

=== RDA Wheat Datathon Report ===

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Introduction

The “[Innovating the wheat community through the RDA services and outputs](#)” Datathon took place at the Athena Research Center in Athens on the 13th and 14th July 2016. The event focused on getting researchers and other stakeholders acquainted with the data formats, services, protocols and needs of the wheat community.

The event was organized by the ATHENA Research Center in the context of the RDA Europe 3 project (WP4), in cooperation with the RDA Wheat Data Interoperability WG. The co-Chair of the group Esther Dzalé Yeumo was a main presenter at the event and one of the main evaluators for the datathon prizes, A dedicated web site has been created to serve the needs of the datathon and can be found here: <http://rda-wheat.imis.athena-innovation.gr/>. The site, besides the practical information, included datasets and services of the wheat and agriculture community which could be used and exploited by the participants.

Agenda

The agenda of the event is available on the following link: <http://rda-wheat.imis.athena-innovation.gr/index.php?op=agenda>

Overall Impression

The overall impression from the event was very good to excellent (see also the feedback section). The participation exceeded expectation by far (we opted for 15 participants and got 41 registered participants over the two days). Due to limited budget, the event had to span only 2 days with the first day comprising of presentations and the second allowing participants to come with ideas and implement them. The first day was very smooth and with high interest from the participants (i.e. asking questions). In the beginning of day 2, the participants were asked to form teams (which they did) and spent the entire day with the conception and implementation of their ideas. In total there were 6 group presentations. The first day attracted more people due to the very interesting presentations. The second day, the number of participants was limited to around 20 people who participated to the hands on session and were researchers, students and data specialists from the first day.

Participants Profile

During the start of the datathon, the participants were asked to present themselves in order to obtain a better understanding about their background. The result was that most of them (over 80%) of the participants had an IT background. The rest were students in the agricultural university of Athens.

In terms of status, participants were researchers, students, independent data specialists from the computer science, the agriculture and other communities. In addition, there were a few project managers.

Day 1: Presentations

The presentations for day 1 covered a broad scope of topics which included:

- About the RDA Initiative – Fotis KARAYANNIS, RDA Europe member and RDA Secretariat, ATHENA Research Center
- Introduction to the Wheat group domain and the RDA Wheat Data Interoperability Group and its outputs - Esther DZALE YEUMO, French National Institute for Agricultural Research-INRA
- Case study 1: Organic Farming System: Management and Certification through GIS systems - Avraam MAVRIDIS, Center for Agricultural Innovation and Entrepreneurship, American Farm School of Thessaloniki
- Case study 2: Applying text mining services to facilitate discovery and linking of Wheat Scientific Information and Data- Michalis PAPAKONSTANTINOU, Agroknow
- Case study 3: Multi-Use Platforms at Sea for energy production and aquaculture, Phoebe KOUNDOURI, Founder and Scientific Director, International Center for Research on the Environment and the Economy, ICRE8
- The RDA Atlas of Knowledge - Dimitris GAVRILIS and Giota KOLTSIDA – RDA Senior-Junior Team, ATHENA Research Center

This choice presented 1 advantage and 1 disadvantage as it turned out later:

- The advantage was that it presented the participants with many different aspects in Agriculture and Wheat (genomics, data mining, farming systems, environmental and sustainability) and did not introduce any bias on their ideas.
- The disadvantage of having a broader set of presentations is that there is no opportunity to get into more depth and hence participants rely more on their own expertise.

Day 2: Participants Proposals

The participants proposed 6 ideas in total and 5 of them came with a demo prototype.

Relation with RDA Outputs

Some of the ideas and services presented in Day 2 were partially inspired by the DDRI service in which heterogenous data was integrated into a database in a common RDF based model.

Winner

The Winners: Melina Rousia, Tilemahos Kolliopoulos, Vangelis Anastasiou

Proposed work title: "Aflatoxins Risk Assessment Mapping in Cereals"

A very popular and important issue that affects the everyday lives of almost the entire earth's population.

The participants combined information from:

- FAO's Eurostat Wheat Datasets
- EC's Food and Safety Alerts and recalls
- FAO's AGRIS portal

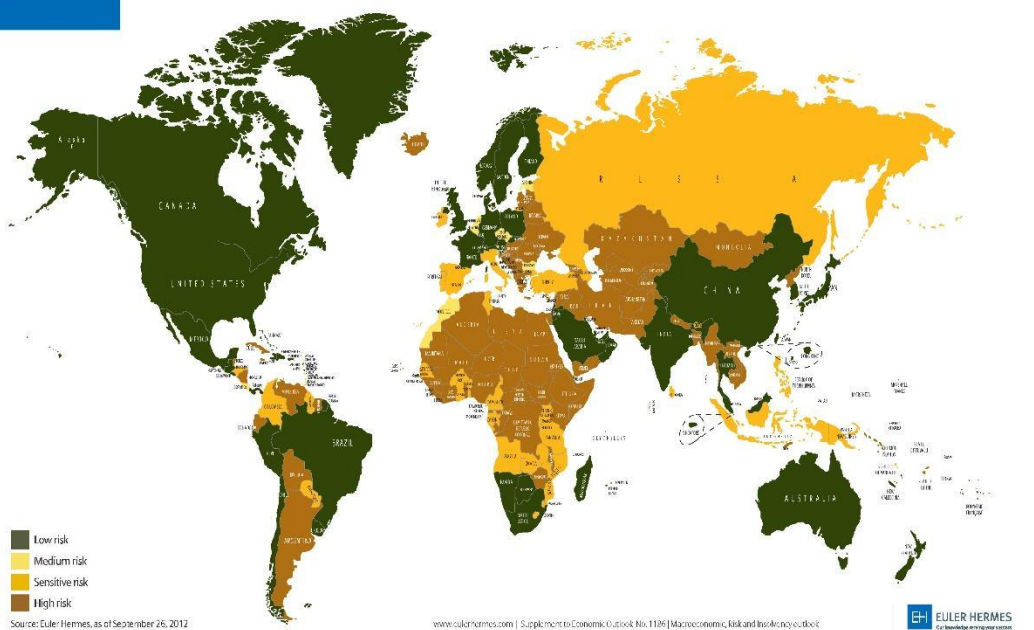
The proposed work included an early warning system for alerting citizens of aflatoxins related health risks. The system takes into account data such as:

1. Geo-spatial information
2. Temperature
3. Humidity
4. Country related information

And the result was a map that depicts an assessment of the risk levels of aflatoxins in cereals at country / regional level.



Euler Hermes, the world leading credit insurer, present in over 50 countries



Cereals have important role in human and animal diet

- Flour
- Bread
- Cereals
- Pasta
- Feed
- Etc.



PHOTO ILLUSTRATION/GETTY IMAGES

Cereals important data



- Yield
- Area
- Prices
- Inputs
- Exports
- Imports

Eurostat Wheat Datasets

The domain EUROFARM (ef) contains information (statistical tables) on structure of agricultural holdings collected through agricultural structure surveys. The data of the domain have been organised into two collections:

- Results of the farm structure surveys contains data from 1990 onwards based on the 1988 legislation and
- Results of the farm structure surveys based on the legislation from 2008. This collection contains the data from the 2010 Census onwards as well as the data for the surveys 2007 and 2005.

following url: https://knoema.com/ef_alwheat/common-wheat-number-of-farms-and-areas-by-agricultural-size-of-farm-uaa-and-size-of-common-wheat-are

Cereals and Toxins

Mycotoxins
(fungi products)



Aflatoxins (Aspergillus flavus toxins)
!!!CAN CAUSE CANCER and many other health problems!!!

The screenshot shows the FAO AGRIS search results page. The search query is 'cereals and toxins', resulting in 55,799 records. A specific result is highlighted: 'preliminary study of T-2 and HT-2 toxins in cereals sold in traditional market in South Korea [2011]' by Kassim, N.; Kim, K.; Mtenga, A.B.; Song, J.-E.; Liu, Q.; Shim, W.-B.; Chung, D.-H.

Aflatoxins in Food

Food safety alerts and recalls

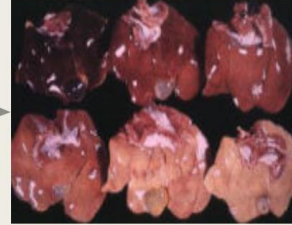
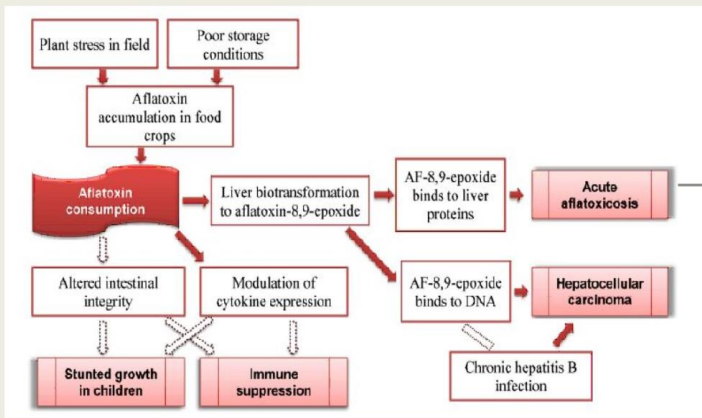
Food safety alerts and recalls: More than 40,000 food safety notifications available through <https://webgate.ec.europa.eu/rasff-window/portal/?event=SearchForm&cleanSearch=1#>

The screenshot shows the RASFF Portal search results for 169 notifications. The search criteria are: Notified from 01/01/2010, Notified till 31/12/2015, Product category cereals and bakery products, and Hazard category mycotoxins. The first notification is detailed in the table below.

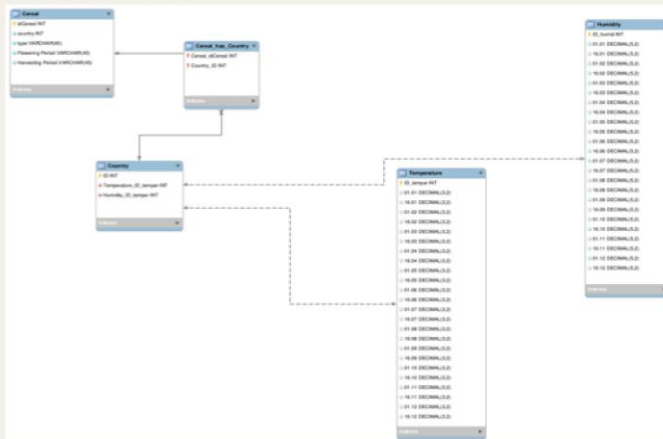
Classification	Date of case	Reference	Notifying country	Subject	Product Category	Type	Risk decision
1. alert	31/12/2015	2015.1664	Slovenia	aflatoxins (B1 = 4.4 µg/kg - ppb) and fumonisins (1800 µg/kg - ppb) in maize from Serbia	cereals and bakery products	food	serious

75 of total 169 notifications of mycotoxins for cereal and bakery products in Europe were related with aflatoxins

Aflatoxins health risks



Database



Agronomic Models for Aspergillus flavus Infestation Risk



Web Map Service

Feedback

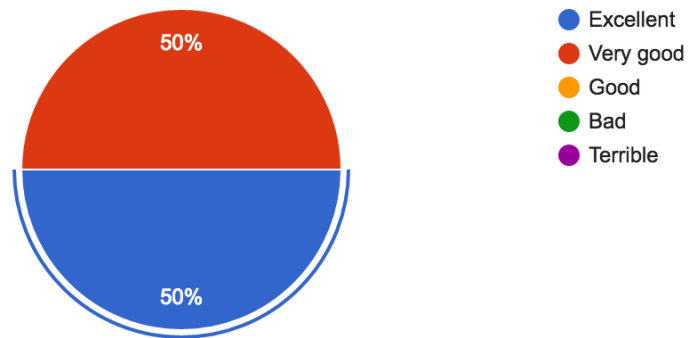
At the end of the event, participants were requested to provide feedback on their impression of event and were provided with an on-line questionnaire.

The goal was to provide a few questions and these included an overall impression of the event, their opinion regarding the presentations (how interested they were) and finally their impression for the first and second days.

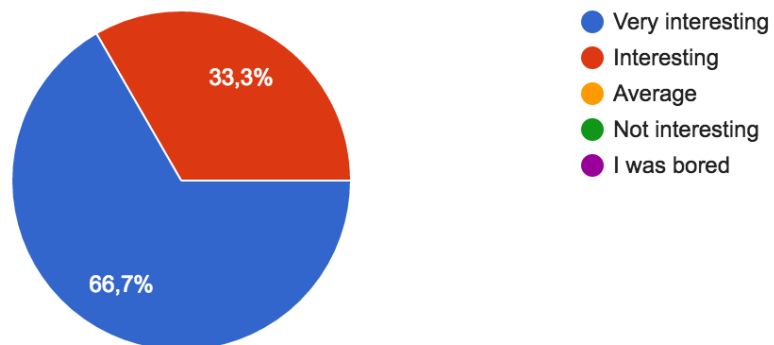
There were only 6 replies and the results from these replies are summarised below.

All the responders graded all 4 questions with Excellent or Very Good, something that indicates very good overall impression of the event.

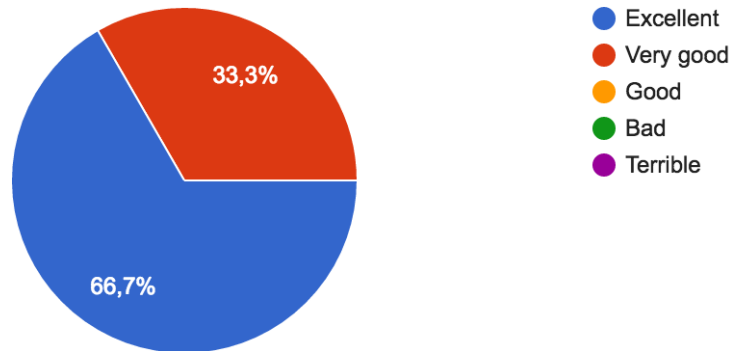
What was your overall impression for the event ? (6 απαντήσεις)



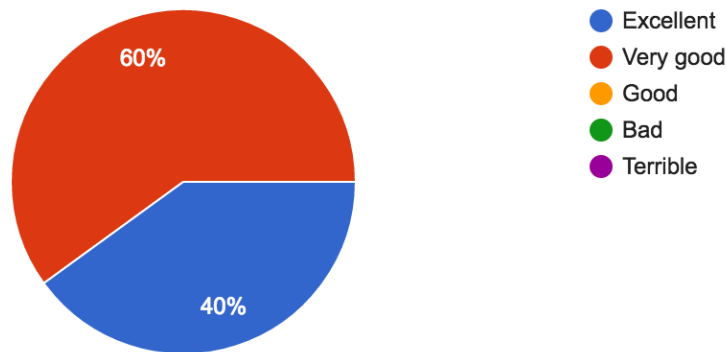
Did you find the presentations interesting (6 απαντήσεις)



Day 1 overall impression (6 απαντήσεις)



Day 2 overall impression (5 απαντήσεις)



Costs

The overall cost of the event including prizes is estimated around 3,5K Euros. The first prize (trip to Rome) is currently being organised (visit to FAO headquarters in Rome). A detailed analysis will be provided asap (besides the trip).

Conclusion

All in all, the event was very useful, combining general RDA outreach with focused community specialization. The datathon event was a pilot event, and given the positive feedback and the low cost, this type of event can be replicated for other communities and also from other partners.

Photos

<https://www.flickr.com/gp/146652208@N08/33Sko9>

<https://www.dropbox.com/sh/eyk2vkse64panff/AABABtwfjue48FutJD8raUzya?dl=0>

(and in the googledocs version please find a selection below)



