

# Space-based systems for resilient and low-emission societies

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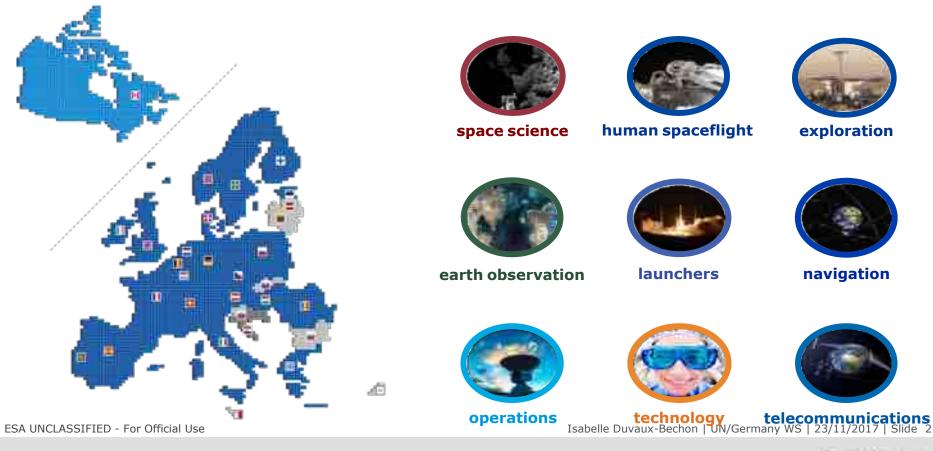
UN/Germany symposium, 23 November 2017

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European Space Agency

### ESA Member States and domains of expertise





### Future constellations & resiliency of space systems



- Will depend on Member States at ESA and in the EU
- Commitment by EU to ensure continuity of Sentinel family (continuity of observations)
- New Sentinels being studied to complement the constellation
- Continuity of Galileo constellation next generation prepared
- Support to telecommunication industry for the development of the new competitive European satellites



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### Resiliency of space systems not enough



- Resiliency of space systems alone (without usage) is not resiliency
- Quantity of data available for free: not useful as such
- Dozens of applications developed in support of resilient and lowemission societies
- Also technology transfer and support to start-ups contribute to global resiliency





Need to identify what is available

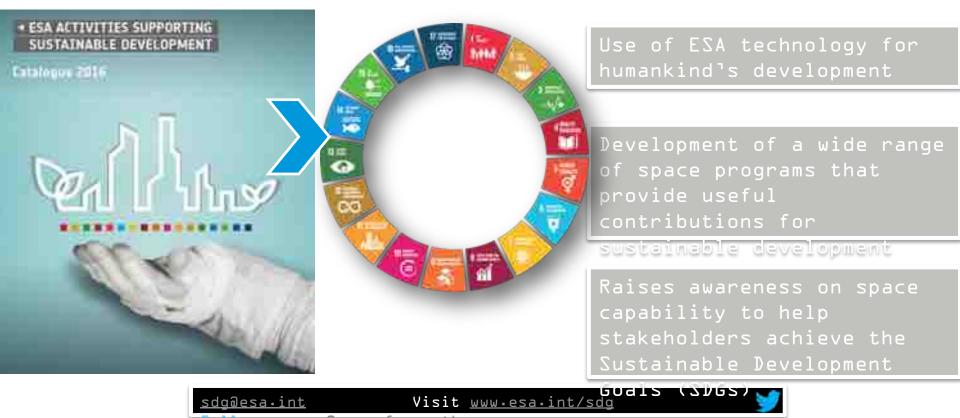
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#### ESA & Global Challenges

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### Hurricane Matthew



- Informing populations
- Putting installations in safety mode
- Damage evaluation







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### Banking systems

















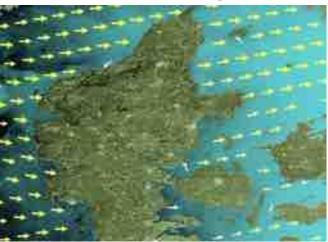


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### Support to renewable energy







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#### SWAYFOREDU2



→ Realization of a cluster of 12 satcom-enabled schools in the rural areas of South Africa (Mpumalanga) and 1 school (3 classes, about 75 students) and Italy (Basilicata Region) for the development of competences in IT and in the

SUPPORT TO E-LEARNING environment. AND SPECIALISED LEARNING

Develop awareness amongst local youth, as well as amongst wider community members, of the importance of **preserving** their local **wildlife heritage** and to adopt a more sustainable approach for Singita and SA government to



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## Models for sustainability - technology









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#### Proposed recommendations – short term



- Identify main challenges faced by countries to:
  - Improve SDGs associated to low-emission and resilience
  - Measure the progress made (using space assets or technologies)
- Map the space applications, services and technologies that can support the improvement of low-emission and resilient societies (part of ESA catalogue and UNOOSA Space Solutions Compendium)
- Establish a relay between the developing countries and the space applications and service providers to inform on what is available to support the development of low-emission and resilient societies.

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#### Proposed recommendations – medium term



- Study and promote space tools allowing to support disaster risk reduction and preparedness (agriculture, water, education, infrastructure...)
- Develop capacity-building for the treatment of big data (data analysts and integrators) integrating space and ground information
- Organise brainstorming events between "users" and space experts to imagine future applications or tools that could support the achievement of a loweremission and better resilient society

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#### To know more !

#### Visit www.esa.int/SDG



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http://esamultimedia.esa.int/docs/spaceforearth/SDG Catalogue October2017.pdf

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