UN Food Systems Summit+2 Stocktaking Moment

SESSION REPORT

All session recordings will be available after the conclusion of the session. Please send the report of your session to Ms. Yota Nicolarea (Panayota.Nicolarea@fao.org) and Mr. Thembani Malapela (Thembani.Malapela@fao.org) by Tuesday 1st August COB

Type (click one): ☐ HLS/PLENARY – ☐ LEADERSHIP DIALOGUE – ☒ SPECIAL EVENT

Aerospace technology for food systems

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List of Speakers, in all segments, and Key Messages

NAME AND TITLE OF SPEAKER	SEGMENT (opening, panel, closing, etc.)	KEY MESSAGES OR/AND RESPONSES TO QUESTIONS
H.E. Mr. Stefano Gatti Special Envoy for Food Security, Italy	Moderator	Mr. Gatti opened the session by introducing the agenda and the speakers.
1. H.E. Mr. Abdoulkader Kamil Mohamed Prime Minister of Djibouti	Keynote speaker	The chronic famines that afflict the planet, caused by climate change and pandemics, are a source of conflict and migration; it is therefore necessary to ensure food security by prevention and better management of water and land for the community. Djibouti, in the Horn of Africa, has a rugged terrain where access does not facilitate the retrieval of information from the meteorological stations installed in the country: as a remedy, Djibouti opted for data collection by satellites. Nowadays, Aerospace technologies turns out to be the most promising for sustainable management of resources because they are involved directly or indirectly on the **5 areas of the Action Plan** proposed by Secretary-General Guterres in 2020. As the Prime Minister stated, Djibouti is committed to the development of **scientific research against climate**

		change for food security: in November 2023, the first nanosatellite will be launched, making it possible to obtain basic images and monitor weather stations. A second one will be launched in 2024. The country also set up a **Climate Observatory** two years ago, in which several countries in the region participate in order to collect scientific climate data and redistribute it to the whole region. The ultimate goal is to fill the gaps and have **a scientific platform open to the region and to the international community** to better guide mitigation and adaptation policies. Djibouti has also launched a partnership activity through "Le réseau de recherche international (IRN) "Recherche, expertise scientifique et savoirs pour la gestion durable des terres et des territoires de la Grande muraille verte - RESET GMV" which runs **from Dakar to Djibouti**, and which will serve to share scientific information and adopt adequate and lasting responses.
2 H.E. Ms. Amina Mohammed UN Deputy Secretary-General	**Keynote speaker**	Aerospace technologies are an **opportunity to accelerate the achievement of the SDGs** and constitute a real change for the 2030 Agenda. In the challenges of the global context (conflicts, pandemics, climate crisis) the need for new tools is significant, particularly in **digital agriculture**. If the potential of aerospace technologies can be harnessed, they could become among the most significant technologies for agriculture and automatically lead the way towards more sustainable and resilient agri-food systems, catalyzing rural transformation, economic development, environmental protection and health for the most vulnerable persons (women, children and marginalized people). By an efficient and **targeted use of the huge capabilities of satellites**, food production can be optimized. Space technologies are already increasing the productivity and efficiency of farms and can help farmers increase yields by more than 10%; they also make it possible to reduce production costs by up to 20% (in fertilizers, pesticides and fuels), improving soil quality and contributing to the best use of our natural resources. The transformative capabilities of aerospace technologies can accelerate the transformation of agri-food systems, by: • Strengthening the supply chain

		• Maximizing the use of resources • Obtaining real-time information about irrigation and crop management • Carrying out market analyses to calculate water consumption • Developing “early warning” systems • Identifying the climate characteristics and monitoring crops. The food technologies integration into our food system transforms it, changing the approach to sustainable development. By programming our digital technology and the access to it, sustainable development is generated, and the SDGs are the key to respond to the urgent issues of our planet.
3. H.E. Ms. Josefa Leonel Correia Sacko Commissioner for Agriculture, Rural Development, Blue Economy and Sustainable Environment, African Union Commission	**Keynote speaker**	Aerospace technologies are revolutionizing the countries that have invested in it, by reducing the need for fertilizers, increasing crop yields and even in agriculture in numerous ways, by: • Weather forecast • Crop monitoring • Crop yield estimation • Disaster response Obviously, in Africa the use of this technology is very limited, which is why the **African Union's Agenda 2063** is pursuing its implementation through the African Space Agency. In the **risk management** field, thanks to the financial and technical support given by ITALY (2021/22) a situation room was established at the African Union Headquarters "the Africa Multi-hazard Early Warning and Early Action System (AMHEWAS) Situation Room for Disaster Risk Reduction", aimed at reducing losses following disasters, by the use of an "early warning" information system. The AU's next goal is to establish two "regional situation rooms": so far one has been established in Kenya and the other one in Nigeria; there are plans to create three more situation rooms (in Mozambique, Cameroon and the third one in a place to be defined in North Africa). African countries are now moving towards aerospace infrastructure and information systems in order to boost productivity, safeguard flora and fauna, and fight

		poaching but they need to be supported in the implementation of aerospace technologies.
4. Mr. Edmondo Cirielli Deputy Minister of Foreign Affairs and International Cooperation, Italy	Keynote speaker	The use of space technologies for agricultural purposes makes it possible to produce more with the use of fewer resources, respecting the environment, according to the sustainable development and the 2030 Agenda, and mitigating the impact of climate change. **The space sector is an essential tool to ensure global food security**. Italy is among the most advanced countries in the development and use of new space technologies, aimed at promoting sustainable agriculture: an essential role is played by Italian companies that are excellence in this sector and particularly performing. This Italian "know-how" has developed over the years and the Italian government will try to make it available for the whole world in agri-food development. Satellites allow constant monitoring over large areas on a continuous basis and satellite images therefore work to create a historical memory to evaluate the production trend over the years. Geo-observation, remote sensing, new forms of calculation and artificial intelligence make it possible to create increasingly targeted analyses, which are essential for reducing the risks generated by climate change and developing early warning systems, in order to increase resilience and improve **the digital rural transformation**. Thanks to satellite digital technologies and their resulting data, farmers have new tools to make increasingly informed choices, controlling every agricultural phase from sowing to harvesting, and to promote **precision agriculture** that is essential for saving resources and polluting less (reduction of pesticides and water consumption). The obvious consequences are greater earnings and competitiveness, thanks to the reduction of management costs and the overall increase in agricultural production. **The use of partnership must be the way to tackle hunger, poverty and the impact of climate change**.
5. Mr. Máximo Torero Cullen Chief Economist, FAO	Technical presentation	About digitalization all around the world there's a huge difference between countries: in Africa only 33% of persons have access to internet. Keys to Digital Transformation are: *Capacity development/Content/Context/Simple/Sustainable*

		Barriers: *electricity/literacy/affordability/local content/network coverage* It is necessary to use technologies not only to help large farms but also smaller owners, because success will be reached **when the benefits are inclusive**. No one should be left behind on the path of transformation.
6. Mr. Teodoro Valente President, Italian Space Agency	**Speaker to the panel Public-Private Partnerships in Space Technologies for Agrifood Systems Transformation**	Space technologies provide numerous tools to transform and manage the agri-food system. • Space for food security: **data interpretation and integration** are a key aspect of this transformation. Farmers and stakeholders need an intuitive platform that can process and translate satellite data into actionable inputs. • **Technical skills and training** are essential to use space technologies effectively. • **Public-private partnerships** in aerospace technologies play a crucial role: actors with different goals, who possess complementary resources and through a co-financing approach, generate a more cost-effective outcome. ESA has set up multiple partnership projects in the field of space telecommunications, together with European industries. In the International Space Station as well, private companies offer commercial services (e.g. for the management of laboratories/experiments). • Further examples are the projects developed by the European Commission and the one by ASI titled "Space Factory 4.0" (with industrial participation). Several opportunities could be explored in the public-private partnership for food security: to encourage "space" and "non-space" actors to engage in dialogue and facilitate this process, ASI in collaboration with FAO, could organize a promotional networking event to share and explore information and practices, aimed at sharing a co-funded programme.
7. Ms. Simonetta Cheli Director of Earth Observation Programmes, European Space Agency (ESA)	**Speaker to the panel**	Space technologies have a relevant role in supporting the food security system, food production and market transparency. **"Esa's WorldCereal product"** with FAO: seasonally updated crop information to help monitoring production across the world.

		In the field of food security, ESA works with IFAD, FAO, etc. in order to: a) Provide statistics on agricultural production. b) Make estimations in the geopolitical field, by images of crops, on the impact of the war in the Ukrainian territory using data from Sentinel-1 and Copernicus-2. c) Monitor sustainable resource management, such as for example groundwater in Tunisia. A third "Sentinel" is under development and its data will be open to the international community.
8. Mr. Luigi Pasquali CEO Telespazio	Speaker to the panel	Innovative aerospace technologies are crucial to effectively respond to the challenge of food security, turning images into actionable data. Satellite data on crops is used: • In crop monitoring, in order to mitigate production risks, promote sustainable use of resources and reduce the waste of water, providing information on the availability of resources, the efficiency of irrigation and the health of the soil, in the so called "precision agriculture". In the field of "Climate risk assessment", in order to analyze vulnerable regions and predict the impact of climate change.
9. Mr. Massimo Comparini CEO Thales Alenia	Speaker to the panel	The opportunity to observe the earth from space by innovative tools is the way to create a **sustainable planet**. New technologies and the era of satellites allow the protection of the planet and us to adapt our techniques towards a digital and green transition.
Ms. Lizett Marie Guzman Suarez Secretary of Food and Nutrition Security of Guatemala	Intervention from the floor	Guatemala has a vision of a sustainable food system and is aware that space technologies are important: for this reason, a strategic information center has been set up to generate reports and indicate early warnings as the country is highly vulnerable to disasters.