



European Space Agency

FAO-ESA Partnership Objectives & Developments

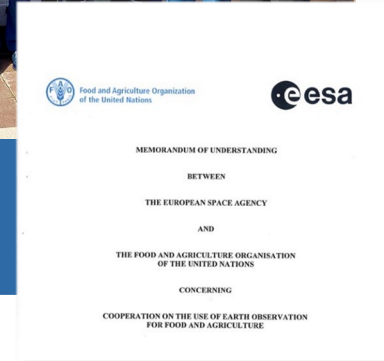
Maurice Borgeaud

Head of the Science, Applications & Climate Department

European Space Agency (ESA)

LPS'22, 25 May 2022

- **Building on a long-term cooperation**
 - Project based – e.g. GlobCover 2005, TropForest 2010, Sen2Agri 2013, Sen4Stat 2018
 - FAO engaged as key user driving requirements
- FAO ESRIN visit 2020
 - Identification of priority thematic areas
- **Setup of FAO-ESA MoU**
 - Design of common Activity Plan (MoU Annex)
 - Formalization of the MoU – signature in April 2021



FAO & ESA MoU

COOPERATION ON THE USE OF EARTH OBSERVATION FOR FOOD AND AGRICULTURE Signed in 2021

FAO and the European Space Agency unite to support countries in achieving the SDGs

A new Memorandum of Understanding enhances the use of Earth observation data for food and agriculture statistics



Objective: “to improve the exchange of expertise between the Parties, to facilitate the development of Earth Observation applications and exchange of relevant data, to enhance the understanding of agricultural processes and food systems [...]”

- **Main benefits:**

- Identification and understanding of the requirements;
- Facilitation of sharing of field data sets
- Development of innovative Earth Observation algorithms, products and applications using cloud computing;
- Demonstration and validation of Earth Observation capabilities
- Support of capacity development of Earth Observation skills for FAO

- **6 thematic priorities**

- **Activity plan** for the next 3 years by thematic, progress to be reviewed annually

- **Land cover statistics**

FAO: Francesco N. Tubiello and Lorenzo De Simone (FAO ESS/OCS)

ESA: Olivier Arino and Marc Paganini

- **Agricultural statistics**

FAO: Carola Fabi, Yakob Seid, Lorenzo De Simone (FAO ESS/OCS)

ESA: Benjamin Koetz, Zoltan Szantoi

- **Agricultural water productivity**

FAO: Jippe Hoogeveen and Livia Peiser (FAO NSL)

ESA: Benjamin Koetz

- **SDG Statistics**

FAO: Lorenzo De Simone, Yakob Seid, and Aida Khalil (FAO OCS)

ESA: Marc Paganini

- **Forestry Statistics**

FAO: Anssi Pekkarinen (FAO NFO)

ESA: Frank-Martin Seiffert

- **Agricultural Stress Index system**

FAO: Monika Tothova (FAO EST)

ESA: Benjamin Koetz, Zoltan Szantoi

- **Coordination activities of the program and with other programs**

FAO: Yakob Seid (FAO OCS)

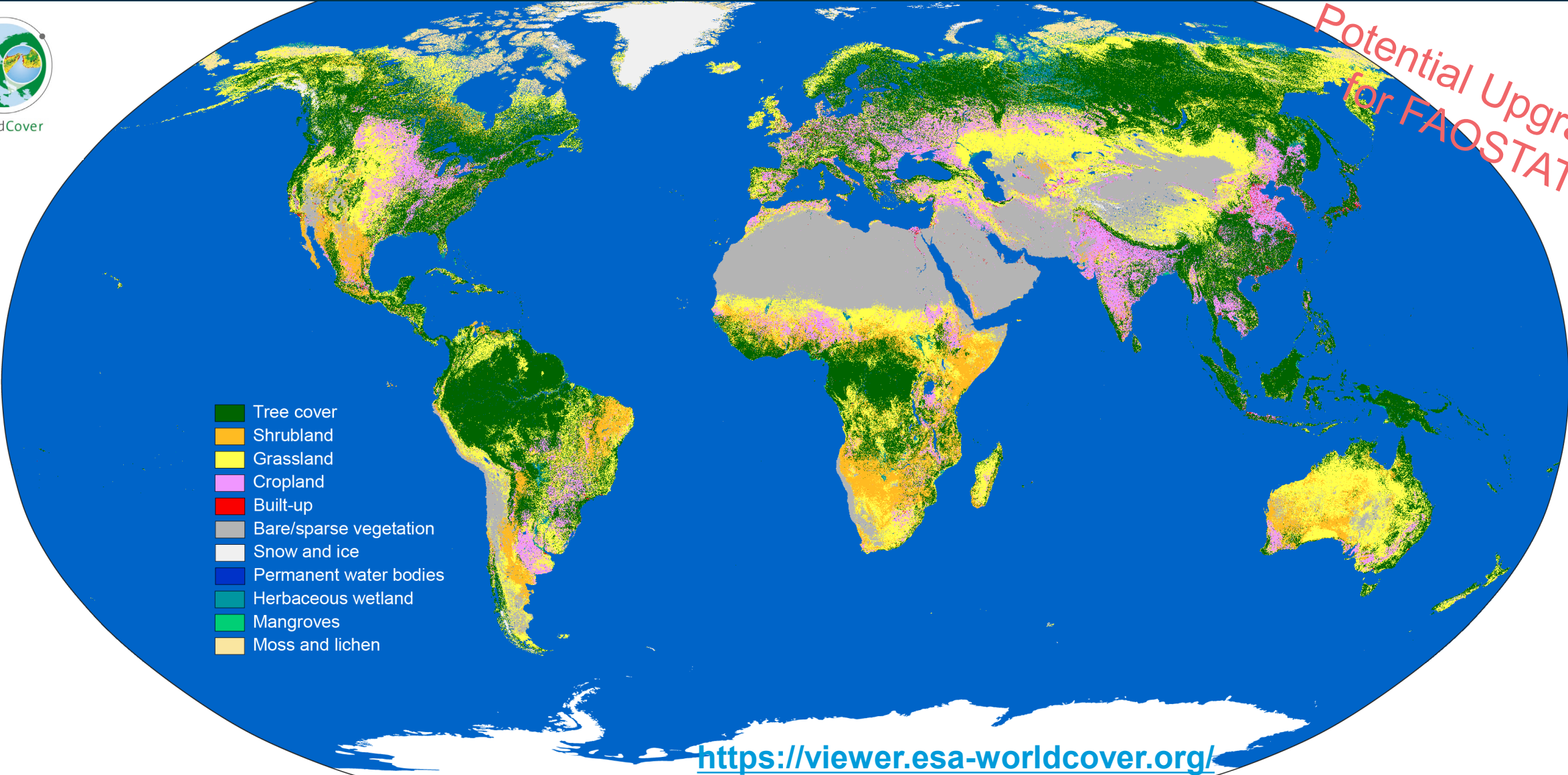
ESA: Benjamin Koetz, Patrick Griffith

WorldCover – Global Land cover @ 10 m, 2020



WorldCover

Potential Upgrade
for FAOSTAT

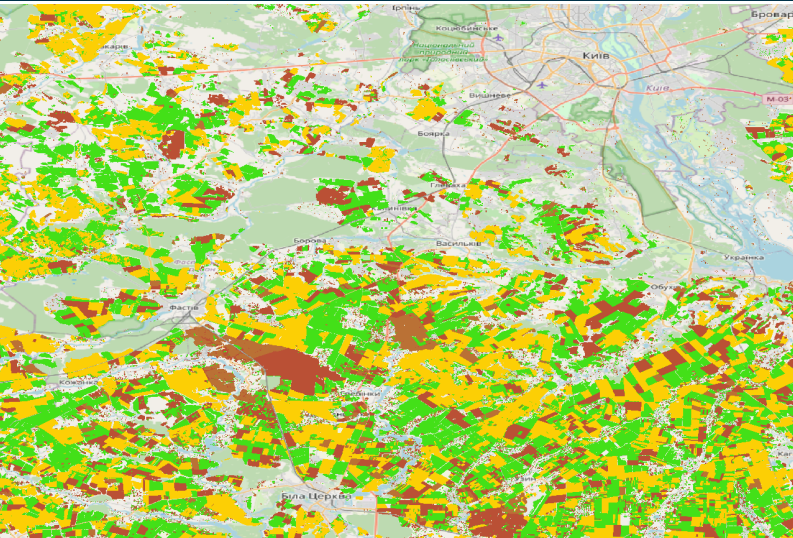


- Tree cover
- Shrubland
- Grassland
- Cropland
- Built-up
- Bare/sparse vegetation
- Snow and ice
- Permanent water bodies
- Herbaceous wetland
- Mangroves
- Moss and lichen

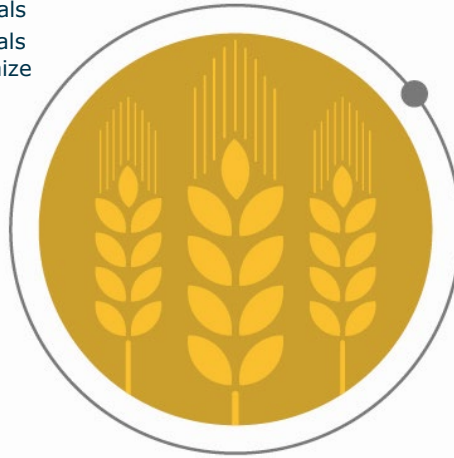
<https://viewer.esa-worldcover.org/>

© ESA WorldCover project 2020
© Contains modified Copernicus Sentinel data (2020), processed by ESA WorldCover consortium





- Annual Cropland
- Winter Cereals
- Spring Cereals
- Summer maize



WorldCereal



Demonstrate timely monitoring of global agricultural productive area for improved international & national reporting as well as market transparency.

- **mapping at 10 m** the global extent of **annual cropland** and two of the major staple crops **wheat and maize** on a seasonal basis
- **Core users:** FAO, GEOGLAM, AMIS
- Global release planned – Q3 2022



Selected expected Outcomes from Workplan 2022:

- FAOSTAT database is enriched with disaggregated crop statistics using ESA data and tools.
- Country data gaps in FAOSTAT on crop statistics are filled with data from WorldCereal
- Integration of Copernicus Sentinel-2 & -3 in the FAO WaPRO portal
- Establish a sustainable system in countries to generate yearly annual land cover maps
- FAO SDG portal is populated with timely SDG data submitted by countries and EO information
- Updated requirements and priorities for EO based information in response to FAO mandate
- **The Workplan is annually updated:**
 - **2023 addressing the current global food crisis with timely & transparent information**

FAO & ESA Partnership on the use of Earth Observation for Food and Agriculture



Agora, LPS'22, 25 May 2022:

Opening: Welcome and keynotes

Maurice Borgeaud, Head of the Science, Applications & Climate Department – European Space Agency (ESA)

Pietro Gennari, Chief Statistician – UN Food and Agriculture Organisation (FAO)

Moderated panel discussion: Moderator Benjamin Koetz, ESA

Livia Peiser – FAO, Land and Water Division

Lorenzo DeSimone – FAO, Statistic Division

Erik Lindquist – FAO, Forestry Division

Pierre Defourney, Earth & Life Institute - Université Catholique Louvain

Radoslaw Guzinski, DHI-GRAS

Open Questions & Answers

