

Agricultural Information Systems Collaborative platform Maghreb

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Abstract— Nowadays the control of the information becomes essential and so is consequently for the competitive factor advantage for the global knowledge-based economy. It is considered as a strategic raw material for companies, in order to take a competitive advantage of it. Regarding the field of agricultural research, we know and this is an achievement for all those involved in this sector, the research makes sense if it is related to the organization of the society and its economic and social development. To fall under this logic of value enhancing and production transfer, knowledge should become social shared and the researchers need to be equipped with tools of visibility and analysis of their activities.

This requires propose a model of information system destined for meshing links between actors involved in research and development. The construction of an information system is a tool for development and transfer of research results to the destination sector of agricultural production. Because it is better for us to propose a model of information system capable of managing intellectual capital in the Algerian agricultural sector and generate value from intellectual assets.

Then, the creation of a shared space should be considered. Such a space will provide an accurate visibility of information and knowledge, to strengthen the institutions, setting up networks of actors. The point is to establish close links with people who share a similar interest (scientists, professionals, political leaders...). This project will take another aspect in the future in order to create an agricultural information systems for a Collaborative platform Maghreb.

Keywords - Information System, Agricultural Information System, Collaborative Platform, Multilingual Agricultural Information, Thesaurus Agronomic, Algeria, Maghreb

1 INTRODUCTION

Information became a discriminating element among all the factors which contribute to the economic and cultural development of a country. It is a strategic resource and has a determining impact on the processes of decision-making aid, planning, management, and scientific research.

Production, storage, diffusion, and exchange of information become major challenges for any organization. For this reason we speak now about “information society”. In this context, Ambrosi et al. state that “there is not just one

information society but many societies, multiple, moving, emergent, changing. These societies, like the words which carry them, are not given to us to be consumed, or adapted but to be constructed, collectively and in an cumulative way. Information and its technologies are not just the same project. The project consists in what we will do with information, and its related risks and potentials. Let the creativity to be expressed by itself and increase it, circulate knowledge” (Ambrosi et al. 2005).

We observe then the emergence of a company of knowledge within the company of information. Nonaka affirms that in an economy where the only certainty is uncertainty, a single source of durable competitive advantage is “knowledge” (Nonaka, 2000). The purpose of what is called the “knowledge management” is to preserve, transfer and develop knowledge while increasing an intellectual capital. This one acts on the one hand, like a stimulant for the innovation and a factor of productivity. It represents on the other hand a device of enhancing the value of knowledge and competence transfer.

To create a decision-making tool to define or evaluate the situation of knowledge on a certain subject we are developing an observatory on the national level. This requires the definition of “targets” of observation, and the type of information we are searching for, once the objectives of the observatory are clearly expressed.

So, the primary application for Local Information System is to provide a place-focused evidence base that is easily accessible to a wide range of users including data experts, managers, policy makers, front-line staff and citizens. They provide a wide range of statistics and reports allowing users to review the current evidence base and build a picture of localities and neighbourhoods for their area of interest (LIS).

There are already some national experiments to create observatories intended for this mission. In France, the Observatory of Sciences and Technology (OST) was created in order to conceive and to produce quantitative indicators related to scientific and technological activities and innovation. It contributes to a strategic analysis and to advance public policies of research on French and European scale (Généralités- Bibliométrie). These activities are based

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on a database made up of more than twenty corpora (scientific publications, patents, participation in the PCRD, data on teaching, European areas, economic situation of the companies...) (Observatory of Sciences and Technology). The National Agency of Evaluation of Higher Education and Research is charged also in a global mission to evaluate higher education and research. This evaluation relates at the same time to the establishments, the research units and the trainings (AERES).

The experiment which is given to us by Canada is also very interesting. It allowed to see how the observatory approach contributes to measure the evolution of science and technology at the country level. The Canadian OST, looks after the constitution, the enrichment and the maintenance of several data banks on R&D, the financing of research, the patents and publications. It allows also the development of an expertise at the international level, in scientometry, technometry and evaluation of research (L'observateur).

We have been inspired by the experiments of neighbouring countries (Morocco and Tunisia). The Moroccan Institute of the Scientific and Technical Information is in charge of the collection, the treatment and the circulation of scientific and technical information for the Moroccan and foreign scientific community. The IMIST makes the documentation and the scientific and technical information available to scientific and industrial circles that they need to be in the vanguard of their research activities or decision making (Moroccan Institute of the Scientific and Technical Information).

In Tunisia, the National observatory of Sciences and Technology of Tunisia (ONST) has a mission of monitoring scientific and technological development. It acts in collaboration with national competences inside and outside the country. It is in charge of ensuring the follow-up of the progress as regards technologies and the realization of the prospective studies in the fields of development progress research and innovation (National Observatory of Sciences and the Technology of Tunisia).

Lastly, we present the Observatory of the National Documentary Potential (PDN) which can be considered as an example of reflection on design of Algerian observatory. This is a diagnostic system for the scientific development of national libraries.

The creation of the Observatory of the National Documentary Potential is the resultant of the implementation of a strategic development plan of a national information system (Kasdi 1998). It meets the following needs:

- To diagnose the actual position of the systems and services of information at the national level.
- To improve the documentary services and resources, to define the needs for the information system in the national scales.

This study presents the observatory of the PDN as a scientific body having current, reliable and objective information which is necessary for the definition, the control and the regularization of the national information system.

The objective of the presented project is thus to combine the various actions around a consortium to allow

the documentary resource sharing which will be standardized with the aim of installing a true national portal whose final objective is to get access to big databases.

In spite of these authorized efforts and undertaken actions that we have tried, they remain insufficient taking into consideration the challenge and importance of the scientific information for decision making.

The interest of these experiments, that we analyzed within the framework of our feasibility study of the observatory on the agronomic research in Algeria, permitted us to observe that the information systems, in the complex universe, in which our economic companies and scientists move, must be conceived like monitoring space of environment, but also like management tools of the own resources of a country. It is this double dimension of technological monitoring, at the same time national and international which will make our future information system a means of piloting the research/development. In the middle and long term, it will be able to integrate functionalities of economic intelligence.

Within the framework of our feasibility study of the observatory on the agronomic research in Algeria, we realized that the information systems in the complex context, in which our economic companies and scientists act, must be conceived like a monitoring space of environment, but also like management tools of the own resources of a country.

In this context, Algeria which faces a food invoice of 3,6 billion dollars (Bouzidi, 2008), with the risk to endanger its food safety, must consider the scientific, industrial and economic information, as a strategic resource that is necessary to manage and exploit in aid of all its sectors of activities and, more particularly of the agricultural sector. But, that cannot be done without the installation of mechanisms supporting the sharing of knowledge and allowing the analysis of the results of the national agronomic research for the benefit of its development. Then, will emerge a collective intelligence characterized by the production of knowledge associated with the structuring and the evaluation of collective actions, the construction of a memory, and the organization of individual competences, in spite of the geographical or cultural distances which separate the individuals concerned.

II. PROJECT OF A NATIONAL OBSERVATORY ON AGRONOMIC RESEARCH

Algeria which faces the risk to endanger its food safety, must consider more particularly the agricultural sector. In order to provide an information system with added value corresponding to researchers expectations and adapted to their needs, a survey was undertaken among different research personnel. Here we are presenting some results of this study.

The study lead to the creation of an information system, which will be in the hands of the decision makers and the scientists, a tool of piloting and increasing the value of the scientific research, by the development of several databases on the institutions, the research laboratories, the projects, the researchers and their publications.

One of the challenges concerns tools capable to favour the capitalization and the transfer of the scientific production towards the agricultural and economic sector.

The query interface of the system which we propose will be presented like a Web page.

We will implement it by setting up a relational management information system for research purposes at the level of the Maghreb. It holds five functions:

- A query and retrieval interfaces: one for public access (Internet and Intranet), the other for restricted access designed for decision makers and research managers, by providing an identification to each user.
- A data management interface (access, update) allowing each institution to access its own data.
- An organization and input system presented as standard access forms for institutions, departments, laboratories, projects and individual researchers.
- A development system allowing the administrator to parameterize and add values according to future needs.

Therefore, the intended system will include three distinct spaces to access the information:

- Relational databases of national research interest: organizations, laboratories, projects, researchers (publications are related to individual researchers in the document databases).
- Access spaces and exchange international information: news, activities, forums.
- A search engine for the databases of agricultural research on the national level.

For this purpose we will propose a diagram which shows the total architecture of the data description:

- An interface to the current observatory database which will be used by the managers of the various research institutions.
- A database maintained by a pilot organization and managed by only one administrator.
- An annual safety copy for the conservation of the scientific inheritance of the various institutions.
- A history resulting from the annual safety copy, allowing the production of evaluation indicators of scientific research such as:
 - a) construction of network sets of themes which are most important and useful for the socio-economic environment of the country;
 - b) best themes covered by the research projects;
 - c) most supported competence clusters, as well as the least covered specialities, in terms of human resources;
 - d) published research in core journals, e.g. the counting of the publications (by institution, laboratory, project, researcher), the impact factor of articles, the most quoted reviews,...

III. SURVEY DESIGN AND METHODOLOGY

We conducted a large national survey that had attracted the participation of over three hundred researchers in Algeria, to know their degree of knowledge on different criteria and evaluation methods.

The organization of our investigation consisted of two main phases: at first, an exploratory phase was developed to conduct qualitative interviews, followed by a pre-survey and, at second, another phase that has been devoted to the questionnaire survey.

An administrative mail was also sent to reference research institutions and to allow the completion of this survey by the researchers. The exploratory phase is divided into two stages: the exploratory interview and the pre-survey. These two approaches reveal that the qualitative survey and pre-test were very effective in gathering opinions. This is due to the fact that the comments we have published were more personal and subjective.

Therefore, it is important to note that the start of our study by the qualitative survey allowed us to understand the mechanisms of thought and behaviour of the investigated scientific community. A total of 500 set of questions were distributed. The gathering lasted five months (February - June 2008). We received 395 returns from which 345 were correctly filled, a rate of 69% of valid questionnaires.

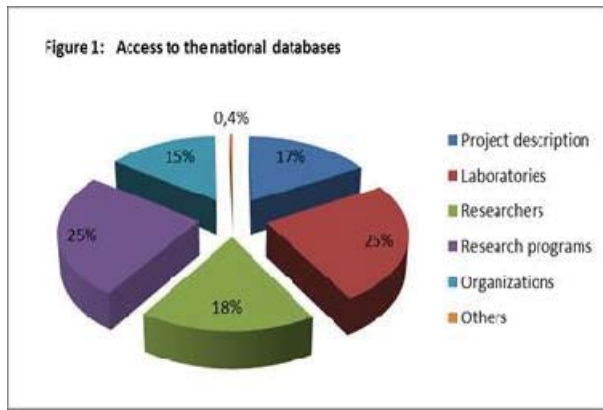
Algeria is facing a challenge by creating an information system of production and dissemination of knowledge on agricultural research. That is what we propose to present as results an extensive survey that we conducted among more than 300 researchers at the national level.

IV. INFORMATION OFFER OF THE PLANNED INFORMATION SYSTEM ON ALGERIAN AGRONOMIC RESEARCH

There are various ways of access to information, in order to facilitate the exploitation and to enhance the value of the results of a research, and their appropriation by the various actors as well as their diffusion. Through this study, we want to evaluate the needs of the scientists in terms of informational offer, which should be available by the future Algerian information system of the agronomic research. This analysis is based on the demands expressed by the researchers concerning the access to information in a big variety of fields: national device of research, national and international publications, databases on the actors, tools of technological monitoring and collaboration.

A. Access to National Databases

Concerning the various intended databases by the information system to describe the national status of research, the demand expressed by the scientists is quite balanced. The number of selected items is in total 1019, each researcher has selected on average approximately 3 different items (cf. Figure 1).



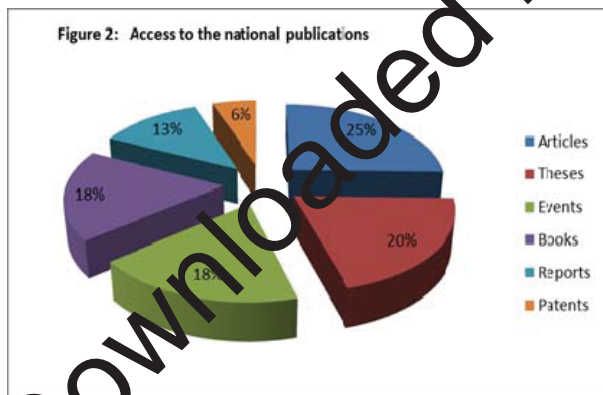
The strong homogeneity of these answers shows that the researchers wish to have information on all the research details in its various components. This consolidates the choice of the agencies of the observatory project who planned to create five distributed federate databases: organizations, research laboratories, research projects, researchers, and research publications.

B. Access to National Publications

The analysis of the researchers' demands concerning the access to the national publications, according to the type of publication, indicates the information sources to be taken into consideration by the future information system on the agronomic research.

The scientists express a clear preference for journal articles (25%), which communicate information of best scientific level, relevant and topical in the field of the agronomic research, either fundamental or applied.

The theses, come in second position, with 20%; they are followed by lectures and books (18% for each of the two types). The reports represent 12% of the demands (cf. Figure 2).



On the other hand, the investigation reveals a lack of interest in national research patents for the development of innovations and the protection of knowledge, in spite of their interest to develop innovation and the economic potential of the country. This disinterest marks for some, an ignorance of the existence of this type of publication in their field. Others estimate that they do not need another information source on the inventions and the holders of the

inventions except for the INAPI (Algerian National Institute of the Industrial Property), where they can carry out their bibliography research in the Property patents.

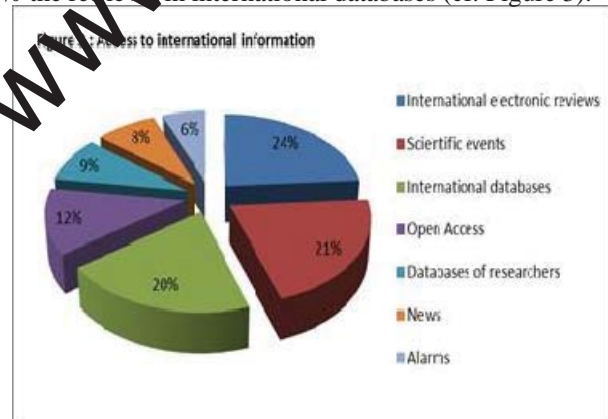
Globalement, ces chiffres montrent que le chercheur algérien souhaite exploiter les résultats de la recherche, tout en pensant à valoriser ses propres résultats et à les rendre accessibles à tous les acteurs concernés.

We can say that all these figures show that the Algerian researcher demands to exploit the results of research, he also thinks to enhance his own results and to make them available for all the actors.

C. Access to International Information

The context of international research, the new information technologies, the evolution of the knowledge and the development of the interdisciplinarity transformed the practice of research and the environment in which the researchers carry out their work. In particular, the access to international information is regarded as a precondition to scientific research innovations in the various countries all over the world.

The survey gives the following results: 24% of the expressed demands concern the access to international electronic reviews, 21% the access to scientific events and 20% the review in international databases (cf. Figure 3).



A result deserves a deeper consideration: the open access represents only 12% of the demands. Exploratory interviews highlighted the ignorance of the scientists related to this type of resource of information (Open access and HAL - Hyper Article on-line). These results correspond to the rate of answers of a study performed in 2007 on "The initiative of open access in Algeria" with a sample of 108 people: 78% of the Algerian researchers seem to be unaware of the existence of the movement of free access repositories (ArchiveSIC, arXiv and HAL; cf. Amrouni, 2007). Another study on "The electronic edition as tool for the enhancement of the agricultural scientific research in Algeria" made in the same year showed similar results: 80% of the researchers are unaware of the existence of open access (Bellahreche, 2007).

We have found this reluctance in other French studies. Those of Swan in 2005 and Wojciechowska in 2006 respectively reveal 22% and 30% of reserve related to unguaranteed author rights (Swan, 2005),

(Wojciechowska, 2006).

We note that the researchers of both countries (Algeria and France) are unaware that the sites of open access facilitate the access to publications, accelerates scientific exchange and improves persistency of the stored data. This collective initiative of the movement of free access emphasizes the relevance of co-operation for sharing knowledge, production of innovations, and the creation of a society of knowledge.

The researcher databases (Who is who?) represent only 9% of the expressed demands. However, this type of database recording competences facilitates the search for colleagues sharing similar interests, the establishment of partnerships and the exploration of new fields or new tendencies.

In the same way, the tools of scientific monitoring do not seem to be known. The news account only for 8% of the demands and alarms (SDI) 6%. These results affirm that, within the Algerian research institutions, there is not only nonexistence of tools adapted to circulation, diffusion and division of scientific and technical information, but that there is also a lack of researchers interest for these tools.

Hence, the Algerian researcher is unaware that these tools currently constitute the principal means of access to the topicality of scientific information; they allow a shared knowledge and facilitate the communication and the interactions near the centers of excellence.

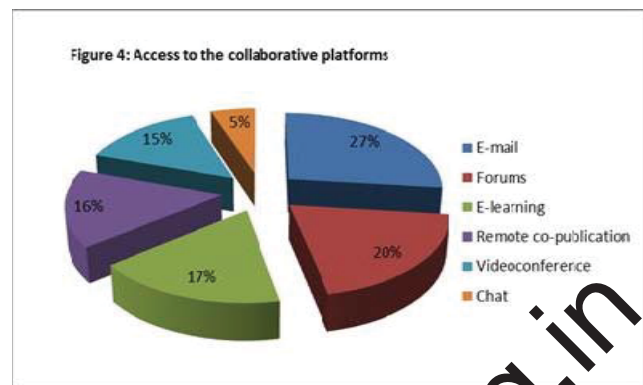
D. Access to Collaborative Platforms

As collaborative work tools intended for scientific production and exchange, the Algerian scientists classify in first the position e-mail with 27% of the expressed demands.

We found the same tendencies as those revealed by a study which was undertaken in France in the year of 2000 among researchers of a business school and which reveals that the use of e-mail is also a means mostly used by the researchers to share the writing of an article (Fleot, 2002).

According to Poissonet, "e-mail is based on a representation of exchanges as a space of a singular meeting between two subjects" (Poissonet, 2002). Then, we have the forums of specialized exchanges with 20% of the demands. These are also tools which support the membership of virtual scientific communities and the performing of collective scientific productions. In addition, if we compare our results with those of a study carried out on the "Pooling of knowledge and the Web community portal" concerning the use of technological by Algerian teacher-researchers, today we note that the Algerian researchers start to be interested in the tools of sharing knowledge. The study quoted above shows that the discussion forums are used by 30% of the researchers in the background of people networks sharing the same knowledge and the same foci of interests (Boukara, 2007).

Among the tools for distance collaboration that the researchers wish to find in the information system, we have the e-learning with 17% of the demands and the remote co-publication with 16% (cf. Figure 4).



The rate of these two media, according to the answers, copies not comparable to the extent of means set up by the ministry for higher education and scientific research (MESRS). Consequently, for the policy followed by this ministry to develop the e-learning in Algeria, it was agreed to create a device for teacher training in the field of ICTs, the mobilization around new telecommunication technologies and reprocessing contributing to the improvement of the quality of teaching, with a greater democratization of the access to the university.

Indeed, the Algerian researchers work more in bulk-heading than in co-production. The exceptions apply to collective products made by researchers who are inserted in networks associating external organizations or in collaborative networks within the same research department. Okubo Yoshiko states "scientific creation still remains a largely national act: the co-authorships show that the researchers refer to national knowledge first of all and that they conjoin more and more within the same laboratory and between national laboratories" (Okubo, 1996).

The videoconference appears only in 14% of the demands. This application makes it possible to organize conferences between people who are distant geographically and who do not need to move in order to establish distant contacts and exchanges.

At last, the chat (asynchronous messages) which makes it possible to constitute living rooms of discussions is also of limited interest (15% of the demands). The scientists consider that the chat is rather a tool of leisure and distraction. It is important to specify that this type of exchange is usually used within the scientific social networks and can meet, initially, a personal need for discovering others on the Internet. This data reveals how much certain preconceptions can force the bulk-heading research activities and the isolation of researchers. Contrary to what the scientists think, this type of tool proposes also services of collaborative information management between researchers. It can be used in order to have relation and to create project teams.

V. CONCLUSIONS FROM THE SURVEY

The general results of this survey allowed to locate a number of strong points and weak points. Among the strong points, we noted a rather strong expectations of the examined scientific community concerning a better

visibility of the total national devices of agronomic research: they wish a broader diffusion of the cartography of the institutions and research laboratories, their programs and research projects and their poles of competences.

A second remarkable point is the interest of the majority of the scientists in research results treating unpublished new topics of topicality (journal articles, talks and theses). Thus, the Algerian researcher is initially interested in the national publications and then in the knowledge produced in his country. In return, he wishes to make known his own publications and his work to be valued by scientific peers. So, as Chartron underlines, the production process of the publication and the use of information are very linked: "The information sources preferred by the researcher are generally those on the basis of which he will seek to valorize his work, in order to be published" (Chartron, 2003).

Concerning the access to international information, the tendencies of the researchers are directed too much towards the international electronic reviews, the scientific events and the international databases, but the new forms of publication, like the open access are ignored. Among the collaborative work tools, the Algerian scientists are interested initially in the e-mail. Then we have the specialized forums of exchanges which are appreciated, but the directories of competences (Who is who?) are neglected. The tools of the technology monitoring (news and alerts) give rise also to little interest for the researchers. However these information sources permit to identify topical themes which carry innovation, to seek the specialists in the corresponding fields, to reinforce the networks between researchers, in order to lead to a consolidation and a mutualisation of knowledge.

Lastly, it would be important that tools such as chat platform exchanges, e-learning, videoconferences and resource sharing for coproduction see an increasing usage to decrease an inter-institutional bulk-heading of the research teams. Indeed, Serge Boulrier insists on the importance of the groupware which develops [...] an improvement of the contact between people concerned with the same task or the same project, an increased quality of production by the multiplication of views, a dynamic of creativity....] ([... une amélioration du contact entre personnes concernées par une même tâche ou un même projet, une qualité accrue de la production par la multiplication des regards, une dynamique de créativité...]) (Boulrier, 2008).

The technical potentialities are such as they exist already: a broad co-operation between many scientific communities through a planetary network which builds a science without border. Research teams who are not very committed in this evolution will be quickly marginalized. It is the challenge which the must raise researchers in the Algerian agronomic research by increasing their participation in international scientific activities: seminars, exchanges of researchers, co-operations with broader projects, and collective publications, etc.

VI. FUTURE PROSPECTS

The conclusions of this project are the following: the exchange and the division of information play a fundamental role for the development, the people in charge of the research and development institutions, and also the political powers (research programs and strategic planning) work more and more on the emergence of a culture of knowledge division as a source of richnesses creation.

As stated above, the Algerian researchers in agronomic research, must increase their participation in the international scientific activities.

It is essential that the Algerian researchers will be integrated in this dimension of collaborative work on widespread themes. These solid networks are requirements for the relationship between partners whose missions must be retained more precisely on topics of current events and innovation.

The survey that we conducted among those more than three hundred Algerian researchers reveals a fundamental need for the creation of a favourable framework for the division of knowledge to get more collective intelligence. This focuses on the creation of an information system of high added value which will be in the hands of the decision makers and the scientists, a tool of piloting and increasing the value of the scientific research, through the development of several databases on the institutions, the research laboratories, the projects, the researchers and their publications.

With respect to future international projects, it will be necessary to think of the creation of a Maghrebian information system devoted to the best processes of renewal and development of the mechanisms of research related to Maghrebian agricultural co-operation.

This implies an information system that has a common language for research exchange what means however, the application of multilingual features in the construction of the documentation language, e.g. in the sector of agronomy. In particular we are thinking of the control of indexing and vocabulary (Richard 2011, Soergel 1974).

A. Agricultural Information Systems in the Maghreb

The creation of an information system and of a data acquisition system specialized on the agronomic research in Maghreb proves to be an essential need, following the problems of enhancement and sustainability of the scientific information. To control and anticipate their evolution, the decision makers and the researchers have an urgent need in knowing:

- who is who, by identifying the centers of competences in the field of agronomic research,
- who makes what, by adopting a technological interface allowing to establish links between the researcher databases and the ones of the scientific work,
- who collaborates with whom, by setting up a project database allowing to identify the partners in a specific area.

Accordingly, it is possible to retrieve data of the information system whatever their nature. E.g. it could be a

search in full text over all the headings of all the tables. Further features will be a field allowing the selection of the required words and a possibility to limit the research objects. All these key tables and words were developed starting from several thesauri such as “Agrovoc” (Agricultural information management standards and “Agris” (International system of information for agricultural sciences and technology). Different hierarchical and associative relations (broader/narrower terms, related terms, equivalent terms, combination use) are established between the terms. It is suited for indexing and searching documents, web pages and digital objects. Agrovoc has also been used in combination with linked open data techniques to connect diverse vocabularies and to build the backbone of retrieval on Internet data.

We think it’s very important to work out a standardized harmonized language and to build a thesaurus common to all the adherent organizations at the observatory.

The tool of indexing of the thesaurus AGROVOC will facilitate, on the one hand, the indexing of the scientific production of the research institutions and the retrieval of the various relational databases of the Maghrebian observatory on the other hand.

Nous pensons qu’il est important d’élaborer un langage harmonisé normalisé et de bâtir un thesaurus commun à tous les organismes adhérents à l’observatoire. L’interrogation des différentes bases de données relationnelles de l’observatoire maghrébin se fera à travers l’outil d’indexation AGROVOC d’une part et l’indexation de la production scientifique des institutions de recherche d’autre part. A titre d’exemple, nous avons la base de données des projets et celle des publications scientifiques.

As an example given, the word ‘Algeria’ in Agrovoc, will display the word tree:¹

UF	13207 - People's Dem Republic of Algeria (EN)
BT	5218 - North Africa (EN)
RT	564 - Arab countries (EN)
RT	3084 - Francophone Africa (EN)
RT	4698 - Mediterranean region (EN)
RT	331313 - SAU (EN)

If we take the number 5218 (North Africa), this gives us the word tree:

UF	3736 - Maghreb (EN)
BT	165 - Africa (EN)
NT	759 - Algeria (EN)
NT	2503 - Egypt (EN)
NT	4312 - Libyan Arab Jamahiriya (EN)
NT	4940 - Morocco (EN)
NT	8007 - Tunisia (EN)
RT	564 - Arab countries (EN)
RT	29755 - Sahara Desert (EN)

¹ **BT** : broader term, **NT** : narrower term, **RT** : related term, **UF** : used for

B. Advantages of the Multilingual Agricultural Thesaurus AGROVOC

B.1. Usage of AGROVOC

The thesaurus AGROVOC² is a multilingual vocabulary and the most complete one in the world. Structured and conceived to cover the terminology of fields like: agriculture, forestry, fishing, food, and related fields. It is available on line in several languages (German, English, Arab, Chinese, Korean, Spanish, French, Hindi, Hungarian, Italian, Japanese, lao, Persan, Polish, Portuguese, Russian, Slovak, Czech, Thai).

It is used in the whole world by the researchers, the librarians, the managers of information to index, extract and organize data in the agricultural information systems. Its role is to help for standardizing the semantic description of the objects of information with an aim of integrating information in the systems, and for providing an access to the relevant resources.

Many institutions use it to index and to research numerical documents, web pages and objects. It will be easy to incorporate into existing systems as it is available in many formats, like MySQL format, MS Access, XML, HTML and IS²⁰⁰⁹.

B.2. Structure and Application of the Thesaurus

Today, AGROVOC comprises 16.607 descriptors and many non-descriptors (synonyms). It is composed of terms which include one or more words, representing a single concept. For each entry term, a group of terms is offered, showing the hierarchical and nonhierarchical relationship to other terms: BT (generic term), NT (narrower term), RT (related term), UF (non-descriptor).

B..3. Concept Server AGROVOC and Workbench

The server permits to represent more semantics than the specific relations between the concepts and the relations between their multilingual lexicalizations, for example, “ a synonym”, “a translation”. It is a resource which structures and standardizes the agricultural terminology in multiple languages, being able to be used by different users and systems worldwide.

A workbench is a Web work environment for the management of the concept server of AGROVOC. It is a tool which supports the maintenance of the data of the concept server , to support the users to add, publish and remove terms and concepts, and to create relations between them in a collaborative and distributed environment. Workbench of the concept server is freely accessible to all and facilitates the collaborative edition.

² AGROVOC has been created in the 1980.

<URL :<http://aims.fao.org/website/AGROVOC-Thesaurus/sub>> (Consulted page 20/03/2012).

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