Belmont Forum

E-INFRASTRUCTURES & DATA MANAGEMENT
Collaborative Research Action

SIGMA
Capacity Development for Stimulating Innovation in Global Agricultural Monitoring

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Scoping Workshop

November 28-29, 2016

ANR, Paris

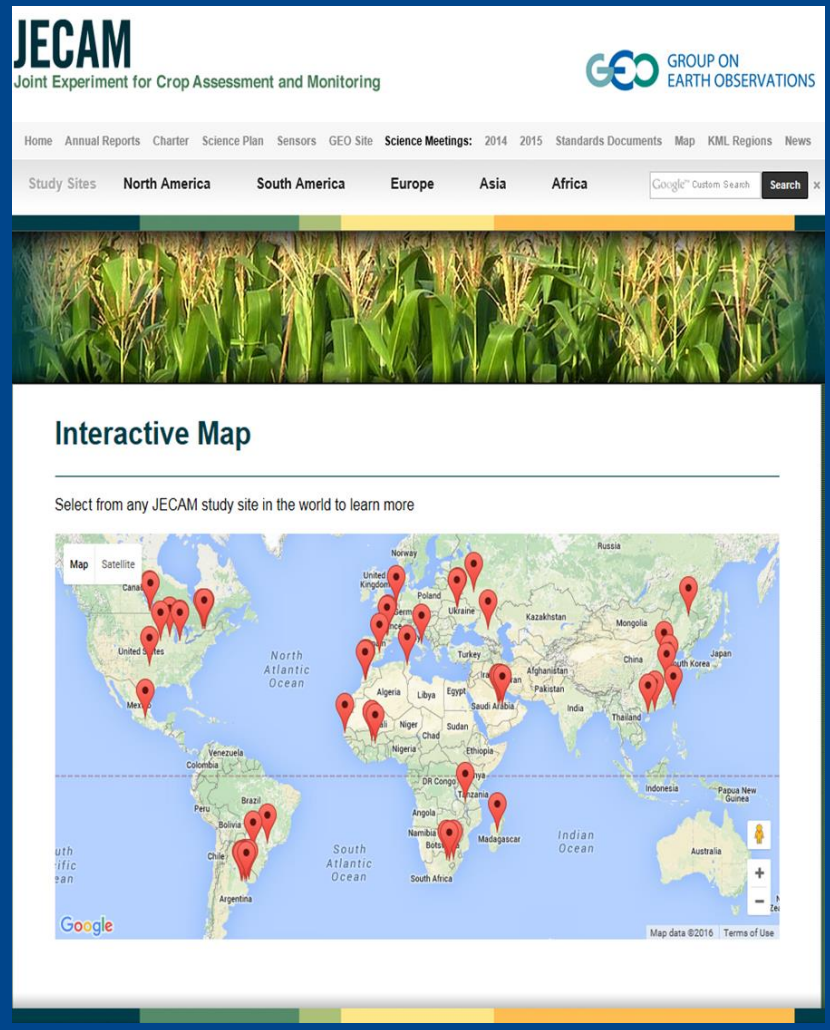
ANR AGENCE NATIONALE DE LA RECHERCHE

BELMONT FORUM

SIGMA PROJECT FACTS

- Funded By The European Commission
- Start 1 November 2013
- Agriculture AND Environment
- 22 partners, 17 countries

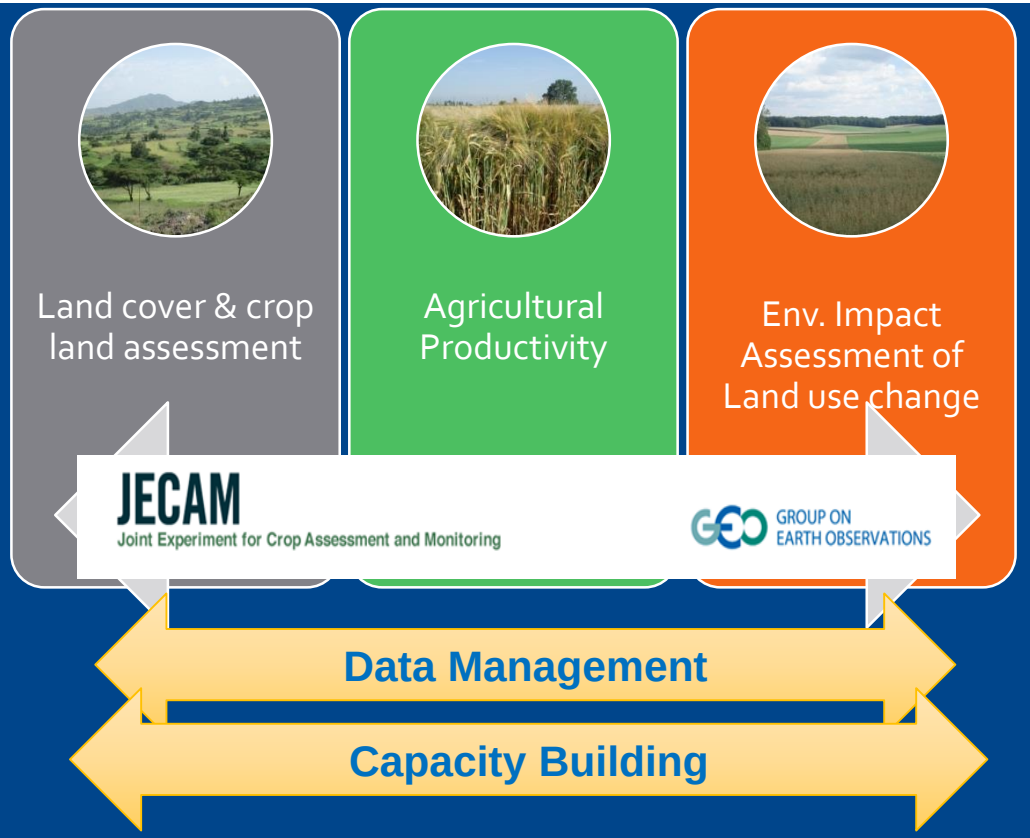
  VITO, CIRAD, JRC, IIASA, Alterra, RADI, NMSC, DEIMOS, GeoSAS, RCMRD, Aghrymet, RCMRD, Sarvision, Sarmap, INTA, Geoville , UCL, EFTAS, FAO, ITC, GISAT, IKI, SRI
- Argentina, Ukraine, China, Russia, Burkina Faso, Ethiopia, USA, Brazil, Vietnam, Belgium, …
- 11,2 M EUR
- A Major European contribution to GEOGLAM-> Supporting JECAM
- Coordinated by VITO, Belgium – Sven Gilliams
- http://www.geoglam-sigma.info/



SIGMA GOAL

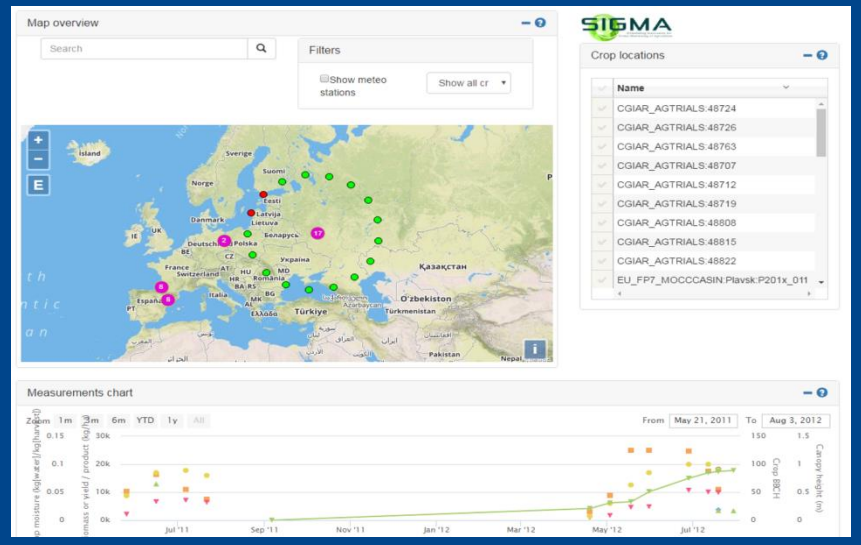
Improve **Remote Sensing based** methods and indicators to monitor and assess progress towards "sustainable agriculture"

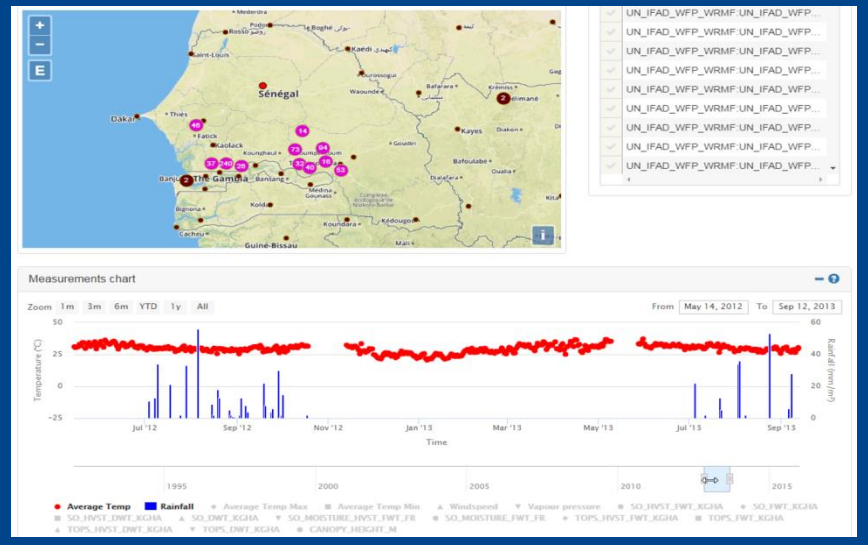
- *Inventory of Crop land distribution and its changes over time*
- *Characterize changes in agricultural production levels*
- *Assess environmental impact of agriculture over time*



E-INFRASTRUCTURES & DATA MANAGEMENT

- SIGMA distribution facility
- SIGMA Analysis facility (VEGA)
- SIGMA Validation facility (GeoWiki)
- Agricultural database (STAC)
- Time Series Viewer → Leverages on Proba-V Mission Exploitation Platform





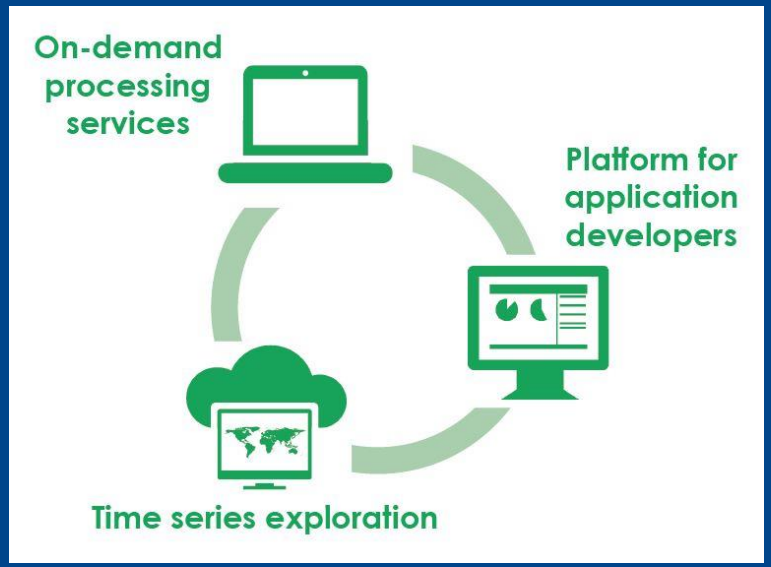
In Situ data storage – viewing - analysis

PROBA-V MISSION EXPLOITATION PLATFORM

proba-v mep

PROBA-V-MEP.ESA.INT

esa vito vision on technology



E-INFRASTRUCTURE AND DATA MANAGEMENT ISSUES

- In-situ database → visualisation & analysis of data
  - Prototype is available … path towards operationalisation is unclear
  - General issue to find reliable complementary open data
  - Mindshift needed to open in-situ data (e.g. field work from multiple projects): free & open
- Mindshift needed towards 'bring users to the data'
  - Many scattered 'pre-operational' approaches, but no final solution in place → EC DIAS looks promissing for Copernicus data
  - Interoperability between different platforms → practically!
  - Need for easy-to-use python/R Remote Sensing APIs on time series of raster data
    - Hiding complexity of the underlying platform (e.g. Hadoop/Spark)
    - Researchers vs. ICT → how to bridge the gap?
    - Good example: Jupyter Notebooks, if supported by rich python/R library specific for the community of researchers
- It is very difficult to stimulate users to publish their output (i.e. products/services) on a platform where other users can discover it - consult its metadata - download it – use it – invoke it - …

EXPECTATIONS FROM E-I&DM CALL

- Opportunities to collaborate with 'best practices' from different teams to (1) learn from each other and to (2) bring together its data & infrastructure for a common goal.
- Focus on bridging the gap between 'data scientists' and 'ICT experts' → simple community-oriented interfaces, hiding underlying complexity of the infrastructure