The importance of international cooperation for achieving the SDGs: Analysing the reasons behind the failure of CBD and proposing solutions.

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Abstract

Every failed or partially failed convention has its drawbacks, lacks and objectives that were not achieved. In this paper, the convention on biological diversity is addressed. Many previous technical solutions are emphasised, and the lack of their implementation is discussed. These solutions include a framework to biodiversity issue by Georgina Mace, a study by Sachs et al. about transformations to achieve the SDGs and access and benefit sharing (ABS). However, the problem is not mere technical-engineering, it is a lack of partnership, political will and consequent priority actions. As a result, the idea of *Apparatus Mundi* (A.M.) emerged to effectively bridge the gap between the technical and the political aspect of any international conventions or multilateral treaty, including CBD. The A.M. must be representative of all countries, communities and genders in an equitable manner in order to ensure objectivity and integrity of its agenda, and it should take the role of influential actor -or *hegemon*- to achieve the SDGs with a multi-objective, multi-sectoral and multi-level approach. Therefore, for any SDG to be effectively achieved, partnership has a key role in ensuring the harmonically and transparently application of all the other aspects including the technical and financial.

Introduction

The Convention on Biological Diversity is one of the three conventions stipulated during the Rio Earth Summit in 1992 with the Framework Convention on Climate Change (UNFCC) and with the United Nations Conference on Sustainable development. During the time the CBD drafted two protocols: The Cartagena Protocol in 2000 and the Nagoya Protocol in 2010 which includes the Aichi Biodiversity Targets. The vision of the CBD cites: by 2050, biodiversity is valued, conserved, restored, and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people. Over the past few hundred years, population growth with consequent doubling of urban areas, unsustainable production and consumption patterns have expanded demand for biological resources, which has in turn caused a dramatic loss of biological diversity (WWF report 2018). Analysing the measures of biodiversity it is clear that we are going badly wrong in protecting our natural systems around the world Instead of slowing and reversing the loss of biodiversity; Nature is vanishing before our eyes, according to the International Union for Conservation of Nature, 66

percent of marine life is under threat from plastic pollution or overfishing; population sizes of mammals, birds, fish, amphibians and reptiles dropped averagely by 68% in fact more than a million animal species, 30% of amphibians, 21% of birds and 25% of mammal species are at risk or in danger of extinction because of habitat loss, farming, poaching, pollution, invasive species and, increasingly, global warming according to a report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the UN platform on biodiversity. There are many different clear examples of this devastation in terms of nature richness: the macadamia tree is almost extinct in nature, originally due to *Kretzschmaria clavus*; 35% of the Oaks varieties are threatened with extinction from invasive pests and climate change; the 45% of protea family flowers are re listed as either Vulnerable, Endangered or Critically Endangered due to changes to natural fire cycles caused by humans and linked with climate change; all the world's freshwater dolphins are now listed as threatened due to man-favoured diseases; the chytrid fungus caused the extinction of 30 amphibian species. (WWF report, 2018)

As the planet enters the so-called "decade on biodiversity", three-quarters of the Earth's surface has been altered by humans. These major and profound changes raise fears of a dangerous and irreversible breakdown of the delicate balance that underpins ecosystems.

Also, the third policy including the 20 Aichi biodiversity targets which have been broken down into 60 separate elements to monitor overall progress is still not achieved yet: None of the 168 signatories of the Aichi Targets has succeeded in achieving even one of these goals, such as removing or reforming subsidies that are harmful to biodiversity, halving the rate of depletion of all-natural habitats or better preserving the diversity of cultivated plants by 2020. From a global point of view of these 60 elements, 7 have been achieved, 38 have shown progress and 15 have shown no progress. The UN report found that 7 Aichi targets have been partially achieved, including those on protected areas and invasive species. 44% of biodiverse areas are now under protection, an increase from 29% in 2000. Around 200 successful eradications of invasive species on islands have also taken place. However, this is clearly not enough. (Adenle 2012). We have already cited the reasons why it may be stated that CBD and its policies has been a failure and now it will be explained why the strategic plans fail repeatedly.

Within the Aichi targets, CBD did not set explicit and focused targets, not following a proper scientific way. Moreover, countries lack the observational infrastructure to track the state of their own national biodiversity in addition to a global context without an harmonized observation system for delivering regular timely data on biodiversity change the progress becomes very hard to track. Furthermore, this data was not mandatorily requested to governments by the Convention wasting efforts. Another aspect not to be underestimated is that CBD deals only with sovereign states and their responsibilities in their own borders, looking for example at the Belt Road Initiative, which could induce another big loss in terms of biodiversity. However, failures regarding the implementation of the Strategic Plan are in many cases not rooted in the Plan itself but in strong forces and power relations that exist independently of the CBD: "the political will is just not here", quoting C. Sendashonga, Global Director of the Policy and Programme Group at the IUCN. In fact, scarce investments in observation systems mean that there are still large gaps in the data particularly on local but also on global biodiversity. This lack of funding for biodiversity conservation is rooted in non-coherent policy making and prioritising actions, driven by governments who aim at preserving

lobbies of fossils interests. Global annual government spending on subsidies to fossil energy is estimated at US$333 billion, against US$150 billion for renewable energy, by the International Monetary fund and considering the externalities the full costs rise to US$5.3 trillion (Morenhout 2020). Moreover, it is not only a huge loss of economic power, but the massive direct and pass-through impacts are mining the achievement of many SDGs, including the one of biodiversity preservation.

Only from 1950 to 2020, countries negotiated over 1100 multilateral agreements to deal with various environmental issues including global warming, acid rain, degradation of habitats, and overfishing (Mitchell 2015). As above mentioned, CBD has failed to slow the problem because of lacks different nature, but we could extend and integrate these reasons to explain and prevent also other failures or slowdown in achieving environmental multilateral plans, *cfr* Figure 1. (Richerzagen 2011)

Category	Problem
Economic and financial	○ Lack of financial and human resources ○ Lack of economic incentive measures ○ Lack of benefit-sharing ○ Lack of bio-economical approach ○ Lack of incentive reform ○ Failure of market in internalising the externalities
Socio-economic	○ Poverty ○ Population pressure ○ Lobbies pressure ○ Lack of infrastructure
Political and societal	○ Lack of political will and support ○ Limited public participation and involvement of stakeholders ○ Lack of goal mainstreaming ○ Political instability ○ Power imbalances, marginalisation of communities ○ Conflicts and riots ○ Lack of influential actors or promoters
Institutional	○ Institutional weaknesses ○ Lack of institutional credibility ○ Poor institutional design (for context and scale)
Juridical	○ Lack of appropriate policy ○ Lack of a *hegemon* (influential or leading actor)
Knowledge- and capacity-related	○ Inadequate capacity to act ○ Lack of transfer and technology and expertise ○ Loss of traditional knowledge ○ Indigenous knowledge and capacity not fully utilised ○ Lack of adequate scientific research capacities ○ Lack of public education and awareness ○ Lack of information availability ○ Lack of coherent policy-making
Cooperation-related	○ Lack of effective partnerships (involving also non-state actors) ○ Lack of both vertical and horizontal cooperation among stakeholders
Natural phenomena and environmental change	○ Climate change with consequent natural disasters ○ Uncertainty about the future scenario and its variables

Figure 1: Overview of hampering factors acting on most of the environmental multilateral treaties.

Investigating and proposing solutions

In this report, the literature is screened to investigate existing solutions for the failure of CBD. Based on the findings, main solutions found were WWF report/Georgina Mace's solution, solution by Sachs et al. (2019) and access and benefit-sharing (ABS).

The WWF is an independent conservation organization with a mission to protect the planet's biodiversity (WWF report, 2018). Despite the many conventions on biodiversity loss (CBD, COP6, Aichi targets…) the curve of biodiversity is still decreasing. The 2018 WWF report tackles the problem of biodiversity while focusing on the solution provided in the Georgina Mace's study where the solution is divided into three steps. The first step adopts the goal of the CBD: "By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people" and adds to it the need to define means to measure the progress of achieving the goals, which is step two. Three main indices were provided to measure the state of biodiversity: The Living Planet Index (LPI) is an indicator of the state of global biodiversity and the health of our planet. It tracks the population abundance of thousands of mammals, birds, fish, reptiles, and amphibians around the world. The Red List Index where a value of 1.0 equates to all species within a group qualifying as Least Concern (i.e., not expected to become Extinct in the near future). An index value of 0 equates to all species having gone Extinct. The Biodiversity Intactness Index (BII) estimates how much of a region's originally present biodiversity remains, relative to if the region were still covered with primary vegetation and facing minimal human pressures. These three indices can be complemented with others, however the choice by Mace et al. (2018) was on these three because they are available in previous literature and are also a strong basis to quantify the state of biodiversity in the future. The third part of the solution is about identifying the best actions out of the different alternatives to achieve the goals through modelling scenarios, and these models should be applied at four different stages: Design, Implementation, Review and Agenda Setting. This solution provides general guidelines divided into three components that not only can it be applied to biodiversity issues but to any global challenge.

Partnership is one of the goals that appears to be the basis of all other sustainable development goals (SDGs). According to Sachs et al. (2019), cooperation should be both horizontal and vertical in order to achieve the SDGs. Meaning that horizontal cooperation is between different countries, while vertical cooperation is between the different entities within the countries from ministries to different public/private institutions. It is provided in that study six transformations that need to be applied through different means to achieve the SDGs with the fourth transformation related to biodiversity. In order to implement these transformations, some directives/solutions were set by Sachs et al. (2019), where three of them: the goal-based organization of government and financing - Diplomacy and international cooperation for peace, finance and partnerships - Social activism to change norms and behaviours, are focused on partnership within the country (vertical) as well as international cooperation (horizontal). Partnership appears to be a core aspect of any convention that would tackle one or more of the SDGs.

Access and benefit-sharing (ABS) refers to the way in which genetic resources may be accessed, and how the benefits that result from their use are shared between the people or countries using the resources (users) and the people or countries that provide them (providers). Genetic resources are the building blocks of life on earth. By developing our understanding of

them, and conserving them, we can improve conservation of threatened species, and the communities who depend on them. ABS has 4 components namely Providers of genetic resources, Users of genetic resources, National Focal Points, and Competent National Authorities. ABS effectiveness has been questioned in international discussions for many years. It is evident that the approach's success has fallen far short of what was Expected. One of the reasons for this failure is a lack of incentives (Richerzhagen, C. 2011). These shortfalls of ABS can be minimized by designing and allocating rights, managing conservation areas, coordinating activities, negotiating ABS contracts, controlling compliance, and sanction misappropriation regarding the use of genetic resources. This in turn requires funding for the establishment and maintenance of such institutions. One such Protocol that was introduced was Nagoya Protocol (NP). The Protocol came into force in October 2014, providing a legal framework for the effective implementation of one of the three objectives of the CBD: the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.
The Nagoya Protocol aimed at easing access to countries' genetic resources and ensuring that potential benefits arising from the use of these resources would be shared with provider countries. Importantly, the CBD and the NP are legal binding agreements, and countries that sign them are obligated to implement their provisions nationally. After NP has come into force, new national laws and regulations providing requirements for access to genetic resources are changing traditional views on collection, deposition, and distribution of microorganisms. The benefits to be shared can be monetary, such as sharing royalties when the resources are used to create a commercial product, or non-monetary, such as the development of research skills and knowledge.

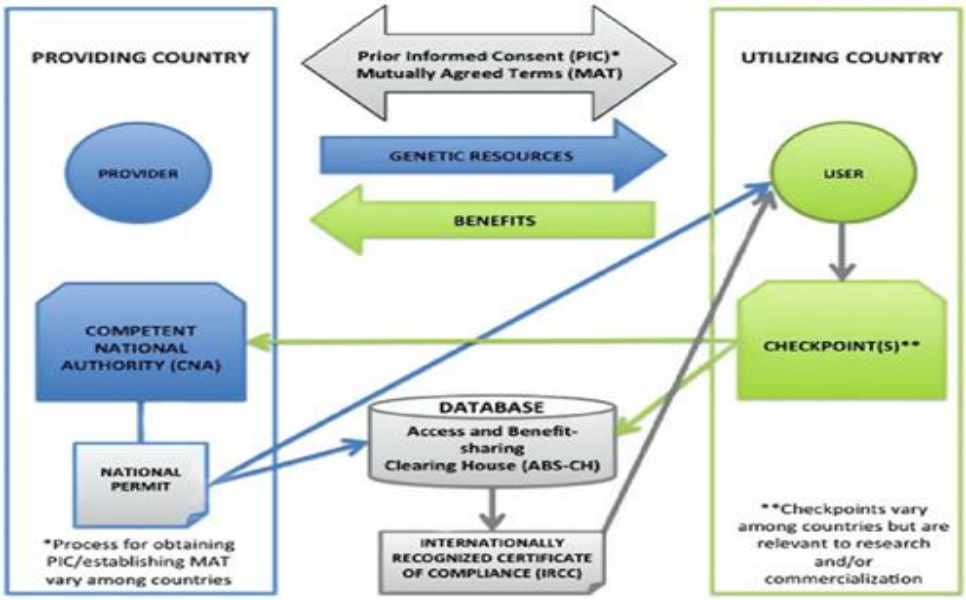

Figure 2: Basic flowchart of how ABS system works. (Sharma, S et al. 2018)

Importance of partnerships

The UN system defines partnerships for the SDGs as follows:
Partnerships for sustainable development are multi-stakeholder initiatives voluntarily undertaken by Governments, intergovernmental organizations, major groups and other stakeholders, whose efforts are contributing to the implementation of inter-governmentally agreed development goals and commitments. (Stibbe, D.T et al. 2018)

Partnerships are very important as any international goal that is to be achieved must have cooperation between countries and sometimes, even each other's support and help. Anything that must be done on a global scale requires understanding or trading of the goods and services between the countries which can accelerate and escalate the probability of achieving that goal in a shorter period. The main reason for many of the goals not being reached is the lack of partnerships.

The partnerships have 3 main categories that can be classified as

1. Leverage/exchange; where knowledge, services and skills are exchanged or loaned by one partner to another.
2. Combine/integrate; where cross sector partnerships are encouraged, and the partners complement each other's roles.
3. Transform; to adapt and find solutions that are feasible and politically acceptable.

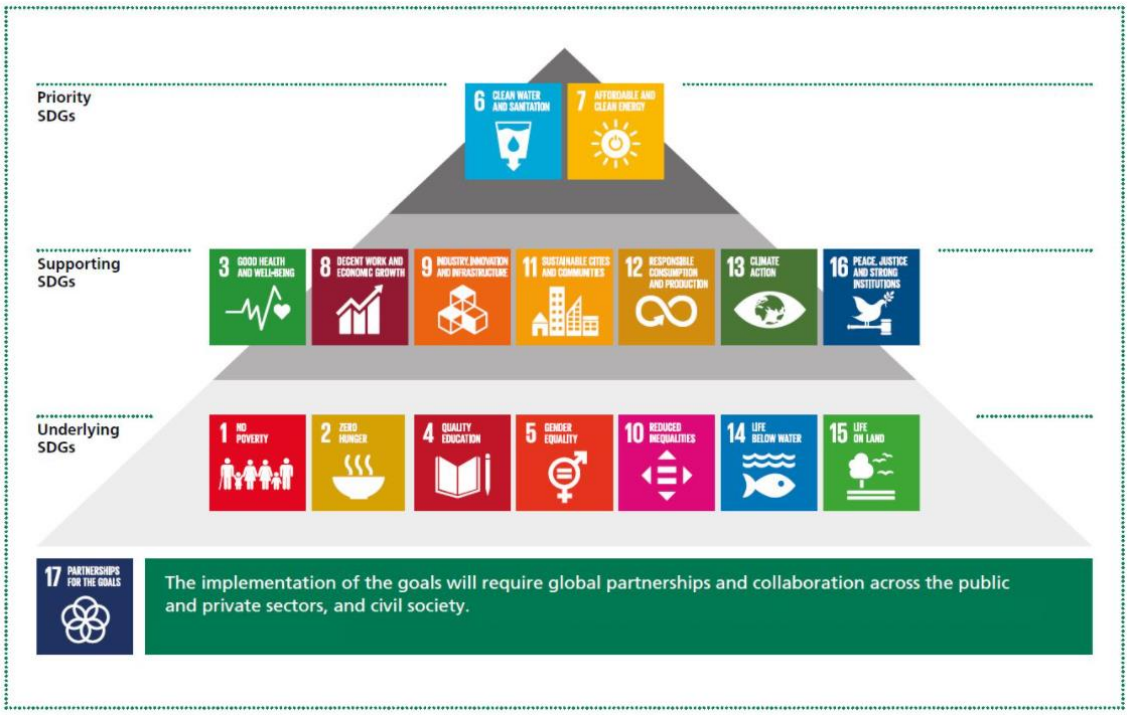

Figure3: While all goals are interrelated, SDG17 underpins the achievement of all the goals.

It is clear that the policy-making framework to help develop strategies and suitable technologies for biodiversity conservation is a complex challenge at the heart of CBD; particularly in getting different governments and intergovernmental organizations together to pursue a common goal.

Following are the solutions that are proposed by us which will ensure the implementation of SDG17 and in turn, the implementation of all the other goals. Given the above-mentioned solutions already available in the literature that tackles the biodiversity issue and that can be also applied to other global challenges related to SDGs, it is still noticeable that some setbacks still exist in the solution of biodiversity. Therefore, it is suggested to establish a new enforcing global policy making apparatus, that in this place is named by the authors as "*Apparatus Mundi*" (A.M.), it should take the role of influential actor or *hegemon*. The aim is to deal with global humanity-common issues, by regulating and coordinating the numerous funds across the world, maybe introducing a new "Environmental Tax" for each country

consisting in the same proportion of GDP. A popular approval is fundamental by mainstreaming (also including the social networks), transparently its goals and results to have the credibility to face against any world power in guaranteeing a fine/punishment system. The Apparatus Mundi must be representative of all countries, communities, and genders in an equitable manner in order to ensure objectivity and integrity of its agenda. Therefore, A.M. should provide a structured framework targeting SDGs through creating a specific department/ministry for each SDG, but without the same timing of politale mandate in order to act more coherently.

Regarding biodiversity, A.M. should be able to enforce international collaborations between governments, public and private researchers that are essential for optimizing resource use and sharing knowledge. For instance, international initiatives that bring together bioscience and IT are needed in sustainable intensification and global soil mapping, to agree protocols (El-Chichakli et al. 2016). A.M. should prioritize targets (food and water security). National monitoring system should include the international dimension to examine how a practice in a country might affect others (El-Chichakli et al. 2016). A.M. should ensure international collaboration between educators to define the knowledge, skills and competences required from developing bioeconomy. An interdisciplinary approach is required to emphasize system thinking, strategic planning and evaluating environmental, social and economic performance as well as understanding of technologies and local specifics. A.M. must unify principles for a global bioeconomy where stronger development of the bioeconomy will help to accelerate progress towards a circular and low-carbon economy. It will help modernise and strengthen the industrial base, creating new value chains and greener, more cost-effective industrial processes, while protecting biodiversity and the environment. A.M. should promote green finance through increasing funding (e.g., tax incentives) and ensure higher returns of green projects through subsidies, lighter regulation and decelerate the brown financing.

Conclusion

It is clear that the policy-making framework is of crucial importance to develop strategies and deliver suitable technologies for getting different governments and intergovernmental organizations together to pursue a common goal. Regarding the biodiversity issues, it is noticeable that the technical aspect is achievable engineering wise, however the problem is more eradicated in the cooperation between the different entities whether within the same country or between countries. The *A.M.* could be a purpose of a different apparatus to join the above-mentioned solutions by including partnership as a main key under one umbrella to effectively enforce its policy. The *A.M.* should address not only biodiversity loss but also all the global issues and challenges (particularly the SDGs), with a multi-objective, multi-sectoral and multi-level approach.

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