

# Agropedia Knowledge Models

**Launch Workshop**

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# What is **agropedia**?

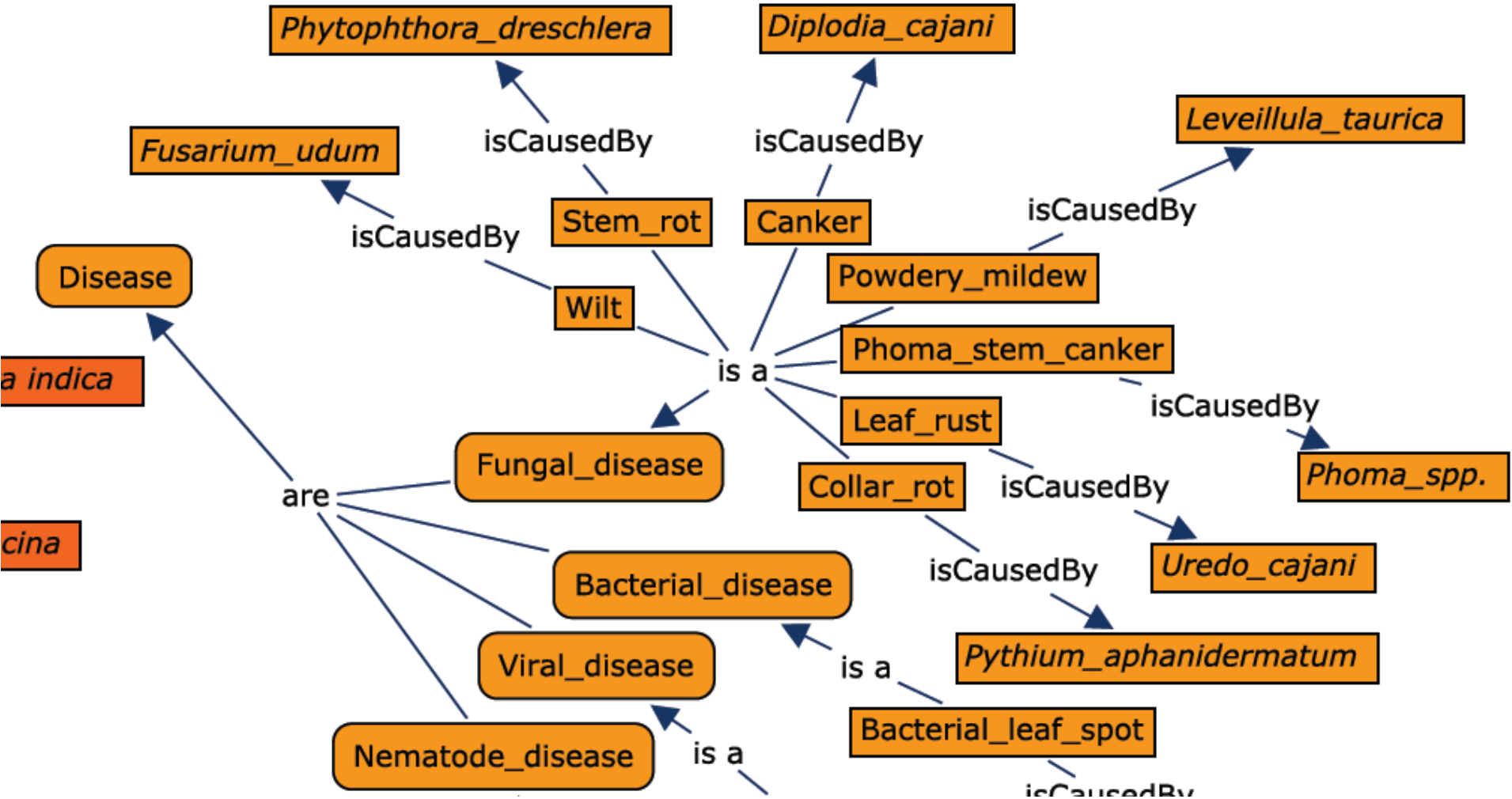
Agriculture Knowledge Repository of  
universal Meta models and  
localized content for a  
variety of users with  
appropriate interfaces  
Built in collaborative mode in  
Multiple languages

*This sounds like a slogan..*

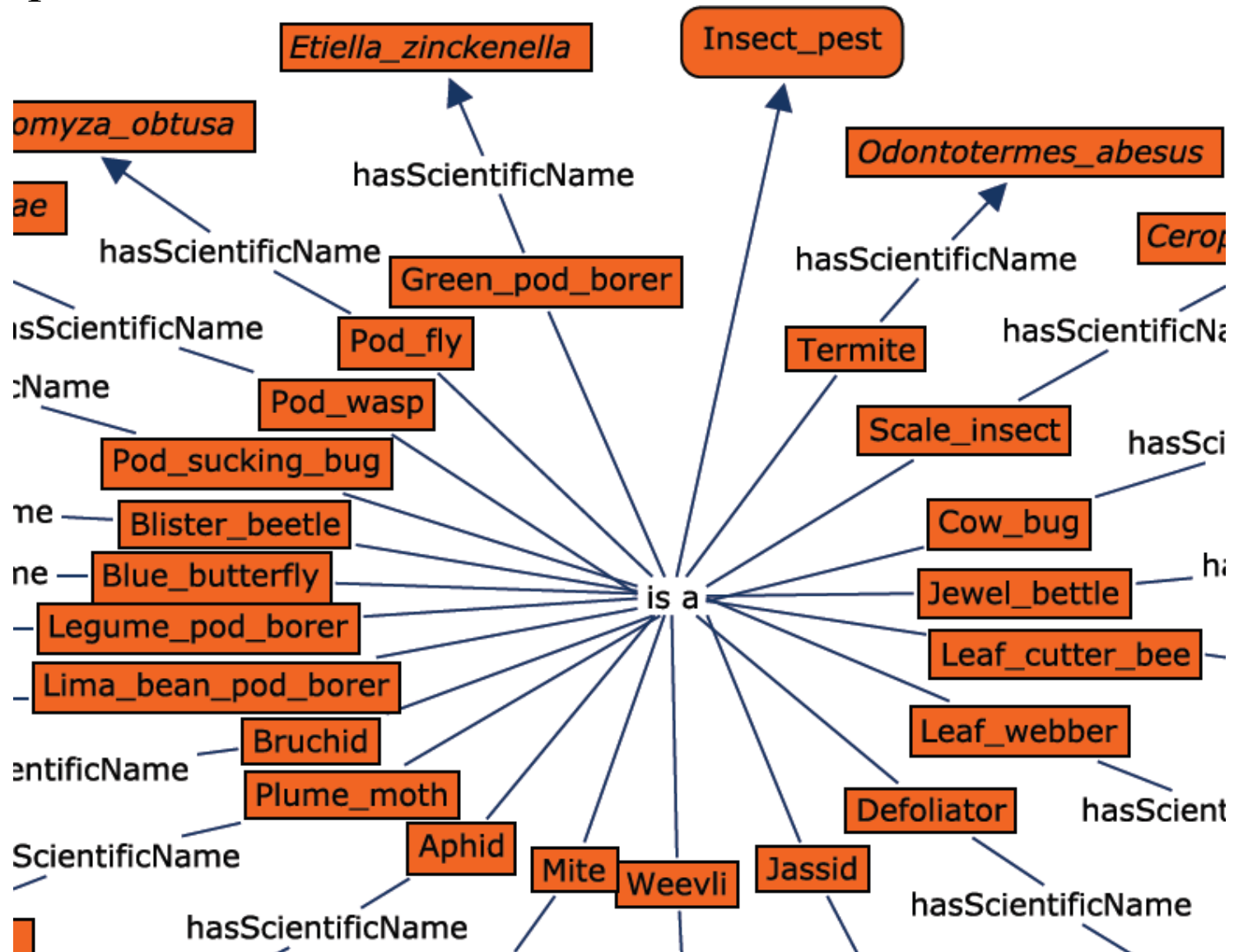
# What is **agropedia**

- It is a **Semantic Web** Application
- What is Semantic Web?
- It is a web application that understands the domain.
- What do you mean understands the domain

# Pigeonpea domain model



# Pigeonpea Domain Model



# How is the domain model useful?

- Search
  - Syntactic search vs. semantic search
  - Google does syntactic search
  - Google searches for the occurrence of the substring
  - Google can not show me all the photographs of insect-pests of Pigeon Pea
- Inference
  - How do I manage this insect-pest?
- Teaching and Training

This domain model is what we  
are calling knowledge model

OK

Tell me more...

# Knowledge Models

- A knowledge model is a function of its use
- For the same domain one needs multiple models depending on the
  - use(indexing, inference:expert systems.. ),
  - user(scientist, extension worker..)
- All such models need to be consistent and coherent
- Research needed to identify these different models and build them
- They get used in tagging



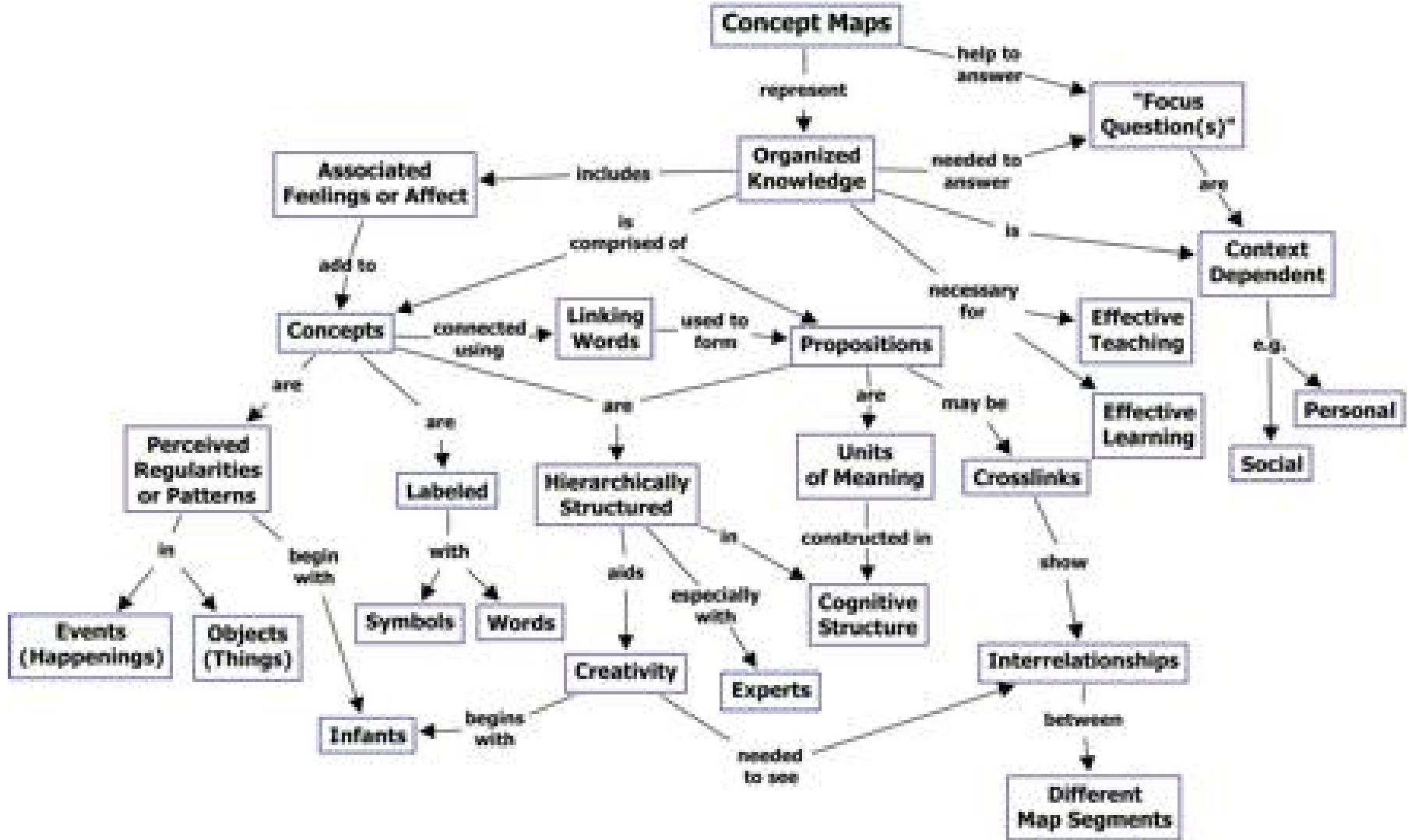
# Knowledge Models

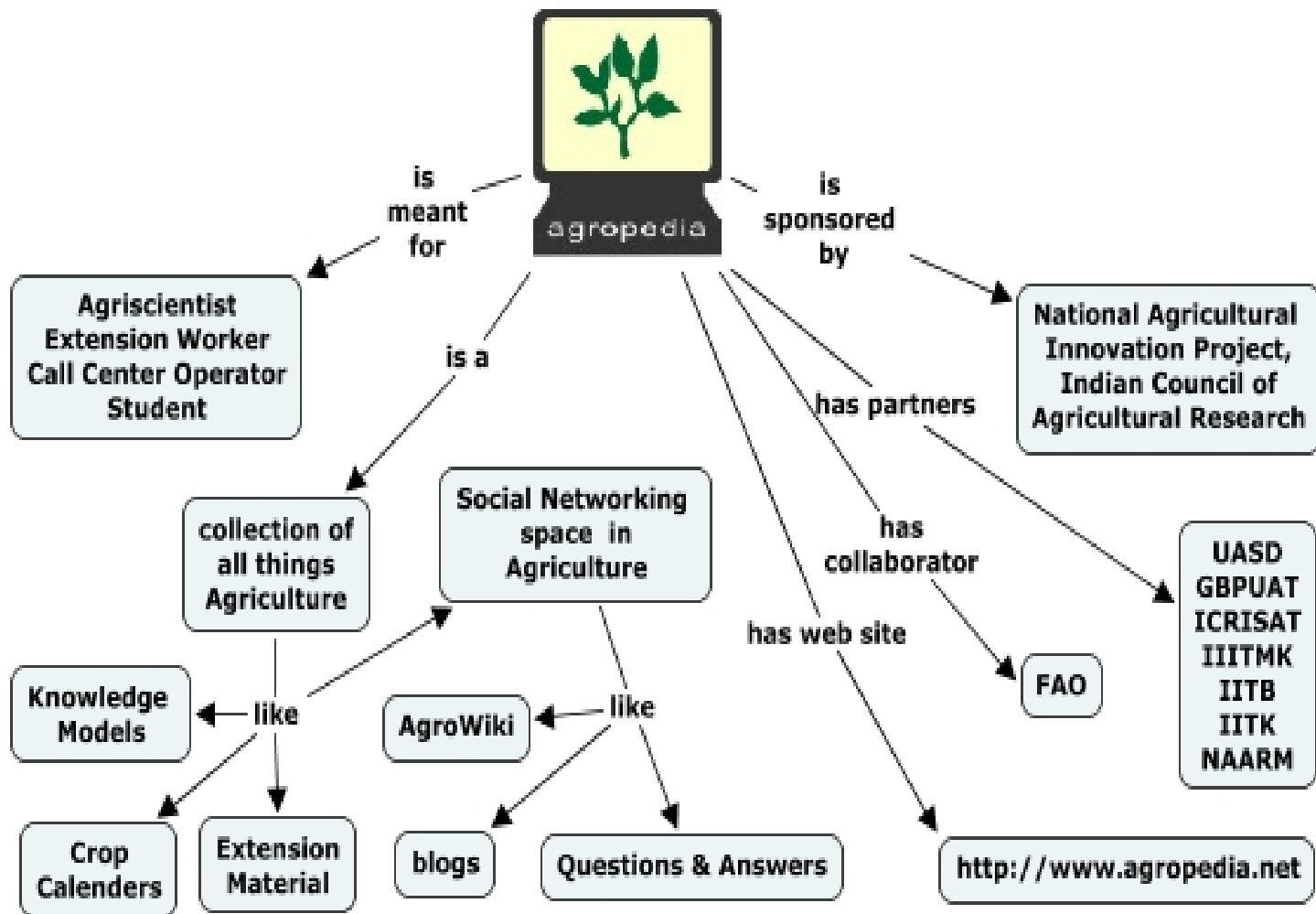
- Controlled Vocabulary
  - The concepts and the terms that are used in that domain
- Taxonomy
  - A hierarchic organisation – Broader Term, Narrower Term
  - Linneaus
- Thesaurus
  - Has more relationships than a taxonomy – like Related term - Agrovoc
- Topic Maps
  - Specially suited for content organisation
- Ontology
  - rich knowledge model; user defined relationships, ...

# How do we build a Knowledge model?

- Many tools like Protégé, NeOn Toolkit, TM4L
- We use a very simple tool call cmap tools
- Helps us build concept maps
- Concept maps are graphical representations of the various terms and their relationships in a domain
- Very easy to learn and use
- Can be used to build Taxonomies, thesaurus, ontology, topic maps....

# Concept Map

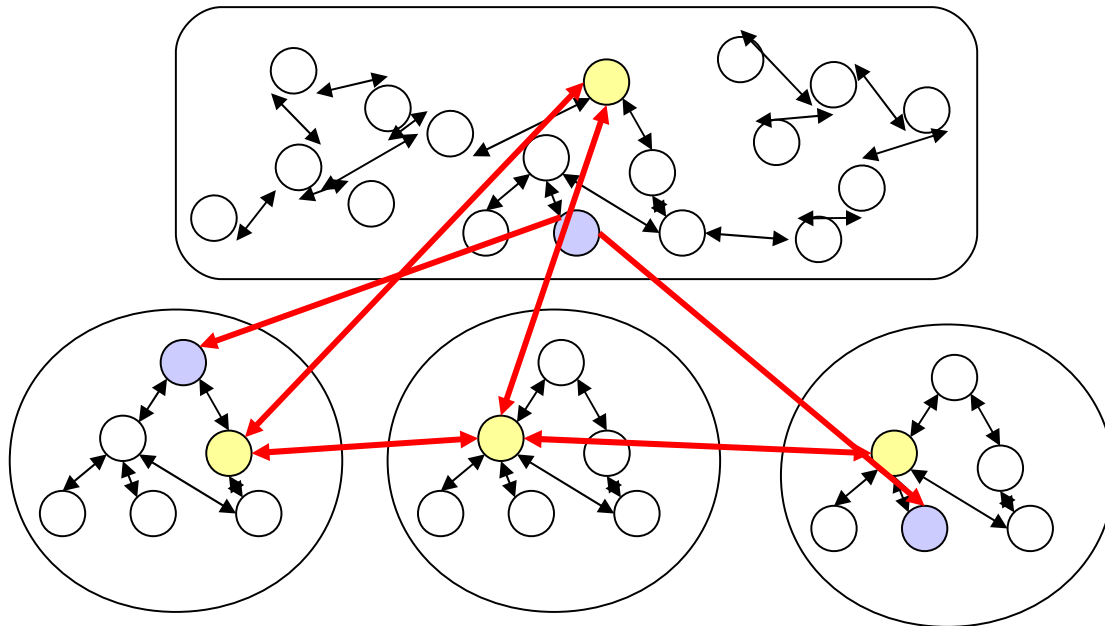




# Knowledge Models

Generic model  
(one for all crops)

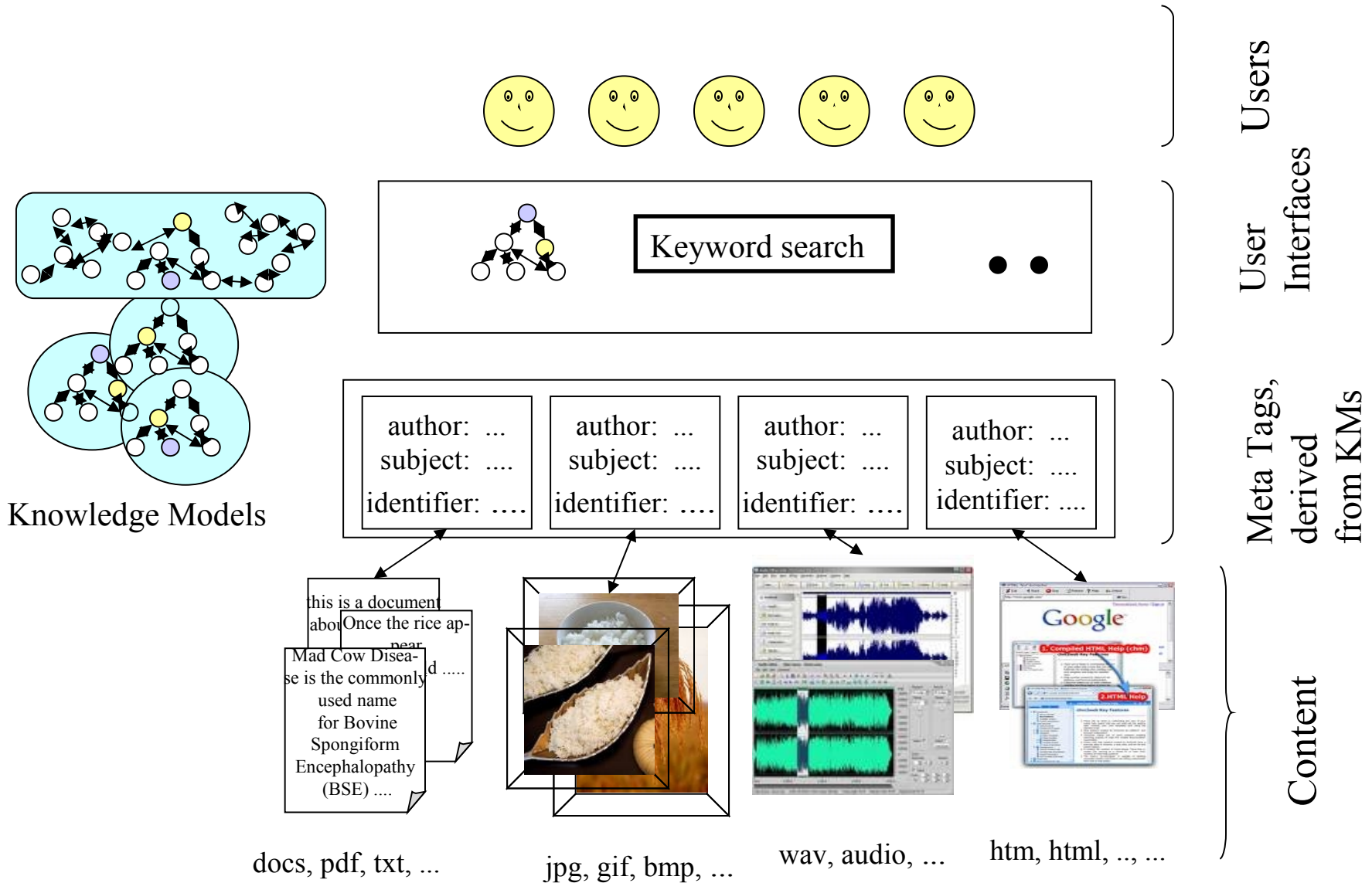
Specific models  
(One for each crop)



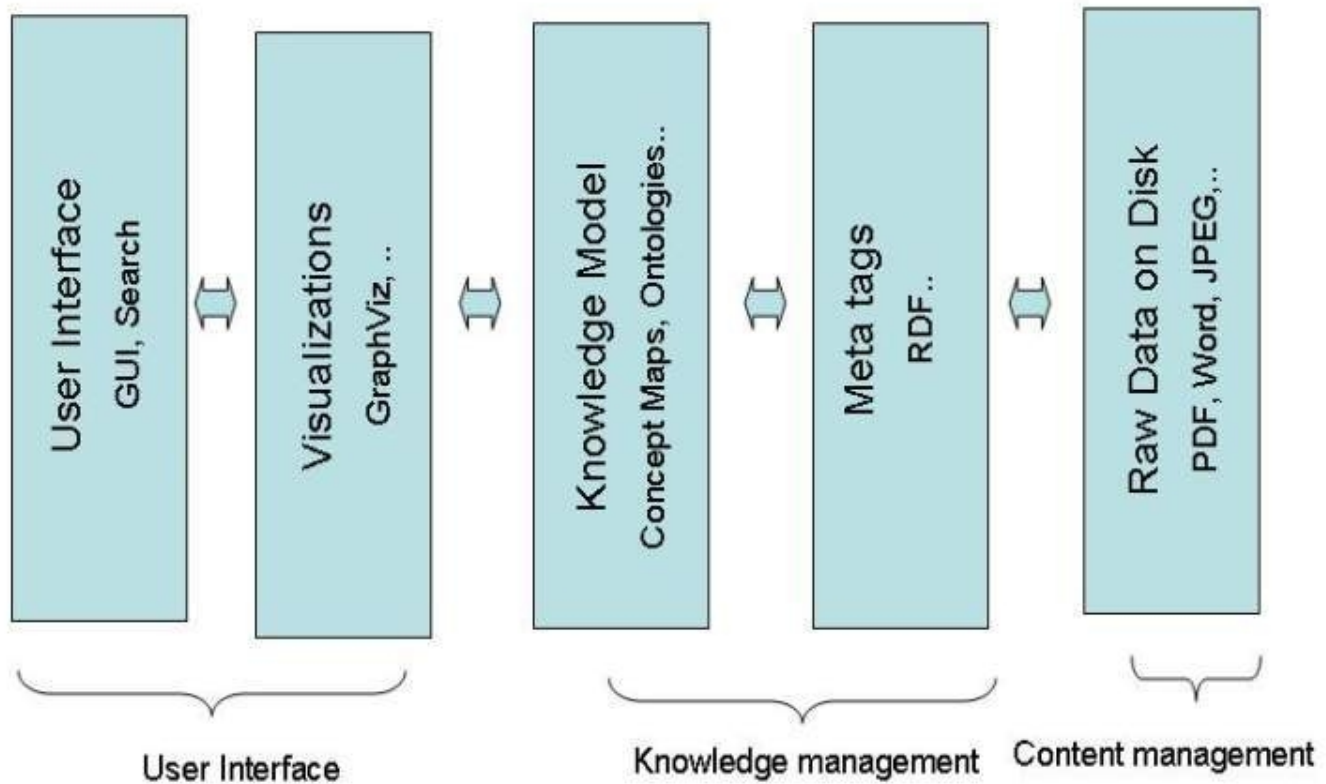
# What we did in the project so far

- Built a generic crop knowledge model
- Developed specific crop knowledge model for 9 crops
- Built a content management system
- Built an tagging system for this content based on the crop knowledge models
- Built a syntactic and semantic search using the using the knowledge model
- All this is hosted at <http://www.agropedia.net>

# agropedia Architecture



# Agropedia Architecture





# What next?

- Content, content, content
- Applications, services
- Community building, social networks

# Thank you