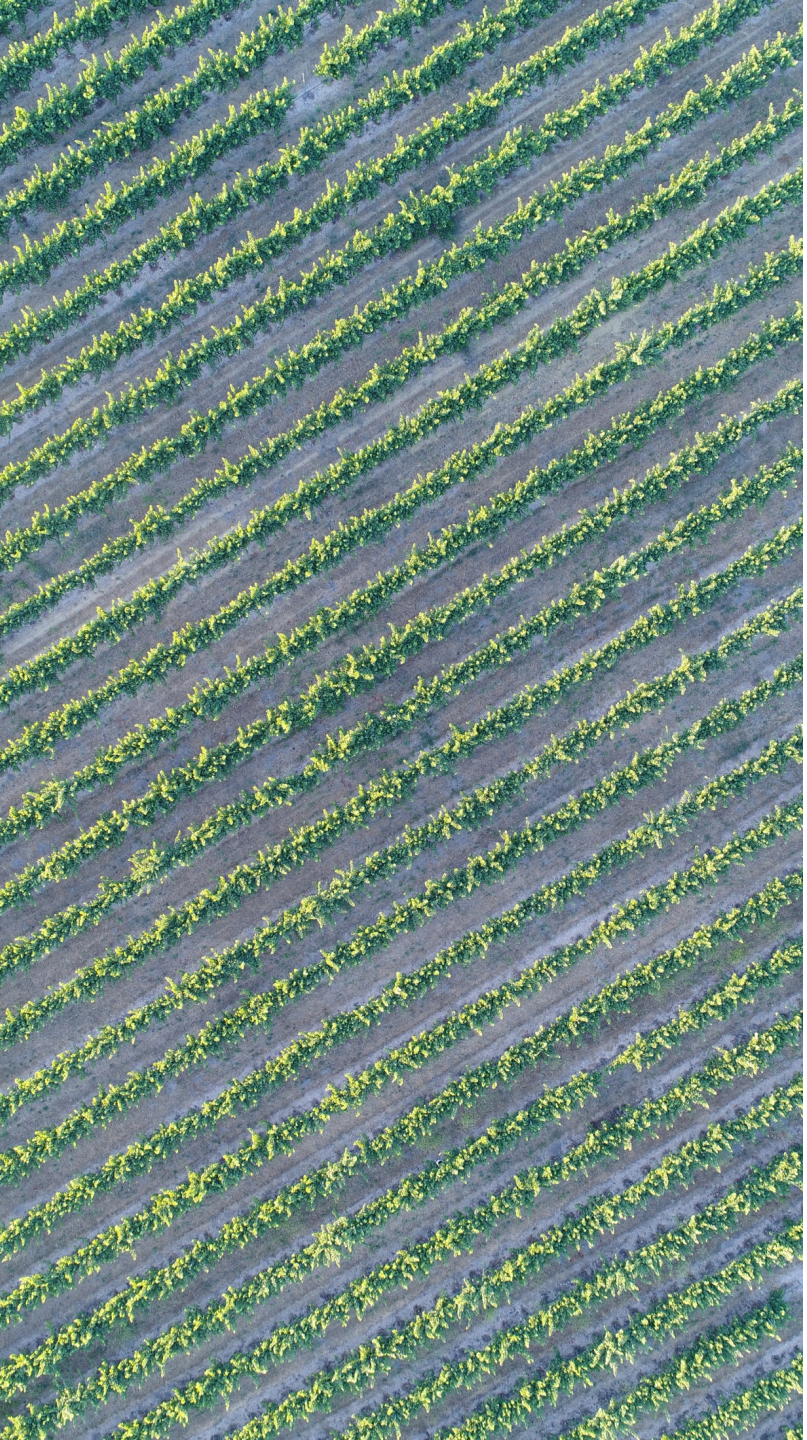
Smart Agriculture

Co-Chairs:

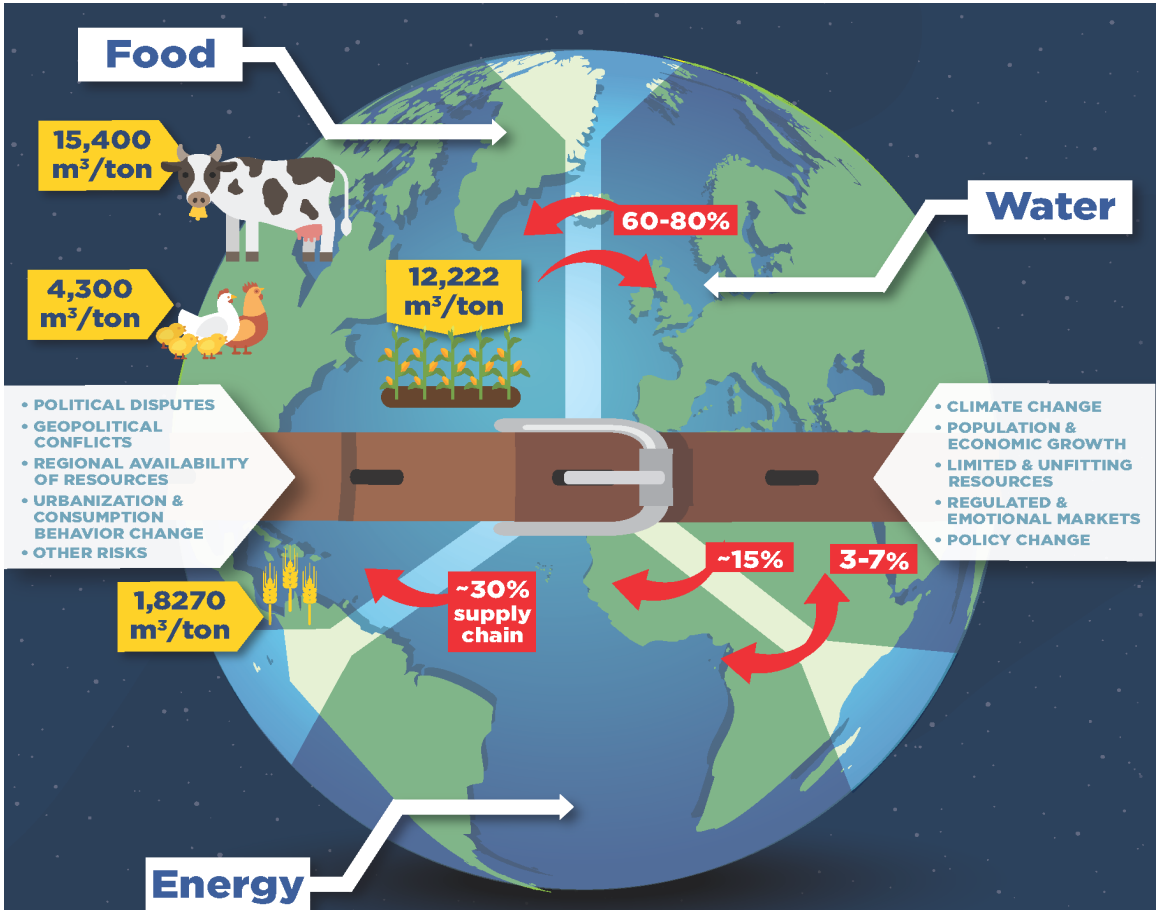
Samer Samarah, Yarmouk University-Jordan

Amir AghaKouchak , University of California, USA



Human food consumption is growing rapidly

According to the UN Food and Agriculture Organization, the world needs to produce 70% more food by 2050 than in 2006 to meet the demands of the growing population.

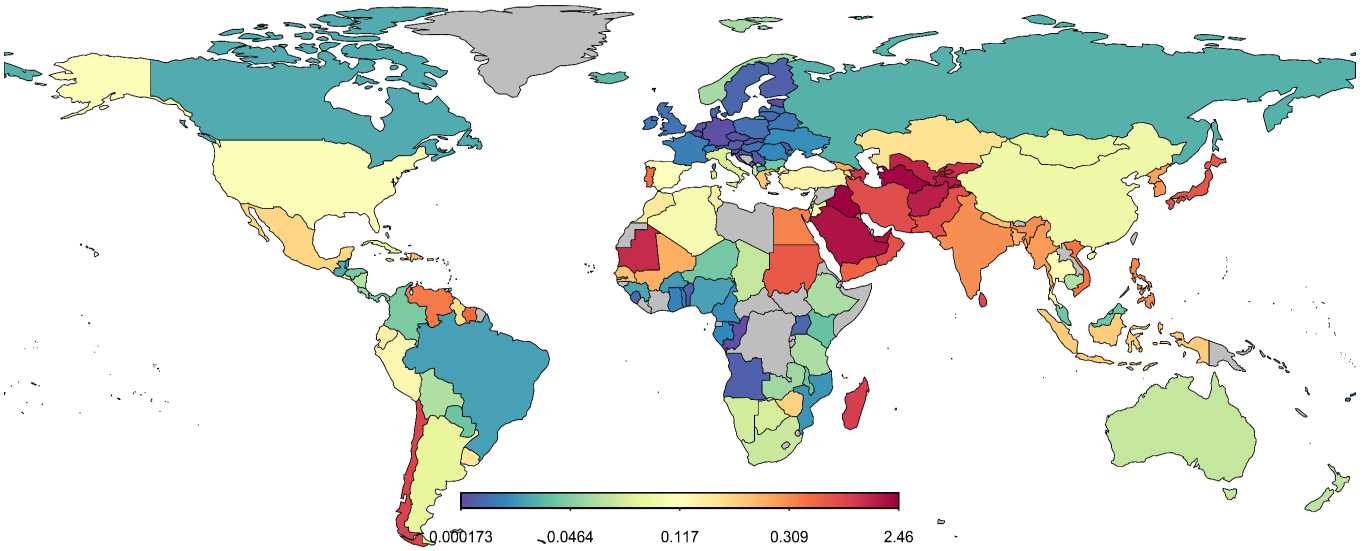


Energy, water and food systems are intertwined and interlinked in the most complex form.

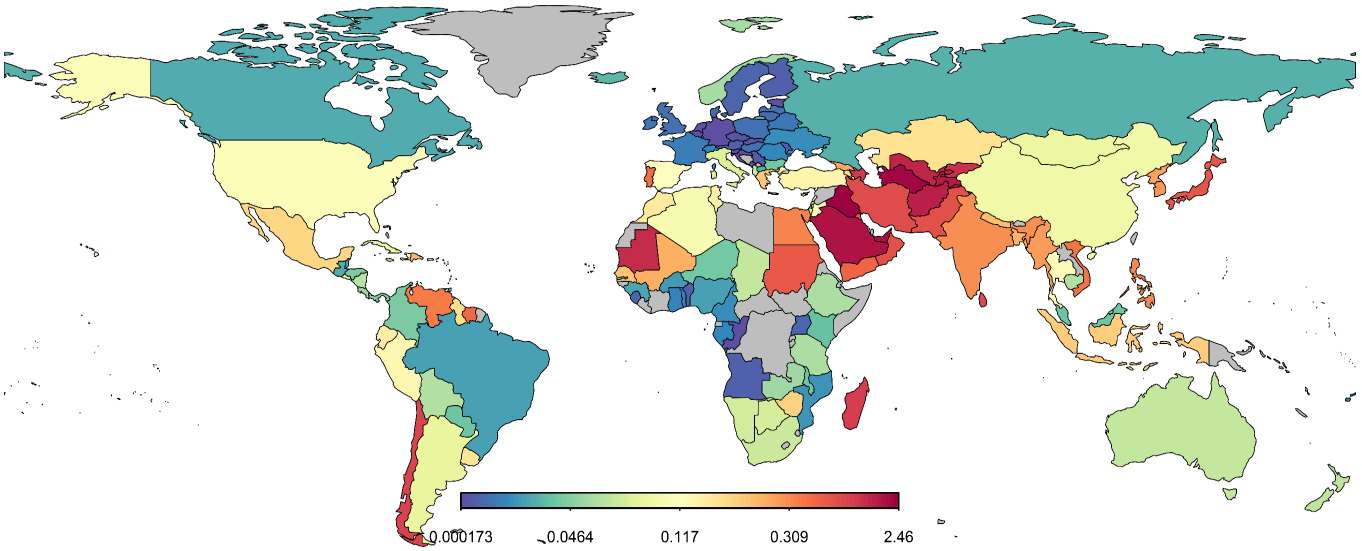
60-90% of available water resources are used in the agricultural sector.

Energy generation accounts for 15% of global fresh water withdrawal.

Food supply chain claims up to 30% of energy production.



Annual total per capita water withdrawal (m^3/person/year) for agricultural, industrial and municipal purposes.



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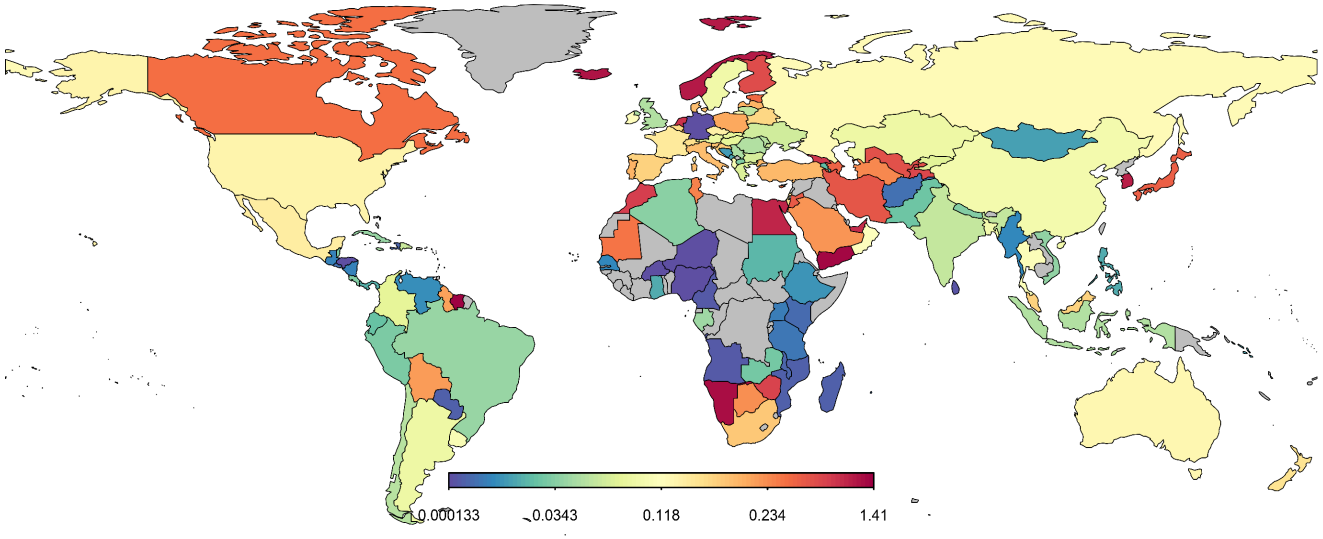

Energy consumption per unit of agricultural production (kWh/kg) in each country. It is noticeable that dry countries such as Yemen and Egypt, and cold countries such as Norway, Finland and Iceland have the highest rate of energy consumption per un


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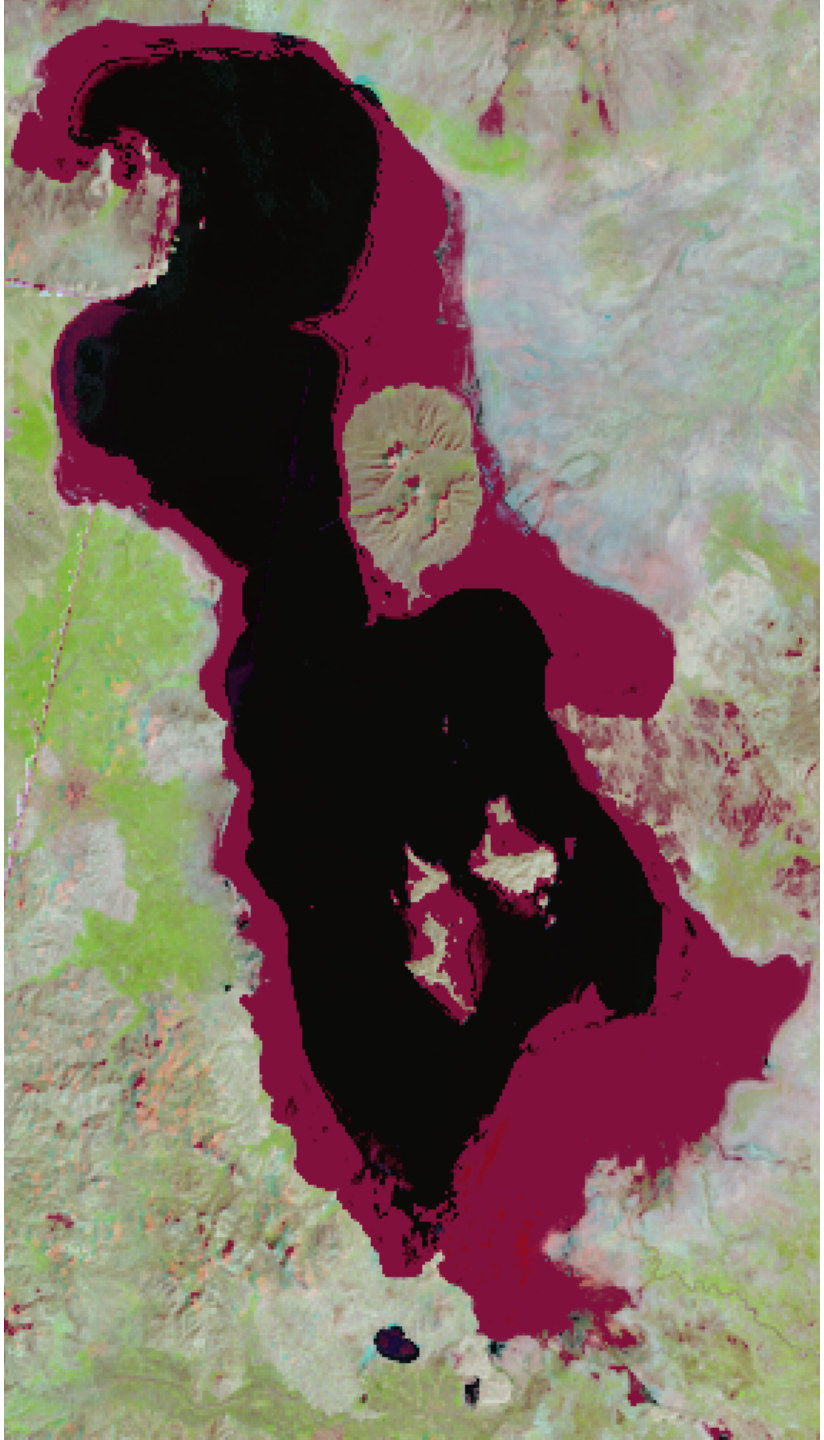

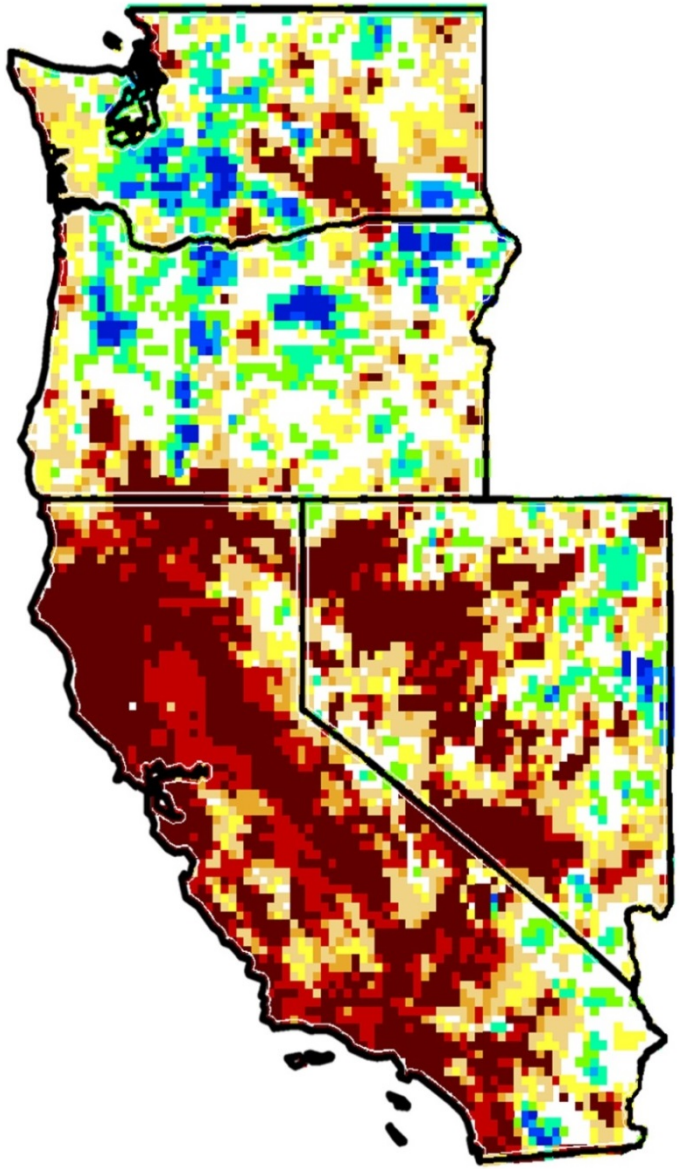

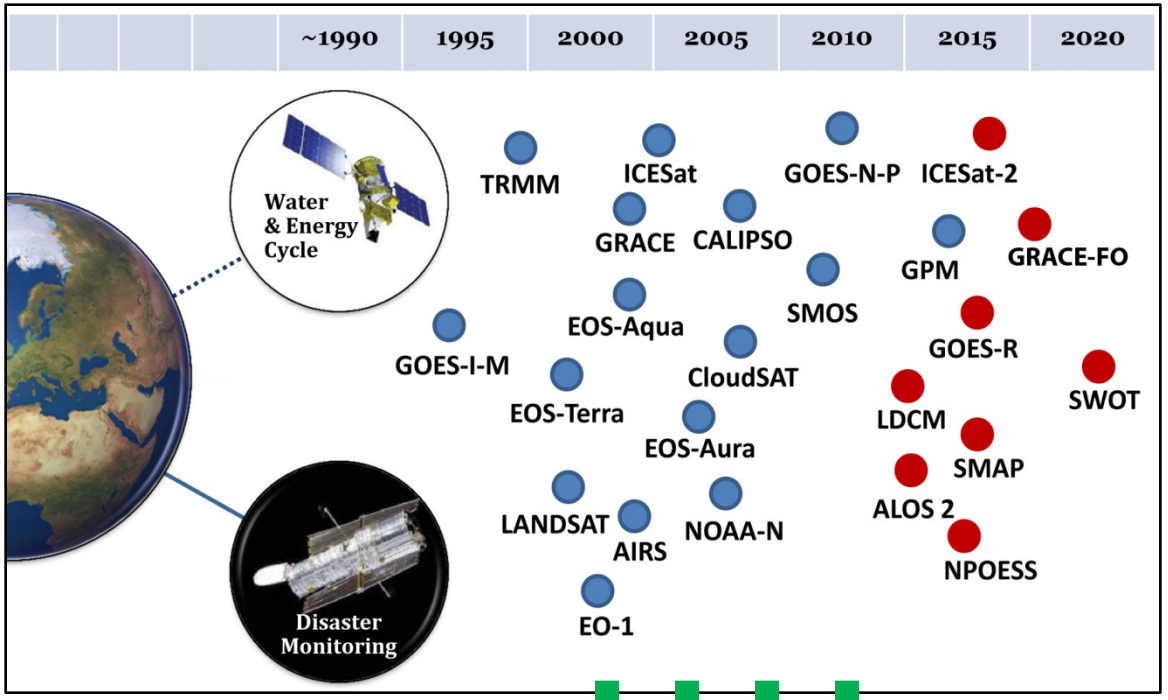
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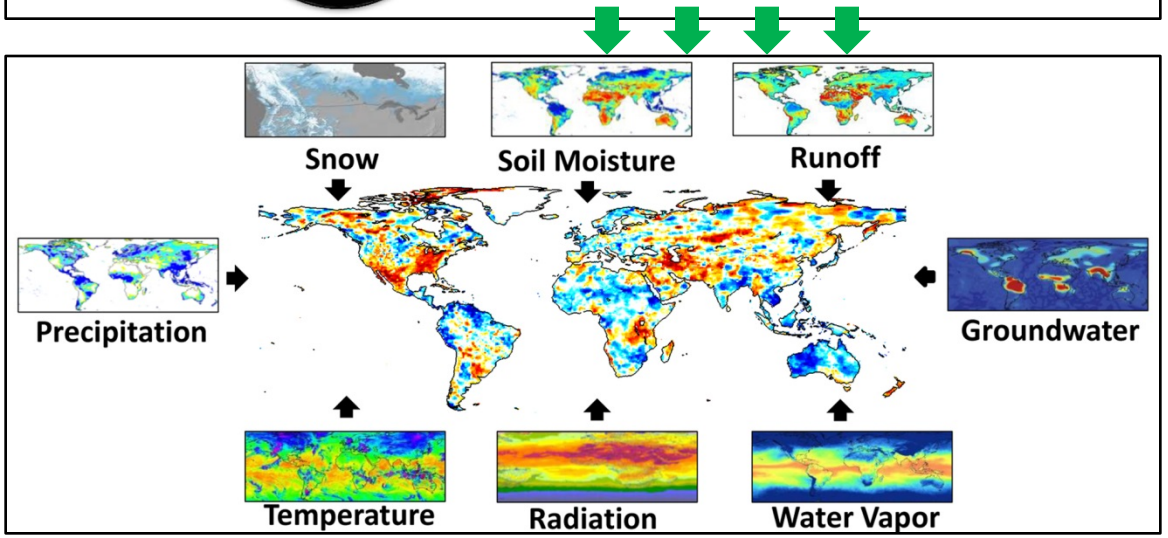
1995
2000
2005
2010
2015
2020
Water & Energy Cycle
Disaster Monitoring
TRMM
ICESat
GRACE
CALIPSO
GOES-N-P
ICESat-2
GPM
GRACE-FO
SMOS
EOS-Aqua
GOES-R
GOES-I-M
CloudSAT
SWOT
EOS-Terra
LDCM
EOS-Aura
SMAP
ALOS 2
LANDSAT
AIRS
NOAA-N
NPOESS
EO-1


Snow
Soil Moisture
Runoff
Precipitation
Groundwater
Temperature
Radiation
Water Vapor

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1- Discovering How Agricultural Development Shapes Climate Change Futures.

Patrick M. Reed, Cornell University, United States

2- Carotenoid Research: From Combating Malnutrition to Parasitic Weeds Control.

Salim Al-Babili, KUAST, Saudi Arabia

3- Impact of Water Policy on Food Security in Jordan

Tala Qtaishat, University of Jordan, Jordan

4- Advances in Mapping Evapotranspiration with Satellite Data

Forrest Melton, JPL/NASA, United States