Putting Food Security Research in Practice at Wageningen UR

Exploiting global knowledge for food-security through cooperation, co-creation and sharing of information

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Food security is a global challenge

- Food security issues affect developed countries, but the largest of impacts occur and will keep occurring outside Europe, in developing countries
- A wealth of indispensable data and knowledge is available also outside Europe
- Cross-links to other domains: nexus water - land - energy
- Effective integrated solutions can only be achieved through global, multi-domain, multi-disciplinary networks
The amount of data and information related to food security is exploding!
Example: Monitoring Agricultural ReSources (MARS)

- Owned and operated by EC-JRC
- Crop forecasts at EU level needed to take rapid decisions on Common Agricultural Policy instruments during the year
- Provide information on vulnerability in specific food insecure areas
- In support of:
  - European Common Agricultural Policy on commodities & subsidies (focus on Europe, Asia)
  - Food aid (focus on Africa)
- Monitoring weather and crop conditions of current growing season (early warning, extreme events)
Example: Monitoring Agricultural ReSources (MARS)

Data

- Weather archives
- Live data stream
- Crop, soil databases

Wisdom
Knowledge
Information
Example: Monitoring Agricultural ReSOURCES (MARS)

Wisdom

Knowledge

Information

Data

- weather archives
- live data streams
- crop, soil databases
- Models
Example: Monitoring Agricultural ReSOURCES (MARS)

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Example: Monitoring Agricultural ReSOURCES (MARS)

Crop monitoring in Europe
MARS Bulletin Vol. 21 No. 7 (2013)

Favourable conditions sustain good yields for EU-28

After the heavy rains of the end of May and beginning of June, Europe experienced rather beneficial conditions for crop growth, with the exception of the plains in eastern Ukraine and neighbouring regions in Russia which experienced hot conditions coupled with scarce precipitation. In northern Italy, there is still a strong delay in the development of summer crops, leading to increased crop vulnerability.

On balance, the EU-28 crop yield forecasts for all cereals, aside from durum wheat, were revised upwards. The yield forecast for soft wheat was raised for all EU-28 countries with the exception of Italy, Bulgaria, Finland and Greece. Durum wheat yield expectations remain clearly above average at the EU-28 level, despite a downward revision for Greece. The overall EU-28 winter barley forecast was also revised upwards due to higher forecasted yields of the two largest producers, Germany and France. EU-28 spring barley yield forecasts remain exceptionally high due to the excellent season in Spain. Rape yield estimates were revised slightly upwards for the EU-28, but are still forecast to be below last year’s level. The EU-28 forecast for grain maize was revised slightly upwards, thanks to an increased yield forecast for Bulgaria, and continues to be clearly above last year’s yield. Yield forecasts for sugar beets were revised downwards.
Making Big Data on Food Security of Use

- Government
- Business
- Research

Wisdom
- Interests, preferences, values, risks, intangibles, ethics...
- Decision Support
- Semantic technologies
- Semantic Web
- LOD
- Semantics

Knowledge
- Infrastructure
- Information
- Data

Information
- Infrastructure
- Databases
- Social Networks
- Models
- Citizen Observatories
- Sensing
- Satellites

Data
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- Satellites
But: we also need access to this Big Data

- A lot of essential data is still “locked” in silos or is residing at people’s desks
- Data is shared on a known-and-trusted colleagues basis, not through licences
- So continue opening up access to data and knowledge:
  - Open Data Initiatives
  - Open Data Journals
  - Meta-data repositories for tools and data
  - Efforts to open up currently inaccessible data silos
  - Clear, harmonized licensing policies
  - Transnational access
  - Knowledge sharing between science, business and government
Some other examples from Wageningen University and Research (WUR) practice.

Wisdom
Knowledge
Information
Data

Dutch National Satellite Data Portal

G4AW program: Geo for Agriculture and Water

GYGA Global Yield Gap Atlas

AgMIP - Agricultural Model Intercomparison and Improvement Project

Open Data Journal for Agricultural Research

LIAISE – FP7 Network of Excellence on Impact Assessment

SemaGrow – Exploiting semantic technologies for Agriculture and Food Security

Welcome to the LIAISE Toolbox

Last review by swelland about 14 hours ago.

The LIAISE Toolbox is a library of models, publications, projects, good practices, experts, etc. to support policy impact assessments. It also provides a platform for the community of practitioners and researchers in this field.

What is new in the LIAISE Toolbox?

Updated content: Cost Benefit Analysis
Stratos Arampatzis, senior researcher and consultant from the LIAISE partner University of Thessaloniki and lead editor for the impact area land use and the method cost benefit analysis has updated the introduction to this method. His article provides a comprehensive overview on this widely applied methodology. He discusses the potential benefits and provides an overview on the criticism of this methodology. (24.3.2013)

Updated content: Collection of Economic data
Klaus Renntrop, lead editor for the section on “collection of economic data” has contributed an
Key Messages

- Food security is a global challenge. This concerns both the issues to be solved and the required resources (knowledge, data, tools, funding etc.) that need to be mobilized to solve these issues. So **(even) stronger international cooperation is required**.

- The amount of data related to food security is exploding, due to the evolvement of data warehousing, social networking platforms, earth observation, sensor networks, citizen observatories etc. It is a challenge to make good quality knowledge available from this ocean of data and information. It is thus key to understand how to exploit Big Data, using **Linked Open Data and the Semantic Web**. We are still only scratching the surface here.

- **We should continue opening up access to data and knowledge.** Promotion and further development of Open Data Initiatives, Open Data Journals and meta-data repositories for tools and data is essential to get the most out of available data and knowledge on the European and global scale.
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Thank you for your attention