

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by WFP

to the CSTD 2019-2020 priority theme on “Exploring space technologies for sustainable development and the benefits of international research collaboration in this context

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Call for inputs Commission for Science and Technology for Development on Priority Theme 2 2019-2020

Input to World Food Programme (WFP)

PRIORITY THEME 2: Exploring space technologies for sustainable development and the benefits of international research collaboration in this context

Which project examples would you highlight?

Under the cooperation between WFP and DLR the following topics related to space research and technologies are treated/listed:

- Humanitarian risk and crisis situational assessment
- Food/drought monitoring, analysis and visualization
- Artificial Intelligence in Emergency Mapping
- Big data analysis/management/sense-making/Citizen Science
- Innovative Earth Observation techniques for crisis indicators and early warning
- Logistics, supply-chain optimization, fleet management
- Transportation-robotics/tele-operated vehicles
- Air-lift optimization
- Innovative navigation and communication solutions
- New technologies in field energy supply,
- Remotely piloted air-crafts
- Tele-medicine
- Hydroponics

Specifically we would like to highlight the Support to Global Humanitarian Risk Mapping (SpaRC) project, the Drones for Humanitarian Aid – Pilot Operation at the Dominican Republic and the DLR Humanitarian Technology Project.

The ***Support to Global Humanitarian Risk Mapping (SpaRC)*** project main objective was the evaluation of global humanitarian risk layers which are based on medium resolution satellite data. It was funded by the German Federal Foreign Office. The project supported preventive measures conducted by the WFP through regional assessment of humanitarian risk. The project duration was from March 2017 to January 2018 and was conducted in cooperation with WFP. It delivered an improved assessment of spatial and temporal risk dynamics and patterns related to food insecurity and disaster risk.

Point of Contact for this activity: Ms. Michaela Bettinger, German Remote Sensing Data Center, DLR, Michaela.bettinger@dlr.de

The ***Drones for Humanitarian Aid*** was a pilot Operation at the Dominican Republic conducted together with the WFP and Wings for Aid Foundation (The Netherlands). Natural disasters like floods can cause people or whole settlements to be isolated from provisions of basic supplies. This so-called last-mile problem can potentially be bridged by the use of drones. In this project, an available 85 kg helicopter drone of DLR transported and delivered emergency goods by dropping boxes at the destination with an innovative concept. A new kind of carton boxes that have self-inflating flaps avoiding the need of parachutes was developed by Wings for Aid for this kind of application. Based on real disaster situations, a pilot operation of two weeks duration was performed where different delivery situations were simulated in the Dominican Republic. The pilot operation was conducted as planned in 2018. The system received overall positive feedback by the local stakeholders in the DR. Additionally, important data was

gathered as basis to evaluate DLR's concepts on the use of larger drones for air transportation (ALAADy) in the future. Lastly, the safety case and experiences gained has been actively discussed by the working group designing the safety analysis method for the new regulatory framework to operate drones in Europe. DLR thereby contributed to the overall safe operation of civil drones in Europe.

Point of Contact for this activity: Mr. Johann Dauer, Institute of Flight Systems, DLR, johann.dauer@dlr.de

In 2019, DLR Space Research and Technology section launched with a run time of three years the so-called **Humanitarian Technology Project**. DLR research and technology activities targeting technology and knowledge needs in humanitarian aid, as articulated by humanitarian actors, are conducted. Together with implementation partners, foremost with the WFP, technological developments will be co-designed and tested in order to make humanitarian aid efforts more effective. Current projects under preparation:

- Demand-driven data services for humanitarian aid (Data4Human)
- Self-Driving / Teleoperated Relief Supply Trucks
- Mobile unfoldable plant cultivation system

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Which contact persons should we put forward?

Beside the mentioned contact persons and principal investigators of the mentioned project examples, DLR wide focal point on Science and Technology for Development and DLR relations to United Nations entities is: *Mr. Joachim Post, International Relations, DLR, joachim.post@dlr.de, Telephone +49 (0)2203 601 4498, Mobil +49 (0)173 5751716*