



OSPAR Convention for the Protection of the
Marine Environment of the North-East Atlantic

Working Group on Monitoring and on Trends
and Effects of Substances in the Marine
Environment (MIME)

Copenhagen: 18–22 November 2019

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MIME draft summary record

Agenda Item 0 – Opening and representation at the Meeting

MIME 19/0/1, MIME 19/0/Info.1

0.1 The meeting of the Working Group on Monitoring and on Trends and Effects of Substances in the Marine Environment (MIME) was held from 18-22 November 2019 at the International Council for the Exploration of the Sea (ICES) in Copenhagen, Denmark.

0.2 The meeting was chaired by Dag Øystein Hjermann (Norway) and was attended by the Chair of HASEC (Sweden) and by representatives from the following:

Contracting Parties: Belgium, Denmark, France, Germany, Ireland, the Netherlands, Norway, Spain, Sweden and the United Kingdom;

Inter-governmental Observer Organisations: the International Council for the Exploration of the Sea (ICES);

Guests: Jaroslav Slobodnik (NORMAN¹ Association).

0.3 A list of participants is at **Annex 1**.

Agenda Item 1 – Adoption of the Agenda

MIME 19/1/1, MIME 19/1/1 Add.1 Rev.1, MIME 19/1/Info.1

Item 1.1 agenda and timetable

1.1 The Chair welcomed everyone to the meeting and highlighted the six main areas of work for the meeting: the annual roll-over assessment, including developing distance to target, background concentrations and assessment criteria; developing the draft hazardous substances objectives for the new North-East Atlantic Environment Strategy (NEAES) 2020-2030; indicator, thematic and other assessments for the QSR 2023; reviewing background assessment criteria (BACs) and assessment criteria for some contaminants; collaboration with NORMAN Association; and developing the new OSPAR contaminants app.

1.2 The draft agenda and the provisional timetable were adopted (MIME 19/1/1 and Add.1 Rev.1). The Heads of Delegation (HODs) noted there were three late documents and agreed to address them during the meeting. A copy of the agenda with the revised document list submitted to the meeting is at **Annex 2**. A list of actions arising from the meeting is at **Annex 3**.

Item 1.2 programme of work 2019/20

1.3 The Secretariat reminded MIME of its Programme of Work 2019/20 for the Hazardous Substances and Eutrophication Committee (HASEC) (MIME 19/1/Info.1). MIME noted all products would be addressed during the meeting and were on track to be met by the stated deadlines for delivery.

1.4 The Secretariat informed of two outcomes of the CoG and HOD meetings, 12-14 November 2019, that were of particular relevance to MIME. Firstly, since MIME 2018 and in response to guidance by the Strategy Task Group, the hazardous substances operational objectives for the NEAES 2020-2030 had been considerably developed by HASEC from 13 to four objectives. CoG had also agreed to develop an

¹ Network of reference laboratories, research centres and related organisations for monitoring of emerging environmental substances. <https://www.norman-network.net/>

implementation plan to complement the NEAES 2020-2030. It would be developed in the meeting cycle 2020/21 and would be a living document. The mode of action and details of objectives could be captured in the proposed implementation plan, which would be rationalised with the JAMP and CEMP. With this in mind, CoG had agreed new guidance for intersessional work by Committees and their subsidiary bodies for refining the operational objectives by CoG(1) May 2020. MIME further addressed the NEAES under Agenda Item 5.2.

1.5 Secondly, during CoG the Kingdoms of Denmark and Norway had agreed MIME could use non-OSPAR data for hazardous substances assessments in Region I. Norway added that only published data could be used, and all data owned by the Norwegian Polar Institute (NPI) were open and accessible free of charge for further use, in accordance with government policy for release of public and publicly funded data. When data were (re)used, the data source must be cited in accordance with the Institute’s guidelines as published at the time. The Norwegian Polar data centre² was establishing an NPI database for time series data on mercury and POPs. However, the database was not published yet. When the database was published, the data could be used according to the data policy guidelines: https://data.npolar.no/policy/NPI-data-policy-en_GB.pdf.

Agenda Item 2 – JAMP and Contracting Parties’ evolving monitoring as drivers for development of OSPAR monitoring of substances and their effects

MIME 19/2/1, MIME 19/2/Info.1

Item 2.1 progress in the JAMP

2.1 The Secretariat presented the Theme H products of the JAMP 2014-2023, to recall the specifications that required work by MIME and the timetable for the work (MIME 19/2/Info.1). MIME proposed some edits to the Theme H products and timetable (**Annex 4**) and agreed **the Chair of MIME would present the proposed JAMP changes to HASEC 2020.**

Item 2.2 review of Contracting Parties’ implementation of the CEMP

2.2 In a tour de table Contracting Parties provided information on their CEMP-related national monitoring programmes, using document MIME 19/2/1 as their starting point. In summary:

Contracting Party	Change to current monitoring	Additional information
Belgium	No change	Since January 2019 there had been a reduction in monitoring stations from 10 to five stations. Three stations were monitored on a transect from Scheldt to English Channel, on a monthly basis across whole tidal cycles (13 hours), which had proved promising.
Denmark	Change to TBT monitoring	TBT in mussels were analysed every second year, and in marine snails in alternate years so there was ‘a measure’ of TBT every year.
France	No change	New area of monitoring for biological effects and contaminants in fish and mussels, the Seine Bay. Every year France tried to stabilise its monitoring programme for fish in offshore stations on the continental shelf and the slope; monitoring deep sea fish species on the continental slope. Also, every year France tried to stabilise its monitoring of mammal and bird samples for analysis.

² <https://data.npolar.no/home/>

Contracting Party	Change to current monitoring	Additional information
Germany	No major changes	Reduced frequency of monitoring metals in water from three-times to twice per year.
Ireland	No change	There was more work on seabirds (terns, gannets & guillemot), using them as potential MSFD indicators.
Netherlands	No change	There had been a delay in the submission of sediment data from 2018. It was likely there would be some missing data for the North Sea area because of national laboratory problems. The next sediment survey would be in 2021.
Norway	No change	There was additional analysis of chlorinated flame retardants (CFR) in cod liver at five stations.
Spain	No change	Sampling was intended for 2019, but no dates had been fixed yet.
Sweden	No change to regular monitoring	2017/18 collection of samples for effects screening and contaminant analysis; eight sites on Swedish coast, and two on Swedish west coast (i.e. the OSPAR area) in snails, blue mussels and fish.
United Kingdom	<i>Scotland:</i> Additional sites to be monitored	The additional sites were to improve regional assessment of contaminants in biota using scallop stock assessment surveys to monitor suite of contaminants (metals, PAH, PCBs, PBDEs etc.) in offshore waters. It was difficult to get mussel sites, which was why scallops were being considered because this would give good coverage all around Scotland. PAHs were not monitored in fish, so scallop surveys would give additional PAH data for offshore waters. No longer analysing metals in sediment. A change of laboratory had resulted in a step-change in concentrations and in some cases changing the status and increasing trends. <i>England and Wales:</i> PFAS for 2019/20 in biota was continuing from last year's pilot studies no change

2.3 The information was used in MIME's review and revision of the descriptions of national programmes in the CEMP and pre-CEMP appendices (Agenda Item 6.1 and Annex 12). A few Contracting Parties exchanged information on their national seabird monitoring and MIME agreed to include **the potential role of seabird and egg monitoring as an agenda item for the 2020 meeting**.

Agenda Item 3 – Data handling and assessment activities

MIME 19/3/1, MIME 19/3/2, MIME 19/3/3, MIME 19/3/3 Add.1, MIME 19/3/3 Add.2, MIME 19/3/4, MIME 19/3/5, MIME 19/3/6, MIME 19/3/7, MIME 19/3/7 Add.1, MIME 19/3/8, MIME 19/3/9, MIME 19/3/10(L), MIME 19/3/Info.1

Item 3.1 annual CEMP rollover assessment

3.1 The United Kingdom (Rob Fryer) informed MIME that the preparation of the 2019/20 CEMP rollover assessment was underway (MIME 19/3/1) and a draft was available in the OSPAR Contaminants App. <https://ocean.ices.dk/oat/?assessmentperiod=2020>. MIME noted the assessment was on the same basis as last year and the help-files would be updated in due course. Several aspects of this year's assessment were brought to MIME's attention (19/PO1) such as inclusion of: egg data (Sweden); AMAP data for Region I (mercury and POPs); Fish Disease Index data; and EROD assessments sex-specific. The issues to be addressed by MIME included: assessment criteria; new substances; matrices (birds, mammals, fish, sediment); bases (dry weight and wet weight issues); inflation factors; regional assessments; and data issues such as uncertainties and TBTIN reported instead of TBSN+.

3.2 During discussion the following points were made:

- a. issues of using dry weight versus wet weight were discussed;
- b. issues around data for contaminants in birds and mammals were discussed, including submitting the data to ICES and how to assess;
- c. the NORMAN representative informed MIME about the LIFE APEX project that aimed to systematically use contaminant data from apex predators and their prey in chemicals management (<https://lifeapex.eu/>). However, MIME noted that although countries could submit their marine mammal data to LIFE APEX, this could not be done for the AMAP data held by ICES.

3.3 The United Kingdom (Rob Fryer) explained that where uncertainty information was provided it was used, but if uncertainties were not provided, they were estimated based on typical uncertainties in the ICES database. MIME noted this was in contrast to the process for HELCOM and AMAP data. Historical data were down-weighted and then inflated where there was no QA. It was proposed to test whether and to what extent the process would make a difference to the data, to decide how to handle uncertainties in future. For example, if the inflation factor had minimal impact on the assessments of trends and status, perhaps the factor could be switch-off.

3.4 Led by the United Kingdom, Contracting Parties worked further on their uncertainty data and other issues (**Annex 5**), including the separate assessments of human health and environmental condition (addressed in Agenda Item 3.6) and MIME agreed:

- a. **Contracting Parties could resubmit their uncertainty data by 31 December 2019, for the 2019/2020 assessment, with the final deadline of May 2020;**
- b. **Contracting Parties would complete the actions to address uncertainties as set out in Annex 5;**
- c. **the Chair of MIME would present the table of environmental condition and human health assessment criteria to HASEC 2020** (see Agenda Item 3.6 and Annex 7);
- d. **the annual assessment in the Contaminants App would be carried out on the same basis as the previous years, with regional assessments, and the Chair of MIME would recommend to HASEC 2020 this should be the published 2020 OSPAR assessment** – taking account of any decision made by HASEC on assessment concentrations for PBDE in biota, in due course;
- e. **trial assessments of biota (a) with environmental standards and (b) with human health standards would be presented in the Contaminants App** (Annex 7).

Item 3.2 OSPAR Contaminants Application

3.5 ICES presented an overview of developments in the OSPAR Contaminants App, which was available from the ICES landing page <http://ices.dk/marine-data/assessment-tools/Pages/ospar-cat.aspx> (MIME 19/3/2 and 19/P07). MIME noted that the Kingdoms of Denmark and Norway had given permission to use non-OSPAR data in the assessments for Region I. The Secretariat explained that Norway had requested an acknowledgement for data and one proposal was to add such text to the landing page. ICES clarified that the draft annual assessment for 2019/20 was based on a 'frozen' data set.

3.6 ICES presented possible improvements to the OSPAR Contaminants App. A drafting group developed a prioritised list of developments for the tool, which was agreed in plenary and used as the starting point for a special request for ICES advice (see Agenda Item 8.1).

3.7 In discussion the following points were made:

- a. the DOI (digital object identifier) currently included all data that were extracted from the ICES database, which were used as the starting point for the annual assessment. However, some were then excluded from the assessment and were not part of the annual assessment that was displayed in the Contaminants App. A separate DOI for the processed database on which the final annual assessment was based, was proposed;
- b. an acknowledgement or citation for the Norwegian Polar Institute data could be added to the annual assessment report, but there was still a question of how to capture it in the DOI;
- c. the NORMAN representative asked whether it was acceptable to download a subset of data from the last 10 years for inclusion in NORMAN's database. However, ICES highlighted that this would be classed as a 'redistribution' of data and checks would need to be made with the data submitters first;
- d. France asked for Mediterranean data to be included in the OSPAR Contaminants App. because France and Spain monitored their Mediterranean stations with the same protocol as their stations in the OSPAR Maritime Area. Therefore, the data would be suitable, but more stations would need to be added to the ICES station dictionary. France and Spain discussed the suggestion with ICES. MIME noted that if appropriate, France and Spain might present a proposal to HASEC 2020 for further consideration of the advantages, disadvantages and implications.

Item 3.3 indicators and thematic assessments for QSR 2023

3.8 The Secretariat presented the QSR 2023 Guidance³ (MIME 19/3/Info.1) and an overview of the plans for the QSR including the timelines for milestones and final delivery (19/P02). MIME recalled the indicators, thematic and other assessments that HASEC and OSPAR had agreed would be contributions to the QSR 2023. The first drafts of the assessments would be needed by MIME 2020, for consideration by HASEC 2021. MIME noted the QSR guidance for indicators (p13) was to repeat the Intermediate Assessment (IA) 2017 assessments and that ICG-QSR was planning as simple an update as possible, meaning all formats etc. would stay broadly the same. This meant that for indicators that were well written for the IA-2017, the focus would be to update the 'results' sections.

3.9 MIME agreed the assessment leads for the QSR 2023 would be:

- a. PAH – United Kingdom;
- b. PCB – United Kingdom;
- c. PBDEs – Sweden and Spain;
- d. TBT in sediment – Belgium and Sweden;
- e. Imposex – Norway and Ireland;
- f. Metals in sediment, biota [& water] – Denmark;
- g. Inputs of heavy metals via air and water – Sweden (Chair HASEC)/INPUT;
- h. Thematic assessment (CHASE) – Denmark;
- i. Fish disease index – Germany;
- j. Integrated biological effects approach assessment case study – France;
- k. Persistent chemicals in marine mammals – Marine Mammal Expert Group.

³ Agreement 2019-02

3.10 MIME agreed the Secretariat would establish a contact group for the lead authors and would communicate intersessionally to share documents and advice from the ICG-QSR and would host a WebEx meeting in 2020 to initiate work on draft assessments, for consideration by MIME 2020.

INPUT's work and proposed assessments for the QSR 2023

3.11 The Chair of HASEC presented an overview of INPUT's area of work: the Riverine Inputs and Direct Discharges (RID) programme; the Comprehensive Atmospheric Monitoring Programme (CAMP); INPUT's assessments in the IA-2017; and ambitions for the QSR 2023 (MIME 19/P03). For the IA-2017, the heavy metals (mercury, cadmium and lead) inputs via air and water had been analysed, using freely available EMEP⁴ MSC-E⁵ data for atmospheric inputs. However, EMEP-E had since changed its website and the data were no longer available to download. INPUT 2020 would be considering steps for obtaining airborne metals data.

3.12 In discussion the following points were made:

- a. in response to queries, the Chair of HASEC informed MIME that the relative contributions of atmospheric and riverine loads to Region II was approximately one-third from atmosphere and two-thirds from rivers, and that EMEP had a dense network of monitoring stations that were geographically widely distributed;
- b. a Contracting Party pointed out that European countries had taken measures for mercury so it would be interesting to demonstrate the airborne contribution and load contribution from non-Contracting Parties;
- c. the parameters for assessment were discussed and in addition to mercury, cadmium and lead, proposals were made for assessing inputs of arsenic, chromium, copper, zinc and nickel;
- d. a suggestion was made to analyse trends for those metals without EACs. Future development of the RID programme could be to include PCBs, PAH and hydrocarbons. It was noted that there were PBDE data for a few major European rivers;
- e. MIME noted that source-apportionment was; point sources, diffuse sources and atmospheric. A Contracting Party highlighted new sources, e.g. from ships' scrubbers and corrosion protection on offshore installations of renewable industry. The Chair of HASEC recalled that shipping was not in the RID programme, however other Contracting Parties were interested in quantifying the load contribution from scrubbers;
- f. in discussion of the scales of assessment, MIME confirmed that it would be preferable for INPUT assessments to be made at the sub-regional scale matching MIME's delineations;
- g. in the absence of dispersion models, it was suggested that salinity could be used as a tracer, e.g. Rhine plume;
- h. MIME requested flow-normalised assessments if possible, whilst recognising INPUT's difficulties in achieving this.

3.13 In conclusion, MIME requested **the Chair of HASEC to provide MIME's feedback to INPUT on the inputs via water and air assessment for the QSR**, as in §3.12 c-h. MIME encouraged **Contracting Parties to bring information on ships' scrubbers to HASEC 2020**.

⁴ European Monitoring and Evaluation Programme (EMEP), under the UNECE Convention on long-range transport of air pollution

⁵ Meteorological Synthesising Centre East (MSC-E)

Thematic assessment

3.14 The Vice-Chair of MIME presented a draft thematic assessment of hazardous substances, based on HELCOM's hazardous substances status assessment tool (CHASE) (MIME 19/3/3, Add.1 and Add.2). Outcomes were presented for the MIME 2019 draft annual assessment data, for the Channel, Irish and Scottish West Coast, Irish Sea and Southern North Sea; data for both biota and sediment. Alternative approaches to calculate an average, or pseudoaverage concentration, and a one-out-all-out approach were demonstrated. MIME was asked: should the CHASE be used, and if so, whether to use the upper limit or just the average; and whether to adopt the one-out-all-out or the CR_{RMS} ⁶ method.

3.15 In discussion:

- a. it was recognised that although there were some issues, the CHASE approach was an objective one;
- b. Contracting Parties recalled that in order to have sufficient data to enable regional assessments, MIME's current approach for regional assessments was generous regarding the rules on the number and geographic spread of monitoring sites. Therefore, the monitoring programme needed to be reviewed and revised. However, there were ways of building confidence through power calculations;
- c. furthermore, it was highlighted that the current monitoring strategies did not provide a reliable basis for the assessment tool at the moment, because different parameters were measured in different sub-Regions. The definitions of 'representative' differed between Regions. Biota and sediment were used for Regions I and IV, because there were too few sediment data on their own;
- d. the risk-based approach to monitoring meant that for some parameters, e.g. imposex, there were no background or representative site measurements. The inevitable result was that some sub-regions failing the CHASE assessment because VDS measurements exceeded assessment criteria. A Contracting Party proposed imposex could be removed from the assessment;
- e. the upper confidence limit did not take into account contaminants that were missing from the assessment because they were not measured. This resulted in a contaminant ratio of 1. It was suggested that in such cases an average value could be applied;
- f. the MSTAT categorised stations as baseline, representative or impacted stations. Only representative stations were used for trends. It was necessary to identify representative stations that were geographically dispersed on which assessment of long-term trends could be based;
- g. the one-out-all-out approach was not generally supported. A proposal was made to use two-out-all-out;
- h. it was highlighted that CHASE could only provide a thematic assessment of status and not trends. MIME would need to work further on a possible parallel thematic assessment of trends.

3.16 A drafting group set out the main issues in using the CHASE tool that would need to be considered (**Annex 6**). MIME agreed to conduct a thematic assessment based on CHASE:

- a. **the Vice-Chair (Denmark) would lead on addressing the CHASE issues (Annex 6)**
- b. **the Vice-Chair (Denmark) would re-run the CHASE assessment for presentation to MIME 2020;**

⁶ Contaminant ratio root mean square

c. **MIME 2020 would further explore methods for analysing the data including trends assessment.**

Confidence assessment for the QSR

3.17 MIME did not have time to address confidence assessment approaches for the QSR (MIME 19/3/10(L)). The Secretariat informed that the issue would be brought to HASEC 2020 for discussion.

Item 3.4 PBDEs in sediment and fish, and trial BACs

3.18 MIME recalled its work to develop PBDE values based on Canadian Federal Environmental Quality Guidelines (FEQGs) as EAC-equivalents, noting not all Contracting Parties supported the approach (MIME 19/3/4). In particular there was a need to investigate BACs for shellfish, which could require bringing in information from passive sampling to work out what were suitable values. MIME recalled that for synthetic substances the background concentration (BC) was zero (which was not measurable) and the standard approach to developing BACs had been to first establish a low concentration that was measurable (typically twice the QUASIMEME constant error) and then to construct BACs using the typical precision in the monitoring data. However, at MIME 2017, it became clear that using twice the QUASIMEME constant error resulted in BACs that were too high for many compounds (i.e. above the concentrations found at some 'contaminated' sites). Trial BACs for PBDE47 in sediment, fish and shellfish had been used in 2018 for the annual CEMP assessment and MIME's discussion on establishing BACs was captured in the helpfile of the OSPAR Contaminant App⁷.

3.19 In discussion the following points were made:

- a. several Contracting Parties were willing to support the FEQGs for use on a trial basis, recognising that a Background Document would need to be drafted before HASEC could consider whether to adopt the values for assessment purposes;
- b. MIME recalled HASEC had requested separate assessments of human health and environmental condition, and FEQGs could be used for the latter. MIME was informed that the EU Water Directors had also stated there should be separate food and environmental health criteria.
- c. it was proposed to assess against both FEQGs and EQS in the QSR 2023, even if it would be difficult to interpret two outcomes; MIME had been requested to separate human health from environmental condition so there would be two outcomes anyway;
- d. some Contracting Parties expressed reservations about assessing against human health criteria noting the derivation of the EQS was complicated. Furthermore, the EQS was supposed to be corrected to trophic level 4, whereas MIME did not use it in this way. However, other Parties still recommended using EQS, noting it was not a question of which to choose, but to take a broader view to the community;
- e. a few Contracting Parties highlighted that nationally, they would only be using the EQS, but nevertheless supported MIME's exploration of different criteria: EQS for human health; QS for environment; FEQGs for individual congeners; and FEQGs for sediment;
- f. it was noted that for some situations, e.g. for sediment ERLs in metal, a choice of criterion had to be made because the background concentrations were higher than the ERLs;

⁷ https://ocean.ices.dk/oat/trDocuments/2019/help_ac_development_organo-bromines.html

- g. it was recalled that MIME's 2016 report on mercury (OSPAR Publication 679⁸) demonstrated that using the EQS resulted in every sub-region failing. OSPAR's QSR 2023 would be used by the EU, and so assessing against the EQS could present difficulties in responding to EU questions. A Party also highlighted that if areas fail, then measures had to be taken. A trend assessment of PBDEs was proposed the QSR do a trend assessment for PBDEs and then chose what to compare to.

3.20 The Secretariat informed MIME of the new OSPAR guidelines for drafting Background Documents (Agreement 2019-01), and MIME noted the information in the Contaminants App helpfile should be the starting point for a Background Document, including reference to the FEQG information.

3.21 MIME agreed:

- a. **to apply FEQGs to PBDEs in fish for the annual assessment.** This would require multiplying the FEQGs on a wet weight (ww) basis by 20 so that they were equivalent to a fish with 5% lipid. The data would then be assessed by normalising all fish concentrations to 5% lipid and applying the standard statistical methods to assess trends and status;
- b. **the United Kingdom would lead on drafting a Background Document for FEQGs for sediment, with the first draft by 31 December 2019. The Background Document for FEQGs would be finalised in written procedure and MIME's recommendations for HASEC 2020 would be added.**

3.22 In MIME's discussion on BACs:

- a. it was highlighted that although MIME might agree to use a derived BAC with a view to reviewing it in the future, sometimes follow-up reviews were not undertaken;
- b. MIME was informed that the JRC was interested in engaging in development of EQS for the marine environment and it was recommended that JRC was invited to contribute to MIME's work on BACs and FEQGs. This was particularly important for countries that were Parties to more than one Regional Sea Convention;
- c. MIME noted that NORMAN did not take up priority substances;
- d. the justification for deriving BACs was that they were below FEQGs and therefore a Background Document should refer to FEQGs;
- e. the United Kingdom (Rob Fryer) noted that BACs for fish had been constructed on a ww basis. Therefore, it did not make sense to propose BACs on a ww basis when at the same time, proposing to conduct the assessment on concentrations normalised to 5% lipid. Instead, the lipid normalised concentrations should be used to construct the BACs, for consistency. This meant calculating new BACs and proposing them for MIME's consideration.

3.23 In conclusion MIME agreed:

- a. **the United Kingdom (Rob Fryer) would recalculate the BACs for fish based on the lipid normalised concentrations and use them on a trial basis for the 2020 roll-over assessment;**
- b. **France and the United Kingdom would draft a Background Document on BACs for sediment for consideration by HASEC 2020;**

⁸ OSPAR Publication 679/2016 Mercury assessment in the marine environment Assessment criteria comparison (EAC/EQS) for mercury

- c. **France and the United Kingdom would draft a Background Document on BACs for fish for consideration by HASEC 2021;**
- d. **France and the United Kingdom would engage with JRC in drafting the BACs Background Documents, as appropriate.**

Item 3.5 trend assessments of birds and mammals' data

3.24 MIME recalled in 2018 it had discussed the possibility of including bird and or mammal data in the CEMP assessment. There were Swedish data for two bird species and some mammal data, from Iceland and the United Kingdom, but nothing submitted on the latter since 2009. MIME had agreed the United Kingdom (Rob Fryer) would investigate the possibilities for including a trend assessment on bird data in 2019.

3.25 MIME discussed issues regarding the matrix – eggs, birds, mammals – and the basis for assessment such as wet weight. Regarding EACs and BACs for birds and mammals, MIME also discussed whether to apply criteria for fish and shellfish

3.26 MIME **agreed that for this year concentrations would be assessed for all the usual species, but not to assess status of birds or mammal data.** Marine mammal data would be assessed for trend only.

Item 3.6 use of EQS_{biota} and development of other environmental assessment criteria

3.27 Sweden presented a proposal for separate assessments of environment and human health using EQS_{biota} and other quality standards (MIME 19/3/5). MIME recalled its discussion on EQSs in the EU for biota and the document that it provided to HASEC that set out the issues. In response to the request by HASEC to conduct separate assessments of environment and human health using EQS, Sweden suggested that MIME could list the thresholds relevant for the assessment of environment and human health, in a similar way as suggested for mercury. The starting point was the EAC Audit Trail and annual assessment criteria. Subsequently the proposed thresholds could be trialled in the annual assessment and displayed in the Contaminant App.

3.28 In discussion:

- a. several Contracting Parties supported the separation of assessments for environmental condition and human health. The process proposed by Sweden would be a good way to display and compare the outcomes and to identify any gaps;
- b. it was pointed out that whilst it could be straightforward to have a new tranche of assessment criteria, there might be some difficulties in how to display the results in the Contaminants App;
- c. care would be needed in analysing the data as some countries conduct separate monitoring programmes, e.g. monitoring fish for consumption was a different programme from environmental monitoring, with different sampling processes. However, it was noted that HASEC was requesting separate assessments based on the same monitoring data that were submitted to ICES;
- d. several Contracting Parties expressed concern about reporting and assessing against human health criteria for MSFD Descriptor 9, 'Contaminants in fish and seafood for human consumption'. However, the Secretariat informed MIME that OSPAR did not address this Descriptor and it was not the intention for MIME to do so;
- e. it was proposed to collect information on Contracting Parties' national processes for trophic magnification and adjustment for trophic level.

3.29 A drafting group collated the available information and comments on environmental condition and human health assessment criteria (**Annex 7**). MIME discussed the information in plenary and agreed to provide the table to HASEC and to conduct trial assessments of biota (a) with environmental standards and (b) with human health standards would be presented in the Contaminants App (see Agenda Item 3.1).

Item 3.7 trial assessment values for TBT in sediment

3.30 MIME recalled that in 2018/19 a preliminary assessment of TBT in OSPAR sediments had been performed using the Swedish quality standard. Sweden presented the background to the derivation of the standard and proposed a way forward (MIME 19/3/6).

3.31 Sweden was thanked for the report that set out the quality standard, noting the high quality of the study. The issue of the threshold being close to the limits of detection was recognised. It was pointed out that the implications of failing the threshold for TBT in sediment would mean that dredged material would have to be deposited on land.

3.32 MIME considered that the Swedish report on TBT in sediment was a sufficiently robust basis for recommending the adoption of the quality standard. MIME agreed:

- a. **to continue to use the TBT in sediment limits in the annual assessment;**
- b. **the Chair of MIME would present the outcomes of MIME's discussion to HASEC and recommend HASEC adopt the Swedish Quality Standard for assessing TBT in sediment the QSR 2023.**

Item 3.8 EAC audit trail

3.33 The MIME Vice-Chair for Assessment (Denmark) informed that HASEC 2019 had requested the audit trail of assessment criteria be kept up to date, and the background documents to be made accessible (MIME 19/3/7 and Add.1). The Vice-Chair highlighted the changes to the documentation since MIME 2018, in particular FEQGs had been added, noting they were being used on a trial basis.

3.34 In discussion:

- a. Sweden provided corrections that were mainly editorial. However, some corrections were regarding food levels for some metals. Sweden noted that a lot of thresholds, though set for the same matrix, had quite different protection goals and that the long trophic chains in the marine environment were not always considered;
- b. the Vice-Chair suggested adding an extra column to the table specifying applicability to WFD and/or MSFD.

3.35 MIME agreed the Vice-Chair (Denmark) **would update and adapt the EAC Audit trail and the accompanying Excel file and MIME would recommend the Audit Trail to HASEC 2020 for publication**, recognising that it would be a living document that may need to be updated every year.

Item 3.9 ICES data matters

3.36 ICES Data Centre presented data handling matters for consideration by MIME (MIME 19/3/8 and 19/P06). These covered: Screening Utility (DATSU) update; outlier check (one generic and two in the Contaminants App); data submission summaries; and data uploading issues.

3.37 MIME thanked ICES for the DATSU check that was working well. The outlier check was discussed, noting that it was often ignored because it was somewhat problematic. Suggestions were made that the outlier check could be conducted using a logarithmic scale or using percentiles.

3.38 In conclusion MIME agreed ICES would change the outliers check to 2.5%ile and 97.5%ile instead of x2 of the standard deviations.

Item 3.10 collaboration with the Arctic Monitoring and Assessment Programme (AMAP)

3.39 The Chair of MIME presented the outcomes of the June 2019 AMAP-OSPAR workshop on temporal trend analysis systems (MIME 19/3/9). The aim of the workshop was to gain more time series data in OSPAR Region I, Arctic Waters. It was well attended by MIME and AMAP experts, including from Canada and USA. There was a range of time-series on birds, mammals, fish from lakes and seas to be considered. The next steps were to develop the R-package, harmonise the input data and address a series of follow-up country-specific actions on data issues, including an action to report to Iceland. The United Kingdom added that AMAP was conducting a mercury analysis and once the code was developed, it would be accessible to OSPAR. Work was needed to assess different groups of mammal data; adults, young, male and female. In 2020 persistent organic pollutant (POP) data could also be added. There were some issues with the Greenlandic data with allocating data to some stations in the ICES database.

3.40 MIME agreed:

- a. to encourage **Contracting Parties of AMAP to submit all their relevant Region I data to the ICES database for accessibility by MIME;**
- b. to encourage **all OSPAR Contracting Parties to submit their marine mammal data to ICES**, which would complement the mammal data to Region I.

Agenda Item 4 – Concentrations and effects of hazardous substances

MIME 19/4/1, MIME 19/4/1 Add.1, MIME 19/4/2, MIME 19/4/3, MIME 19/4/4(L)

Item 4.1 CEMP monitoring programme coverage

4.1 The United Kingdom (Rob Fryer), recalled discussion at MIME and intersessional work by the Chair of MIME to review the CEMP monitoring coverage to identify spatial and temporal gaps, and to recommend sites for extra sampling that would improve geographical coverage for regional-scale assessments (MIME 19/4/1 and Add.1). MIME noted that Region I was lacking in stations, but that this would change for biota (not sediment) with the inclusion of AMAP non-OSPAR data. The aim was to ensure that sufficient data for regional assessments for future QSRs.

4.2 In discussion the following points were made:

- a. MIME's current approach for regional assessments was generous regarding the rules on the number and geographic spread of monitoring sites and temporal length of time series;
- b. Denmark informed MIME that it was in the process of revising its marine monitoring programme, and it was likely that all EU member states were doing the same;
- c. the United Kingdom informed that in Scotland the frequency at which stations were monitored depended on the levels of contaminant. If concentrations were well below threshold, then sampling was every 6 years; if concentrations were close to threshold then sampling was more frequent. Also, Scotland tried to ensure monitoring of sufficient background/reference sites. This had meant adding more stations to improve geographic cover, aiming for five stations in each Scottish region;

- d. the importance of also checking what kind of stations were being monitored was noted, aiming for a general picture of the OSPAR area;
- e. it was proposed that groups of neighbouring countries could help the process, by identifying stations in each Region that were representative and of a reasonable geographic spread. The number of stations should be sufficient to detect changes and to give discriminatory power for detecting trends;
- f. Belgium informed MIME it was running a 1-year programme sampling water and sediment on a two-tide cycle and in doing so, it was capturing an enormous variation.

4.3 During the meeting the Chair of MIME computed counts of time series in each sub-region, for biota and sediment, classifying stations as informal status, status only, status and trend. The Chair produced plots, maps and tables of information for Contracting Parties to check (**Annex 8**).

4.4 In conclusion MIME agreed an Agenda item for 2020 to discuss CEMP monitoring coverage with a view to establishing / agreeing a network of stations that would be monitored for the foreseeable future, that would be representative of prevailing conditions, and would provide sufficient geographic coverage to enable regional assessments in each MIME sub-region. In particular, Contracting Parties would be asked to identify which of their current stations were representative of prevailing conditions and would be monitored in future, and where they could increase monitoring effort to ensure better geographic coverage (possibly at the expense of some existing monitoring stations). At present, three stations (with reasonable geographic spread) were considered the minimum requirement for a regional assessment, but this was unlikely to give adequately precise estimates of regional status and trends. Some calculations that show the relationship between precision and number of stations would be possible at MIME 2020.

4.5 MIME agreed Contracting Parties would **identify which of their current stations were representative of prevailing conditions and would be monitored in future, and where they could increase monitoring effort to ensure better geographic coverage (Annex 8), for MIME 2020.**

Item 4.2 biological effects approach as a contribution for the QSR

4.6 France presented the development of the integrated chemistry and biological effects approach as a case study contribution to the QSR 2023 (MIME 19/4/2 and 19/P09). France was focusing on the concept and indicator development and suggested involving WGBEC in the development of the case study and as co-author. The case study for the integrated approach was proposed to be based on four contributions: MIME's spreadsheet; integrated approach trial application 2013; integrated biomarker response (IBR); and FDI in some areas. The objectives were: to propose a common methodology providing a standardised spreadsheet produced by MIME and which could be validated by the WGBEC 2020 in March; to collect harmonised data, figures format and interpretations produced by each voluntary Contracting Party in 2020-2021; and to report collectively with the contribution of MIME and WGBEC on harmonised data and illustrated results obtained on a local and/or on a large geographical scale in the OSPAR area. Contracting Parties were invited to consider co-authoring the indicator assessment with France.

4.7 The case study proposal was supported by Belgium, Denmark, France, Ireland, Sweden, Norway, the United Kingdom. MIME agreed:

- a. **France would provide its standardised spreadsheet to Contracting Parties;**
- b. **Contracting Parties would perform the analysis and interpretation of their own data, following their national approach by selecting contaminated and/or pristine sites;**

- c. **Contracting Parties would provide their national data on biomarkers, bioassays and chemicals data in the spreadsheet;**
- d. **France would present the initial results and progress to MIME 2020.**

Item 4.3 Fish disease index assessment as a contribution for the QSR

4.8 MIME noted progress with inclusion of fish disease index (FDI) data in the annual assessment (MIME 19/4/3). During MIME Germany and the United Kingdom (Rob Fryer) worked on the FDI data, after which Germany informed MIME that the code for providing FDI data for dab had been tidied up and it would be extended to cod and flounder by 31 December 2019. This would enable the FDI to be incorporated into the MIME annual assessment for status and trends for the three species, on a station-by-station basis. ICES confirmed it would welcome having the code, too.

4.9 Germany confirmed that it would lead in drafting the FDI assessment for the QSR. Germany confirmed that the concept as set out in the technical specification sheet was still valid. There was a new German fisheries biologist Jörn Scharsack (joern.scharsack@thuenen.de) who would start in January 2020, working with Thomas Lang (Thomas.lang@thuenen.de).

4.10 France noted that the FDI could be incorporated in the integrated biological effects approach case study, for areas that had the necessary combination of information (see Agenda Item 4.2).

4.11 In conclusion, MIME agreed:

- a. **Germany would send the code to the United Kingdom and ICES by 31 December 2019;**
- b. **the Secretariat would invite Germany to confirm that it would lead the FDI assessment for the QSR, in early 2020.**

Item 4.4 candidate indicator on PCBs in marine mammals

4.12 On behalf of the Marine mammal expert group (MMEG) of ICG-COBAM, the Secretariat presented the proposal for the new candidate indicator, “Trends and Status of PCBs in marine mammals” (MIME 19/4/4 (L)). MIME noted HASEC and BDC 2019 had approved the development of a new candidate indicator. MIME was invited to comment on the technical consideration of developing this approach.

4.13 A drafting group produced a set of recommendations for the MMEG, which MIME refined in plenary. MIME agreed **the Secretariat would provide MIME’s recommendations on the marine mammal indicator to MMEG and the Chair of BDC (Annex 9).**

Agenda Item 5 – Strategic issues

MIME 19/5/1, MIME 19/5/2, MIME 19/5/2 Add.1 Rev.1, MIME 19/5/3(L), MIME 19/5/3 Add.1, MIME 19/5/3 Add.2, MIME 19/5/3 Add.3, MIME 19/5/4, MIME 19/5/5, MIME 19/5/Info.1, MIME 19/5/Info.2

Item 5.1 NORMAN collaboration

5.1 The NORMAN⁹ Association representative, Jaroslav Slobodnik presented NORMAN’s work on emerging environmental substances and the NORMAN mission (19/P05). Ireland presented potential areas for collaboration with MIME, in particular on ecotoxicology, passive sampling, non-target screening, prioritisation of chemicals of emerging concern (CEC), nanomaterials and microplastics (MIME 19/5/1).

⁹ Network of reference laboratories, research centres and related organisations for monitoring of emerging environmental substances: <https://www.norman-network.net>

5.2 During discussions support was expressed for collaboration with NORMAN, recognising that there were important differences with OSPAR. For example:

- a. collaboration could focus on the technical approach, e.g. organise a session with NORMAN experts and MIME to exchange technical expertise;
- b. NORMAN was WFD-focused whereas OSPAR encompassed the maritime area of the North-East Atlantic;
- c. sharing data with NORMAN would likely require permission from all Contracting Parties;
- d. WGBEC and MCWG could discuss how to collaborate with NORMAN;

5.3 Following discussions, Ireland led on drafting a document elaborating the potential areas of collaboration with NORMAN, which was agreed during the written procedure of the summary record (**Annex 10**). Contracting Parties were requested to comment in particular on data matters.

5.4 MIME agreed:

- a. **the NORMAN general assembly, November 2019, would be asked for in-principle approval for collaboration with OSPAR.** Ireland drafted the text that briefly described areas for collaboration;
- b. **HASEC would be invited to approve the proposed areas for collaboration with NORMAN (Annex 10).**

CONNECT project

5.5 Ireland presented a proposal to complete an OSPAR-wide pilot target and suspect contaminant screening project to evaluate the extent and range of contaminants of emerging concern in OSPAR marine matrices (MIME 19/5/5). The project would use mussels as a common matrix, from impacted and less-impacted sites. The work could contribute a case study for the QSR and could also support work on rationalising the LCPA and LSPC. The aim would be to report progress on the project to MIME 2020.

5.6 In discussions:

- a. several Contracting Parties supported the initiative;
- b. more information on the project's proposed outcomes and the level of expertise required to interpret the outcomes was requested. In response the NORMAN Association representative briefly presented the LIFE APEX project (<https://lifeapex.eu>), on the systematic use of contaminant data from apex predators and their prey in chemicals management, as an example of the outputs;
- c. Denmark expressed support and hoped that HELCOM would also carry out such a study;
- d. in response to a concern that mussels may not be the best matrix because the concentrations might not be high, the NORMAN representative said it would depend on where the samples were taken;
- e. a suggestion was made to ensure the substances on the LCPA and LSPC were screened for in the project;
- f. technical issues with biota samples were highlighted, e.g. mussel extraction and sample processing not being standardised, so that consideration of intercalibration may be needed.

5.7 In conclusion, MIME agreed Ireland would draft a one-page plan for the CONNECT project, by 31 December, including specifying the expected composition of the report and timeframe. The aim was to start sending samples in February 2020.

Item 5.2 North-East Atlantic Environment Strategy (NEAES) 2020-2030

5.8 The Chair of HASEC (Sweden) gave an overview of the state of development of the North-East Atlantic Environment Strategy (NEAES) 2020-2030 that was due to be agreed and launched at the OSPAR Ministerial 2020 (MIME 19/P04). The Chair of HASEC presented the version of the NEAES hazardous substances operational objectives in the Clean Seas theme, which was presented to CoG(2) 2019 (MIME 19/5/2), and the associated draft guidance for Committees to use in finalising the objectives (MIME 19/5/2 Add.1 Rev.1). MIME was invited to review the hazardous substances objectives across HASEC and OIC, to comment and rationalise them, following the CoG guidance.

5.9 A drafting group proposed revision to the objectives to rationalise them and make them SMART¹⁰. These were discussed and further refined in plenary.

5.10 MIME agreed that **on behalf of MIME, the Secretariat would provide the revised hazardous substances operational objectives (Annex 11) to the Chair of HASEC, with a view to further intersessional development work to be determined by the Chair of HASEC.**

Item 5.3 List of Chemicals for Priority Action (LCPA) and List of Substances of Possible concern (LSPC)

5.11 On behalf of the Netherlands and Sweden, the Chair of MIME proposed an approach for rationalising the List of Chemicals for Priority Action (LCPA) and List of Substances of Possible concern (LSPC) (MIME 19/5/3(L)) and first proposals (MIME 19/5/3 Add.1 and Add.2). MIME was invited to comment on the proposed processes for rationalising and filtering the Lists.

5.12 In discussions the following points were made:

- a. a Contracting Party requested more time to examine and comment on the composition of the Lists, and queried whether two separate Lists were needed;
- b. it was highlighted that the JRC's recent publication listed approximately 2,700 substances, including substances listed by all the Regional Seas Conventions. Revisions to OSPAR's Lists would have implications for the JRC's publication;
- c. it was noted that legislation on pharmaceuticals, pesticides and biocides were not under the jurisdiction of REACH and should be treated differently;

5.13 MIME agreed:

- a. **the Secretariat would set up an intersessional WebEx in late January 2020 with the Chair of MIME, Belgium, Ireland, the Netherlands, Sweden and the NORMAN representative to discuss possible collaboration with NORMAN on rationalising the Lists.**
- b. **the WebEx meeting would also address ecotoxicology** (see Agenda Item 5.4, §5.16);
- c. **the Secretariat would circulate the outcomes of the WebEx to MIME, in February 2020.**

Item 5.4 substances needing marine ecotoxicological data

¹⁰ Specific, measurable, ambitious/achievable, realistic and time-bound

5.14 Belgium explained that HASEC 2019 had requested MIME 2019 to investigate which substances were most in need of marine ecotoxicological data and whether such information was already available, or where it might be found, and to then inform HASEC 2020 of its findings (MIME 19/5/4). Belgium highlighted the recognised need for more marine ecotoxicological data. ECHA had basic information that was insufficient for a decision basis and therefore ECHA relied on OSPAR for more information. However, in practice OSPAR rarely received requests for information.

5.15 In discussions the following points were made:

- a. the NORMAN representative noted the difficulty of obtaining marine ecotoxicological data and that the LIFE APEX project, which took samples from top predators, might be useful. He was also coordinator of the LIFE APEX project, and the project could quickly look at presence/absence information in the North Sea. Since 2016 there had been other campaigns e.g. in the Black Sea, so it could be possible to compare Europe-wide. A full report of LIFE APEX could be given to MIME or HASEC. LIFE APEX was adopting a methodology for deriving PBT values, by end of 2019. The methodology and background could be provided; QSAR-derived (quantitative-structure activity relation); PBT data; and occurrence of samples in LIFE APEX in the North Sea;
- b. a Contracting Party stressed the importance of the questions on whether there were enough ecotoxicological studies to say whether concentrations were of concern, whether new work was needed and what were the best methods for identifying new chemicals and contaminants. Ecotoxicologists were focused on the ecosystem and new risk-assessment approaches and new methodologies should be combined. Furthermore, the approach should be clearly identified in the OSPAR Strategy.

5.16 MIME agreed:

- a. **Ecotoxicology would be discussed as part of the WebEx meeting on the Lists** (see Agenda Item 5.3, §5.13);
- b. **the Coordinator of the LIFE APEX project would share the methodology for deriving PBT values with MIME by the end of February 2020**, when it should be available;
- c. **Belgium would bring MIME's discussion and the LIFE APEX methodology to HASEC 2020.**

Agenda Item 6 – Review and revision of the Coordinated Environmental Monitoring Programme (CEMP)

MIME 19/6/1, MIME 19/6/1 Add.1–11, MIME 19/6/2, MIME 19/6/3

Item 6.1 CEMP and pre-CEMP Appendices

6.1 The Secretariat informed MIME that the OSPAR Commission 2019 had agreed the Secretariat would investigate the feasibility of reconfiguring the CEMP Appendices to align with the European Commission's Working Group on Data and Information's (WG DIKE) revised MSFD Art.11 on monitoring programmes format (MIME 19/6/1). CoG had requested that where useful OSPAR-specific information was collected in the Appendices, it should not be lost even if the European Commission no longer required those fields of information. The Secretariat explained that in future the Appendices would be made available online through the OSPAR Assessment Portal (<https://oap.ospar.org/en/>), with a view to assisting MSFD Art.11 reporting by Parties that were EU member states.

6.2 MIME considered the initial drafts of the CEMP Appendices in the new format (MIME 19/6/1 Add.1–11) and responded to the recommendations and questions as follows:

- a. [ProgrammeCode] – remove field.
- b. [ProgrammeDescription] – text proposed for each Appendix.
- c. [Contracting Parties monitoring] – chose “coordinated data collection”.
- d. [Contracting Parties supplying data] – aggregate to Contracting Party name, and do not retain the Regional, spatial/temporal level of detail.
- e. [Contracting Parties with an “opt out”] – Contracting Party name only.
- f. [Spatial scope] – MIME agreed that other options are needed. MIME urged member states recommend changes to WG DIKE bilaterally.
- g. [Spatial Resolution (proportion)] – remove field.
- h. [Spatial Resolution (Density)] – remove field.
- i. [MonitoringType] – MIME agreed that other options are needed, e.g. “In situ sampling coastal and offshore”. MIME urged member states recommend changes to WG DIKE bilaterally.
- j. [Indicator Metric] – Secretariat proposal agreed.
- k. [Parameter Measured] – Secretariat proposal agreed.
- l. [Monitoring Guidelines/Monitoring Method in place] – “CEMP guidelines for coordinated monitoring for hazardous substances” (Agreement 2016-04)” is missing from the enumeration list. Other Agreements added.
- m. [Assessment Guidelines] – the URL links to the Contaminants App helpfiles were updated.

6.3 In written procedure of the summary record Contracting Parties reviewed and revised as necessary the CEMP and pre-CEMP Appendices, including updating information on any changes in their national monitoring programmes and MIME **agreed the Chair of MIME would present the revised appendices to HASEC 2020 (Annex 12.H01 – Annex 12.H11).**

Item 6.2 MIME-related CEMP guidelines

Guidelines on coordinated monitoring for hazardous substances (Agreement 2016-04)

6.4 The Vice-Chair of MIME for Assessment (Denmark) presented the overarching “CEMP guidelines for coordinated monitoring for hazardous substances” (Agreement 2016-04). In particular, an addition was made to the Sampling Strategy section to describe the AMAP Trends and Effects Monitoring Programme (ATEMP), and a new section on screening was proposed.

6.5 In consultation with AMAP, the Vice-Chair of MIME refined the amendments and MIME **agreed the Chair of MIME would recommend the revised Agreement 2016-04 to HASEC for publication (Annex 13).**

New guidelines for monitoring contaminant-specific biological effects and general biological effects

6.6 France gave an overview of the background to the development of biological effects monitoring (19/P10). France presented the advice of the WGBEC on preparation of new biological effects guidelines, covering: general biological effects for a ‘cocktail’ of contaminants based on biological mechanisms and physiological functions; and specific biological effects for imposex/TBT, PAH metabolites and ALA-D heavy metals (MIME 19/6/3). France highlighted that the decision by HASEC not to promote the integrated biological effects approach to full CEMP would likely remove WGBEC’s incentive to promote the approach. It was noted that collaboration with NORMAN could give new impetus with an alternative approach. France highlighted that it was necessary to find a European consensus, which could take a long time.

6.7 In discussion:

- a. Contracting Parties thanked France for the collaboration with WGBEC and for WGBEC's helpful advice;
- b. it was highlighted that other possibilities for testing biological effects, e.g. passive dosing, could be considered;
- c. MIME was informed that there were very few marine experts involved in the WFD Working Group Chemistry (WGChem) and the WG was not aware of the process behind deriving EACs;
- d. it was suggested that WGBEC should be kept informed of integrated biological effects work and perhaps this could be added to WGBEC's Terms of Reference that were due to be renewed.

6.8 France confirmed it could continue to be the lead Party for devising new guidelines and that the work could be shared between MIME and WGBEC, for which a timeline needed to be determined. WGMS and MCWG could also be involved.

6.9 MIME thanked WGBEC for its advice, as the WG had specific expertise in the biological effects approach. MIME agreed WGBEC could provide valuable support in developing new guidelines for monitoring contaminant-specific biological effects and general biological effects, as part of its Terms of Reference especially regarding effect-based monitoring. Such ongoing support from WGBEC would be welcomed by MIME.

PFOS in seawater guideline (Agreement 2010-08)

6.10 Germany recalled that MIME 2018 had agreed to postpone finalising the revision of the PFOS in seawater guideline¹¹ until after publication of a revised international standard, the ISO CD 21675 for the analysis of PFAS in water. The ISO Guidelines were finally published in mid-November 2019 and Germany offered to double-check the revisions to Agreement 2010-08 against the ISO.

6.11 MIME agreed Germany would finalise the revision of PFOS in seawater guidelines (Agreement 2010-08) and MIME could check them in a written procedure, ready for consideration by HASEC 2020.

Item 6.3 out-of-date JAMP monitoring guidelines

6.12 Denmark presented the table of MIME-relevant monitoring guidelines with dates and requirements for review, which had been presented to MIME in 2018. Noting the work underway to review the CEMP monitoring programme coverage (see Agenda Item 4.1), it was suggested to wait for decisions on how to adapt the monitoring programme, before determining which out-of-date Guidelines were most important to be reviewed and renewed.

6.13 MIME agreed that following a discussion on the revision of the monitoring programme during MIME 2020, the Guidelines that were a priority for revision could be determined. The United Kingdom offered to support the Vice-Chair of MIME for Assessment with the task of prioritising the Guidelines. Contracting Parties were asked to consider offering to lead on updating the guidelines, in due course.

Agenda Item 7 – Development of monitoring and assessment

Item 7.1 international quality assurance programmes

7.1 Denmark informed MIME of developments in the QUASIMEME programme. QUASIMEME met 7-8 February 2019. It had conducted a performance review and although there were some problems with total

¹¹ Agreement 2010-08

nitrogen (nutrients), the results were generally good. For water samples, spiking of, e.g. organo-tins, were tested and the results were good. Over the last couple of years QUASIMEME had also used spiked samples for biota because of lower concentrations, e.g. of PBDE, from polluted sites and was considering spiking for sediment also. The problem with sediments was aging, so there were two ways of dealing with the samples: slurry them for addition of standards, and then drying it again; or improve the homogeneity of samples. However, the latter could become too dusty to use in the laboratory. QUASIMEME would be interested in receiving large samples from polluted sites (3-5 kg of bivalve soft-body or fine-grained sediments).

7.2 There was renewed work on testing ocean acidification. In 2019 there were new initiatives for PFOS and microplastics. PFOS was running well. QUASIMEME had distributed samples containing microplastics but many things could be reported from the analyses. QUASIMEME summed up all the categories that participants reported, but this was not very precise. The results of the microplastics work were already available and it was a good starting point, but an agreement was needed on what would be reported. Participants were invited to comment on it and Denmark planned to ask for more detailed results.

7.3 Any comments from Contracting Parties would be taken aboard for the next QUASIMEME Scientific Assessment Board Meeting 20-21 February 2020.

7.4 France informed MIME of developments in WGBEC, as detailed in **Annex 14**.

Item 7.2 projects and innovative approaches

7.5 Denmark explained its proposal to present a discussion paper to the European Union Working Group on Chemicals (WGChem) on collaboration to gather information for setting EQSs, mainly in shellfish (MIME 19/P08). Contracting Parties that were EU member states were invited to address two questions: do member states have a strategic approach or a defined strategy for the reduction of pollutants in the aquatic environment?; and how do member states perform estimations on which sources are the most significant for specific pollutants considered to be problematic for the aquatic environment? Denmark highlighted issues with ships' scrubbers and calculation of load from shipping in Danish waters, and problems with unknown status because of monitoring matrices where there were no threshold values. The aim was to identify measures for reducing hazardous substances, which would inform the development of WFD and MSFD Programmes of Measures.

7.6 Professor Joachim Sturve (University of Gothenburg, Sweden) presented effect screening – biological effect monitoring in polluted areas along the Swedish coasts, 2017-2018 (MIME 19/P11).

- a. Contracting Parties thanked Sweden for the presentation. It was a good illustration of what could be achieved in Europe, when sharing the same concept. It could be a good basis for the QSR 2023. The long-term series of biomarkers in fish was exemplary and used the best approach to interpret the evolution of trends in biological effects. Parties noted that it had been a relatively expensive study;
- b. Ireland informed MIME of a similar national study that also looked at cost-benefit of indicators. In response to a query, Sweden highlighted that reproduction, growth and condition (size and weight) was an effective marker that explained most of the biological effects;

7.7 Belgium presented a study on Tributyltin: an aggressive bottom-up stressor in a marine multi-stressor environment. A Quality Status Report (MIME 19/P12).

Agenda Item 8 – Scientific advice and on data handling by ICES

Item 8.1 draft requests for ICES Advice

8.1 MIME drafted one request for ICES special advice, for further developments in the OSPAR Contaminants App (**Annex 15**) and agreed to **present the Request to HASEC 2020 for its consideration.**

Agenda Item 9 – Any other business

9.1 There was no other business.

9.2 MIME proposed meeting for five days, 16-20 November 2020 at ICES.

Agenda Item 10 – adoption of the Summary Record

10.1 The Secretariat prepared a draft of the MIME part of the HASEC programme of work 2020/21, which Contracting Parties refined in plenary and agreed as part of the draft Summary Record (**Annex 16**). MIME agreed the **Chair of MIME would present the draft Work Programme to HASEC 2020 for consideration.**

10.2 The Summary Record of the meeting was adopted in written procedure.