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## Bringing Space to the Non-Space Community: Toward Sustainability and the Space2030 Agenda

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### Abstract

As we all know sustainable development and the Sustainable Development Goals (SDGs) are an important topic around the globe. Many different sectors are working on this endeavour including the space sector. With the recent UNISPACE+50 and the introduction of a Space2030 Agenda, Member States of the Committee on the Peaceful Uses of Outer Space (COPUOS) have a working group specifically dedicated to the Space2030 Agenda. This research aims to discuss the importance of highlighting ways in which the Space2030 Agenda can be considered and implemented by non-State and non-space actors with examples given from other United Nations-led agendas and initiatives that relate to sustainability. It is important to discuss how other action plans such as the African Union 2063 Plan or the Addis Ababa Action Agenda can give insight toward the Space2030 Agenda. It is important to look at how non-state actors and other sectors can work with the space sector in order to achieve sustainability and the SDGs. As was stated in the Proposal by the Bureau of the Working Group on the “Space2030” Agenda on a draft structure of a “Space2030” Agenda (A/AC.105/C.1/L.372), the aim is to “provide a common understanding of the potential and challenges of bringing the benefits of space to Earth, in the space sector as well as the non-space sector, as close collaboration between the two sectors is vital for reaping the benefits of using space technologies and applications for sustainable development.” This is key for working with entities outside of the space sector. However it is also important to look at how even within the space sector (or also outside of), “In fulfilling the “Space2030” agenda and its implementation plan, importance is attached to global partnership and strengthened cooperation among Member States, United Nations entities, intergovernmental and non-governmental organizations, industry and private sector entities, to ensure that through joint efforts and profiting from the practical experiences and contributions of different stakeholders, the benefits of space will be brought to everyone, everywhere” (A/AC.105/C.1/L.372). Keeping these points in mind, this research will discuss all aspects of international collaboration, inter-sectorial interaction, and non-Member State inclusion to be considered for the Space2030 Agenda.

**Keywords:** SDGs, Space2030, COPUOS, non-State actor, international collaboration, sustainability

### Acronyms/Abbreviations

AfCFTA – African Continental Free Trade Area;  
AU – African Union;  
COP – Conferences of Parties;  
ECOSOC – United Nations Economic and Social Council;  
FTYIP – First Ten-Year Implementation Plan;  
GNSS – Global Navigation Satellite System;  
HLF – High Level Forum/Fora;  
ICAO – International Civil Aviation Organization;  
IGO – Inter-Governmental Organization;  
ITU – International Telecommunications Union;  
MGoS - Major Groups and other Stakeholders;  
NGO – Non-Governmental Organization;  
SDGs – Sustainable Development Goals;  
TFM – Technology Facilitation Mechanism;

UN – United Nations;  
UNCOPUOS – United Nations Committee on the Peaceful Uses of Outer Space;  
UNDESA – United Nations Department of Economic and Social Affairs;  
UNFCCC – United Nations Framework Convention on Climate Change;  
UNOOSA – United Nations Office of Outer Space Affairs;  
UNISPACE/UNISPACE+50 – United Nations Conference on the Exploration and Peaceful Uses of Outer Space.

## 1. Introduction

Sustainable development and the Sustainable Development Goals (SDGs) are an important topic around the globe. Many different sectors are working on this endeavour including the space sector. With the recent UNISPACE+50, Member States of the UN Committee on the Peaceful Uses of Outer Space (UNCOPUOS) committed to draft and present a Space2030 Agenda to the 75<sup>th</sup> United Nations (UN) General Assembly, establishing a working group specifically dedicated to the Space2030 Agenda [1]. This research aims to discuss the importance of highlighting ways in which the Space2030 Agenda can be considered and implemented by non-State and non-space actors with examples given from other United Nations-led agendas and initiatives that relate to sustainability. It is important to discuss how other action plans such as the African Union 2063 Plan or the Addis Ababa Action Agenda can give insight toward the Space2030 Agenda. It is important to look at how non-state actors and other sectors can work with the space sector in order to achieve sustainability and the SDGs. As was stated in the Proposal by the Bureau of the Working Group on the “Space2030” Agenda on a draft structure of a “Space2030” Agenda, the aim is to

“provide a common understanding of the potential and challenges of bringing the benefits of space to Earth, in the space sector as well as the non-space sector, as close collaboration between the two sectors is vital for reaping the benefits of using space technologies and applications for sustainable development.”[2]

This is key for working with entities outside of the space sector. However, it is also important to look at how even within the space sector,

“In fulfilling the “Space2030” agenda and its implementation plan, importance is attached to global partnership and strengthened cooperation among Member States, United Nations entities, intergovernmental and non-governmental organizations, industry and private sector entities, to ensure that through joint efforts and profiting from the practical experiences and contributions of different stakeholders, the benefits of space will be brought to everyone, everywhere.”[3]

International collaboration also includes the United Nations Office for Outer Space Affairs (UNOOSA) as broker especially when talking about capacity-building and international dialogue. Therefore, it is important to look at the angle of UNOOSA as a facilitator and aide to the Space2030

Agenda especially with the idea of non-Member State and non-space actor inclusion or interaction.

Keeping these points in mind, this research will discuss all aspects of international collaboration, inter-sectorial interaction, and non-Member State inclusion to be considered for the Space2030 Agenda with a concise set of recommendations for moving forward in building, implementing and reviewing the Space2030 Agenda now and in the future.

## 2. Key examples at the UN Level

The UNCOPUOS Working Group on the Space2030 Agenda is working to draft a consensus-driven, multi-lateral, long-term agenda. For a better development of such document and framework, and for a more effective implementation of the same after its finalisation, it is important to look at key examples of agendas and frameworks already in place and try to draw lessons from these.

The following is a non-comprehensive attempt in identifying international mechanisms, programmes, projects and platforms that Member States are encouraged to contribute to and take advantage of in implementing the “Space2030” Agenda, considered in its most up-to-date draft [4].

### 2.1. *Parallel agendas*

A first focus explores the African Union’s Agenda 2063 and the Addis Ababa Action Agenda, respectively initiated in 2014 and 2015. The two Agendas are parallel mechanisms to what the Space2030 Agenda would be and at the same time these should be considered due to their long-term vision, ambitions, and structures.

#### 2.1.1. *The Agenda 2063*

Agenda 2063 is the African Union's (AU) long-term strategy document/vision to shape Africa as "the Africa we want"[5]. Approved in 2013, Agenda 2063 encompasses seven aspirations, namely 1) A prosperous Africa based on inclusive growth and sustainable development; 2) An integrated continent, politically united based on the ideals of Pan Africanism and the vision of Africa's Renaissance; 3) An Africa of good governance, democracy, respect for human rights, justice and the rule of law; 4) A peaceful and secure Africa; 5) An Africa with a strong cultural identity, common heritage, values and ethics; 6) An Africa whose development is people-driven, relaying on the potential of African people, especially its women and youth, and caring for children; and 7) Africa as strong, united, resilient and influential global

player and partner [6]. Worth mentioning is that, in this last aspiration, outer space is listed among the areas in which Africa aims to obtain its place in terms of global governance.

In order to provide a concrete embodiment of such aspirations, the Agenda identifies a number of flagship projects that are key to accelerating Africa's economic growth and development as well as promoting Africa's common identity, highlighting African history and culture [7]. These projects span through various categories, as infrastructure, education, science, technology, arts and culture, as well as initiatives to secure peace on the continent [8]. Examples of flagship projects are an Integrated High Speed Train Network to connect all the African capitals and commercial centres, the establishment of the African Continental Free Trade Area (AfCFTA), the introduction of a single African Passport to allow free movement of African citizens, or the establishment of an African Virtual and E-University to foster continent-wise opportunities for higher education and, relevant to the scope of this paper, the drafting of an Africa Space Strategy [9].

#### 2.1.1.1. Current state of implementation

Due to its strategic, long-term connotation, the Agenda has been divided into five Ten-Year Implementation Plans, the first of which (named First Ten-Year Implementation Plan, or FTYIP) is structured to last from 2014 to 2023. The FTYIP has been divided into 20 goals along the 7 aspirations and it tries to keep into account national, regional and continental needs, opportunities, and stakeholders [10].

With half of the timespan of the FTYIP already passed, the African Union is carrying forward the Agenda with mixed results. While some goals and aspirations are harder to track, some specific flagship projects are moving at a fast pace. The Africa Space Strategy, for instance, was already drafted in 2017 [11], laying the foundation for African Space Policy and further activities and implementation in the space sector. Similarly, the AfCFTA was signed in 2018 [12] and it entered into force in May of 2019, after reaching the validating threshold of 22 signatory states [13]. Currently, AfCFTA is being enforced by 27 African countries out of 54 signatories (out of 55 African Union Member States) [14]. Linked to the AfCFTA, a Protocol of Free Movement of Persons was signed, moving forward the idea to establish a visa-free zone among the AfCFTA members, thus making a relevant

step toward the introduction of an African Union-wide Passport [15].

#### 2.1.1.2. Non-state actors in the Agenda 2063

The AU's Agenda 2063 attributes a relevant role to non-state actors. Drafters of the Agenda underline that the agenda is a "continental 50-year agenda through a people-drive process outlining the *Africa We Want*" [16]. The formulation of the Agenda, and potentially its Ten-Year Implementation Plans, is the result of extensive bottom-up consultations [17], and the selected flagship projects are stated to be the result of consultations with the African Citizenry [18].

Besides having been involved in the formulation of the agenda, non-state actors are directly recalled by the FTYIP to advocate and monitor its implementation, by being part of an Agenda 2063 National Advisory Group [19]. Non-state actors are also identified as key stakeholders in the implementation of the Resource Mobilization Strategy, a factor that implies that they will be "assigned responsibilities appropriate to their relevance and competencies".[20]

This last point underlines a quite important involvement of commercial actors, and in particular from the financial sector, as the FTYIP suggests a heavy reliance on the use of commercial financial "intermediation vehicles", both existing ones – as banks, insurance companies, and microfinance institutions – and new ones – as the Africa-wide financial institutions envisioned by the Agenda 2063 flagship projects). [21]

#### 2.1.1.3. Agenda 2063 and space

As already mentioned, space receives a considerable level of attention in Agenda 2063, such that one of the 14 flagship projects linked to the agenda is the drafting and implementation of an Africa Space Strategy. The interest in space shown in the Agenda is not for the development of an African space industry per se, but rather for the benefits that space applications bring to the implementation of the overall agenda. Space is in fact seen as a key enabler by the African Union, as "[s]pace applications are needed to achieve over 90% of the strategic objectives across the eight departments of the African Union Commission" [22].

This is similar to what UNOOSA has been advocating for since the introduction of the UN 2030 Agenda: Space applications are vital to the achievement of the UN 2030 Sustainable Development Goals – with GNSS and remote sensing

applications positively impacting almost 40% of the targets and indicators related to the SDGs [23].

Space, with space applications, technologies, related know-hows and infrastructures, therefore is highly intertwined with Agenda 2063, being both an agenda item to pursue and an enabler of the agenda, and the African Space Strategy, in this context, is comparable to the Space2030 effort by the UN Committee for the Peaceful Uses of Outer Space (UNCOPUOS) – they are both frameworks to boost development and use of space applications, acknowledging their relevance and impact on the larger development agendas in which they are considered.

### *2.1.2. The Addis Ababa Action Agenda*

The Addis Ababa Action Agenda was an outcome of the Third International Conference on Financing for Development in 2015 under the auspice of the UN Department of Economic and Social Affairs (DESA). Taking into account the 2002 Monterrey Consensus and the 2008 Doha Declaration, the Addis Ababa Action Agenda aimed to “address the challenge of financing and creating an enabling environment at all levels for sustainable development in the spirit of global partnership and solidarity.”[24] One specific area of note that pertains to the outer space community is the Agenda’s recognition of the advances made in science, technology, and innovation which “have enhanced the potential to achieve our development goals”[25]. Within the Agenda seven action items were put forth, one of which has direct relevance to the outer space community – science, technology, innovation, and capacity building. Action Item Science, Technology, Innovation, and Capacity-Building sets out to encourage knowledge transfer, international support, cooperation, and partnership, incentivizing technology creation, supporting research and design, and the establishment of the Technology Facilitation Mechanism (TFM) – just to name a few. The Agenda set up an inter-agency task team on science, technology, and innovation for the sustainable development goals (SDGs) in order to “promote coordination, coherence and cooperation within the United Nations system on science, technology and innovation related matters, enhancing synergy and efficiency, in particular to enhance capacity-building initiatives”[26]. The task team includes the private sector, the scientific community, and civil society. It is of note that the International Telecommunications Union (ITU), which has links to the outer space

community, was one of the first of the UN representatives listed in the Agenda task team.

#### *2.1.2.1. Current state of implementation*

Now four years on, the Inter-Agency Task Force on Financing for Development has created the 2019 Financing for Sustainable Development Report, which considers the Addis Ababa Action Agenda and the 2030 Agenda for Sustainable Development. This report highlights the science, technology, and innovation developments with a special note related to outer space. Under the heading of new and emerging technologies for the SDGs the report notes that

“small-scale satellites are used in communication networks and in applications that use high-resolution imagery in areas such as for monitoring land use and for urban planning. These satellites may soon become affordable for more developing countries, businesses and universities”.[27]

In parallel to the Addis Ababa Action Agenda, DESA has also created the UN System SDGs Action Database [28] which catalogues the implementation of the SDGs by the UN system. UNOOSA, ITU, and the International Civil Aviation Organization (ICAO) are listed with an overview of how they utilize space, satellites, and aviation in order to support the SDGs.

#### *2.1.2.2. The Addis Ababa Action Agenda and space*

Though not explicitly part of the Agenda, space applications such as satellites have been named as technology that could be beneficial for the SDGs in areas such as monitoring and communications. This small but powerful addition should serve as an example for other parts of the UN and Member States toward implementing space applications into more SDG relevant documentation, policies and science, technology, and innovation related initiatives as there are many facets of sustainable development that can be connected to space applications.

### *2.2. Global agendas to which Space2030 wants to contribute*

Other international mechanisms and frameworks worth mentioning are the three that the Space2030 Agenda drafters often mention. This is discussed here in order to try and derive lessons for what concerns drafting and implementation procedures to involve non-state actors in the Space2030 Agenda.

Throughout drafts of the Space2030 Agenda, as well as in the presentation of the Agenda itself, drafters often mention – quite obviously – the 2030 Agenda for Sustainable Development, the Paris Agreement, and

the Sendai Framework for Disaster Risk Reduction 2015-2030.

These three agendas have been highly regarded in the ongoing drafting processes for the Space2030 Agenda, as, in fact,

“[t]he Space2030 agenda is envisioned as a comprehensive strategy for reaffirming and strengthening the contribution of space activities and technologies to the achievement of global agendas such as the 2030 Agenda for Sustainable Development, the Paris Agreement and the Sendai Framework for Disaster Risk Reduction.” [29]

Conversely, drafting and implementation procedures envisioned for these agendas have not found the same room for consideration so far, in particular, regarding the role of non-state actors in and for the agenda.

In fact, since the Earth Summit in 1992, with the Agenda 21 [30], and 2012, with the General Assembly Resolution 66/288 - The Future we want, the UN ecosystem has pretty much institutionalized the presence and involvement of non-state actors, grouped in Major Groups and other Stakeholders (MGoS), and this has strongly influenced both the drafting process of the 2030 Agenda for Sustainable Development, and the Paris Agreement, while not being reflected in the Space2030 Agenda.

In the first case, Member States were allowed to invite experts from non-state actors and observers to take part and contribute to the Open Working Group on SDGs sessions, along the lines drafted by the UN Economic and Social Council (ECOSOC) decision 1993/215.[31]

As for the Paris Agreement, emerged from the Conference of Parties (COP) 21, (and all the UN Framework Convention on Climate Change [UNFCCC] COP prior and after the COP21), observer IGOs and NGOs, grouped along Constituencies mirroring the MGoS, have been allowed to contribute with institutionalized procedures, be it submissions to calls for information and views, constituencies-wide statements, side events and exhibitions, and monitor and report of daily negotiations during COPs and High-Level Forums [32, 33, 34]. Notably, non-observers have also been allowed to contribute via specific submissions.[35]

Finally, as per Sendai Framework recommendations, the UN General Assembly established an Open-Ended Intergovernmental Expert Working Group, encouraging

“relevant bodies and organizations of the United Nations system, as well as relevant intergovernmental

and non-governmental organizations and other stakeholders, to make contributions, as appropriate, to the work of the working group”.[36]

This has been implemented by allowing non-state actors to submit contributions both to formal sessions and during inter-sessional periods. Furthermore, a platform has been created in 2018 to allow all state and non-state stakeholders to share Voluntary Commitments regarding Disaster Risk Reduction, updates about their implementation status, challenges, achievements, and best practices, allowing the UN Office for Disaster Risk Reduction to monitor and measure the overall progress of the goals set with the Sendai Framework.[37]

Overall, what emerges from the 2030 Agenda for Sustainable Development, the Paris Agreement and the Sendai Framework is a picture of high involvement of non-state actors. If the Space2030 Agenda aims to strengthen the contribution of space to achieve these three global agendas, one could expect the Agenda to involve or interact with the same stakeholders, to follow similar procedures in this sense, to be open to discussion and feedback, and overall to ensure that the actions required to implement one agenda are compatible and in line with the implementation and achievement of the others. It is thus important to analyse what consideration stakeholders other than the UN COPUOS Member States receive in the current draft of the Space2030 Agenda.

### **3. #InvolvingEveryone?**

Throughout the Revised Zero Draft of the Space2030 Agenda and its Implementation Plan, submitted close to the end of the 62nd Session of COPUOS, one can see that non-state actors are held in high consideration by the Agenda Implementation Plan. Non-state actors and international cooperation play a vital role for the agenda, being pivotal points of the sections “Partnerships”, “Tools”, and “Resources” of the Draft. Drafters acknowledge the global reach and scope of the Agenda, specifically mentioning that

“importance is attached to global partnerships and strengthened cooperation among Member States, United Nations entities, intergovernmental and non-governmental organizations, industry and private sector entities, with the Committee [on the Peaceful Uses of Outer Space], supported by the Office [for Outer Space Affairs], as the main international platform for facilitating that cooperation”.[38]

In the following paragraph of the Zero Draft, an additional mention is also granted to research

institutions and academia [39], further expanding the scope of the Agenda.

Thus, one would expect a great level of involvement from non-state actors, but the Space2030 Agenda and the processes surrounding its drafting and implementation have been instead mostly lead by UNCOPUOS Member States, with unclear solutions as to how or when non-state actors could be involved in *global partnerships and strengthened cooperation*.

### 3.1. Potential roles for non-state actors

In fact, the Agenda still misses a better clarification regarding the expected interactions between the Agenda itself, its drafters, and non-state actors, with a particular lack of consideration for these actors' potential contribution to the drafting of the Agenda. While UNCOPUOS and its subcommittees have proven themselves as "a unique platform for international cooperation in the exploration and use of outer space for peaceful purposes" [40] – thus being considered the legitimate forum to discuss and contribute to the drafting of the Space2030 Agenda –, it could be worth questioning whether non-state actors' contributions are really welcomed by the Committee and the Space2030 Agenda Working Group. In fact, despite non-state actors being considered relevant for the implementation of the Agenda-related plan, there's no clear mechanism with which they have been provided with in order to contribute to the drafting of the Agenda. Moreover, the unfolding of the Working Group meetings in informal, closed doors sessions, on one side, and the proposal by some Member States within UNCOPUOS to limit the possibility to intervene during the Committee meeting Sessions for the observers [41], on the other, do not seem to show openness toward non-state contributors.

In the light of the diplomatic legitimacy of such conducts and given the relevance of non-state actors as highlighted in the Implementation Plan of the Space2030 Agenda, to finalize a most effective version of the Agenda, it becomes important to establish a precise relationship between the Member States part of the Space2030 Agenda Working Group, and the non-state actors, whether they are observers at UNCOPUOS or not.

Two main options, with different outcomes and levels of involvement, emerge.

#### 3.1.1. An active engagement of non-state actors...

The first option, clearly the most desirable for non-state actors but likely the most demanding for Member

States, would be to institutionalize a bottom-up consultation mechanism, to make sure that what will be the finalized version of the Space2030 Agenda is actually reflecting the current status and potentialities of things. A bottom-up approach is boasted by the drafters and minds behind the AU's Agenda 2063, so a similar approach could be considered as an achievable result for the Space2030 Agenda, if set within a realistic timeline. This approach would grant a very active and dynamic role for non-state actors, conceding an increased feasibility of implementation of the Space2030 Agenda, as the goals could be set by those considered vital to potential partnerships for the Agenda's execution. However, this would also require a very relevant effort from UNCOPUOS Member States, given the paced drafting phase already reached and the diplomatic constraints to the major involvement of observers and non-state actors in the discussions.

#### 3.1.2. ...or an active outreach to non-state actors

The second option stems from the fact that UNCOPUOS Member States are well entitled to reserve themselves the right to work on a High-Level Agenda, thus keeping non-state actors at a distance from the "drafting room". UNCOPUOS Member States could, therefore, regularly and proactively outreach to non-state actors as draft works proceed. This approach, that could be envisioned both as formal and informal top-down outreach and pre-emptive capacity building, would design more of a reactive role for non-state actors, but would grant enough room for these to adapt to the evolution and refinement of the Agenda, react to changes within the Agenda, and overall be ready to be involved when requested to. In this way, the Space2030 Agenda would entirely come from the authorship of UNCOPUOS and its Member States, but it would also keep third parties updated and encourage them in being prepared. A lack of communication until the moment of the rolling of the finalized Agenda would likely mean a lack of the necessary momentum, outside of the governmental realm, to carry forward the Agenda until 2030, and as such the proposed second option could prevent this situation.

### 3.2. Potential roles for non-space actors

Further expanding the scope of potential stakeholders involved in the fulfilment of the Space2030 Agenda, re-reading Paragraph 21 of the Revised Zero Draft (quoted above) one can see that no assertions have been made as to which specific sector

those “United Nations entities, intergovernmental and non-governmental organizations, industry and private sector entities” should operate within.

This is a key passage, as, in the Agenda, Member States commit to pursue objectives that would

“[f]acilitate and promote the integration of the space sector with other sectors including energy, public health, environment, climate change, management of resources, information and communication technology”.<sup>[42]</sup>

Although it is clear that non-state actors within the space sector are those most interested in contributing to and in being involved in the implementation of the Space2030 Agenda, it is this important to point to the potential opening to non-space actors – by UNCOPUOS Member States – to implement the Agenda.

This opening is bidirectional, with non-space sectors benefiting from a major outreach effort from space actors and, vice versa, with the space sector benefiting by learning from other sectors.

### 3.2.1. From space to non-space

The direction from the space sector to non-space ones stems directly from space downstream activities. Reaching out to space applications end users, looking for feedback on the needs of these end users to provide better services can be as obvious as neglected. Sure enough, the fact that space is becoming more accessible has provided opportunities for more cooperation and integration, with the example, among the most recent, of satellite data company Spire Global partnering with insurance analytics company Concirrus.<sup>[43]</sup>

Nevertheless, making sure that discussions concerning the space sector do not remain confined within the usual conferences and exhibition centres, it is important to promote major engagement of space experts in non-space discussions up from governance fora and agencies down to everyday operations for small and medium businesses. If the space community steps outside of its boundaries to present space as an infrastructure for downstream needs, and if it makes clear for end users how to benefit and exploit such infrastructure, non-space sectors will likely be interested in being engaged in the Space2030 Agenda.

### 3.2.2. Opening up to non-space expertise and making way for new actors

The opposite direction, from non-space to space, is potentially even more relevant for the space sector.

The fact that space has become a little more mainstream every day in the last fifteen years has certainly helped more non-space actors to consider potential involvement in the sector, be this for commercial spin-in or spinoffs, for the pursue of visionary goals, or just to enjoy the view of cherry-red electric cars launched beyond Mars’ orbit. This renewed interest from private actors in a sector where private actors have always had high entry barriers has enabled leaner ways to do space activities, introduced new business models, dusted old ideas with new, allowed for cheaper technologies and overall attracted capital (human included) that was not thought of by many, but surely dreamt by few, at least as far back as the launch of the Ansari XPrize.

What is very relevant to the direction from non-space to space is not that space has become mainstream *per se*, rather that space has become similar to other down-to-earth sectors – with the great limitations of the case. And for this very reason, a niche such as the space community can only benefit from trying to bring in expertise, governance practices, and overall ideas from other well-established sectors that have already learnt to deal with what the space sector is starting to deal with right now.

This is already happening, and an example of this is the rising interest toward start-ups, private investments and venture capital in the sector. This was something mostly unheard-of before the 2010s in the space sector, and it is a result of space becoming more mainstream as specific technologies became more accessible. Looking at numbers: more than two-thirds of the investments in space start-ups since 2000 have been just in the last four years <sup>[44]</sup>, and the number of investors interested in the sector has risen steadily, with 187 investors in 2018 <sup>[45]</sup>, a +5.6% compared 2017<sup>[46]</sup>, and +36.7% compared to 2016 <sup>[47]</sup>. Even just the availability of this data shows that the sector readily tried to learn from “outsiders” that were usually focused on other high-technology, high-risk sectors, introducing new expertise, new lingo and new approaches as more investors from non-space became more interested in space. Learning from outsiders on this specific example has brought visible impact: we now have major involvement on the topic at conferences, the rise of dedicated investment funds, public programmes aiming to grow more VC-favourable ecosystems for space, and a rising number of private start-ups sprouting in a sector historically funded quasi-exclusively by taxpayers’ money and dominated by large aerospace and defence contractors.

### 3.3. UNOOSA as a broker

In this context, the Space2030 Agenda needs a serious broker between space and non-space, in order to achieve cross-collaboration and bring in non-state and non-space actors to contribute to the implementation of the agenda. Such a *bridge* between space and non-space could be through UNOOSA. In fact, UNOOSA has put forth many events which highlight the use of space toward the SDGs and sustainability through international collaboration and communication, and its most recent efforts go in the right direction to keep non-space and non-state actors engaged. UNOOSA events, namely the High-Level Fora (HLF), the UNOOSA Symposia and Workshops, as well as the recent 2018 UNISPACE+50, have all built upon one another and created synergies that move toward the Space2030 Agenda. In November of 2019 UNOOSA will host with Austria the first World Space Forum which will also continue the discussion from these mentioned events.

The High-Level Forum series which ran from 2016 to 2018, with a new iteration being the 1st World Space Forum in 2019, was a

“unique opportunity for the collective space community to address the cross-sectoral impact of integrating economic, environmental, social, policy and regulatory dimensions of space in pursuance of global sustainable development”.[48]

With a title focus on “Space as a Driver for Socioeconomic Sustainable Development” [49], the series “intended to facilitate constructive dialogue between policy-makers and key stakeholders from different parts of the government, civil society, business and industry, among others to address broader perspective of space economy, space society, space accessibility and space diplomacy” [50]. Now the first World Space Forum aims to continue the work of the HLF as well as UNISPACE+50 and the Space2030 Agenda with regard toward the SDGs and the international community.

UNISPACE+50, an international event held June 2018, celebrated the fiftieth anniversary of UNISPACE (the United Nations Conference on the Exploration and Peaceful Uses of Outer Space) in Vienna, Austria with

“all Member States of the United Nations and experts from the broader space community, including United Nations entities, international, intergovernmental and non-governmental organizations, the private sector and industry, the entrepreneurial, business and academic community,

researchers involved in the use of space activities, and civil society leaders”.[51]

UNISPACE+50 brought to attention the four pillars including space economy, space society, space accessibility, and space diplomacy with an aim toward realizing the importance of space applications toward the SDGs and sustainability as well as a driver for the Space 2030 Agenda. This event encouraged various stakeholders, and not just Member States, to come together to remark on space for sustainable development. UNISPACE+50 again encouraged non-Member State involvement including space and non-space actors.

The UN/Austria Symposium series “is one of the long-standing activities that are performed under the Programme of Space Applications of the United Nations Office for Outer Space Affairs. It has been organized in Graz since 1994” [52] with 2019 marking the 25th anniversary of the series. This symposium series highlights sustainability, the SDGs, and space applications.

“The main objective of this symposium is to foster dialogue between the diplomatic community and those communities using space, exploring ways to utilize space related activities and services as a tool for diplomacy, and cooperation, stimulating access to space related services that are available and accessible by different countries”.[53]

What makes this series critical is that it brings together State and non-state actors as well as space and non-space actors, as well as the potential replicability of such format throughout the world. The audience comes from UN regional offices, academia, non-governmental organizations, and more. This dynamic group tackles issues regarding collaboration, capacity-building, and end user needs – just to name a few. It is critical that outcomes from these symposia should be built upon year after year as well as be reported to UNCOUOS and its Space2030 Agenda working group, as all of these insights could provide incredible tools and resources for the Space2030 Agenda and its implementation in the future.

Overall UNOOSA works hard to create events that are about international collaboration from all stakeholders, not just Member States, which is why it’s a great broker for more involvement toward the Space2030 Agenda and its future.

Additionally, UNOOSA has a distinct role in that it can also support and broker for capacity building and “technical assistance” which would be critical for end-users, non-State actors, and Member States collectively. Overall this means that for successful

collaboration and communication between State and non-State actors there is always going to be a role for UNOOSA with regards to the Space2030 Agenda.

#### 4. Recommendations

Based on the current status of the Space2030 Agenda and considering the above-mentioned concepts and examples, the following recommendations for the building, implementation, and reviewing of the Space2030 Agenda will be set forth below. As an overview to the recommendations it is important to note regarding the Revised Zero Draft of the Space2030 Agenda under Overarching Objective 4 there are 2 specific points, 4.3 and 4.7, which would be impossible to achieve without involving non-State actors. These points are as such:

“4.3. Strengthen capacity-building and technical assistance, including that provided by the Office for Outer Space Affairs, for Member States in the field of international space law, policy and space-related institutional capacity-building; [...]

4.7. Promote international cooperation and exchanges on regulating commercial and private outer space activities, based on international law, with a view to enhancing the safety and long-term sustainability of outer space activities while facilitating the development of the space industry;” [54]

Additionally, under Section A Partnerships points 21 and 22, there is not a feasible way forward without involvement from non-State actors. These points are as such:

“21. In fulfilling the “Space2030” Agenda and its implementation plan, importance is attached to global partnerships and strengthened cooperation among Member States, United Nations entities, intergovernmental and non-governmental organizations, industry and private sector entities, with the Committee, supported by the Office, as the main international platform for facilitating that cooperation.

22. The Office for Outer Space Affairs should be appropriately positioned so that it may serve as a conduit for promoting and facilitating the use of space-based solutions in the implementation of the “Space2030” Agenda. It should continue, within its mandate, to forge partnerships, including with research institutions, academia, industry and the private sector, to provide broader opportunities to access space for purposes of science, innovation, research and development, education and capacity-building, and should implement activities to promote the use of space-based applications and technologies

to support Member States in meeting the objectives of the global development agendas.”[55]

Therefore, it is critical that non-State actors, and by extension non-space actors, be at the very least *informed* of the Space2030 Agenda progress and way forward with a better option for them to actually be *involved* in the process – as will be described in more detail below.

##### 4.1. Building the Space2030 Agenda

Regarding the path toward a finalized draft of the Space2030 Agenda, as discussed in 3.1, Member States part of the UNCOPUOS Space2030 Agenda Working Group are left with the two discussed options of either 1) actively involve non-state actors in the drafting procedures of the Space2030 Agenda, or 2) proactively outreaching and updating them so that non-governmental entities and the private sector are ready and aligned with the oncoming Space2030 Agenda implementation plans.

The first option, a proactive involvement of non-state actors, can be implemented following the example of UN FCCC, Sendai Framework, or the African Union’s Agenda 2063 by, for instance, establishing consultation mechanisms and online platforms, being open to submission and contributions, prior or during meeting sessions, or giving the opportunity to circulate statements during working group sessions.

The second option, namely a more reactive role for non-state actors, can be instead supported by actively outreaching to non-state actors to update them on drafting and negotiations developments, supporting the circulation of timely reports and summaries of the Space2030 Working Group meeting sessions, or by supporting the presence of non-state actors, with role of observers and reporters, at every meeting session. The UNFCCC COPs are a great example in this last point, as they allow for observers to draft daily journals of negotiations.

Overall, given the on-going timeline of the drafting of the Agenda, and given the efforts that the first option would require to Member States, it would be strongly encouraged to follow the second option to still enable non-state actors to play a reactive role, rather than no role, in the potential final year of drafting of the Space2030 Agenda. As already discussed, lack of outward communication during the Agenda drafting phases might signify a lack of momentum among non-state stakeholders after the Agenda is released, thus crippling the Agenda.

Alongside the second option, the Space2030 Agenda Working Group should also consider – to foster non-state actors’ engagement in the drafting process – the creation of parallel texts such as Agenda Annexes and Addenda. This could be open to submissions without slowing the drafting process of the working group. An ideal application of such solution would be a more comprehensive list of Tools of implementation submitted by non-state actors, and to be updated even after having reached consensus on a final draft of the Space2030 Agenda.

#### *4.2. Realising and tracking the Space2030 Agenda*

Alongside the drafting of the Agenda, Member States and the Space2030 Agenda Working Group ought not forget the fundamental role that non-state actors will be asked to play in implementing the Agenda. No exhaustive recommendation can be provided in this regard, but a handful of examples that have been proven feasible with frameworks such as those analysed can and should be taken in consideration.

Firstly, and as mentioned in the Section 4.1., non-state actors can and should be invited to contribute in building up a more extensive list of tools among those indicated by the section “Tools” of the Zero Draft. This does not necessarily require editing or impacting the agenda and can provide a great overview of all the ways for Member States and stakeholders to pursue the Agenda.

Secondly, as done by the African Union’s Agenda 2063, the first year of implementation of the Space2030 Agenda could be focused on the identification, ideally with consultations, of feasible flagship projects aligned with the agenda’s goals. This would provide concrete guidance both in terms of governance and actions required – a guiding light for all the stakeholders interested in supporting the Agenda but without enough resources to carry commitments on their own.

Thirdly, a continuous call for voluntary submissions of initiatives or updates on given commitments – as it has been implemented within the Sendai Framework – could help non-state actors in showcasing their work. This would help these actors in giving the example to other stakeholders, while helping them and others in finding potential partners, synergies and leverages across projects and actors worldwide. This would also support decision makers in tracking the progresses made within the implementation of the Space2030 Agenda.

Fourth, a physical, hands-on series of activities could be carried forward to make Member States and non-state actors meet and discuss implementation strategies, issues and solutions. It is encouraged that the UN/Member State event format, together with the hopefully recurrent World Space Forum, could provide opportunities to assess locally and globally the progresses in the implementation of the Agenda, fostering exchange views and perspectives thanks to a strong involvement of non-state actors across the whole spectrum of potential sectors. It is furthermore encouraged to push for a smarter utilization of these events, making sure that every event builds over and expand on outcomes of previous ones, thus facilitating the accumulation and diffusion of knowledge on issues and solutions faced and found by stakeholders while implementing the Space2030 Agenda.

#### *4.3. Reviewing the Space2030 Agenda*

A final set of recommendations pertains the wider review of the Space2030 Agenda. In fact, non-state actors might not have been involved in the drafting of the Agenda, but this does not mean they should be consequently excluded from its monitoring and review phases until 2030.

A recommendation in this direction would be for UNCOPUOS Member States to involve non-state actors in the monitoring and review process of the Agenda’s activities and impact, throughout the full period of implementation of the Agenda. An Advisory Group, as the one established by the African Union for its Agenda 2063, or leveraging a network of state and non-state actors such as the UN Sustainable Development Solutions Network [56] could fit this. This would not only offer a great responsibility to non-state actors, but would also result in less governmental resources to be dedicated to the process.

Furthermore, reminding that “[i]n 2025, the Committee should carry out a midterm review of progress made in implementing the “Space2030” [57], it is encouraged to UNCOPUOS Member States to explore ways for non-state actors to actively contribute to such midterm review, as well as ways for non-state actors to submit contributions and addenda to the Agenda in occasion of the 2025 midterm review, in order to expand and/or adapt the Agenda’s scope in its last five years of implementation, ensuring that from today to 2030 no opportunity is missed.

### **5. Conclusion**

The Space2030 Agenda has the ability to be a powerful addition to the United Nations family of

agendas targeting sustainability, cooperation and the SDGs. Therefore, it is critical that international cooperation amongst all types of stakeholders is considered so that everyone can follow and support the implementation of the agenda. The space sector has become a group with a plethora of varied people, organizations, and companies so now is the time to consider their involvement and commitment to sustainability in space and through space application. As this paper has outlined, this form of international cooperation between varied stakeholders is already happening via other structured Agendas and platforms, such as the African Union Agenda or the Addis Ababa Action Agenda, here overviewed as examples. Rather than focus and invest resources to formulate or establish from scratch mechanisms that are already in place elsewhere, the space sector should follow these existing examples and find commonality with them, in particular as the Space2030 Agenda would fall within the same United Nations' umbrella of initiatives as such examples. In the end, the Space2030 Agenda is just one of many steppingstones toward a more sustainable future. Space is something that should be accessible to all through peaceful purposes. It is a huge resource for Earth sustainability, and that is why it is also critical to include stakeholders outside of the space sector to foster cross-sectoral influences, can coordinating with them, supporting them in and learning from space applications for the SDGs and sustainability while benefiting from sharing best practices already in use in more established sectors. As was shown above, some of these agendas are already including space in their verbiage and understanding of usability, therefore the space sector could too implement a strategy that includes consideration for other sectors cross-compatibility and cooperation. The space sector has a great wealth of knowledge, technology, and science that can contribute to the SDGs and with a powerful and well-prepared Space2030 Agenda there will be room to engage with actors, communicate, build capacities, and cooperate on an international and well-rounded standing through planning, reviewing, and implementation.

As the Space2030 Agenda gets closer to its finalization and work is done to integrate it in a wider mechanism of cooperation, this is the ideal time to bridge the gaps and create synergies for the future.

## 6. References

[1] Balogh, W., UNISPACE+50 and the “Space2030” Agenda, World Meteorological Organization 14th Session of Consultative Meetings on High-Level

Policy on Satellite Matters, Geneva, Switzerland, 23 June 2018.

[2] Committee on the Peaceful Uses of Outer Space, Proposal by the Bureau of the Working Group on the “Space2030” Agenda on a draft structure of a “Space2030” Agenda, A/AC.105/C.1/L.372, 14 Dec. 2018, para. 14.

[3] Ibid., para. 15.

[4] Committee on the Peaceful Uses of Outer Space, Revisited Zero draft of the “Space2030” Agenda and implementation plan, A/AC.105/2019/CRP.15, 19 June 2019.

[5] African Union Commission, Agenda 2063: The Africa We Want, April 2015.

[6] Ibid., p. 2.

[7] African Union, Flagship Projects of Agenda 2063, n.d., <https://au.int/en/agenda2063/flagship-projects>, (accessed 7 Sept. 2019)

[8] Ibid.

[9] Ibid.

[10] African Union Commission, First Ten-Year Implementation Plan 2014-2023, Sept. 2015, pp. 12, 18-20.

[11] African Union Commission, African Space Strategy, HRST/STC-EST/Exp./16 (II), Oct. 2017.

[12] African Union, Agreement on Establishing the African Continental Free Trade Area, 21 March 2018.

[13] Miller, J., Africa in the news: African Continental Free Trade Agreement updates, Algeria's president resigns, and Vodacom Tanzania executives face criminal charges, 6 Apr. 2015,

<https://www.brookings.edu/blog/africa-in-focus/2019/04/06/africa-in-the-news-african-continental-free-trade-agreement-updates-algerias-president-resigns-and-vodacom-tanzania-executives-face-criminal-charges/>, (accessed 7 Sept. 2019).

[14] African Union, List of countries which have signed, ratified/acceded to the Agreement Establishing the African Continental Free Trade Area, 16 July 2019, <https://au.int/sites/default/files/treaties/36437-sl-AGREEMENT%20ESTABLISHING%20THE%20AFRICAN%20CONTINENTAL%20FREE%20TRADE%20AREA.pdf>, (accessed 7 Sept. 2019).

[15] African Union, Protocol to the Treaty Establishing the African Economic Community Relating to Free Movement of Persons, Right of Residence and Right of Establishment, 29 Jan. 2018.

[16] African Union Commission, First Ten-Year Implementation Plan 2014-2023, Sept. 2015, p. 11.

- [17] African Union, Agenda 2063 – SDGs, n.d., <https://au.int/en/ea/statistics/a2063sdgs>, (accessed 7 Sept. 2019).
- [18] African Union Commission, An overview of Agenda 2063: First Ten Year Implementation Plan, 2015.
- [19] African Union Commission, First Ten-Year Implementation Plan 2014-2023, Sept. 2015, p. 123.
- [20] Ibid., p. 31.
- [21] Ibid., p. 29-31.
- [22] African Union Commission, African Space Strategy, HRST/STC-EST/Exp./16 (II), Oct. 2017, p. 5.
- [23] United Nations Office for Outer Space Affairs, European Global Navigation Satellite System and Copernicus: Supporting the Sustainable Development Goals, United Nations, Vienna, 2018.
- [24] United Nations, Addis Ababa Action Agenda of the Third International Conference on Financing for Development, Addis Ababa, Ethiopia, 13-16 July 2015, p. 1.
- [25] Ibid., p. 2.
- [26] Ibid., p. 55.
- [27] Inter-Agency Task Force on Financing for Development, Financing for Sustainable Development Report 2019, United Nations, New York, 2019, p. 152
- [28] United Nations Department of Economic and Social Affairs, UN System SDGs Action Database, n.d., <https://sustainabledevelopment.un.org/content/unsurvey/index.html>, (accessed 7 Sept. 2019).
- [29] United Nations Office for Outer Space Affairs, World Space Forum 2019, n.d., <http://www.unoosa.org/oosa/en/ourwork/hlf/2019/world-space-forum-2019.html>, (accessed 7 Sept. 2019).
- [30] United Nations Conference on Environment and Development, Agenda 21, Rio de Janeiro, Brazil, 3-14 June 1992.
- [31] General Assembly Open Working Group on Sustainable Development Goals, Methods of Work, n.d., [https://sustainabledevelopment.un.org/content/documents/1692OWG\\_methods\\_work\\_adopted\\_1403.pdf](https://sustainabledevelopment.un.org/content/documents/1692OWG_methods_work_adopted_1403.pdf), (accessed 7 Sept. 2019).
- [32] United Nations Framework Convention on Climate Change, Admitted NGOs, n.d., <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/admitted-ngos#eq-2>, (accessed 7 Sept. 2019).
- [33] United Nations Framework Convention on Climate Change, COP24 Observer Guide, n.d., [https://unfccc.int/sites/default/files/resource/COP24\\_observer\\_guide.pdf](https://unfccc.int/sites/default/files/resource/COP24_observer_guide.pdf), (accessed 7 Sept. 2019).
- [34] United Nations Framework Convention on Climate Change, Participation and engagement in the Bonn Climate Change Conference - June 2019, n.d., <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/participation-and-engagement-in-the-bonn-climate-change-conference-june-2019#eq-3>, (accessed 7 Sept. 2019).
- [35] United Nations Framework Convention on Climate Change, How to engage without observer status, n.d., <https://unfccc.int/process-and-meetings/parties-non-party-stakeholders/non-party-stakeholders/how-to-engage-without-observer-status>, (accessed 7 Sept. 2019).
- [36] United Nations General Assembly Resolution 69/284, Establishment of an open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction, A/RES/69/284, June 3 2015.
- [37] United Nations Office for Disaster Risk Reduction, Sendai Framework Voluntary Commitments – Guideline for Submission, Dec. 2018.
- [38] Committee on the Peaceful Uses of Outer Space, Revisited Zero draft of the “Space2030” Agenda and implementation plan, A/AC.105/2019/CRP.15, 19 June 2019, para. 21.
- [39] Ibid., para. 22.
- [40] Ibid., paras. 10, 13, 4.1.
- [41] Notes from Author’s attendance at the 62<sup>nd</sup> Session of the UNCOPUOS, Vienna, June 12-21 2019.
- [42] Committee on the Peaceful Uses of Outer Space, Revisited Zero draft of the “Space2030” Agenda and implementation plan, A/AC.105/2019/CRP.15, 19 June 2019, para. 1.2.
- [43] Wener, D., Spire Global announces partnership with insurance analytics firm Concirrus, 13 Aug. 2019, <https://spacenews.com/spire-global-announces-partnership-with-insurance-analytics-firm-concirrus/>, (accessed 7 Sept. 2019).
- [44] Bryce Space and Technology, Start-up Space 2019, 2019, p. II.
- [45] Ibid., p. III.
- [46] Ibid.
- [47] Bryce Space and Technology, Start-up Space 2018, 2018, page III.
- [48] United Nations Office of Outer Space Affairs, High Level Forum, n.d., <http://www.unoosa.org/oosa/en/ourwork/hlf/hlf.html>, (accessed 7 Sept. 2019).

[49] Ibid.

[50] Ibid.

[51] United Nations Office of Outer Space Affairs, Unispace+50, n.d.,

<http://www.unoosa.org/oosa/en/ourwork/unispaceplus50/index.html>, (accessed 7 Sept. 2019).

[52] United Nations Office of Outer Space Affairs, United Nations/Austria Symposium: "Space: a Tool for Accessibility, Diplomacy and Cooperation", n.d.,

<http://www.unoosa.org/oosa/en/ourwork/psa/schedule/2019/2019-un-austria-symposium.html>, (accessed 7 Sept. 2019).

[53] Ibid.

[54] Committee on the Peaceful Uses of Outer Space, Revisited Zero draft of the "Space2030" Agenda and implementation plan, A/AC.105/2019/CRP.15, 19 June 2019, para. 4.3,4.7.

[55] Ibid., para. 21-22.

[56] Sustainable Development Solutions Network, n.d., <http://unsdsn.org/>, (accessed 7 Sept. 2019).

[57] Committee on the Peaceful Uses of Outer Space, Revisited Zero draft of the "Space2030" Agenda and implementation plan, A/AC.105/2019/CRP.15, 19 June 2019, para. 30.