STUDY ON THE LEGAL AND INSTITUTIONAL STATUS OF NATIONAL STRANDING NETWORKS

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1. Terms of Reference

At their 7th Meeting (Istanbul, Turkey, 5-8 November 2019), the States Parties to the Agreement on the Conservation of Cetaceans of the Black Sea, Mediterranean Sea and Contiguous Atlantic Area (Monaco, 1996; ACCOBAMS) adopted the Programme of Work for the Triennium 2020-2022 (Resolution 7.6, Annex 6). Within the overall objective to improve knowledge about the status of cetaceans, Conservation Action (CA) 1d, entitled *Functional stranding networks and responses to emergency situation*, includes – among other means of implementation – the preparation of "a study on legal/institutional status of national stranding networks in order to assist experts in the establishment of official national stranding networks when relevant".

Under the terms of reference, the consultants were requested to prepare the above mentioned study.

CA1d is considered as a "core priority" of the current Programme of Work. Among the other means of implementation of CA1d, the 2020-2022 Programme of Work lists the following:

- organizing trainings on necropsies, live strandings and response to emergency situation in the ACCOBAMS area, following the best practices on causes of death, including marine litters, and on the use of relevant databases;
- entering relevant national data into relevant databases;
- promoting the use of a database of experts and stranding authorities;
- encouraging the creation of a permanent expert panel on strandings, to assist on emergencies and unusual mortality.

Expected outcomes of CA1d are the following:

- official national stranding networks are established and operating; and
- information on stranding events are regularly exchanged among national networks.

The proposed action identifies the setup or reinforcement of official national stranding networks (with all national institutions concerned) as appropriate, and the encouragement of collaboration among national networks of ACCOBAMS States Parties.

On 8 July 2022, the Executive Secretary of ACCOBAMS sent a letter to the National Focal Points, asking them to provide the formal text of measures or legislation, if any, in force in their respective countries, concerning the establishment of stranding networks. Replies have been received from the Focal Points of five States Parties (Croatia, Cyprus, Greece, Morocco, Tunisia).

2. The Stranding Phenomenon

The document "Best Practices on Cetacean Postmortem Investigation and Tissue Sampling", issued under the auspices of the ACCOBAMS and the Agreement on the Conservation of Small Cetaceans of the Baltic, Northeast Atlantic, Irish and North Seas (Geneva, 1992, amended in 2008; ASCOBANS), provides the following definition of "stranded cetacean":

> "A stranded cetacean is one whose body lies entirely on land and includes both dead and live animals found in a helpless state after faltering ashore ill, wounded, weak, or simply lost. In this document it is expanded to include animals either dead or alive but showing clear signs of physiological dysfunction in shallow waters. On the basis of the number of animals involved, it is possible to distinguish between single and mass strandings"[1].

On the basis of the number of animals involved, it is possible to distinguish between single and mass strandings. The latter involve more than two cetaceans (excluding cow/calf pairs) stranding at the same time and place. Several causes may lead to a mass stranding, including, but not limited to, extreme weather conditions, tidal changes, disease of one or several group members, or human-related events. According to the results of the ACCOBAMS/Pelagos Workshop on Cetacean Live Stranding, held in Monaco on 29-30 October 2014[2], the expression "atypical mass stranding" defines events often related to sonar exposure, in which animals do not strand all together as a single cluster, but in very short and defined space and time laps[3]. It is noteworthy that some individuals involved in a mass stranding may be completely healthy[4].

According to the report of the above-mentioned joint ACCOBAMS/Pelagos workshop, pelagic cetacean species, in particular large whales observed in an unusual proximity to the coastline, are considered at risk of stranding. Other cetaceans may be affected by the phenomenon; in particular: a) rare or vagrant cetaceans in the area; b) cetaceans close to the coastline, ports, estuaries, basins and within highly congested areas or in their proximity; and c) cetaceans that are found unusually in shallow waters near the coast or on the beach (beached).
Cetaceans could also be entangled in fishing gear that impairs their swimming and diving abilities, with severe influences also on the animal's feeding capabilities. In such cases, stranding is a consequence of the cetaceans' seriously affected swimming capacity.

Depending on whether the stranded animal is dead or still alive, human intervention will aim at collecting data for scientific purposes, preventing death, or hastening it to prevent suffering, according to the case.

A. Live Strandings

Live-stranded animals are usually in need of medical attention and are unable to return to their natural habitat without assistance. In such cases, all interventions should be coordinated by a rescue team that include expert veterinarians, able to understand – using their best knowledge and a well-established triage procedure – whether the animal is

[1] *Best Practice on Cetacean Post Mortem Investigation and Tissue Sampling*, edited by IJSSELDIJK, BROWNLOW & MAZZARIOL, doc. ACCOBAMS-MOP7/2019/Doc33 of 26 September 2019, p. 11. See also Annex 1 to ACCOBAMS Resolution 6.22 (Common definitions of terms related to stranding events).

[2] *Report of the ACCOBAMS/Pelagos Workshop on Cetacean Live Stranding*, Monaco, 29-30 October 2014, doc. ACCOBAMS-Pelagos-WLS/2014/Doc25, p. 2.

[3] In this regard, a recent ACCOBAMS status report points out that "[n]oise generated by naval sonar was proven to be responsible of 'atypical' mass strandings – i.e., concerning a minimum of two or usually more individuals and refers to an unusual spread of stranded cetaceans in space and time (…) – recorded in the region at least 17 times and causing the death of a minimum of 108 individuals (…). This is very likely a gross underestimate of the impact of naval sonar on the species in the Mediterranean, where major naval exercises using noxious sonar levels regularly occur; and although the implication of this mortality source at the population level has not been quantified yet, evidence from other parts of the world suggest that it is significant, at a minimum at a local scale (…)", NOTARBARTOLO DI SCIARA & TONAY, *Conserving Whales, Dolphins and Porpoises in the Mediterranean Sea, Black Sea and Adjacent Areas*, 2021, p. 43.

[4] *Best Practice* cit. (*supra*, note 1), p. 12.

immediately releasable, releasable after a period of rehabilitation, or when permanent captivity or euthanasia are the only options.

In general, the health status and the causes and nature of the stranding event (i.e., if it is due to an epidemic outbreak, a mass stranding, a pollution phenomenon, including noise pollution, etc.) are basic criteria to decide the possible release into the wild. In this regard, while there is still need for an international harmonization of parameters for decisions, at least at regional scale, non-binding protocols do exist – such as the one of the British Divers Marine Life Rescue, mentioned in the joint ACCOBAMS/Pelagos workshop's report – that could be used as reference. In case of live strandings, the following definitions are generally accepted, according to the same report:

- "releasable cetaceans": animal stranded alive whose ecological, ethological and health conditions, evaluated by skilled veterinarians, are considered appropriate for an independent life without any danger for wildlife population and public safety;
- "conditionally releasable cetaceans": animals stranded alive whose ecological, ethological and health conditions, evaluated by skilled veterinarians, are considered appropriate for an independent life without any danger for wildlife population and public safety, after further examinations or after a period of rehabilitation or quarantine, when national legislation allows such procedures;
- "non-releasable cetaceans": animals stranded alive whose ecological, ethological and health conditions, evaluated by skilled veterinarians, are considered not appropriate for an independent life without any danger for wildlife population and public safety, also after a period of rehabilitation or quarantine. Euthanasia or permanent captivity, when national legislation allows such procedures, are the most suitable options.

B. Dead Strandings

When cetaceans are found dead ashore, in order to quantify and explain the causes of stranding (whether natural causes, diseases, or human-related impacts), it is necessary to perform systematic *postmortem* examinations. Unusual mortality events (UMEs) leading to strandings are characterized by an unexpected mortality of cetaceans at an abnormally large scale, compared to average stranding reports for the species, or by a significant die-off of any marine mammal population[5]. Both cases demand immediate response.

Postmortem examination procedures should be carried out through a shared approach, in order to compare and exchange consistent data collected during necropsies. The above-mentioned ACCOBAMS/ASCOBANS document addresses the procedure of a multi-tier triage approach (external examination and stranding data collection; *postmortem* investigations and tissue sampling; *post mortem* examination with diagnostic aims), offering a *post mortem* framework aiming for consistency across Europe when conducting examinations on dead cetaceans.

Instruments at international and regional level that demand the monitoring of the conservation status of cetaceans formulate objectives that can be pursued, among other means of implementation, also through stranding investigations. In fact, stranding data provide a better vision of the cetacean populations, a better knowledge of their ecology (including biological and genetic data) and a better evaluation of the threats facing these species. While no instrument explicitly states how cetacean populations should be monitored, it is supported by scientific evidence that

[5] "There are seven criteria that make a mortality event 'unusual'. 1. A marked increase in the magnitude or a marked change in the nature of morbidity, mortality, or strandings when compared with prior records. 2. A temporal change in morbidity, mortality, or strandings is occurring. 3. A spatial change in morbidity, mortality, or strandings is occurring. 4. The species, age, or sex composition of the affected animals is different than that of animals that are normally affected. 5. Affected animals exhibit similar or unusual pathologic findings, behavior patterns, clinical signs, or general physical condition (e.g., blubber thickness). 6. Potentially significant morbidity, mortality, or stranding is observed in species, stocks, or populations that are particularly vulnerable (e.g., listed as depleted, threatened, or endangered or declining). For example, stranding of three or four right whales may be cause for great concern whereas stranding of a similar number of fin whales may not. 7. Morbidity is observed concurrent with or as part of an unexplained continual decline of a marine mammal population, stock, or species": *Best Practice* cit. (*supra*, note 1), p. 11.

a thorough investigation and understanding of stranded carcasses via *postmortem* examinations offer effective and relatively cost-efficient ways to meet the conservation objectives.

Under the auspices of ACCOBAMS, in 2021 the Department of Comparative Biomedicine and Food Science (University of Padua, Italy) and the Department of Veterinary Pathology (University of Liege, Belgium), in collaboration with the Laboratory of Applied Bioacoustics (University of Catalunya, Spain), the Pelagis Observatory (France), the Centre de Recherche sur le Mammifères Marins (University of La Rochelle, France), and Centro di Referenza per la Diagnostica sui Mammiferi Marini (Cre.Di.Ma) (Turin, Italy), organized a 5-day marine mammal necropsy training. Specific objectives of the training course were to train experts on cetaceans' necropsy procedures, data collection and tissues sampling; to encourage harmonization to allow regional analysis and interpretation; to use new technologies to develop and apply the concept of tele necropsy and on-line consultancy of marine mammal health specialists.

Besides offering specific training on dissection and sampling procedures, medical pictures and tele necropsy, anatomy and gross pathology, skull morphology, extraction and fixation of cetaceans' inner ear, the course specifically addressed "conservation and political issues: ACCOBAMS and ASCOBANS". Among the documents used for the training, the course considered ACCOBAMS Resolution 7.14 (*Best practices in monitoring and management of cetacean stranding*)[6].

Finally, the disposal of the carcass of a dead cetacean involves a choice – that in certain cases could be difficult – between different means (natural decomposition, burial on site, disposal at sea, transport to landfill, incineration, composting).

C. The Transboundary Nature of Strandings

Being most cetaceans highly migratory species[7], particularly relevant, in the ACCOBAMS context, is the fact that cetacean strandings can become transboundary events. Such situations include, among others: a) large cetaceans considered in a difficult condition swimming through international borders; b) stranded animals released after rehabilitation in areas close to the national borders; c) mass strandings, environmental incidents; and d) epidemic outbreaks[8].

As transboundary events, strandings can affect multiple jurisdictions, involve various policy sectors and require rapid responses. The efficient organization of the latter is fundamental, but complex, as it mobilizes different national services and institutions. It can be necessary to face a continuous exchange of information distributed over a large number of actors. Accordingly, it is crucial to reach a good level of coordination among ACCOBAMS States Parties, including with non-Party Range States, in order to respond effectively to strandings, under conditions that are often characterized by uncertainty, urgency, and stress. Some ACCOBAMS documents have also highlighted the delicacy of the matter with regards to the reactions of the media on the opportunity and efficacy of the rescue operations coordinated by States that are Parties to an international instrument for cetacean conservation, as these animals raise the interest of the large public. The involvement of different States may also raise the problem of the lack of a clear chain of command or hierarchy. As the concurrent involvement of different national institutions may result in a delay of action, it would be appropriate to always identify a coordinating unit in charge of the operations. Information and data shared among different national institutions should also follow consistent methodologies, processes or approaches, otherwise they may be misleading.

[6] See *infra*, para. 3.B.

[7] Annex I to the United Nations Convention on the Law of the Sea (Montego Bay, 1982) lists among highly migratory species the following cetacean families: *Physeteridae*, *Balaenopteridae*, *Balaenidae*, *Eschrichtiidae*, *Monodontidae*, *Ziphiidae*, *Delphinidae*.

[8] *Report of the ACCOBAMS/Pelagos Workshop* cit. (*supra*, note 2), p. 2.

On the basis of these premises, the elaboration of an ACCOBAMS transboundary common procedure for live cetacean strandings has been the subject of the joint ACCOBAMS/Pelagos workshop whose results seem quite useful for future action on the normative level[9].

3. Stranding in the Framework of the ACCOBAMS

Within the framework of the ACCOBAMS, the question of cetacean stranding is a major subject of interest, as shown from the following heterogeneous sources.

A. Stranding in the Conservation Plan (Annex 2 to the ACCOBAMS)

The rationale for preventing, monitoring and studying cetacean strandings relies on the ACCOBAMS and, more precisely, on its Annex 2, containing the ACCOBAMS Conservation Plan, which forms an integral part of the Agreement. The Conservation Plan lists a number of measures for the conservation of cetaceans that the Parties are bound to undertake, to the maximum extent of their economic, technical and scientific capacities.

Cetacean strandings are explicitly referred to in three sections of the Conservation Plan.

Under Sect. 4 (research and monitoring), Parties shall:

> "(…) develop systematic research programmes on dead, stranded, wounded or sick animals to determine the main interactions with human activities and to identify present and potential threats; (…)"[10].

The first objective is to put in place research programmes that determine whether certain human activities may have an effect on cetacean strandings.

Under Sect. 5 (capacity building, collection and dissemination of information, training and education), Parties shall co-operate to:

> "develop the systems for collecting data on observations, incidental catches, strandings, epizootics and other phenomena related to cetaceans; (…)"[11].

The collection of reliable data is crucial for both developing further research programmes and being prepared to face emergency situations.

Under Sect. 6 (responses to emergency situations),

> "Parties shall, in co-operation with each other, and whenever possible and necessary, develop and implement emergency measures for cetaceans covered by this Agreement when exceptionally unfavorable or endangering conditions occur. In particular, Parties shall:
>
> a) prepare, in collaboration with competent bodies, emergency plans to be implemented in case of threats to cetaceans in the Agreement area, such as major pollution events, important strandings or epizootics; and
> b) evaluate capacities necessary for rescue operations for wounded or sick cetaceans; and
> c) prepare a code of conduct governing the function of centers or laboratories involved in this work. (…)".

[9] They will be taken into account for the conclusions of this paper (*infra*, para. 6).
[10] Para. *d*.
[11] Para. *a*.

The development of emergency plans requires trained personnel, advanced technical capacity and adequate financial means. According to the Conservation Plan, in the event of an emergency situation requiring the adoption of immediate measures to avoid deterioration of the conservation status of one or more cetacean populations, a Party may request the relevant Coordination unit to advise the other Parties concerned, with a view to establishing a mechanism to give rapid protection to the population identified as being subject to a particularly adverse threat.

B. Stranding in the ACCOBAMS Resolutions

Cetacean stranding has been a specific subject of a number of ACCOBAMS Resolutions, starting from the first Meeting of the Parties.

Resolution 1.10 (Cooperation between national networks of cetacean strandings and the creation of a database; adopted in 2002), recognized that in the ACCOBAMS area there were already several networks, follow-up systems, and collections of data from stranded animals. It welcomed the offer of Spain to increase coverage of the data base MEDACES to the whole of the Mediterranean sub-region/Atlantic zone of the Agreement[12]. After taking note of a report by the ACCOBAMS interim Secretariat presenting the state of national structures on the basis of a questionnaire distributed to States Parties, the Resolution recommended each Party individually: to implement, if not already done, or to complete at a national level, networks or information structures for intervening and collecting data on strandings; to reinforce the coordination so that the data collected can be effectively used; to increase as needed the participation of non-governmental organizations and scientific community in such actions; and to support the introduction in cetacean training courses, of appropriate methods of field-work.

Resolution 1.10 recommended the coordination of national networks and the creation of a database covering the Agreement area, i.e., MEDACES, acknowledging the contribution of the University of Valencia (Spain) to the increase of the coverage of the system and entrusting the RAC/SPA to administer MEDACES as a sub-regional coordination unit for the Mediterranean Sea and the adjacent Atlantic area. The issue was raised about the need to find the means to establish and manage the equivalent database for the Black Sea and to connect it, as far as possible, with that of MEDACES. Other riparian States were invited to participate in these actions.

Resolution 1.10 also invited the Parties to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (Washington, 1973; hereafter: CITES) to register laboratories with the CITES Secretariat for a free exchange of specimens between their scientists[13]. The Scientific Committee was asked to approve, on the occasion of its first meeting, a general protocol on measures to be taken when confronted with stranded animals, as well as to approve a code of deontology assuring the quality and use of the database and defining practical methods for setting up the network.

Referring to the above-mentioned invitation to exchange specimens between scientists, **Resolution 2.10** (Facilitation of exchange of tissue samples; adopted in 2004) urged ACCOBAMS States Parties to register at least one specialized competent scientific institution with the CITES Secretariat and inform the ACCOBAMS Secretariat of this designation. It asked CITES national management authorities to facilitate the granting of import permits for samples coming from the sea under an ACCOBAMS implementation program and, as far as necessary, the subsequent exportations. It also charged the ACCOBAMS Secretariat to manage and make available an updated database including the names of scientific institutions and the procedures to be implemented for such exchanges, as well as the national CITES authorities competent to grant any relevant permits.

[12] See *infra*, para. 3.E.
[13] See CITES Resolution Conf.11/15.

Resolution 3.25 (Cetacean live strandings; adopted in 2007) invited the range States to act on the recommendations of the Scientific Committee in conducting live stranding activities in the ACCOBAMS area and recommended the establishment of an advisory panel for ACCOBAMS rescue activities and a veterinary group, as recommended by the Scientific Committee. The Resolution recommended the ACCOBAMS Secretariat and the States Parties to explore the following options: the establishment of an ACCOBAMS-wide rescue network; the provision of annual reports on rescue activities to a central body, such as MEDACES; the further analysis of rescue capacity in the ACCOBAMS area, followed by efforts to make rescue coverage comprehensive; the development of an ACCOBAMS rescue triage; the establishment of a network of expert veterinarians to provide help and advice to each other and to the ACCOBAMS rescue network, the involvement of zoos and aquaria in rescue activities, as appropriate, within their logistic frameworks and infrastructures, without exposing the animals for public display or display for commercial purposes; and an increase in the numbers of trained volunteers and other rescue workers through appropriate training events (noting that there might be national requirements for licensing rescue workers). The Scientific Committee, in collaboration with the ACCOCAMS Secretariat and the Focal Points, was charged to develop comprehensive guidelines on live strandings.

Resolution 4.16 (Guidelines for a coordinated stranding response; adopted in 2010) recognized that the ACCOBAMS area had been the scene of major cetacean mortality events, involving mass strandings over wide geographical areas, which had evoked great concern and attracted considerable attention from the scientific community. In order to address new outbreaks of mortality events related to chemical, acoustic and biological pollution, as well as related to infectious agents and harmful algal blooms, affecting cetacean populations or their critical habitats, the Resolution expressed the view for a need of a task force, made up of international experts, to address marine mammal mortality and special events. Two studies were annexed to this Resolution, respectively on “Guidelines concerning best practice and procedure for addressing cetacean mortality events related to chemical acoustic and biological pollution” and “Guidelines for a coordinated cetacean stranding response during mortality events caused by infectious agents and harmful algal blooms”.

The Scientific Committee was urged:

- to update the roster of contact persons and experts from the scientific and conservation communities and from governmental environment and natural resource agencies who could contribute in appropriate fields of expertise, such as pathology, epidemiology, toxicology, biology, ecology, acoustics, and to strengthen the two emergency task forces on:
    - (i) “mass mortality”, to address unusual mortality events, including epizootics and atypical mass strandings; and
    - (ii) “maritime disaster”, to address oil or chemical spills affecting critical habitats of cetaceans;
- to use existing experience to prepare contingency plans for each task force, including descriptions of administrative procedures and modalities for interventions, the decision-making processes and the management of information, communication and relations with the media;
- to update the studies and the contingency plans periodically on the basis of past experience and new techniques and technologies.

The Parties were recommended, and non-Party riparian States were invited, to inform the Secretariat as rapidly as possible about unusual mortality events affecting cetacean populations or their critical habitats, so that the emergency contingency plan could be initiated; and to facilitate the organization of training programmes to enhance the effectiveness of the emergency task forces. The ACCOBAMS Secretariat was instructed to contact, in consultation with the Scientific Committee and in collaboration with States and sub-regional coordination units, the relevant experts in order to initiate the emergency contingency plan, as well as the Regional Marine Pollution Emergency Response Centre

for the Mediterranean Sea (REMPEC) and its homologous Black Sea organization under the Convention on the Protection of the Black Sea against Pollution (Bucharest, 1992), in order to define a collaborative effort, as appropriate.

Resolution 6.22 (Cetacean live strandings; adopted in 2016) recognized that cetacean live strandings can present national governments with specific challenges that are exacerbated when they become a transboundary event. It recalled the need for the harmonized procedures proposed by the joint ACCOBAMS/Pelagos workshop organized in 2014, as well as the need for human safety stressed by the Expert Workshop organized in this regard by the International Whaling Commission in 2013.

The Resolution is accompanied by three important annexes, namely on: Common definitions of terms related to stranding events (Annex 1); Common best practices for a basic *postmortem* examination of stranded cetaceans (Annex 2); Common data collection protocol for live strandings (Annex 3). The Scientific Committee was requested to approach the European Cetacean Society, the International Whaling Commission and ASCOBANS in order to review during the triennium, if necessary, the common definitions, common data and common necropsy protocol; and develop principles and guidelines for handling live strandings events, including prevention, recognizing the cultural, political and socio-economic differences between countries. The ACCOBAMS Secretariat was requested to encourage training and exchange programmes for national stranding networks aimed at creating a common framework for rescue teams, in particular with respect to rehabilitation, intervention on live strandings and euthanasia procedures and dealing with the public; undertake trainings on necropsies, live strandings and response to emergency situation in the ACCOBAMS area; maintain or establish regional or sub-regional mailing lists of participants in the stranding networks to facilitate exchange of information, particularly in the South Mediterranean region; encourage data and tissue exchanges through collaboration with relevant databases and tissue banks. In this context, the Resolution stated that a list of tissue banks registered with the CITES Secretariat should be made available.

Resolution 6.23 (Capacity building; adopted in 2016), after recalling the value and role of stranding networks in providing valuable data for cetacean conservation, asked the ACCOBAMS Secretariat to assist States Parties to undertake capacity-building efforts in countries where stranding networks are either not efficiently operating or absent, in particular the training of personnel on how to deal with stranding events, including rehabilitation and euthanasia, and how to run a necropsy, involving local authorities in the network and intervention teams.

Annex 2 to **Resolution 7.9** (Rules and Commitments of ACCOBAMS Partners; adopted in 2019) strongly encouraged ACCOBAMS Partners that own original data on cetaceans in the Agreement area to share such data, as appropriate, through the MEDACES stranding database[14] and any other relevant tools.

Resolution 7.14 (Best practices in monitoring and management of cetacean stranding; adopted in 2019), after recognizing the importance of strandings data in addressing population biology and threats to cetaceans, such as entanglement in, and ingestion of, marine debris[15], stressed that evaluating and addressing threats generating cetacean stranding is a key part of the ACCOBAMS objectives and is relevant to past decisions related to, *inter alia*, the ACCOBAMS Conservation Plan. The Resolution asked the Scientific Committee to identify pilot areas covered by existing stranding monitoring networks, where the "level A" basic tiered guidelines on necropsies approach (Appendix 1 of the Annex 2 of ACCOBAMS Resolution 6.22) could be adopted and systematically implemented to gather a *de minimis* set of data, including presence or absence of ingested and entangling debris, species, sex and total length of the animals. Annex 1 to the Resolution included an operational summary of the best practices and criteria associated

[14] For MEDACES see *infra* para. 3.E.

[15] On the effects of marine debris on cetaceans see the *Report of the Joint ACCOBAMS/ASCOBANS/ECS/SPA-RAC Workshop on Marine Debris and Cetacean Stranding*, held on 16 April 2018 in La Spezia, Italy.

with diagnoses of the most relevant threats for cetaceans[16], namely bycatch, marine debris effects, sound related mortalities, pollution, infectious diseases and others. The Resolution reiterated the importance of effective strandings networks throughout the ACCOBAMS area; encouraged the Parties to assist other Parties in establishing or strengthening such networks through cooperation, capacity building and sharing of best practices; recommended the re-establishment of an ACCOBAMS expert panel on strandings to assist with emergencies and unusual mortality events, as well as to assist in the establishment and strengthening of networks throughout the ACCOBAMS area.

The Resolution also recommended Parties that, with respect to data on marine litter: a) all stranding networks adopt at least the basic level of the tiered common best practices on macrolitter to collect *de minimis* information on marine debris; b) ingested or entangling marine macrolitter recovered during *post mortem* examinations is collected and preserved for further identification analysis including retrospective studies; c) rates of debris ingestion and entanglements in stranded or bycaught cetaceans are collated and submitted via national progress reports or other reporting mechanisms; d) efforts be increased to quantify the relevant contributions of active gear and abandoned, lost or otherwise discarded fishing gear to cetacean entanglement. The Resolution encouraged the updating of a well-documented, searchable database on entities involved in stranding networks, databanks (such as MEDACES[17]) and tissue banks (NETCCOBAMS) and called upon the Scientific Committee and other scientists involved in stranding network to provide the ACCOBAMS Secretariat with relevant information using the templates available on NETCCOBAMS.

Resolution 7.17 (Global Post 2020 Biodiversity Framework: ACCOBAMS Mobilization; adopted in 2019) called ACCOBAMS Parties to implement effective cetacean conservation measures and to better integrate cetaceans into relevant sectoral policies in order to achieve and maintain a favorable conservation status for cetaceans and protect their habitats, in particular by developing, revising and effectively implementing Conservation Management Plans and National Action Plans, including in particular the implementation of a national stranding network using the joint ACCOBAMS/ASCOBANS/IWC necropsies protocol.

C. Stranding in the Practice of the Scientific Committee

While elaborating, over the years, on the need for actions to prevent the harming and killing of animals by marine debris and abandoned, lost or otherwise discarded fishing gear, the Scientific Committee has been reiterating also the importance of effective strandings networks throughout the ACCOBAMS region and has been encouraging ACCOBAMS and its States Parties to assist each other in establishing or strengthening such networks through co-operation, capacity building and sharing of best practices. In addition, the Scientific Committee has been supporting an ACCOBAMS expert panel on stranding to assist with emergencies and unusual mortality events and in the establishment and strengthening of regional stranding networks.

At the 7th Meeting of the ACCOBAMS States Parties, in 2019, the Chair of the Scientific Committee highlighted that particular efforts were made to standardize best practices for necropsy on cetaceans in collaboration with ASCOBANS and the International Whaling Commission (IWC).

At its 14th Meeting, in 2021, the ACCOBAMS Scientific Committee adopted Recommendation 14.4 (Cetacean Stranding Networks), where cetacean stranding networks (CSNs) were recognized as an important source of complementing data on cetacean mortality, including bycatch events. Recommendation 14.4 recognizes that cetacean stranding networks vary widely based on scientific requirements, political drivers, resources, infrastructure and personnel experience. It recommends a tiered approach to carcass triage. Importantly, the recommendation highlights

[16] Evidence-based Diagnostic Assessment Frameworks for Cetacean Necropsies on Specific Issues/Threats.
[17] For MEDACES see *infra* para. 3.E.

that, in a large number of cases analyzed by the existing cetacean stranding networks, the cause of death could not be identified, which indicates that there is still room for expertise improvement[18].

Recommendation 14.4 formulates three conclusions that necessitate action by States Parties. First, appropriate training and adequate funding are needed for an optimal cetacean stranding networks functioning, which is still lacking. This should include resorting to new technologies and remote training, support and advice, in order to implement a continuous training program and ensure a standardized approach to *postmortem* investigations, data collection, tissue sampling, and analyses.
Second, the Scientific Committee encourages further study using *postmortem* investigations on stranded animals by using a dedicated diagnostic framework to assess bycatch mortality, such as the use of carcass drifting models.

Third, the Scientific Committee stresses the need for improvement of data collection on cetacean population genetics and pathology and recommends building effort in developing tissue banks. It also encourages further collaboration at a regional level between tissue banks, to facilitate the exchanges of tissue samples for joint analyses.

While the recent recommendation of the Scientific Committee has focused on the issue of dead strandings, as regards live strandings, the ACCOBAMS expert on strandings pointed out that a "dolphin refuge" may be a valid option not only for dolphins currently in dolphinaria, but also for stranded dolphins in need of prolonged rehabilitation[19].

D. Stranding Data in the Implementation of the ACCOBAMS Strategy

The establishment of "functional stranding networks" has been listed among the activities – as a concrete cetacean conservation effort – of the ACCOBAMS Action Plan since the development of the Strategy based on the analysis of the ACCOBAMS effectiveness for the 2002-2010 period. Such activity included the undertaking of systematic trainings on necropsies, live strandings and response to emergency situations in the ACCOBAMS region, as well as the establishment of (sub)regional mailing lists of participants in the stranding networks to facilitate exchange of information, in particular in the South Mediterranean region. The expected output was, among others, a regularly exchanged information on stranding events.

Within the New ACCOBAMS Strategy as annexed to Resolution 7.4, under the overall objective "to manage effectively the Agreement and to improve the conservation status of cetaceans and of their habitats in the area of competence of the Agreement by 2030", live strandings are mentioned in Section 1 (Effectiveness of the Agreement) among the most relevant topics concerning the enhancement of capacities for conservation of cetaceans; and in Section 2 (Conservation of Cetaceans) among the topics in need for centralization, organization and dissemination of existing knowledge of cetaceans and identification of gaps in knowledge.

In addition to its autonomous relevance for a better knowledge of the status of cetaceans, the exchange of stranding data also represents a means for assessing and monitoring the impacts of interactions of cetaceans with fisheries and aquaculture. Accordingly, in the Programme of Work for the Triennium 2020-2022 (Annex 6 to Resolution 7.6), it is listed among the means of implementation of Conservation Action 2a: *Interactions with fisheries / aquaculture*. Furthermore, the exchange of stranding data contributes to the monitoring of the impacts of marine litter on cetaceans. Accordingly, it is listed among the means of implementation of Conservation Action 2e: *Marine litter*).

[18] The report of the 14th Meeting of the ACCOBAMS Scientific Committee stresses that, "[f]or a large majority of strandings (67%) corresponding to nearly 3,000 strandings reported during the five years period prior to this review, it was not possible to establish the precise cause of death. The remaining 33% were somehow related to fisheries, since they had been recorded as caused by bycatch, fishery interactions, or as result of intentional injuries. That large number of cases in which the cause of death was not identified indicates that there is still, at least in many cases, large room for improvement" (Doc. ACCOBAMS-SC14/2021/Doc40, para. 49).
[19] *Ibid*., para. 84.

E. The Mediterranean Database of Cetacean Strandings

In November 2001, the 12th Meeting of the Parties to the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona, 1995; hereafter: Barcelona Convention) endorsed the proposal made by Spain to establish in Valencia a Mediterranean Database on Cetacean Strandings, named MEDACES, under the aegis of the Barcelona Convention, in particular its Protocol Concerning Specially Protected Areas and Biological Diversity in the Mediterranean (Barcelona, 1995; hereafter: SPA Protocol).

The Specially Protected Areas Regional Activity Centre (SPA/RAC), based in Tunis (Tunisia), acts as depositary of MEDACES, whose management is entrusted to the Cavanilles Biodiversity Institute (ICBIBE) of University of Valencia, with the financial support of Spain (Ministry of Environment).

As already recalled[20], the ACCOBAMS Meeting of the Parties welcomed in Resolution 1.10 the offer of Spain to increase coverage of the data base MEDACES to the whole of the Mediterranean sub-region/Atlantic zone of the Agreement.

The actual MEDACES covers regions adjacent to the Mediterranean Sea (the Black Sea and the contiguous Atlantic waters), thus including the whole ACCOBAMS area. Accordingly, since 2010, ACCOBAMS regularly supports financially the continuity of MEDACES. Moreover, at each Meeting of the ACCOBAMS Parties, the stranding data topic is included in the agenda, with a view to encouraging scientists to upload their data and to use MEDACES. The data are uploaded in MEDACES by the RAC/SPA or ACCOBAMS National Focal Points or by scientific institutions, and the data bank is secured by regular backup.

A review elaborated in 2016 on the functioning of MEDACES[21] reported that, from among the 27 riparian States of the ACCOBAMS area, 21 had recorded data in MEDACES, but only 10 seemed to be regular data providers. The same document stated that the existence of stranding networks could be assessed through the report form the *ad hoc* ACCOBAMS workshop or from the ACCOBAMS Parties meetings or other ACCOBAMS documents and reported that – in that year – seventeen countries in the ACCOBAMS area had stranding networks or rescue centers, namely: Algeria, Bulgaria, Croatia, Cyprus, France, Georgia, Greece, Israel, Italy, Monaco, Morocco, Portugal, Romania, Slovenia, Spain, Tunisia, and Ukraine.

It is noteworthy that the experts' review highlighted that the co-management RAC/SPA-ACCOBAMS for the Mediterranean stranding data needed to be revisited as, *inter alia*, it requires actions from the national Focal Points of the two organizations. ACCOBAMS resolutions related to stranding networks are in fact directed toward ACCOBAMS Focal Points, but RAC/SPA has its own Focal Points. Such duality for a single issue was considered irrational by the experts appointed by the ACCOBAMS Secretariat and RAC/SPA for undertaking the review. According to these experts, the ACCOBAMS Focal Points should be the only ones to be involved in order to avoid national confusions and duplication of efforts.

The experts highlighted the receipt of regular inputs of data from countries of the Black Sea and Atlantic waters, i.e. outside the scope of the RAC/SPA. They considered satisfactory the use of MEDACES by the non-Mediterranean countries under the ACCOBAMS, as complementing the use under the RAC/SPA for the Mediterranean[22]. However, they considered that the regular uploading on MEDACES from the existing networks is the prerequisite for a truly satisfactory implementation of the system. Accordingly, they highlighted the need for efficient awareness campaigns, not only towards Focal Points, but towards local and national scientific communities.

[20] *Supra*, para. 3.B.
[21] *Review of the Functioning of MEDACES*, Doc. ACCOBAMS-MOP6/2016/Inf27.
[22] In their review, the experts reported that Georgia only had reported to ACCOBAMS on its stranding network.

In this regard, it is to be noted that none of the responses received by the ACCOBAMS Secretariat upon request for contributions to this study indicated the use of the MEDACES database by their research institutes and in their conservation decision-making processes.

F. Stranding before the Follow Up Committee

It may be useful to remark that the question of cetacean strandings has been raised also before the ACCOBAMS Follow Up Committee. In its 2018 meeting, it considered a submission presented by OceanCare in 2016 on the assessment and control by Greece of military activities around South-East Crete. OceanCare alleged that the Greek authorities had not assessed and controlled military maneuvers, and especially the use of active sonar around South-East Crete, in a manner consistent with ACCOBAMS Resolution 4.17 (Guidelines to address the anthropogenic noise on cetaceans in the ACCOBAMS area). According to OceanCare, such non-compliance with the relevant resolution had likely caused an atypical mass stranding of Cuvier's beaked whales in 2014.

The Follow Up Committee was not in the position to determine with total precision what were the reasons for the atypical mass stranding of beaked whales that occurred in the first ten days of April 2014 around South-East Crete. Nor was it possible for the Follow Up Committee to determine whether this could be the result of the use of sonar by Greece or by another State (the military exercise had been performed by the military navies of three States, including two non-Parties to the ACCOBAMS). Nevertheless, the Committee found it likely that the mass stranding brought to its attention was the result of the military exercises taking place from 31 March to 10 April 2014, in which Greece was involved.

The Follow Up Committee noted that the use of sonar is a well-known source of anthropogenic underwater noise that can be detrimental to the maintenance of a favorable conservation status for cetaceans, as it is required by Art. II, para. 1, of the ACCOBAMS. To address this concern, ACCOBAMS States Parties adopted Resolution 4.17, which includes a set of "Guidelines to address the impact of anthropogenic noise on cetaceans in the ACCOBAMS area". Some of the Guidelines specifically address military sonar and civil high power sonar and are consequently applicable also to military activities.

While recognizing the efforts and commitments reported by Greece to be in line with the ACCOBAMS Resolutions addressing the impact of anthropogenic noise on cetaceans, the Follow Up Committee found it helpful to recommend the Party to provide information to the ACCOBAMS Secretariat about how the Guidelines annexed to Resolution 4.17 have been implemented after the mass strandings of 2014. According to the Follow Up Committee, this information by States Parties would also enable the Scientific Committee to assess whether there are difficulties in implementing such measures and if any other actions are needed.

4. Stranding in Other International Frameworks

Some international instruments applicable to cetaceans require the determination of the conservation status of the relevant species. This would imply also the collection of data on strandings. However, it is difficult to find specific provisions on how strandings should be monitored and interventions in case of stranding should be effected.

For example, "a description of the population dynamics, natural and actual range and status of species of marine mammals and reptiles occurring in the marine region or subregion" is to be considered among the "biological features"

listed in Annex III to European Union Directive 2008/56 of 17 June 2008 establishing a framework for Community action in the field of marine environmental policy (Marine Strategy Framework Directive).
In 2016, the International Whaling Commission, established under the International Convention for the Regulation of Whaling (Washington, 1946), endorsed a new initiative aiming at sharing international expertise and information on strandings, establishing guidelines on best practice and providing emergency response training. The goal of this initiative, based on a workshop held in 2016[23], is building global capability in strandings response, research and data collection. The initiative has three core components: a Steering Group to manage the initiative, a multi-disciplinary Expert Panel to provide specialist advice and a Strandings Coordinator who brings technical expertise and leads the work program.

The Conservation and Management Plan, annexed to the Agreement on the Conservation of Small Cetaceans of the Baltic, Northeast Atlantic Irish and North Seas (New York, 1992; ASCOBANS), stipulates that

> "each Party shall endeavor to establish an efficient system for reporting and retrieving bycatches and stranded specimens and to carry out, in the framework of the studies mentioned above, full autopsies in order to collect tissues for further studies and to reveal possible causes of death and to document food composition"[24].

In 2020, the Meeting of the ASCOBANS Parties approved a Resolution on Small Cetacean Stranding Response, which adopts the Best Practice on Cetacean Post-Mortem Investigation and Tissue Sampling. The document on Best Practice arises from the harmonization process in ACCOBAMS and ASCOBANS[25]. The Resolution recalls in the preamble that

> "effective responses to live strandings not only contribute to achieving and maintaining a favorable conservation status of small cetaceans, but also have significant animal welfare implications".

5. Information Received by Some ACCOBAMS Parties

The following analysis on the legislative or regulatory measures adopted by ACCOBAMS States Parties with regard to national stranding networks is largely insufficient to draw general conclusions, due to the still limited number of replies received to the request of information addressed by the ACCOBAMS Secretariat[26]. However, it is useful to recall that the ACCOBAMS Scientific Committee made during its 14th meeting (November 2021) the following remark:

> "The current situation of cetacean stranding monitoring varies significantly among countries. Some have well-established official national CSNs [= cetacean stranding networks] and keep databases encompassing either all or part of their coast, while others are highly dependent on the enthusiasm of a few individuals working largely independently with quite limited resources"[27].

A. Croatia

The Institute for Environment and Nature of the Ministry of Economy and Sustainable Development of Croatia (former Agency for the Environment and Nature) organizes and runs the National Alerting and Monitoring System for captured, dead, injured and sick animals of strictly protected species. Within the framework of this system, in 2010, the Protocol for Alerting and Monitoring of dead, sick or injured strictly protected marine species (marine mammals, sea turtles and cartilaginous fish) was developed and a National Stranding Network started to be operational.

[23] See *Report of an IWC Workshop Developing Practical Guidance for the Handling of Cetacean Stranding Events*, 5-6 May 2016, doc. IWC/66/WKM&WI Rep02.
[24] Para. 3.
[25] See *Best Practice* cit. (*supra*, note 1).
[26] *Supra*, para. 1.
[27] Doc. ACCOBAMS-SC14/2021/Doc40, para. 49.

The Croatian legislation concerning the establishment of the stranding network (Ordinance on Strictly Protected Species[28]) provides as follows:

> "(1) The handling of dead, injured or sick strictly protected animals is regulated by the Alerting and Monitoring System established and managed by the Croatian Agency for the Environment and Nature (hereinafter: the Agency), except for the species listed in Annex I of this Ordinance column "Note" marked with the letter "L".
> (2) As part of the Alerting and Monitoring System, the Agency prepares protocols for alerting and action in case of finding dead, injured or sick strictly protected animals for individual species or groups of species.
> (3) Protocols from paragraph 2 of this article are published on the website of the Ministry and the Agency.
> (4) The Agency creates and publishes on its website a form for reporting the finding of dead, injured or sick strictly protected animals, which enables the finder to enter the following information:
>
> - the name of the strictly protected animal (scientific or Croatian name of the species) or a detailed description;
> - time of finding;
> - place of finding;
> - method of finding;
> - condition of the animal;
> - finder;
> - animal mark, if visible;
> - handling of the animal.
>
> (5) The finder is obliged to report the discovery of a dead, injured or sick strictly protected animal to the Agency via the report form or by telephone within 24 hours from the moment of discovery"[29].

B. Cyprus

Chapter 135 of the Fisheries Law, implemented by the Department of Fisheries and Marine Research (DFMR) of Cyprus, is the national legislation that covers also issues related to the protection of marine mammals. Under the national legislation, any stranding of cetaceans dead or alive must be reported to the DFMR that collects and documents the data. To that effect, the DFMR has produced a form that is used for reporting and collecting information related to strandings. Fisheries licenses also provide that the holder of a license is bound to report to the DFMR any bycatch of marine mammals must immediately by phone and by completing a report.

The Cyprus stranding network consists of the DFMR personnel that cooperates with other government agencies such as the Veterinary Services that carry out *postmortem* investigation and tissue sampling.

The DFMR cooperates with the United Kingdom Sovereign Base Area Administration (SBAA) Environment Department. The SBAA is the civil government of the Sovereign Base Areas (Akrotiri and Dhekelia) of the United Kingdom in Cyprus. Any stranding of cetaceans in the Sovereign Bases areas are communicated to the DFMR that cooperates with the SBAA Environment Department for the documentation of the stranding.

[28] *Official Gazette* No. 144/2013 and 73/2016.
[29] Art. 7.

C. Greece

Greece does not have a national legislation on stranding networks. However, the signature and publication of a joint ministerial decision establishing a national stranding network is expected within a short time. It will be adopted by the Ministers of Defense, of Environment and Energy, of Interior, of Shipping and Island Policy and of Agriculture Development and Food. The drafting of the decision is the result of a consultation process that has involved several participants (research institutes, academies, non-governmental organizations, etc.).

D. Morocco

In Morocco, the follow up on strandings is carried out by the National Institute for Fisheries Research (*Institut National de Recherche Halieutique*, INRH), which has engaged in the enhancement of such activity over the past years. Since 2015, different actions have been taken with a view to clarifying the role of State authorities in the management of strandings. Accordingly, the organization of relevant activities within the INHR has been reviewed and a procedure devoted to the management of strandings has been established. Special efforts have been made to collect information, in consideration of the interests that strandings raise for science as well as for the management of the associated sanitary risks.

A concertation process has been launched with the national institutions involved in the management of strandings and the absence of a legal framework that takes into account the specificities of strandings has been identified as a major deficiency.

The pandemic has delayed the process of identification and formalization of the legal framework regulating activities related to strandings. But the fact remains that the INHR, in consultation with the various State institutions involved in the process, is working to intervene in a timely manner and to establish a reliable database of stranded species.

The monitoring of the strandings of protected species along the Moroccan coast is part of the activities of the teams of the INHR, which work in close cooperation with representatives of public and enforcement authorities, whenever the relevant information is transmitted to them.

This activity is structured within the INHR in a Stranding Monitoring Network (*Réseau de Suivi des Échouages*, RSE) composed of teams of scientists from the six regional centers of the INHR, with regional focal points. Actions are coordinated from the INHR regional center in Casablanca. Due to this consultation, in addition to the partnership with ACCOBAMS, the idea of the INHR stranding monitoring network was able to progress on many points, namely:

- implementation of standardized procedures in the management of strandings and the management of associated risks;
- popularization and dissemination of information to institutional partners;
- training of scientists involved in the management of strandings (collection of information, training in necropsy, collection and storage of samples);
- implementation of the fundamentals for the creation of a national tissue bank.

In 2018, with a view to improving the quality of interventions and to setting up a National Stranding Network (*Réseau National des Échouages*, RNE), a critical analysis of the process of managing the strandings of marine protected species in Morocco was carried out by the INHR.
In addition, a guide was developed on the basis of feedback from stakeholders in the field. It describes the rules for managing the stranding of marine protected species on the Moroccan coast, from the alert to the feedback. The guide contains stranding management procedures for those national institutions whose representatives are involved in the field of strandings.

Finally, and with a view to sharing scientific information and building a database, particularly on strandings, the INHR publishes information on the various events on the Moroccan Fisheries Research Observatory website[30]. It is an interactive platform, based on the exploitation and enhancement of data from scientific monitoring networks, including the stranding monitoring network. Information on the place of the stranding, those who did intervene, the stranded species, the sex, the measurements, as well as other observations are mentioned in the "environmental alert" section of the Moroccan Fisheries Observatory.

E. Tunisia

The Tunisian National Stranding Network for Cetaceans and Marine Turtles was launched in 2004 by the National Institute of Sea Sciences and Technologies (*Institut National des Sciences et des Technologies de la Mer*, INSTM). The network was officially established through Decision No. 327 of 29 January 2014 concerning the creation of a national committee of follow up on of strandings and coordination, headed by the Director General of the INSTM and composed of a group of representatives of the different ministries concerned. The committee meets once a year and issues an annual report on strandings.

6. Conclusions

As regards cetacean stranding, the ACCOBAMS, in particular its Annex 2 (Conservation Plan), binds Parties, to the maximum extent of their economic, technical, and scientific capacity, to develop systematic research programmes, to develop systems for collecting data and to prepare emergency plans. Moreover, parties, in cooperation with each other, are bound to prepare a code of conduct governing the function of centres or laboratories involved in emergency measures, that is measures which also imply research and collection of data.

The importance of strandings for the achievement of the ACCOBAMS objectives is confirmed by the interest that the Parties, the ACCOBAMS organs and other entities have devoted to the different aspects of this subject. However, the current situation of cetacean stranding monitoring varies significantly among ACCOBAMS State Parties and there is a need to proceed towards more consistent models of stranding networks from both the substantive and institutional points of view. This could lead to consideration by ACCOBAMS Parties of the possibility of drafting a code of conduct for cetacean live and dead strandings, supplemented by the relevant technical annexes.

The code of conduct could build, as appropriate, on a number of already existing technical documents, such as the already mentioned annexes to Resolution 6.22 (Common definitions of terms related to stranding events; Common best practices for a basic *post mortem* examination of stranded cetaceans; Common data collection protocol for live strandings) and the appendices or annexes to the already mentioned 2014 ACCOBAMS / Pelagos Workshop (Best practices for animal at risk of stranding; Best practices for cetacean stranded during single, mass stranding and unusual mortality event; Proposals for the establishment of an harmonized procedure in case of cetaceans live stranding for all the Parties to ACCOBAMS; Proposal on procedure for general services; Proposal on procedure for national and local institutions and governments; Proposal on procedure for technical personal and volunteers; Proposal on procedure for national and local media and public opinion).

The envisaged code of conduct could be intended as a model for legislation or regulations to be adopted, if not already in place, by ACCOBAMS Parties. However, it could also serve the purpose of developing a transboundary common procedure among ACCOBAMS Parties to deal with cetacean stranding.

[30] https://observatoire-halieutique.ma/

In this regard, the report of the ACCOBAMS / Pelagos Workshop highlighted that "most of the national procedures used in case of strandings are often recent and in some cases incomplete and general", therefore "information between countries could flow most easily between jurisdictions and within organizations that have had previous collaborations"[31]. The report pointed out the need for creating a "general common sense", because interpretation of data, analysis and decision-making procedures can be very different across national borders. The suggestion of the report was to create a "bottom-up process so to overcome subjective limitations and to facilitate rapid decision-making".

Accordingly, the report suggested the development of a shared procedure, starting from the selection of best practices and a debate among different States and experts belonging to different services and institutions. Any such procedure should be monitored in progress, with a view to measuring outcomes, through performance and impact indicators. In particular, the workshop recommended that relevant actions, "in view of the fulfillment of a Transboundary Common Procedure"[32], be addressed to the following questions:

- since the ACCOBAMS area presents important differences in the approaches to alive and dead strandings, from very informal practices to very structured procedures, services and equipment, a clear decision should be taken on which aspects of homogeneity should be compulsory and on which aspects differences should be maintained;
- a shared roadmap should be identified with timing and main actions to reach homogeneity in the ACCOBAMS area, through the identification of effective procedures fitting with differences, considering the main shared elements among States Parties and the main obstacles experienced by them with organizational and operative matters (in this regard, a learning-by-doing and step-by-step approaches with a benefit-sharing perspective should be adopted and monitored in the long term);
- a starting point of the road map should be to provide a shared definition of all the stranding events that can be identified as transboundary situations;
- doubts and worries expressed by States Parties concerning the implementation of a common procedure should be addressed: for countries where national stranding networks are already in place33, there is the fear that possible changes would undermine the balance achieved; for countries where national stranding networks do not yet exist, there is the fear that a procedure based on the standards of more technologically and operationally advanced countries could impose an excessive burden and require an effectiveness too difficult to achieve;
- a space for cooperation should be created, where experts could share experience on analysis and diagnostics and interventions, with the involvement of non-governmental organizations that in most countries play a crucial role in the phases of intervention and are, for this reason, repository of important knowledge;
- carcasses of dead animals, in particular large specimens, could be considered as biological pollution drifting at sea (even before stranding): therefore, an alert stranding network of the countries closest to the event could be included in an existing cooperative transboundary operational procedure for pollution, in order to coordinate efforts among the relevant national authorities;
- on the one hand, the complexity linked to uncertainty and emergency in strandings should be considered in order to help experts on the field to face the event; on the other hand, States should achieve more safety standards, also by considering the use of already existing transboundary protocols adopted to face environmental emergencies, which could avoid overlapping and repetition of work and efforts;
- official national representatives should be identified for securing that the information flow on strandings is continuous among ACCOBAMS Focal Points and more effective in case of mass strandings;

[31] *Report of the ACCOBAMS/Pelagos Workshop* cit. (*supra*, note 2), p. 2.
[32] *Ibid*., p. 3.
[33] For example, see the French experience of Pelagis (*Coordinateur du Réseau National Echouages*): https://www.observatoire-pelagis.cnrs.fr/.

- experts should not be left alone with their responsibilities in the context of strandings: governments should, therefore, commit to consider with more attention the issue in their agendas;
- capacity-building should include specific trainings and exchange of information, procedures and guidelines built on the experience of rescue teams or experts, through the organization of specific meetings;
- considering that the potential causes of strandings could originate in areas beyond national jurisdiction, ACCOBAMS States Parties should address the issue of conservation on the high seas in order to find possible solutions[34].

[34] This could become a transitory concern. If all the coastal States decided to establish their exclusive economic zones, no high seas area would be left in the Mediterranean Sea, where there is no point at a distance of more than 200 n.m. from the nearest land or island. In the Black Sea and in the contiguous Atlantic area exclusive economic zones have already been established by the coastal States.