above – to be reviewed when better gear / operational data are available |                                                                                                                                           |     |

|                                                                                                                                            |                                                                                                                        |      |
|--------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|------|
| E2.3 There is a habitat management strategy in place for the fishery.                                                                      |                                                                                                                        |      |
| E2.3.1                                                                                                                                     | There are measures applied to the fishery which are designed to manage the impact of the fishery on marine habitats    | Pass |
| E2.3.2                                                                                                                                     | The measures are considered likely to prevent the fishery from having a significant negative impact on marine habitats | GAP  |
| See above. The gear types are likely to constitute sufficient 'measures' but E2.3.2 is set as a GAP to ensure that this is fully verified. |                                                                                                                        |      |

### E3. Impact on the ecosystem

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                            |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| E3.1 Information on the potential impacts of the fishery on marine ecosystems is collected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                            |      |
| E3.1.1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The main elements of the marine ecosystems in the area(s) where the fishery takes place have been identified                                                               | Pass |
| E3.1.2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The role of the species caught in the fishery within the marine ecosystem is understood, either through research on this specific fishery or inferred from other fisheries | Pass |
| E3.1.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Collection and analysis of ecosystem information is adequate to provide a reliable indication of the impact the fishery has on marine ecosystems                           | GAP  |
| According to MarinTrust (2023) there is no information on this; however, the role of small pelagics in the ecosystem can easily be inferred from other similar upwelling ecosystems and related species (e.g. in NW Africa). <b>A great deal of recent research is available on the physical and biological oceanography, dynamics and ecosystem of the Arabian Sea; e.g. Ismail and Salim 2025, Narvekar et al. 2021, Ismail and Shehhi 2022, Chatterjee et al. 2022 and many others; the ecosystem is sufficiently well-studied that the key ecosystem elements and drivers can be identified.</b> |                                                                                                                                                                            |      |

|                                                                                                                  |                                                                                                                                             |     |
|------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|-----|
| E3.2 There is no substantial evidence that the fishery has a significant negative impact on the marine ecosystem |                                                                                                                                             |     |
| E3.2.1                                                                                                           | The information collected in relation to E3.1.3 indicates that the fishery does not have a significant negative impact on marine ecosystems | GAP |
| See above                                                                                                        |                                                                                                                                             |     |

|                                                                         |                                                                                                                          |     |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----|
| E3.3 There is an ecosystem management strategy in place for the fishery |                                                                                                                          |     |
| E3.3.1                                                                  | There are measures applied to the fishery which are designed to manage the impacts of the fishery on marine ecosystems   | GAP |
| E3.3.2                                                                  | The measures are considered likely to prevent the fishery from having a significant negative impact on marine ecosystems | GAP |
| See above                                                               |                                                                                                                          |     |

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