The Man and the Biosphere (MAB) Programme of UNESCO and its World Network of Biosphere Reserves (WNBR): contribution to global transformation towards sustainable and resilient societies.

1. An assessment of the situation regarding the principle of "ensuring that no one is left behind" at the global level:

Sustainable development includes the maintenance of land/seascape mosaics that have a mix of natural, rural and urban ecosystems where local communities and other stakeholders actively engage the governance and management authorities to guide decision-making and to generate options for environmental, economic and social well-being for current and future generations. It is built on the assumption that ecosystem health and biodiversity wealth can be linked to policies and practices for creating opportunities for humans to improve their social, economic and cultural conditions. **Conserving biodiversity, maintaining the resilience of ecosystems or restoring them, and safeguarding our planet's variety of life, is fundamental to a global transformation towards sustainable and resilient societies.**

The degradation of ecosystems jeopardizes nature's contributions to people, endangering economies, livelihoods, food security and nutrition, cultural diversity and spirituality, and the quality of life of people everywhere. These biodiversity-dependant ecosystem services include the provision of potable water, food and fibres, soil fertility, maintenance of the genetic databank of biodiversity, climate regulation, and recreational and aesthetic values among others. Biodiversity and cultural diversity are intricately linked. Biodiversity loss also disproportionally affects the most vulnerable, exacerbating inequality . In many societies, women embody specific knowledge on biodiversity and apply it in a sustainable manner. However, their role in biodiversity management and the decision-making process may not be properly recognized or capitalized upon. While the link between gender equality and the state of biodiversity is not always obvious, it is omnipresent and needs to be addressed in order to implement the SDGs. Accumulated across generations and renewed by each new generation, indigenous knowledge is integral to a cultural complex that also encompasses language, systems of classification, resource use practices, social interactions, ritual and spirituality. These unique ways of knowing are essential facets of the world's cultural diversity and provide a foundation for locally appropriate sustainable development and way of life. Supporting and promoting the contribution of women, indigenous people as well as youth as agents of change is essential to inform us about the drivers of biodiversity degradation and reverse this alarming trend.

If halting biodiversity loss is mainly the Sustainable Development Goals numbers #15 and #14 of Agenda 2030, biodiversity is also strongly linked to all other SDGs. Biodiversity is the living fabric of our planet that underpins human wellbeing at present and in the future. The implementation of SDGs needs to be inclusive, and should be based on a deep transformation of people's roles, actions and relationships with Nature. The awareness and appreciation of the diverse values of biodiversity need to be further amplified and mainstreamed within the Agenda 2030 in order to transform human behavior in favor of conservation and sustainable use of biodiversity. A diverse world gives us the flexibility to adapt to local and global change, including climate change. Biodiversity therefore underpins most SDGs and its loss constitutes a threat to both security and peace.

2. The identification of gaps, areas requiring urgent attention, risks and challenges:

Sadly, we are witnessing rapid decline of biodiversity which threatens nature and people alike. According to the reports released by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in 2018, the main global drivers of biodiversity loss are climate change, invasive species, over-exploitation of natural resources, pollution and urbanization. Land degradation occurs in all parts of the terrestrial world and can take many forms. Combating land degradation and restoring degraded land is an urgent priority for meeting the SDGs contained in Agenda 2030.

Designation and management of **protected areas** is the cornerstone of biodiversity conservation. However, despite an increase in the total number and surface of protected areas in the world, biodiversity continues to decline dramatically, in part due to limited resources to maintain these areas as strictly protected and/or to enforce relevant legal frameworks. In addition, current protected area networks may need to be re-aligned to account for climate change. It is not only the physical environment that preserves biodiversity, but also social and economic systems that are well-connected to biodiversity and ecosystem services.

UNESCO accompanies Member States and their people in their efforts to halt biodiversity loss by understanding, appreciating, safeguarding and using biodiversity sustainably. One of the flagship programme launched in 1971 is the UNESCO's Man and the Biosphere (MAB) Programme, an intergovernmental scientific programme with its World Network of Biosphere Reserves (669 sites in 120 countries, including 20 transboundary sites in April 2018). Biosphere reserves provide an **integrated landscape/seascape approach to conservation planni**ng, which is essential in ensuring suitable habitats for marine and terrestrial species. Living in and managing a biosphere reserve is to reconcile, in the same space, conservation and development objectives and foster the convergence of the long-term interests of the stakeholders involved. Biodiversity conservation and sustainable development are occurring in a context of uncertainty. To deal with uncertainty, we need to promote and explore collectively (throughout participatory processes and scenarios) social and ecological interdependencies and solidarities.

Despite availability of sufficient knowledge to halt biodiversity erosion, gaps in knowledge and data remain about the trends and drivers for many ecosystems and species. **Interdisciplinary research and data sharing** is needed to fill knowledge gaps, and to identify policy responses that take into account knowledge, economic paradigms and cultural norms. A best available knowledge approach can help cover knowledge gaps by drawing on complementary knowledge systems, including citizen sciences, and the mobilisation of indigenous and local knowledge, all implemented in biosphere reserves.

Coping with change and social learning is a key issue to facilitate future institutional and technical innovations required for dealing with biodiversity loss and global changes: these are contributions of the UNESCO World Network of Biosphere Reserves.

The scale and intensification of biodiversity erosion mean that deferring action will increase costs in the future leading to even greater losses of benefits, with great impacts on livelihood of people.

3. Valuable lessons learned on transformation towards sustainable and

resilient societies:

Resilience is enhanced by participation. It builds on the idea that it is through participation and meaningful engagement that individuals in a group become members of a community. Such interactions facilitate the flow of information and knowledge necessary to address challenges. But they are also generative of greater awareness, empathy, and the possibility of cooperation on local level participation, under the assumption that such participation likely contributes to resilience. The MAB programme's vision is "a world where people are conscious of their common future and interaction with the planet, and act collectively and responsibly to build thriving societies in harmony with the biosphere".

There is a need to develop engagement and actions from a diversity of stakeholders **(multi-stakeholders) governance,** regional cooperation and partnerships with the private sector.

The Lima Action Plan adopted in 2016 at the 4th World Congress of Biosphere Reserves in Lima, Peru along with the Lima Declaration serve as a roadmap for the implementation of the MAB Strategy for 2015-2025. It places strong emphasis on thriving societies in harmony with the biosphere for the achievement of the Sustainable Development Goals and implementation of the 2030 Agenda for Sustainable Development, both within biosphere reserves and beyond, through the global dissemination of the models of sustainability developed in biosphere reserves.

The MAB Programme with its WNBR constitutes an important and valuable partner and instrument for research and experimentation on the ground, to build on practice-based sustainable development and share it globally. The MAB Programme harnesses lessons learned through sustainability sciences and education and use modern, open and transparent ways to communicate and share information. A key goal is to ensure that its World Network of Biosphere Reserves (WNBR) consists of effectively functioning models for sustainable development by improving governance, collaboration and networking within the MAB and WNBR; by developing effective external partnerships to ensure long-term viability. Findings from case studies of the WNBR show how the biosphere reserves are concrete tools for achieving a global transformation towards sustainable and resilient societies and implementing the SDGs in holistic way.

4. Emerging issues likely to affect building sustainable and resilient societies

As we move forward with new ways of interacting with the biosphere, it is essential that stakeholders are trained and has capacity for implementing new and varied approaches. Further efforts would be needed therefore to facilitating capacity building by fostering learning and leadership skills. Mobilization of sufficient financial resources to properly manage and protect existing biosphere reserves, including through innovative partnerships with the private sector to scale-up funding is also necessary. A lack of adequate technical & financial resources and capacity can limit the up-scaling of innovative solutions, further demonstrating the need for regional and subregional co-operation .

Most policies directed at addressing biodiversity are fragmented and target specific. **Mainstreaming of biodiversity** into development policies, plans, and programmes can improve efforts to achieve both the Aichi Biodiversity Targets and the SDGs.

Stopping biodiversity loss is essential for climate change mitigation and for transition towards sustainable development. Current and future environmental migrations depend to a large extent upon adaptation strategies that will be implemented in vulnerable regions, and the mitigation of environment degradation and climate change themselves.

5. Areas where political guidance by the High-level Political Forum on Sustainable Development is required:

The governance and management of the biosphere reserve places special emphasis on the crucial role that knowledge, learning and capacity building play in creating and sustaining a dynamic and mutually beneficial interactions between the conservation and development functions of a biosphere reserve.

Renewed efforts to develop National Biodiversity Strategy and Action Plans (NBSAPs) should be considered with an emphasis on co-production of knowledge in wide consultation with civil society and other user groups, including the private sector, to inform policy decisions, and strengthen national policies related to biodiversity where they already exist. It places e**mphasis on multi-level governance** at national, local and community levels with appropriate support of relevant regional and international network such as the WNBR of the MAB programme.

In line with the holistic approach of Agenda 2030, SDGs 15 and 14 should be considered in connection to all others SDGs. More specifically, it is essential to identify the SDGs that could directly or indirectly harm biodiversity and ecosystem health. This might support warning mechanisms on these targets and objectives, in order to seek solutions and transform these risks into opportunities for the biosphere and humans. It is also important to make known these positive solutions in sectors that are usually unaware of the risks they may cause to biodiversity and the resilience of ecosystems.

6. Policy recommendations on ways to accelerate progress in establishing sustainable and resilient societies:

Attempts to raise awareness of the importance of biodiversity and communicate the complex issues involved are often given a relatively low political priority.

The depreciation of the natural capital is rarely integrated into national accountings. It is essential to take better account of this dimension and to find mechanisms that internalize the economic and social externalities created by the degradation of the biosphere in order to inform decision-making processes.

Lack of awareness of biodiversity and its importance is common, with biodiversity sometimes perceived as a resource to be exploited, for example through unsustainable logging or poaching of wild animals. **Communication on biodiversity is a crucial issue that must be addressed to achieve the objectives of the SDGs and of the CBD. A key challenge is to draw attention to the importance and urgency of biodiversity mainstreaming in the context of Agenda 2030,** in order to achieve the high-level support necessary across governments, the UN system and civil society to inform the negotiations of a post-2020 global biodiversity framework. Another challenge is to elaborate a common powerful narrative to communicate biodiversity in political settings and to civil society. This narrative must be able to engage key stakeholders

including youth, business and private sector in the process, and convince them to become actors in this transformation towards resilient societies.

In addition, **mobilization of sufficient financial resources to properly manage and protect existing biosphere reserve,** including through innovative partnerships with the private sector to scale-up funding as well as the establishment of connected landscapes such as biosphere reserves, where various forms of knowledge are integrated into management.

Case studies: Linking Biosphere reserves to SDGs

Case studies	SDGs	Targets	Themes and/or flagship projects
Aya BR (Japan)	**2, 12, 15**[1]	2.4 12.4	Evergreen forest protection; ecological agriculture
Arganeraie BR (Marocco)	3,5,6, 15		Climate change mitigation; women empowerment; production of argan oil
Oasis du Sud BR (Marocco)	3,6 8,13,15		Project of awareness raising "sauvons nos oasis"
del Odiel BR(Spain)	**12,15**	12.2 12.4 12.5 12.6 12.8	European blue carbon fixation project "Blue Natura".
Omo BR (Nigeria)	1,8,15		Economic alternatives based in green markets
Schorfheide-Chorin BR (Germany)	**7,8,15**		Traditional architecture construction with climate-friendly techniques to safe energy and resource
Mount Hakusan BR (Japan)	2,3,4,5,7,8,10,12,15		Educational activities using the 17 SDGs as tools helped to raise awareness in regional issues
Magaliesberg BR (South Africa)	4,15,16		Preservation of keystone species (leopard)
Tadami BR (Japan)	**8,12,15**	8.9 12.2 12.8	Eco-certification: Labels for the traditional product brand " Capital of Mother Nature Tadami"
Camili BR (Turkey)	1,2,8,12,15		Ecotourism; Beekeeping; Agriculture and Animal Husbandry
La Red Espanola de la Biosfera BR (Spain)	**4,5,8,11,12,15,16,17**		Waste management

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[1] **In bold:** SDGs that are explicitly mentioned in the case study (in the other case studies, they are supported by flagship projects).

Seaflower BR (Colombia)	**1,2,6,7,8,12,13,14,15**		Economic alternatives based in green markets; Implementation of alternative energy
Sierra Nevada de Santa Marta BR (Colombia)	**11,15,17**	11.3. 11.4 15.1 15.2 15.4 17.17	Strengthening of the indigenous governability in the ancestral territory
Pachmarhi BR (India)	**1,2,4,5,6,7,8,10,13,15,17**		Construction of Pond for providing Irrigation facilities to nearby villages
Agasthiyarmalai BR (India)	**15,17**		Multi-Stakeholder Dialogue on the forests of the BR
Nilgiris BR (India)	**15,17**		|Promotion of ecotourism activities
Sundarban BR (India)	2,3,4,6,8,15		Honey collection from Sundarbans forests by traditional honey collectors
Alto Bernesga BR (Spain)	**4,5,8,15,17**		capacity-building; communication and awareness.
Area de Allariz BR (Spain)	**11,15,17**		Waste management projects : Composting island next to urban gardens
Lanzarote BR (Spain)	**11,15,16,17**		Multi-stakeholder governance processes
Montseny BR (Spain)	**11,15,17**		Multi-stakeholder governance processes