

## Project Vision

During the last years, the trend to open up data and provide them freely on the Internet has intensified in volume as well as quality and value of the data made available. The linked data community has grasped the opportunity to combine, cross-reference, and analyse unprecedented volumes of high-quality data and to build innovative applications. This effort has caused a tremendous network effect, adding value and creating new opportunities for everybody, including the original data providers.

But most of the low-hanging fruit has been picked and **it is time to move on to the next step, combining, cross-indexing and, in general, making the best out of all public data**, regardless of their size, update rate, and schema; accepting that centrally-managed repositories (even distributed) are not able to meet the challenges ahead and that we need to develop the infrastructure for the efficient querying of large-scale federations of independently-managed sources.

## Two years into the project!

During the first two years of SemaGrow we reached several milestones on the way to realizing the project's vision and goals:

- We extended the state of the art in *adaptive query processing*, to improve the way URI resources are handled by algorithms that analyse query feedback to maintain histograms about the data served by remote end-points that we cannot have a data dump of.
- We developed a *query execution engine* that is both algorithmically sophisticated, taking advantage of complex histograms, and well engineered, parallelized to avoid blocking on unresponsive endpoints.
- We carried out *ontology alignment* experiments, focusing on synthesis approaches and collaborative, semi-automatic alignment methods. A first prototype of a GUI for human-assisted alignment was also developed
- We integrated a *functional prototype* that has been deployed and tested on *realistic and challenging use cases*.

## At a Glance

### Partners

- Universidad de Alcalá (Coordinator)
- National Centre for Scientific Research “Demokritos”
- University of Rome “Tor Vergata”
- Semantic Web Company
- Institute of Physics Belgrade
- Stichting Dienst Landbouwkundig Onderzoek
- Food and Agriculture Organization of the U.N.
- Agro-Know Technologies

### Core Information

Call:	FP7-ICT-2011.4
Objective:	4. Intelligent Information Management
Target Outcome:	(a) Reactive algorithms, infrastructures and methodologies for scaling up data intensive techniques
Project ID:	SEMAGROW-318497
Funding Scheme:	STREP
Duration:	1 Nov. 2012 - 1 Nov. 2015
Total Cost:	3,146,747 €
EC Contribution:	2,470,000 €

[www.semagrow.eu](http://www.semagrow.eu)



## Heterogeneous Data Collections & Streams

Use Case

*The perspective from which extremely large and very complex agriculture-related data sets are considered is the one of **research activities**, during which the users need to cope with **heterogeneous data collections & streams** in order to **achieve new scientific investigations** that may help **forecast and address societal challenges such as food production in changing climate conditions**.*

*The perspective from which extremely large and very complex agriculture-related data sets are considered is the one of **information management**, during which the users need to cope with **reactive analysis of the data within the time scale and processes that they need to support** in order to **create value through extensive data collection and analysis** that may help **timely and better decision making related to societal challenges like food security**.*

## Reactive Data Analysis

Use Case

## Reactive Resource Discovery

Use Case

*The perspective from which extremely large and very complex agriculture-related data sets are considered is the one of **education**, during which the users need to cope with **reactive resource discovery** in order to be able to **find, reuse and exploit data resources created in one environment in very different contexts**.*

### Contacts

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