

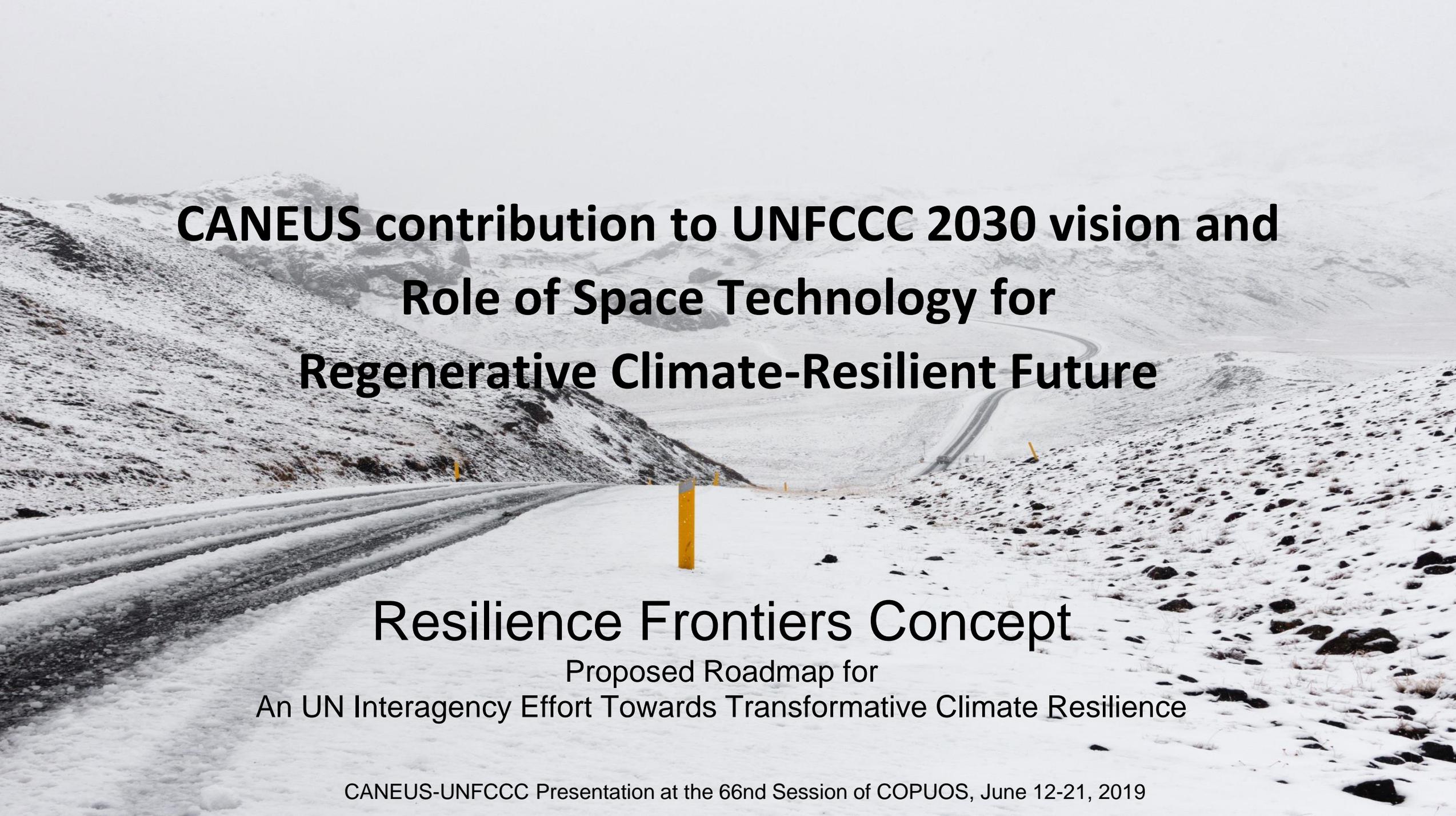
Presentation to COPUOS



**CANEUS contribution to UNFCCC 2030 visions and
Role of Space Technology for Regenerative Climate-Resilient Future**



VIENNA | June 19th, 2019

A wide-angle photograph of a snowy mountain landscape. A winding road, partially covered in snow and ice, leads from the foreground into the distance. Several yellow vertical markers are placed along the road. The background shows rugged, snow-covered mountain peaks under a bright, overcast sky.

CANEUS contribution to UNFCCC 2030 vision and Role of Space Technology for Regenerative Climate-Resilient Future

Resilience Frontiers Concept

Proposed Roadmap for
An UN Interagency Effort Towards Transformative Climate Resilience

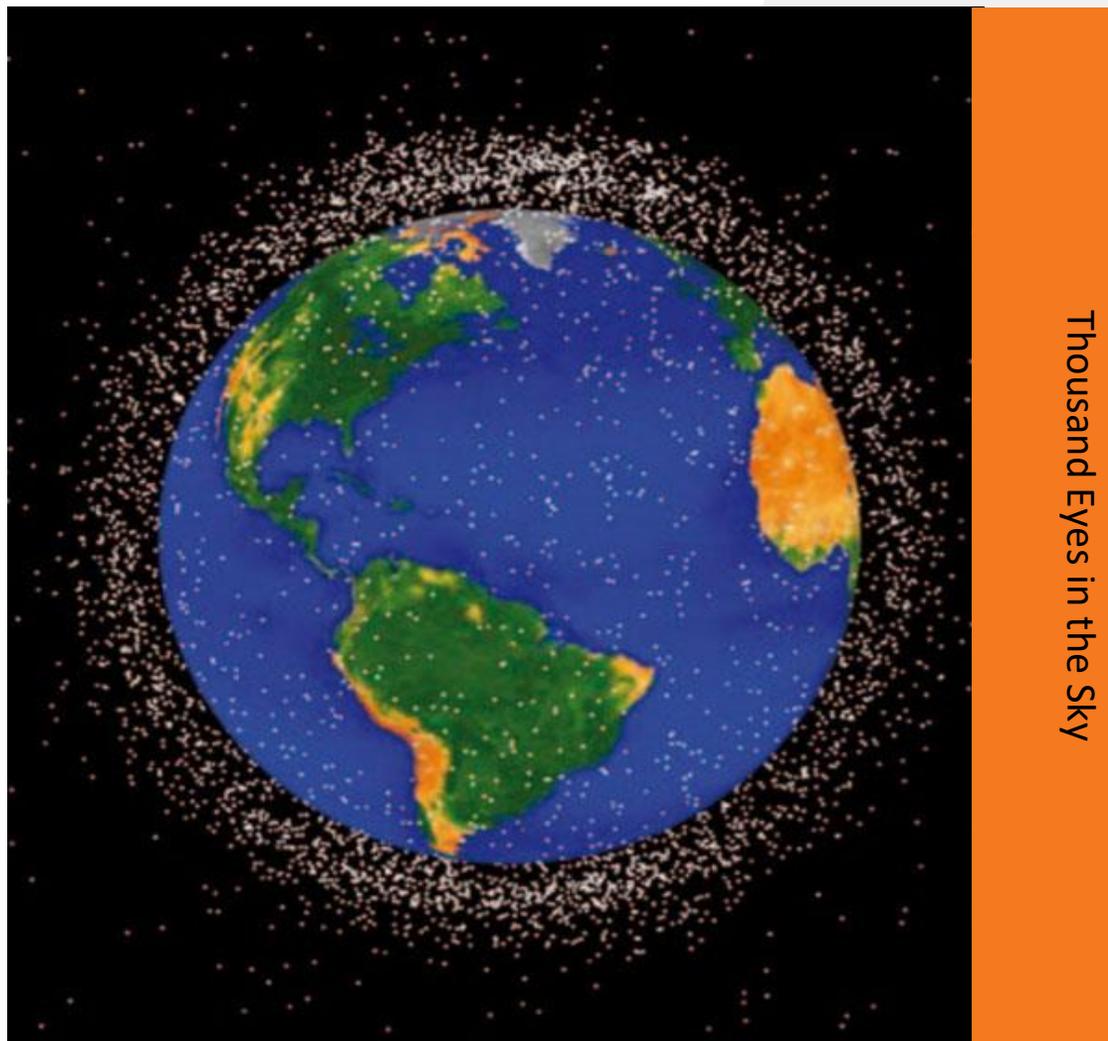
Presentation Outline

- Why CANEUS: Proven “Concept to Systems” Model
- What is the UNFCCC Resilience Frontiers Concept: CANEUS Contribution
- What is the UNFCCC Resilience Frontiers Outcome: Important Role of Space Technology
- How COPUOS Members can contribute: Proposed Roadmapping for transformative climate resilience



and United Nations

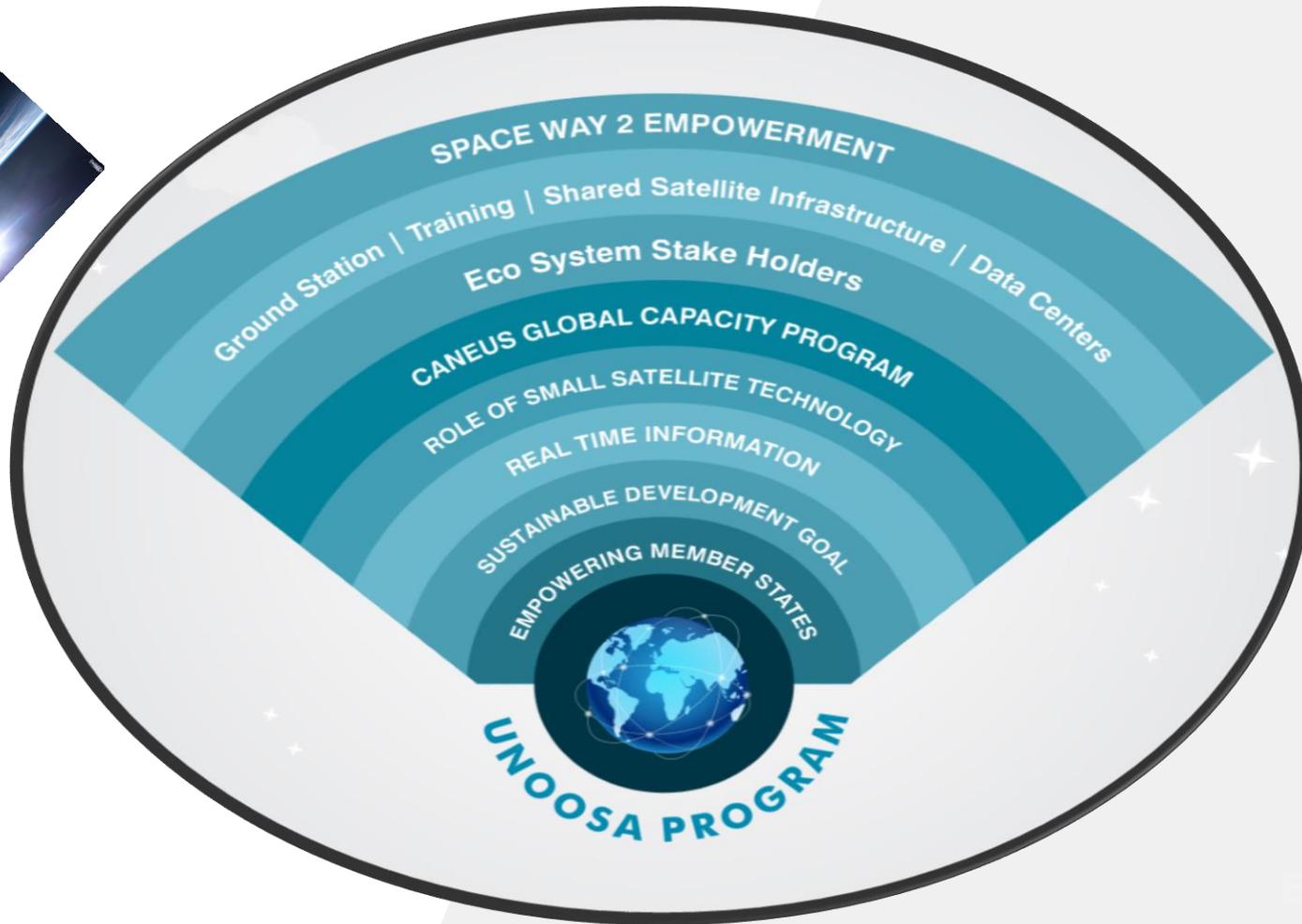
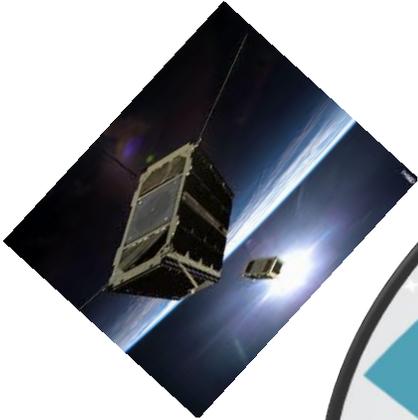
CANEUS VISION



Thousand Eyes in the Sky

CANEUS VISION ALIGING WITH UN AGENDA

Emerging Technologies SPACEWAY 2 EMPOWERMENT

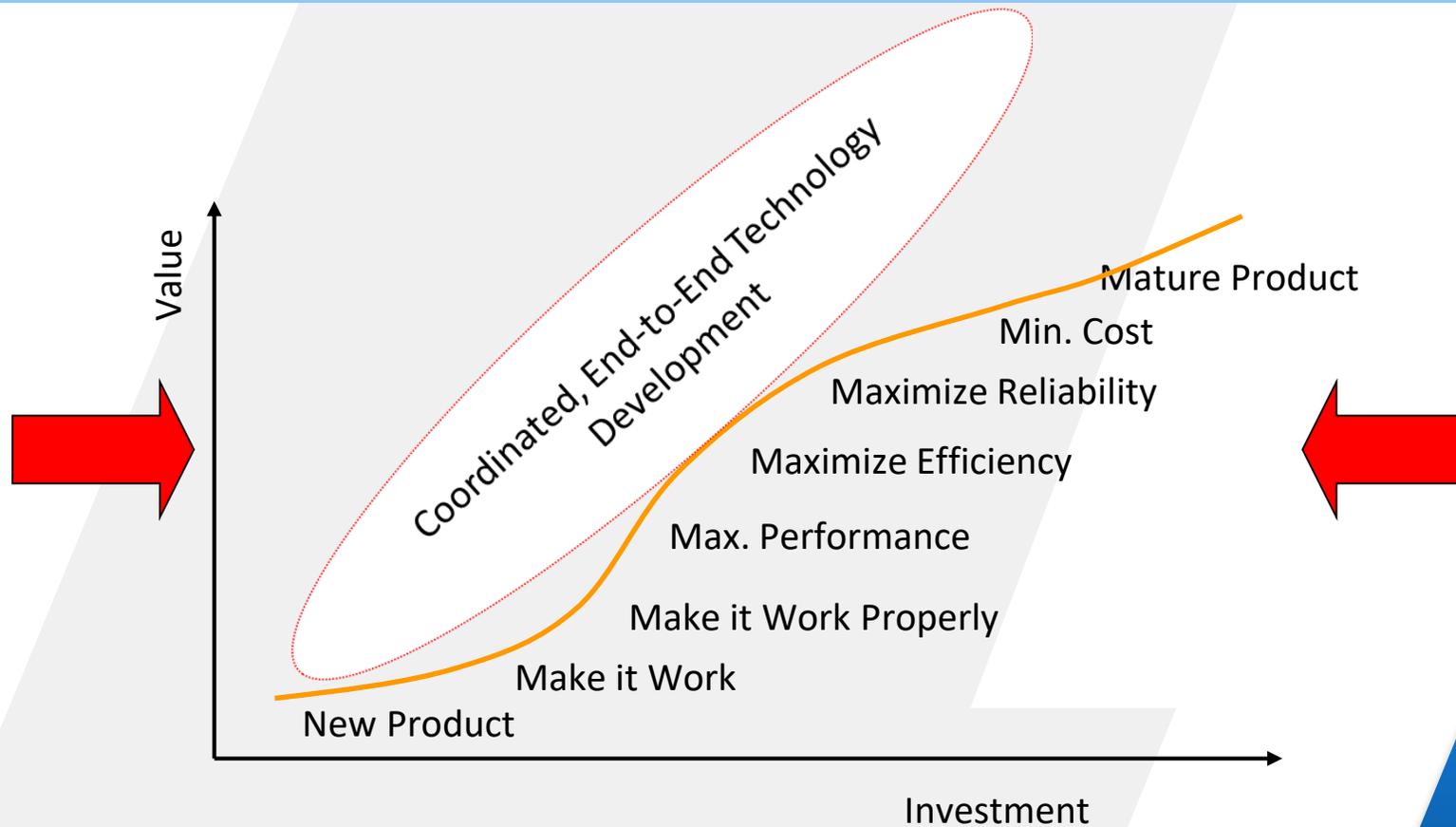


Thousand
eyes
in the sky



CANEUS was the first international organization created in 2000 to address the "Valley of Death" problem that afflicts the Space sector and to propose a coordinated, end-to-end solution

- Maximize Return-on-Investment for emerging technologies and laterally **compress the S-Curve**
- Pursue a **coordinated, end-to-end technology development** strategy
- Promote rapid insertion by creating **application pull**

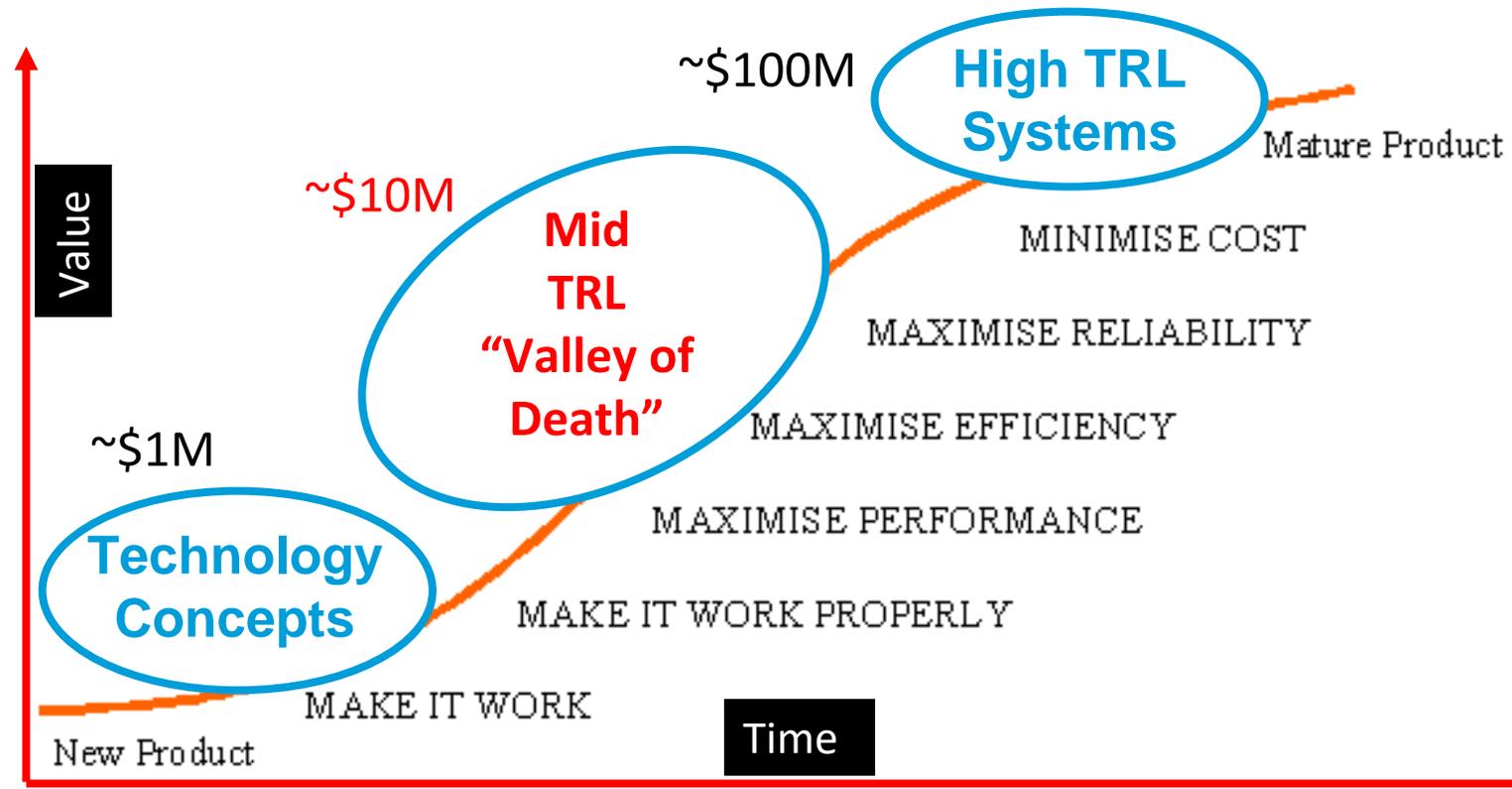


Basis for CANEUS Mission “Concepts to Systems: C2S”

CANEUS Concepts to Systems (C2S): Rationale

Rationale

Very few technology concepts make it to the system prototype demonstration stage!



Delivering on C2S Mission

CANEUS C2S Implementation Over the Years

CANEUS 2002 – CSA, Montreal, Canada



CANEUS 2004 – NASA Ames, Monterrey



CANEUS 2006 – CNES, Toulouse France



CANEUS 2008 – JAXA, Japan; Brazil; NASA Ames



CANEUS 2010 – ISA-Italy; ESTEC-ESA, Netherlands



CANEUS 2012 – Roscomos; Singapore



CANEUS 2014 – IIST-ISRO, IISc, India, and UN-ISDR



CANEUS 2015-16 – UN-ISDR and UN-OOSA



CANEUS 2018 – UN-System

CANEUS evolved a methodology to work with end user needs through intensive “concepts to systems” process leading to international collaborative consortia projects, limited objective demonstrations, capacity building initiatives and spin-offs

CANEUS C2S Partners

Space Agencies

- NASA
- CSA
- ESA
- ISRO
- DLR
- CNES
- ESTEC
- JAXA
- ROSCOSMOS
- UN-OOSA
- UN-ISDR

Pvt. Industries

- Boeing
- Airbus
- EADS
- GE
- Honeywell
- Mitsubishi
- EMBRAER
- UTC
- LMI

Govt and Academia Organisations

- MIT
- UC Berkeley
- Stanford
- TU DELFT
- McGill
- NRL
- NOAA
- NRCC
- EC

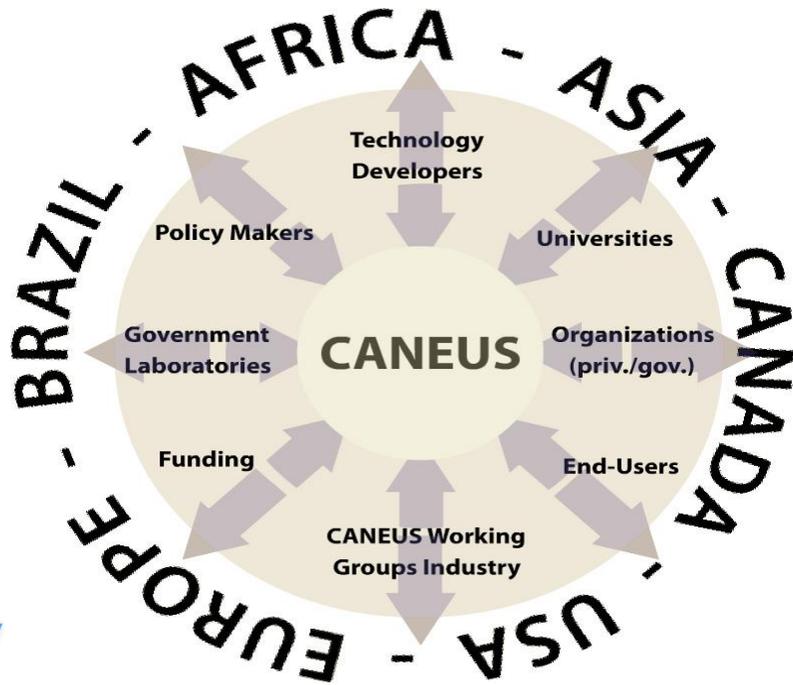


State Visit by the King and Queen of Sweden to CANEUS

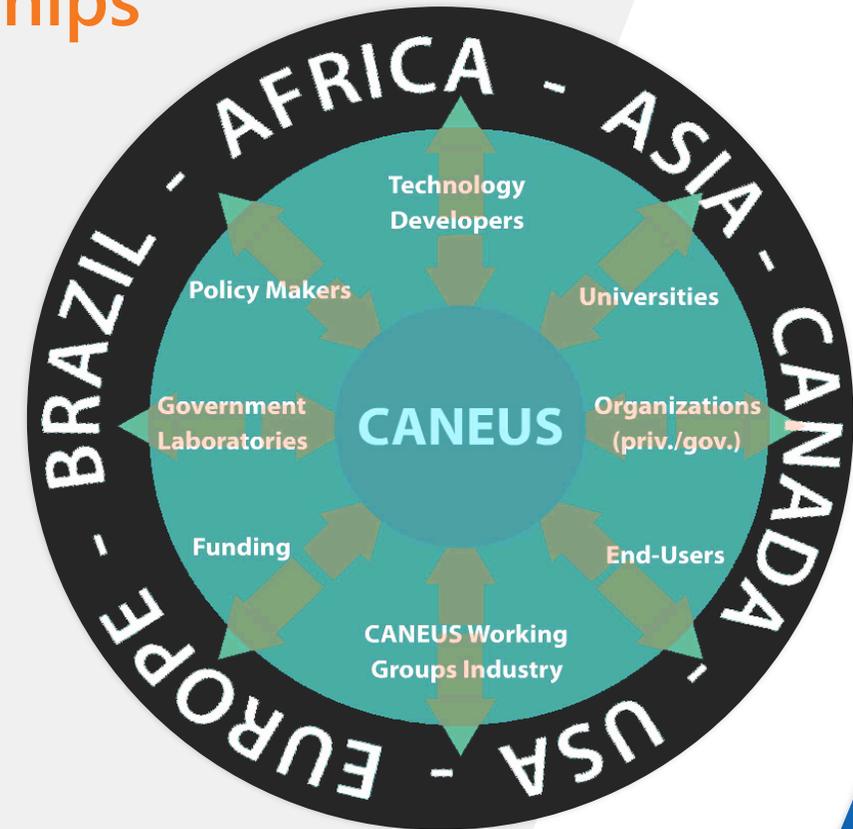
for Mission Specific, Finite Duration Projects

CANEUS PURPOSE

CANEUS' Sole Purpose: Enable Productive Partnerships

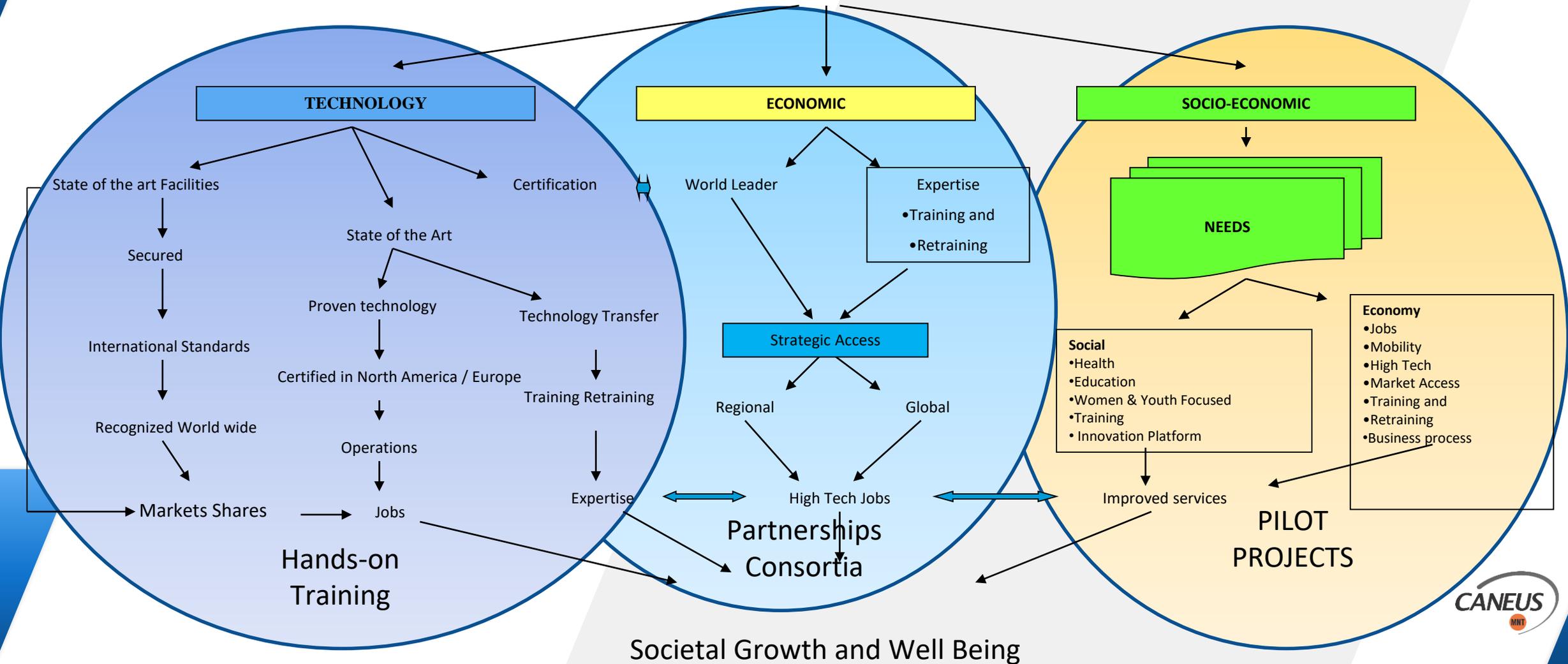


As a "hands on" organization, CANEUS is focused on the practical aspects of transitioning emerging technologies rapidly and efficiently by bringing together technology developers, aerospace end-users, governmental policy makers and investors from across the world



Leveraging CANEUS – UN 2009-2019 Proven Partnership

Building on CANEUS – UN Decade+ Proven Partnership



GlobalSat for DRR initiative launched at Sendai with UN-ISDR, UN-OOSA and World Bank



Third UN World Conference on Disaster Risk Reduction,
Place: Tohoku University Kawauchi-kita Campus. Room: B200
Sendai-Japan

March 17th, 2015, 9:00 – 12:00

CANEUS Workshop

New Global Framework for Sharing of Space Technology and Data Standards To Serve Nation's Disaster Management Needs.

Proposed UN Global-Sat,
For commitment to the post-2015 framework for disaster risk reduction

To create proposed UN Global-Sat, that allows sharing of space and data segments with its ability to serve as a strong tool for nation's disaster management and development needs



CANEUS initiated UN Co-ordinated Global Partnership



CANEUS-UN MOU Signed IAC, Mexico, 2016 UN Coordinated Global Partnership



Mr. Giovanni RUM
Engaged as Consultant
2017



Resilient Frontiers Concept

comprehensive approach

long-term outlook

4th industrial revolution emerging social trends sustainability ethos

futurism foresight 2030

interagency effort

NWP action pledge

CEB work on frontier issues

2-year collective intelligence process

How to maximize our resilience to climate change beyond 2030
by addressing opportunities and challenges
in harnessing the potential of disruptive frontier technologies
and emerging social trends towards sustainability

Launchpad event 100 visionary thinkers

5-days Korea

Resilient Frontiers Concept

Drivers of change

- Artificial intelligence
 - AI
 - Big data
 - Blockchain
 - The Internet of things
 - Autonomous systems
- Biotechnology
- Satellite technology
- Sustainability ethos

Basic needs

- Food
- Water
- Health
- Nature
- Human security

Institutions and support systems

- Finance
- International law and governance
- Education
- Values
- Habitats

Resilient Frontiers Outcome



The 2030 visions for future resilience co-created at Resilience Frontiers 2019 break away from traditional approaches to adaptation to climate change through a transformative and regenerative approach to climate resilience.



In those visions, a global change in consciousness towards a “nature-first” culture fosters a (re-)connection to the global ecosystem, which drives individuals and societies to assume their responsibility in the stewardship of nature.

Resilient Frontiers Outcome



The health of ecosystems, including all living beings, is understood as both a central condition and core criterion for human resilience to climate change, and thus for human security worldwide. A global system change translating into new forms of habitats as well as social and economic practices enables the continuous regeneration of societies, economies and ecosystems.



This takes place against the backdrop of applied frontier technologies and a retooled financial systems. At the same time, equitable access to data becomes a global public good and fosters inclusive public dialogues.

Resilient Frontiers Outcomes

3 cross-cutting objectives and 8 possible pathways

I) Fostering a “nature-first” global culture to ensure environmental stewardship

- Building on **local and indigenous practices** and knowledge, as well as inclusive public dialogues, to foster a “nature-first” global culture
- Enabling **life-long learning** in environmental stewardship

II) Retooling global cooperation to effectively respond to future climate risks

- Ensuring **universal equitable coverage** of, and open-access to, (big) data and information relevant to climate resilience
- Facilitating **conservation, restoration and equitable management** of natural resources, particularly in regard to **water** resources and **biodiversity**
- Facilitating the **equitable governance and multilevel coordination** of both intra-national and international human mobility associated with the adverse effects of climate change

Resilient Frontiers Outcomes

III) Transforming sectoral approaches to sustain long-term regenerative resilience

- Countering climate impacts on public health and wellbeing through a **holistic ecosystem approach** to health
- Mainstreaming **regenerative food production capabilities**, including precision agriculture, especially among smallholders, to generate nutritious food for all
- Developing **innovative financial instruments** (including fiscal incentives) to regenerate nature and ensure the sustainable use of resources at the local level

UNFCCC Stakeholders Way Forward: Invitation to COPUOPS Members

1

A **Roadmapping exercise** to refine policy-relevant pathways and identify milestones towards attaining the cross-cutting objectives.

2

To be undertaken by **consortia of relevant stakeholders by 2020** in a decentralized, coordinated and iterative manner, by mobilizing innovative methods, including transdisciplinary dialogues involving public and private partners as well as civil society.

3

Additional activities by experts and their organizations through the **Resilience Frontiers Nexus** (*meeting tomorrow, June 20, 2019, at Bonn*)



••• **THANK YOU** •••
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