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CMS Scientific Council (ScC-SC5)**

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INFRASTRUCTURE DEVELOPMENT AND MIGRATORY SPECIES

(Prepared by the Secretariat)

Summary:

This document reports on the implementation of Decisions 13.130 to 13.134 *Infrastructure Development and Migratory Species*. It recommends that the Sessional Committee establish a multi-stakeholder working group on linear infrastructure.

INFRASTRUCTURE DEVELOPMENT AND MIGRATORY SPECIES

Background

1. Infrastructure development has been a topic under discussion of the Conference of the Parties and its subsidiary bodies for many years. In 2002, COP7 (Bonn, Germany) adopted Resolution 7.2 *Impact Assessment and Migratory Species* which emphasized the importance of good quality environmental impact assessment (EIA) and strategic environmental assessment (SEA) as tools for implementing the Convention. COP11 (Ecuador) in 2014 adopted Resolution 11.27 *Renewable Energy and Migratory Species*, which established the Energy Task Force as a multi-stakeholder platform that works towards reconciling renewable energy developments with conservation of migratory species. At the same meeting, Parties adopted the *Guidelines for Addressing the Impact of Linear Infrastructure on Large Migratory Mammals in Central Asia* describing the application of best practices to address the impacts of linear infrastructure development at the project and national level in order to maintain connectivity for wildlife populations in the face of growing infrastructure development in Central Asia.
2. Building on the existing work, the 13th meeting of the Conference of the Parties (COP13) adopted Decisions 13.130 to 13.134 *Infrastructure Development and Migratory Species*. Decision 13.131 and 13.132 are directed to the Scientific Council:

Decision 13.131:

The Scientific Council is requested to, subject to the availability of resources establish a multi-stakeholder Working Group on linear infrastructure composed of stakeholders with experience and knowledge on the impact of linear infrastructure development on migratory species and options for mitigation. The Working Group is asked to:

- a) *review available information relevant to linear infrastructure development and potential impacts on migratory species, the compilation of responses received under Decision 13.130 as compiled by the Secretariat in accordance with Decision 13.133 (a), and other relevant information;*
- b) *identify areas where further assistance is needed to enhance the implementation of Resolution 7.2 (Rev.COP12) Impact Assessment and Migratory Species paragraph 2, which urges Parties to include in EIA and SEA, wherever relevant, as complete a consideration as possible of effects involving impediments to migration, in furtherance of Article III (4) (b) of the Convention, of transboundary effects on migratory species, and of impacts on migratory patterns or on migratory ranges;*
- c) *develop a workplan and identify priority tasks for the Working Group based on the existing information, such as standards, guidelines, best practices related to addressing the impact of linear infrastructure development as well as the review of the compilation under paragraph (a);*
- d) *provide recommendations on the future direction of work under the Convention to support Parties in addressing the impact of linear infrastructure on migratory species.*

Decision 13.132:

The Scientific Council is further requested, subject to the availability of resources, to:

- a) *identify the types of infrastructure that have not been addressed under CMS and are of particular relevance to the conservation of CMS-listed species, provide advice on possible actions that could be taken to address such infrastructure, and report the findings to the 14th meeting of the Conference of the Parties;*
- b) *consider the outputs of the Working Group on linear infrastructure and make recommendations to the 14th meeting of the Conference of the Parties.*

3. COP13 instructed the Secretariat to assist the Scientific Council with the implementation of the instructions received from COP13:

Decision 13.133:

The Secretariat shall:

- a) *identify information gaps regarding the implementation of Resolution 7.2 (Rev.COP12) Impact Assessment and Migratory Species and, based on any identified gaps, consider improvements to guidance on preparing National Reports to improve collection of information regarding infrastructure development for review by the Standing Committee as part of amendment(s) to the National Report format under Decision 13.14;*
- b) *compile existing standards, guidelines, and best practices related to addressing the impact of linear infrastructure development and make them available online;*
- c) *subject to the availability of funds, convene at least one meeting to assist the Working Group in implementing Decision 13.131;*
- d) *liaise with the United Nations Environment Programme, the Convention on Biological Diversity, the International Association for Impact Assessment, the World Bank and other relevant international and regional organizations, multilateral environmental agreements, the private sector, development banks, financial institutions, donors, non-governmental organizations and academic institutions, as appropriate, to support the operation of the Working Group and to assist Parties in addressing the impacts of linear and other infrastructure on migratory species such as through joint capacity development activities.*

4. With the generous funding received from the Government of Germany, the Secretariat commissioned an EIA/SEA expert to assist with the implementation of the above Decisions.

Implementation of Decisions 13.130, 13.131 (a) – (d) and 13.133 (a) – Analysis of responses in National Reports

5. The Secretariat, as requested under Decision 13.133 (a) compiled the responses provided by Parties in their National Reports submitted to COP13. Only five National Reports included specific mention of implementation of Resolution 7.2., likely due to the fact that the National Report template did not include such a focus.
6. Nonetheless, the analysis of responses in National Reports to Parties' implementation of Resolution 7.2 (Rev. COP12) provides some indication of information gaps for the Secretariat to consider improvements to guidance on preparing National Reports to improve collection of information regarding infrastructure development, which will be reviewed by the Standing Committee as part of amendment(s) to the National Report format under Decision 13.14.

Implementation of Decisions 13.131 (a) – (d) and 13.133 (a) – Compilation of existing standards, guidelines, and best practices

7. An analysis has also been prepared by the EIA/SEA expert compiling existing standards set by multilateral development banks, guidance on EIA, SEA and landscape approaches as well as best practices by different stakeholders, an Executive Summary of which is annexed to this document. The full report is available as UNEP/CMS/ScC-SC5/Inf.3. The analysis also contains a proposed work plan and priority tasks for the Working Group based on existing standards, guidelines and best practices compiled. Lastly, it makes broad suggestions for the composition of the Working Group.

Implementation of Decisions 13.131 and 13.133 (c) – (d) – establishment and meeting of a working group

8. COP requested the Scientific Council to establish a multi-stakeholder Working Group on linear infrastructure composed of stakeholders with experience and knowledge on the impact of linear infrastructure development on migratory species and options for mitigation and instructed the Secretariat to convene at least one meeting to assist the Working Group. In that regard and as part of the Secretariat's Work Programme 2020-2023 with the German Federal Agency for Nature Conservation (BfN) a meeting is scheduled for 2022 at the International Academy for Nature Conservation on the Isle of Vilm, Germany with the generous support from the German Government. As requested by COP13, the Secretariat will liaise with relevant partners to support the Working Group.

Implementation of Decision 13.132 (a)

9. With the Working Group expected to be meeting in 2022, it is envisaged that the outputs of its discussions will be submitted to the Sessional Committee at its 6th meeting. At the same meeting, the Sessional Committee will also be requested to identify the types of infrastructure that have not been addressed under CMS and are of particular relevance to the conservation of CMS-listed species, provide advice on possible actions that could be taken to address such infrastructure, and report the findings to COP14.

Recommended actions

10. The Sessional Committee is recommended to:
- a) take note of the analysis provided in the Annex to this document.
 - b) establish a multi-stakeholder Working Group on linear infrastructure composed of stakeholders with experience and knowledge on the impact of linear infrastructure development on migratory species and options for mitigation.
 - c) nominate a Chair of the Working Group.
 - d) request the Secretariat to identify members of the Working Group in close consultation with the Chair.

LINEAR INFRASTRUCTURE AND MIGRATORY SPECIES

THE ROLE OF IMPACT ASSESSMENT AND LANDSCAPE APPROACHES

(Prepared by Mr. Roel Slootweg on behalf of the CMS Secretariat)

EXECUTIVE SUMMARY

CMS Decisions. The Convention on Migratory Species in its [Decisions 13.130-13.134](#) on Infrastructure Development and Migratory Species, has requested Parties to provide information, through its National Reports, on measures taken to implement Resolution 7.2 (Rev.COP12) on Impact Assessment and Migratory Species. The secretariat is requested to identify information gaps regarding the implementation of Resolution 7.2 and, based on any identified gaps, consider improvements to guidance on preparing National Reports to improve collection of information regarding infrastructure development. Furthermore, the creation of a multi-stakeholder Working Group on Linear Infrastructure is announced under the Scientific Council.

This report is produced in response to the above-mentioned Decisions. It provides an **analysis of the National Reports** for COP13 with suggested additional questions in relation to Resolution 7.2, and an **analysis of existing standards and guidelines**; furthermore it provides a number of **best practice cases** and proposes a **work plan** for the new **Working Group on Linear Infrastructure**. As the report covers three fields of expertise, i.e. biodiversity, infrastructure and impact assessment, the report starts with a descriptive chapter on infrastructure and impact assessment to provide a common information background.

INFRASTRUCTURE AND IMPACT ASSESSMENT (CHAPTER 2)

Infrastructure covers the basic systems and services that a country or organization uses in order to work effectively. The focus in this document lies on the physical manifestation of infrastructure systems and their interactions with migratory species. The scope is further limited to linear infrastructure because of its far-reaching effects on migratory species. Estimates of annual global infrastructure investment needs range from \$3 trillion to \$7 trillion, with projected infrastructure investments surpassing the total current stock in the next decades. This is referred to as a 'use it or lose it' moment in economic history. Given the long lifespan of infrastructure investments, it is of utmost importance that projects not only avoid negative impacts ('do no harm'), but are also low-emission, resilient, sustainable and circular ('do good').

Environmental Impact Assessment (EIA) was created at the end of the nineteen sixties in the industrialised world to give a legal voice to the voiceless environment; its use gradually spread around the globe and at present all but three UN Member States have adopted EIA legislation. EIA has to guarantee that the environmental impacts of proposed projects are identified before a decision on the licensing of a project can be given. The procedure is created in such manner that stakeholders and the general public have a legal right of access to this information and in most countries also the right to submit views and comments on the presented information. It is an instrument to inform decision-making with scientifically sound information, create transparency, and thus contribute to the legitimacy of the decision-making process.

Drawing attention to migratory species in EIA. The CBD in its Guidelines for Biodiversity in EIA and SEA put emphasis on two steps in the EIA process as these are fundamentally important to raise issues related to biodiversity, including migratory species. Without properly addressing these first two steps, the whole issue of migratory species runs the risk of going unnoticed in the environmental assessment and project licensing process:

- **Screening** is used to determine which proposals should be subject to EIA, to exclude those unlikely to have harmful impacts and to indicate the level of assessment required. Further guidance on screening for migratory species issues is needed for those having to make a screening decision. Such guidance does not exist.
- **Scoping** is used to identify key issues which should be studied in detail. It is used to define the Terms of Reference for the actual study phase, and sets out the proposed approach and methodology. Promising alternatives are identified. This is the phase in which issues with migratory species have to be specified and study questions and research methodologies defined, for which relevant expertise has to be available.

Strategic Environmental Assessment (SEA) is a logical add on to the existing EIA practice. As EIA can only address the impacts of individual projects, it has difficulty in addressing the cumulative impacts of multiple separate initiatives. Furthermore, strategic decisions on, for example, energy mix (e.g. wind or gas) or transport options (e.g. road or rail) are often made at higher policy levels, before concrete projects are identified. Taking environmental issues on board during policy development and planning phases can potentially be very influential. SEA is designed to assess the environmental (and social) consequences of upstream governmental policies and plans. The scope of assessment at this level is broader, in terms of geographical reach, time horizon and thematic room for alternative options. The greatest analytical strength of SEA lies in the comparison of alternatives.

SEA steps are not pre-defined. Each planning process has its own characteristics; a national transport plan will have a rather different gestation process as compared to a spatial or regional development plan. Where EIA follows a series of internationally acknowledged steps, the SEA process cannot easily follow a prescribed series of steps; it has to adapt to the steps in an often incremental planning and decision making process. This makes SEA somewhat difficult to envision for outsiders.

Four tiers, or levels of decision-making are ideally present in governmental planning and decision making on infrastructure development. At each level the nature of activities and the geographical area of intervention are more narrowly defined; the scope of assessment clearly changes with it:

- National policies such as a national energy or transport policies have no clearly defined activities and no or limited geographical scope. Yet it is important to have an environmental perspective on these policies as fundamental choices are made on, for example, transport modes or energy mix, with serious consequences for the dominant type of infrastructure to be developed. From a migratory species perspective possibly no go zones or closed periods can be defined.
- Plan definition: the infrastructure needs are defined within a broadly defined corridor that connects existing or new development 'nodes'. Lines connecting the nodes do not necessarily have to be geographically defined (yet). Identification of migration corridors is of utmost importance at this stage.
- Programme definition: investment programmes for a specific area and/or sector are defined, including the identification of alternative routings of linear infrastructure. SEA can be used to study the consequences of routing and technology alternatives, aimed at avoiding major impacts.
- Project definition. Concrete projects design with a focus on technical design and selection of the exact location. EIA is legally obliged to assess the impacts of construction, operation and decommissioning phases, including alternative solutions to avoid impacts and proposing mitigating measures to counteract the residual impacts. The EIA report includes an environmental management and monitoring plan.

Recent development in impact assessment show that the integration of biodiversity in impact assessment has received significant attention over the last two decades, from biodiversity related conventions as well as from international financial institutes. SEA is increasingly becoming an established instrument, also in developing countries. While attention to biodiversity is on the rise, the actual implementation on the ground sees huge differences in quality. Some of the shortcomings of impact assessment practise remain pertinent, namely (i) the inclination to only want to tick off - legally required - boxes; (ii) a limited or bad scoping; (iii) a sole focus on negative impacts, thus not looking at enhancement potential; (iv) more generally, little attention to genuine sustainable alternatives; (v) assessments being prepared too late for having a real impact on decision making; and (vi) capacity constraints in all its dimensions.

The good news with respects to biodiversity is that the overall quality of impact statements is improving and that SEA seems to live up to its promises of doing a better job at the landscape level (including ecosystem services), providing more room for alternatives, and better taking into account cumulative impacts.

SEA has seen a steady increase in attention and is developing into a mature process, quite different from EIA, geared towards the peculiarities of government planning and decision-making processes. The 'traditional' role of SEA is re-active with a planning process in the lead while the SEA assesses the consequences of the plan (and alternatives if available). However, SEA is increasingly used in a pro-active manner to inform a planning process. Rather than assessing the impacts of plans, the rationale for this approach is to use SEA to inform the planning process from the start towards more sustainable solutions, by defining social and environmental sustainability boundaries for a plan.

To anchor the interest of migratory species in the impact assessment process an important first step is to make sure migratory species become visible for those involved in the screening and scoping for impact assessments. There is a need for guidance on how to screen out issues related to migratory species. For SEA

it would be worthwhile to develop strategic guidance on how to provide the relevant information at policy, plan and programme level, what level of detail is needed and what methodologies are available. Depending on the **level of ambition** of the proponent, impact assessment can be used as a legal tool to force proponents to pay attention to migratory species, or it can be used as an invitation to proponents to develop the best possible plans and projects, taking into account the need to sustain populations of migratory species.

Suggested actions / recommendations on impact assessment:

1. Develop screening guidance for migratory species
2. Develop guidance on SEA information requirements on migratory species.

ANALYSIS OF NATIONAL REPORTS (CHAPTER 3)

In total, 45 national reports, out of a total of 93, were analysed. Observations (bullets) and conclusions from the analysis:

- **Asia is underrepresented** in the available National Reports.
- The **level of detail** in the National Reports is **limited**. Where issues are referred to, it is merely a hint or the mentioning of an issue.

For deeper insights a National Report may not be the appropriate instrument. However, the National Reports do point towards Parties that may be able to provide relevant additional content on topics mentioned in their reports.

- Reports **focus predominantly on** activities related to species conservation and protected areas; in other words, **green sector activities**. EIA and SEA are applied to projects and plans from other sectors (transport, energy, water, etc.) which seem to be largely beyond the reporters' horizon.
- **A minority** of National Reports **report on the use of EIA (35%) and SEA (11%)** as tools that can be used in support of migratory species. Only two Parties report on the use of SEA for infrastructure planning.

The above two observations address a core issue of this study – how to effectively cross boundaries between sectors, in this case the 'green' and the 'infrastructure' sectors, preferably making use of available legal EIA and SEA instruments. Even though asked for in the National Report format, boundary crossing is very little visible in the National Reports. Neither is the use of EIA and SEA, but this is less surprising as it has not very clearly been asked for.

- **Twenty percent** of Parties **report on major infrastructure** developments that affect in one way or the other migratory species. Most of these deal with wind turbines, probably because these are subject of a dedicated CMS initiative of the Energy Task Force, resulting in several guidelines.

Although being one of the global major investment sectors with significant impacts on migratory species, linear infrastructure is not reported on. This was not specifically asked for in the report template, but the template does provide sufficient entry points to report on such highly visible threats to migratory species.

- Integrated approaches at **landscape level** are **mentioned by 18%** of Parties, without further information.

Follow up with individual countries on cases on which is being reported could provide relevant information on application of various types of landscape approaches.

- Reporting on the **mitigation hierarchy** only refers to mitigation and compensation examples; **avoidance**, the most important priority step in the hierarchy, **is absent**; a well-known problem also in the impact assessment community.

With respect to the mitigation hierarchy, impact assessments usually have little influence on project location and design to avoid impacts and, moreover, only mitigate or compensate the impacts; strategic assessment of policies and plans that precede the actual projects, considered the best avoidance mechanism, are absent.

- There is very **little information on standards and tools** to address migratory species in impact assessment; the 'Appropriate Assessment' under EU Habitats Directive is mentioned.
- Best practice examples emphasise the **need to integrate environment in sector development strategies** and to look at legal protection of wildlife corridors in spatial / regional planning frameworks. The potential **role of SEA in such efforts is not referred to**.

- A very informative and relevant contribution is a guideline document on eco-friendly mitigation measures to mitigate the impacts of linear infrastructure on wildlife.
- **Citizen science and public data portals** are considered effective tools in support of migratory species by several Parties. Even though not mentioned, impact assessment practitioners are known to make serious use of such information sources.

Publicly available data (including on migratory species), sometimes collected through citizen science projects, is an important development which deserves support and upscaling.

- Identified **gaps in implementing the Convention** refer to well-known obstacles such as the difficulty in reaching decision makers, the lack of integration of migratory species in planning and poverty reduction strategies, the difficulty in mainstreaming in other sectors, the difficulty in coordination between ministries within a country and between countries in a region.
- Four Parties provide insight in **needs for further assistance** to strengthen implementation of the Convention. These include international expert support; support in institutional and technical capacity development, particularly at lower levels of government (decentralisation); more international cooperation and private sector involvement. Two Parties refer to the implementation of CMS targets in EIAs as a priority for future work.

Avoiding impacts, rather than (partially) mitigating or compensating impacts, by upstream strategic spatial and sector planning is recognised. However, the facilitating role of SEA in, inter alia, creating transparency and defining and comparing alternative, sustainable development options, goes largely unnoticed.

Suggested actions / recommendations on National Reports:

3. Based on the analysis of country reports Section 3.3 proposes a number of additional questions for the National Report Format, under the disclaimer that a National Report may not be the appropriate instrument for deeper insights. The provided information is short and limited in explanatory text. A focussed effort under the auspices of the new Working Group may probably provide more insight; several tasks for the Working Group are suggested.
4. Different options to integrate the questions into the existing format are suggested. For each question the topic, a motivation, and the relation to the present format is provided.

STANDARDS AND GUIDELINES (CHAPTER 4)

An overview is provided of existing standards and guidelines addressing the impacts of linear infrastructure, including a gap analysis where it concerns migratory species. The information is subdivided into sections on (i) International Financial Institutions (IFC, World Bank, IADB, EIB, EBRD, AfDB, AsDB, AIIB), (ii) professional best practice guidance, and (iii) recent views on a prominent planning approach for sustainability, the landscape approach, and how this can be used in combination with SEA to better present the cause of migratory species.

Safeguards of International Financial Institutes (IFIs) (Section 4.1)

IFIs use safeguard policies to identify and manage the risks associated to their loans. From biodiversity (and migratory species) perspective the safeguards of all IFIs have over the last decade evolved towards the standard set by the seminal 2012 IFC Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources.

Procedurally, migratory species do appear in the safeguards of IFC, World Bank, EIB, IADB, EBRD, AfDB, ADB, AIIB, as one of the defining characteristics of critical habitat; such habitat should support globally significant concentrations of migratory species and/or congregatory species. In supporting guidance documents the critical habitat criterion is further developed for practical use; here the migratory species knowledge is limited.

Information needs for migratory species not triggered. Intrinsically, threatened migratory species are addressed by the Red List criterion. Yet, the migratory nature of species creates particular requirements for an impact assessment (for example on geographical and temporal scale of assessment). Migratory species should thus draw special attention, which it presently does not do in a sufficient manner.

Ecosystem services that support the maintenance of areas important for migratory species may go unnoticed. The focus of safeguards is on ecosystem services directly linked to human values. So for example, provision of water for irrigation or public water supply is an ecosystem service on which the safeguards will be

triggered; water supply to maintain downstream ecological processes may go unnoticed (e.g. floodplain regime, fresh/salt water balance in a delta, etc.). On the other hand, most standards refer to essential ecological processes or ecosystem functions. However, possible linkages to migratory species are not made.

As with biodiversity in general, **unprotected and non-threatened migratory species run the risk of being ignored** as they are considered common. Yet, if we want to maintain a functional earth, the conservation of common biodiversity is vital, particularly in relation to the continued provision of ecosystem services on which humanity depends. Ecosystem services are typically maintained and guaranteed by 'common' species.. These should not be ignored in EIA, but if the criteria in a safeguards policy do not trigger attention to these species, the risk of oversight is real.

IFI safeguards are focussed on doing no harm, even though some refer to the intention to enhance biodiversity (do good) if possible. The most these safeguards can accomplish is to reduce the rate of biodiversity loss. For actually improving the situation of migratory species, more is needed. This obviously relates to the global transitional change needed to stop further decline of "system earth".

Among the bank documentation **there hardly is any guidance material addressing migratory species**. The best example comes from IFC addressing migratory fish in hydropower dam projects.

Suggested actions / recommendations on International Financial Institutions:

5. IFIs provide supporting documents, which may include topical or geographically focussed documents and best practice cases. Since all banks require special attention to migratory species, additional guidance on migratory species would be the easiest step to enhance the implementation practice for migratory species. This should be a globally applicable document addressing all groups of migratory species. A summary overview of all available CMS documents with an instruction on how and in what circumstance to use each document would make a good start (see for example the CMS document Information Resources for the Renewable Energy sector, or the global CMS migration atlas which is in preparation). A globally applicable document for terrestrial migratory species, comparable to the Guidelines for Addressing the Impact of Linear Infrastructure on Large Migratory Mammals in Central Asia, with additional information on appropriate research methodologies for (functional) groups of migratory species, is still needed. A combination with the earlier recommendation on the drafting of guidelines on screening and scoping for migratory species seems obvious.
6. Appendix I and II listed species are protected under CMS, but may not be protected nationally or not considered threatened. The protected status under CMS is not reflected in the safeguards of development banks, so may go unnoticed. This needs to be corrected through for example the additional information document described above.

Best practice guidance and initiatives (Section 4.2)

Mitigation knowledge well developed. There is a serious body of knowledge and expertise on the topic of habitat fragmentation by linear infrastructure and ways to mitigate the impacts. This report only touches upon the issue by referring to non-scientific guidance documents. Within the scientific community, for example in the area of road or transport ecology, there is much, much more. The advice not to re-invent the wheel, must be taken seriously.

Need for impact avoidance through "upstreaming". The mitigation hierarchy requires to first study avoidance options. This is a much less developed field, particularly in relation to the need for more strategic spatial and sectoral planning, and the role of SEA in such endeavour. The G20 Quality Infrastructure initiative, very influential in the infrastructure donor community, provides a broad perspective on the consequences of a real transition towards sustainability. It addresses at the highest policy level the need to minimise environmental impacts of infrastructure and to avoid lock-in in unsustainable investments. It does not address migratory species as such, but it does provide entry points for the mainstreaming of biodiversity. A similar call for more focus on upstream, systems-level approaches comes from UNEP's Sustainable Infrastructure Partnership.

Green infrastructure and nature-based solution are two closely related and rapidly developing fields, particularly in relation to climate mitigation and adaptation. The relevance for biodiversity and migratory species is obvious.

Good biodiversity guidance is produced for several sectors, notably in the hydropower, mining and energy sectors. Aspects related to migratory species are globally applicable and of general nature (e.g. fish, bird,

terrestrial animals), with individual species as example cases. Whether these guidelines are followed in practice is difficult to know and has not been further analysed (see [CBD/SBSTTA/21/INF/13](#) for further information).

The impact assessment community has also produced relevant biodiversity guidance material paying good but generic attention to migratory species. Additional information on migration requirements for better defined (groups of) migratory species would be an add-on to existing guidance.

An increasing number of international and country level **biodiversity data portals** are being developed. Open access to such data portals is extremely relevant for good impact assessment practice. It is unclear if and how migratory species are being addressed in such databases.

Visibility of CMS outputs in the impact assessment and infrastructure communities is **low**, yet the information is highly relevant.

Suggested actions / recommendations on best practice guidance and initiatives:

7. The G20 Quality Infrastructure recommendations are not focussed on migratory species, but they very clearly show the changing perspective in the world of infrastructure and the opportunity it provides for a green transition. CMS should, probably in collaboration with other Biodiversity conventions, feed information into and put itself on the agenda of this very influential and agenda setting initiative supported by G20, IMF, OECD, EU, and G20 member countries. Relevant information material and good practice cases to make the case for biodiversity and migratory species can be accommodated by the Global Infrastructure Hub. Biodiversity is seriously underrepresented at the moment. Similarly, relevant information material and good practice cases are needed for the Sustainable Infrastructure Partnership, the International Transport Forum.
8. Therefore, CMS Secretariat or members of the working group are advised to participate in infrastructure community conferences, for example the upcoming (fully digital) International Conference of Ecology and Transportation, to establish contacts with relevant players in this community.
9. Develop ideas and guidance on how migratory species interests can be integrated into nature-based solutions. Contact active platforms such as the [PEDRR](#) clearinghouse for knowledge, training, advocacy and practice on Ecosystem-based Disaster Risk Reduction (Eco-DRR) to see how this information can feed into such initiatives. Similarly, EcoShape's very practical [Building with Nature](#) initiative is interesting, promoting the concept of hybrid engineering: green where possible, grey where needed. (There is much more; see [wiki page](#)).
10. A more systematic treatment of all (groups of) migratory species from Appendix I and II, for example, by using the concept of functional groups, would provide a relevant add-on to the existing information. Freshwater species are underrepresented at CMS, but are considered an important topic when assessing the fragmentation impacts of (hydraulic) infrastructure.
11. Assess the status of migratory species in global databases and, if necessary, suggest appropriate adaptations. Provide guidance for countries to develop their own databases making, for example, use of citizen science initiatives.
12. Reach out to other global communities, notably the infrastructure and impact assessment communities, highlight the existence of available documentation, and find procedural entry points where the information can feed into planning and assessment processes. Redesign the information in such manner that it is fit for purpose.

Landscape approach (Section 4.3)

Sustainable landscapes. The 21st century presents humanity with the dual challenge to protect nature and to create an equitable home for people living on a finite planet. The need for sustainable landscapes as a source of multiple social, economic and environmental benefits is acknowledged in international policy agreements. Protecting nature as part of productive, sustainable and resilient landscapes is becoming a centre piece in the sustainability transformation agenda. Obviously, migratory species are part of this. Achieving long-term economic, environmental and social goals increasingly depends on understanding and accounting for the impact of land management decisions on ecosystem goods and services, and developing a more coordinated and integrated approach to natural resource management on a larger scale.

The proliferation of landscape approach terminology and products has led to confusion on what a landscape approach represents, how different concepts, frameworks and tools relate to each other. Many people think, or say, they are working at the landscape level or with a landscape approach. Yet, there is quite

some confusion on the actual meaning of such statements. The chapter provides an overview of recent thinking on landscape approaches, which boils down to three different interpretations of the landscape approach:

a) Using a landscape scale only. It departs from the biophysical boundaries of a landscape and does not include participatory nor interdisciplinary processes. It aims at understanding patterns and processes at landscape scale. Landscape boundaries are defined by biophysical boundaries only; social-economic and institutional boundaries are not taken into account. This is not what is considered a landscape approach, although it can provide useful insights, especially when looking at interactions between physical infrastructure interventions and migratory species. By adjusting assessments to the scale needed to understand migratory processes, much gain in the quality of assessment can be made.

b) Sectoral landscape approach. Many landscape approaches may start with a sectoral focus but evolve, in response to challenges encountered, to incorporate other objectives and thus develop characteristics of an integrated landscape approach. The simplest form is the interference of one sector plan with conservation objectives in the landscape. Usually, there are interactions with multiple other sectors and stakeholders, so the approach may develop naturally into the third category. For example, a proposed transport corridor will create a barrier to migratory species, but may also cut through communities, take productive agricultural land, or lead to settlement of migrants. Impact assessment can facilitate the identification of affected stakeholders. Inviting these stakeholders into a planning process is not something that impact assessments can impose, but authorities willing to do a good job can easily integrate the principles of a landscape approach into an impact assessment process. The willingness and ambition of the leading actor(s) in the process is critical.

c) Integrated landscape approach. The 'real' landscape approach. Even though the start of a process may be sectoral, the interference with other resource users and conservation goals should ideally lead to an integrated landscape approach. An aspect well developed in impact assessment but entirely neglected in the landscape approach literature is good scoping; what are the really important issues to take into account. Such scoping is, of course, part of a participatory decision. Scoping is a fundamental part of impact assessment procedures, designed to focus assessments on the most relevant issues and keep such studies under control (in terms of time and money expenditures).

Suggested actions / recommendations on the landscape approach:

13. **Promote SEA as a procedural vehicle to implement the landscape approach.** For a landscape approach to be effective it should ideally be linked to a formal planning process such as a regional development plan, a spatial plan, a sector plan (e.g. transport). SEA is designed to provide information on the sustainability of such plans, involve stakeholders in the process and guarantee process transparency. These are shared principles with the landscape approach, so SEA can be an ideal implementation vehicle.

GOOD PRACTICE CASES (CHAPTER 5)

Four cases illustrate many of the issues addressed, referred to throughout the report.

- **SEA for Developing a Gas Pipeline Network for South Africa.** The case provides a conceptually easy and straightforward procedure to define the optimal routing for a gas pipeline network in South Africa, taking into account biodiversity (and other) interests.
- **Biodiversity Conservation Corridors in the Greater Mekong Subregion.** The case shows the importance of good quality and formalised biodiversity information in SEA for corridor planning. It contains additional information on the issue of migratory fish and hydropower dams in the Mekong river.
- **Assessment of Proposed Dams in the Mara River Basin.** A case to show how infrastructure projects can have distant, but serious impact on wildlife migration in a transboundary river basin. Both SEA and EIA play an ill-defined but influential role in providing essential information.
- **Lamu Port-South Sudan- Ethiopia (LAPSSET) Infrastructure Corridor.** A case with SEA at the highest strategic planning level for an international corridor with potentially serious direct and indirect consequences for migratory terrestrial animals.

WORK PLAN FOR THE WORKING GROUP ON LINEAR INFRASTRUCTURE (CHAPTER 6)

CMS COP Decision 13.131 calls for the establishment of a multi-stakeholder Working Group on linear infrastructure composed of stakeholders with experience and knowledge on the impact of linear infrastructure development on migratory species and options for mitigation. The **agenda of this working group is set by the following observations:**

Legal and procedural instruments to take migratory species into consideration in the preparation and funding of policies, plans, programmes and projects linked to infrastructure **are in place**. EIA and increasingly also SEA are effective instruments to address potential environmental impacts prior to decision making. International financial institutions apply these instruments to implement their environmental safeguards policies. Even though content-wise the attention to migratory species in safeguards is rather minimal, the necessary 'hooks' to flag issues related to migratory species are there. The need for good screening and scoping guidance has already been discussed.

Relevant knowledge is available but dispersed. Infrastructure planners and decision makers are often little aware of the issue and the need to include this in their decision-making processes or may not know where to find relevant information. Guidance documents do not address migratory species in any consistent manner. They do not go into any detail on different functional species groups, research methodologies, sources of information. In other words, the available detailed scientific information needs to be mainstreamed for general use.

From mitigation to avoidance to improvement. Where most documents focus on mitigating the impacts of linear infrastructure, the real question of course is how to entirely avoid negative impacts by alternative routing or design of infrastructure. And, more ambitiously, how to contribute to a better and healthier planet by enhancing the situation of migratory species. For a real transition to a sustainable world the level of ambition has to be raised from doing no harm to doing good.

Mainstreaming by upstreaming. From the infrastructure community, the biodiversity community and the impact assessment community there are consistent calls for more strategic planning to be able to address the challenges posed by the Sustainable Development Goals. At higher planning levels there is more room for integrated planning at landscape level. The issue of migratory species has to be part of the process. Where EIA continues to play its role in avoiding negative impacts (do no harm) of proposed projects, SEA can be used to start thinking in terms of enhancement (do good) and thus contribute to a transition towards sustainability.

Look beyond the migratory species agenda. For CMS and the Working Group it is important to think about the consequences of the above approach since its focus of attention has to go beyond the migratory species agenda. Plans for economic corridors (like China's belt & road and many others) and policies that may lead to major infrastructure works (e.g. energy, transport, water policies) have to be identified as early as possible in order to be "on board".

Potential members of the working group can be found in the following categories:

- Infrastructure sector
- Impact assessment community, most likely through IAIA
- International Financial Institutions
- Scientific community involved in migratory species
- Global biodiversity data portals
- Some national governments, preferably represented by line ministries responsible for the planning of major linear infrastructure works (e.g. transport or energy department).
- International NGOs
- International platforms such as CBD, IPBES and infrastructure platforms.

Suggested actions / recommendations for the working group (in summary):

14. **Reach out** to the infrastructure community and learn their language and procedures.
15. **Provide information** on migratory species, geared towards the processes in which it is used (fit for purpose).
16. **Facilitate integration of migratory species interests** into existing planning and impact assessment processes by developing guiding materials.
17. **Seek synergies** and work with Parties