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Office for Outer Space Affairs

SPACE4SDGS

UN/AUSTRIA SYMPOSIUM: "SPACE APPLICATIONS FOR FOOD SYSTEMS"

Panel 1: Resilience

7 September 2021

Resilience: some definitions

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AT5 of the UN Food Systems Summit 2021 defines resilience as “the ability … to prevent, resist, **absorb, adapt,** respond **and** **recover** positively, efficiently and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all”.

WFP defines resilience as: “the capacity to ensure that shocks and stressors do not have long-lasting adverse development consequences”. Capacities required for resilience include ability **to absorb, adapt, and transform**.

IFAD defines resilience as the extent to which social or ecological systems can (a) **maintain functionality**, (b) **recover** from losses, and (c) **improve their integrity and functionality** when subject to disturbance.

FAO defines resilience as "the ability to prevent disasters and crises as well as to anticipate, **absorb, accommodate or** **recover** from them in a timely, efficient and sustainable manner.

UNDRR defines resilience as the ability … to resist, **absorb, accommodate, adapt to, transform** and **recover** from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management

IPCC defines resilience as the ability … to anticipate, **absorb, accommodate, or** **recover** from the effects of a hazardous event in a timely and efficient manner, including through ensuring the preservation, restoration, or improvement of its essential basic structures and functions.

Space-based information

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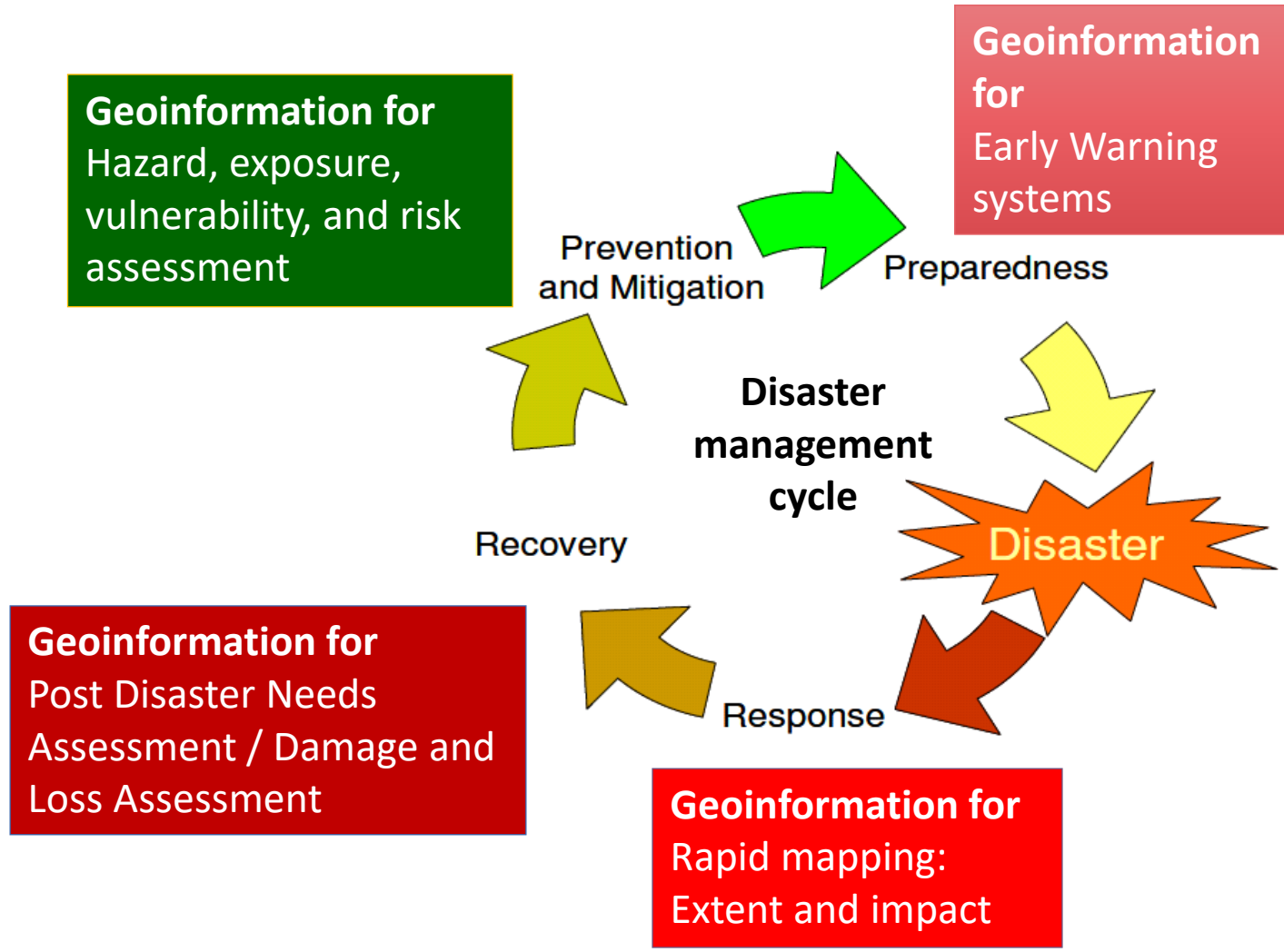
Satellite data is used to generate relevant information to be used to make more precise decisions.

- Before an event for improved agricultural yield.
- Just before and event to forecast potential impacts and implement measures to minimize impacts.
- During an event to map impacts.
- After the event for recovery efforts.



Space technologies for food systems resilience

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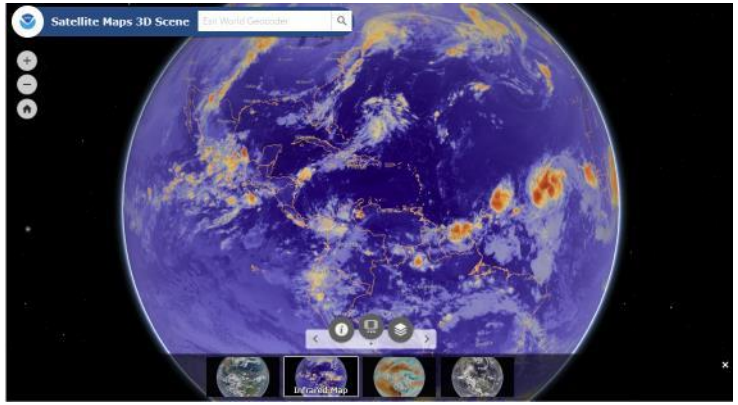
Earth observation

Images courtesy of NASA of the US

Global Navigation Satellite Systems (GNSS)

Satellite meteorology



Infrared view: Image courtesy of NOAA of the US

Satellite communication

Some examples

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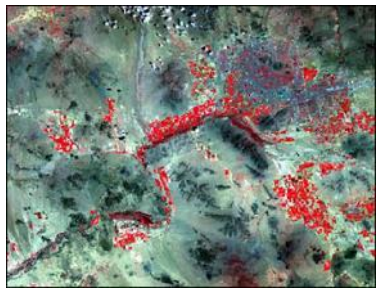
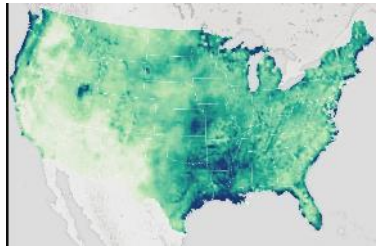
Land use / Land cover

Precision agriculture



Irrigated areas

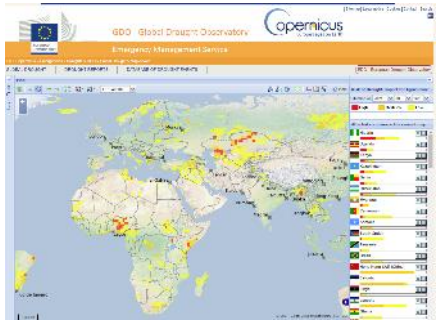


Soils moisture

Images courtesy of NASA of the US

Early warning/Early Action

Drought monitoring



Forecast-based financing in case of droughts

Response and Recovery

Index-based insurance for farmers using NDVI

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Panel 1: Resilience

Action Track 5 of the Food Systems Summit addresses food systems resilience, universal food access and climate-resilient development pathways to food systems transformation. The panel will showcase how space solutions contribute to ensure resilience of food systems and discuss how space applications could be further used.

Participatory methods and co-creation for the resilience of productive systems	**José Madrigal / Lilian Juarez**	**CDMX, Mexico**
From space to field: WFP innovations for zero hunger	**Hila Cohen**	**World Food Programme**
Boost agriculture by data driven decisions	**Andreas Prankl**	**Farmdok, Austria**
Discussion		