



# PAEPARD



THEMATIC BRIEF #7



Strengthening the capacity of multi-stakeholder partnerships in ARD

## Knowledge co-creation and management in ARD

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# From information to knowledge

The distinction and relationship between information and knowledge is often expressed pictorially as the “knowledge triangle” or “knowledge pyramid” (Figure 1), although many variations on this theme exist. Essentially, information may be regarded as different pieces of data made meaningful by being organized and interpreted. Knowledge is often regarded as information that is applied, or put into action: information interpreted, internalized and contextualized by an individual or group, (potentially) leading to action. When knowledge becomes socialized and internalized, to the point where it is widespread, largely unquestioned, and used to inform day-to-day tasks, it is sometimes referred to as wisdom.

Knowledge can be broken down into different kinds: the “what” (concepts), the “why” (cause and effect relationships), and the “how” (procedures, know-how). But generally, information is considered to become knowledge when it leads to some form of action. As it is individual and context specific, knowledge to one individual or group can be simply information to another. Knowledge is shaped by personal experiences and beliefs and will change when people interact and exchange about it (see more on this below).

## Types of knowledge

The knowledge management literature often distinguishes two types of knowledge, that is, **explicit** and **tacit** knowledge. Explicit knowledge refers to that which is considered objective, written down, structured and easily communicated. Tacit knowledge is that which is more intuitive and subjective, related to experience, and it may be difficult to articulate and share. While explicit rules of grammar exist in most languages, most people have a tacit knowledge of their own language which allows them to speak grammatically correctly, even if they are not aware of the “rules”. In most cases, people combine both explicit and tacit knowledge.

The interpretation and application of information is influenced by the interactions between individuals and groups, in the process leading to the creation of new knowledge. In typical Agricultural Research for

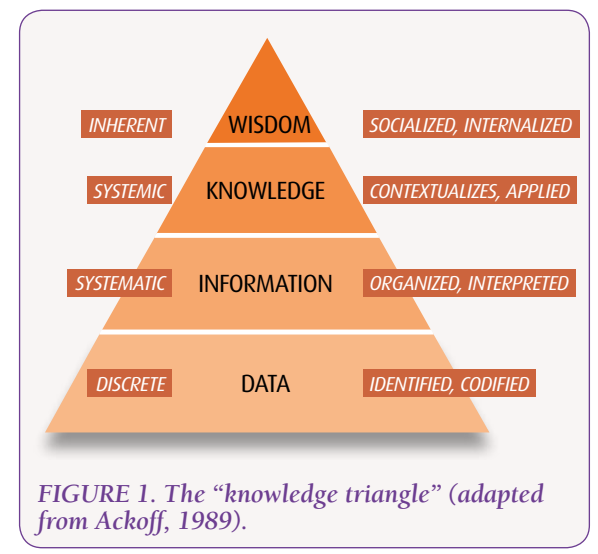
Development (ARD) partnerships, this process is made more complicated by the different emphases or values given to explicit and tacit knowledge by different groups of stakeholders. Researchers, for example, tend to focus on (what they regard as) objective, explicit knowledge which has been documented in a professionally recognized format. Indeed, their professional advancement often depends on generating and codifying such knowledge in professional journals.

Other stakeholders such as farmers and business people, place more emphasis on tacit knowledge, gained through experience. Their incentive is based on what works (and makes money) in practice. These stakeholders tend to regard the “explicit knowledge” of researchers and educators as “information”, to be tested and adapted in practice before it is acknowledged as “knowledge”.

New knowledge is created when tacit and explicit forms of knowledge are converted and exchanged. Tacit knowledge needs to be made more explicit – by documenting and communicating.

The exchange of perspectives and experiences among groups (both tacit and explicit) allows ARD partners to better access, deploy, develop and exploit existing knowledge, in a process of learning and innovation (see *Box 1*, next page).

A third type of knowledge referred to in the literature is **embedded** knowledge. This refers to knowledge that is acknowledged as such, but has become formally embedded in rules, manuals, processes or products, or less formally embedded in the behaviour, ethics and culture of groups or organizations. An organization which is agile in embedding knowledge can be referred to as a “learning organization”.



## Bringing tacit and technical knowledge together to improve soybean processing

BOX 1

**IN SOUTH AND CENTRAL BENIN**, processing at village level is mostly carried out by women. Women’s groups produce soybean milk, flavouring mustard (“afitin”) and cheese (“goussi”).

**THE LOCAL NON-GOVERNMENTAL ORGANIZATION**, Sojagnon, supporting soybean value chain in Benin, brought together women’s soybean processing groups with researchers from the University of Abomey-Calavi in Benin, the Institut des Sciences Agronomiques du Benin (INRAB), the Federation des Unions de Producteurs (FUPRO) du Benin, University of Lisbon and the University of Wageningen and research (WUR) in the Netherlands. The Coordinator of Sojagnon, promoted discussions between them and organized field visits of researchers to the region, leading to the improvement of processing technologies and knowledge

on the biochemical and nutritive value of local soybean products. With PAEPARD funding, the “re-engineered Soybean Afitin and Milk project (ProSAM) brought technical and explicit knowledge together with the tacit knowledge of women’s groups. This was the first time these two groups had interacted and exchanged on their different kinds of knowledge. This led to longer shelf-life and new markets for soybean milk and Dadonu.

**THE INCREASING KNOWLEDGE AVAILABLE** on suitable soybean processing techniques is now being shared and scaled up through additional women’s groups in other projects (such as the Dutch-funded 2SCALE project, and the German-supported ProAgri-GiZ). Improvement in the soybean value chains has led to improved household income and improved nutrition in the region.

## The importance of sharing knowledge

When individuals share their knowledge, and this knowledge becomes embedded in a group or team’s norms and processes, it can be said that it has become part of the group’s knowledge and capacity. When group knowledge becomes widely shared amongst the members of an organization and gets incorporated and embedded not only in documents and repositories but also in organizational routines, processes, practices and norms it can be said to have become organizational knowledge, memory, or capacity. Through sharing, therefore, knowledge can be passed or transferred from individuals to groups and from groups to organizations.

The sharing of knowledge between individuals, groups and organizations facilitates the generation and accumulation of additional knowledge. Knowledge is created in dialogue and interaction, and hence the knowledge available to a group or community increases with sharing and conversely decreases if and when hoarded. Where knowledge is effectively shared between ARD partners, this knowledge then becomes greater than that of the individual organizations or individuals in the partnership.

Teams, organizations and partnerships that effectively share their knowledge and learning therefore become more

knowledgeable and perform better than those who keep knowledge to themselves. Promoting knowledge sharing is likely to result in improved team and organizational performance, particularly in terms of effective, efficient and relevant use of their assets. Partnerships formed around complex issues and that encourage sharing and joint learning between partners are likely to out-perform those who do not. Of course, knowledge is also often seen as a source of power; knowledge sharing means being prepared to share this power. It also means losing control over what happens to the knowledge.

The basic requirements of effective knowledge sharing are simple: a source of knowledge (ARD partners and stakeholders), and time and space for interaction and joint learning. The time and space for interaction can be both formal and informal, as well as physical (face-to-face) and virtual (on line):

- **Formal** spaces for interaction consist of scheduled activities such as (partnership) meetings where reflection and learning – especially about processes and stakeholder relationships – should take place in addition to planning and the more normal project accounting of tangible inputs and outputs.
- **Informal** spaces include those often unbudgeted and unscheduled opportunities for people to interact; these can be encouraged through social occasions (mealtimes, evenings) and informal discussions, establishing virtual communities of practice, discussion groups, joint field visits, open days, etc.

Both tacit and explicit knowledge are important to understand an ARD situation



ARD partnerships often underbudget for these “transaction costs”. But saving on these opportunities to exchange reduces interactions between staff, and staff and stakeholders; reduces the accumulation of knowledge by a partnership or its component organizations; and therefore likely reduces their performance, competitiveness and/or sustainability over time.

## Knowledge management

**Knowledge management within ARD partnerships** is therefore about providing and managing the space for knowledge exchange, co-creation of knowledge and joint learning. This space needs to bring together the explicit knowledge of researchers and combine it with the tacit knowledge of research users (farmers and agribusinesses) to create new knowledge. How can such a space be provided and facilitated? Who should have the responsibility to organize and manage such a space? Who documents the new emerging knowledge? (i.e. who converts the tacit knowledge into explicit knowledge?). Many ARD partnerships grapple somewhat unsuccessfully with this issue, as the prevailing organizational and professional culture does not provide suitable incentives. Professional recognition usually comes through peer (not user) reviewed professional journals, project funders usually emphasize measurable outputs and outcomes through quantitative “monitoring and evaluation” systems; neither system encourages mutual learning, documentation of tacit knowledge, or knowledge on innovation processes themselves.

The concept of Agricultural Knowledge and Information Systems (AKIS,) developed in the early 1990s, moved away from a simple transfer of technologies to farmers and recognized the equal importance of integrating the (tacit) knowledge of other stakeholders (including farmers, processors, consumers, etc.), along with that of research and extension services. The AKIS concept views all actors within an agricultural system as having a stake in the process of generating, disseminating and using knowledge, not just researchers. It stresses the need to take stock of the knowledge of all system actors by creating a “platform” for the interaction of the actors, facilitating the generation of joint learning and developing new knowledge to be put into use.



## Knowledge management and innovation platforms

“Multi-stakeholder innovation platforms” (MSIPs) can be broadly defined as *a forum of stakeholders who share a common interest and come together to solve problems and develop mutually beneficial solutions*. MSIPs have become a common mechanism to facilitate interaction, knowledge sharing, learning, and documentation in ARD partnerships. Such platforms can be local, regional or national, according to the issue addressed. The diversity of cultures, mindsets and social backgrounds of the actors within such a platform or ARD partnership, however, can lead to conflict and hinder these knowledge-sharing processes. Good facilitation is necessary to build trust, social cohesion and stimulate joint reflection in order for actors to think beyond their own interests and create room for new perspectives and actions.

The task of knowledge exchange between ARD partners usually falls to a “champion”, facilitator, broker or project manager (See Brief 3: Adaptive Leadership). This might be an individual or a specialized organization, NGO, government department or business development service. However, this intermediary role is often not present, or not well defined, and specific focus on knowledge exchange, learning and documentation often “falls between the cracks” among other partnership activities.

Within the context of ARD partnerships, knowledge management therefore includes:

- **Generating** new knowledge, and accessing relevant knowledge from outside sources (e.g. knowing which *Trichoderma* strains to best use, in the production of vegetables);
- **Transferring** existing knowledge to all actors in a partnership or innovation platform (e.g. through training how to produce and use improved compost);
- **Using** accessible knowledge to aid decisions and respond to shared challenges (e.g. through building on local composting techniques known to farmers);
- **Embedding** the knowledge in products, services, processes, structures and culture of the ARD partners and stakeholders (e.g. through commercialization of the *Trichoderma* enriched compost);
- **Documenting** and storing knowledge for the future benefit of partners and scaling of good practice (e.g. through the PAEPARD reports on the *Trichoderma* “story”).

Undoubtedly, new information and communications technology (ICT) offers potential for improved knowledge

management. A variety of communications and “web 2” information sharing tools and project management software is now available. But ICT - “hard” assets - alone will not automatically lead to improved knowledge management. It represents only the storage system and pipelines for knowledge management. It does not itself create knowledge, guarantee or even promote knowledge generation and knowledge sharing in cultures that do not favour such activities. The availability of good technologies alone does not change a knowledge-hoarding culture into a knowledge-sharing culture: incentives for sharing are also required.

## Knowledge management tools

As noted above, “knowledge management” within an ARD partnership is related to the strategies, cultures, leadership of the partners themselves, as well as the tools that are used to facilitate interaction, learning, documentation and communication. A complete overview of knowledge management tools therefore would cover all these areas. For the purposes of this brief, we can distinguish:

**Tools to facilitate face-to-face interaction:** Most ARD partnerships will inevitably involve meetings where stakeholders come together to discuss areas of common interest, define joint goals, negotiate roles and responsibilities, and assign resources (or develop strategies to acquire such resources). Also important – although often less frequent and less organized – are meetings to jointly reflect on experience, define lessons learned and how to act on or embed this new knowledge. Both of these types of exchange can be made more efficient by good facilitation to ensure the input of all stakeholders (using an outside facilitator for the purpose, if necessary), and by the use of specific and structured tools to plan and/or reflect (see Brief 6: Reflection and learning in ARD).

**Tools to facilitate virtual interaction:** Many ICT solutions and tools now exist to manage communication and knowledge between project partners and networks. Especially valuable when partners are geographically far apart, these tools can incorporate communication (email, discussion groups, virtual conferencing), planning tools (scheduling, activity streams), resource depositories

(documents, videos, case studies, etc.). For knowledge exchange with other ARD partnerships and actors, webinars, virtual conferences, discussion groups, and communities of practice are common methods.

## Experiences of knowledge management in PAEPARD

The PAEPARD project itself can be considered as a platform for mutual learning and knowledge. It aimed at creating ARD partnerships balanced between a) African and European partners, and b) research organizations and research user groups (e.g. farmer organizations). It was designed to promote a process of mutual learning, cultural understanding and attitudinal change regarding ARD. An expected result of PAEPARD, according to its document of description of action, is that *“African and European stakeholders, including the African Diaspora in Europe, have access to timely and relevant information and are actively engaged in sharing knowledge on ARD partnership opportunities and best practices”*.

PAEPARD organized knowledge management at three levels:

- **Within the PAEPARD project partnership** – involving some nine organizations from Africa and Europe, including continental and international research, farmer-based, capacity development and non-governmental organizations with very different cultures related to knowledge types and knowledge management;
- **Within individual ARD partnerships** (consortia) formed with support from the broader project, including some 18 multi-stakeholder consortia involving research, farmer groups, NGOs, industry associations, etc;
- **Between the PAEPARD project and external stakeholders**, including funding agencies (the European Commission, which funded the overall project, as well as bilateral agencies from Netherlands, Germany and elsewhere which funded ARD consortia formed with PAEPARD support), as well as sub-regional and national research agencies.

The PAEPARD communication strategy tools emerged over time, in line with the emergence of new information and communication needs. This strategy included both

Knowledge management is more than just information management



creating spaces for exchange of tacit knowledge and mutual learning, as well as exchange of more explicit knowledge via publications and virtual media, for all three levels of information and knowledge management.

### Tools used within the PAEPARD project partnership

As with many such projects, the main formal “spaces” for knowledge exchange between project partners consisted of a project Steering **Committee** (comprising managers of the partner organizations), and a project Management Team meeting (consisting of project implementors from the partner organizations). Co-implementation of project activities such as **training workshops** were perhaps the main opportunity for mutual knowledge sharing and learning. Early on in the project, initial “**stakeholder consultations/mobilization**” workshops were held for stakeholder groups (researchers, NGOs, farmer organizations) in both Europe and Africa, to better understand their knowledge areas and concerns. Towards the end of the project, **joint “capitalization” workshops** were also organized to share perspectives between the partners and consortia, and document lessons learned for both an internal and an external audience.

In terms of specific and virtual communication tools, project partners initially – albeit not very consistently – used **Dgroups** ([www.dgroups.org](http://www.dgroups.org)), **email exchanges**, and **Skype** and **Twitter**.

### Tools used within individual ARD partnerships

Knowledge exchange within the individual ARD partnerships (consortia) was initially promoted through “**partnership inception**” workshops. These were specifically designed to promote knowledge exchange between different stakeholders, using tools such as systems and stakeholder analysis, to explore mutual understanding of an initially identified issue of mutual interest or concern (see Brief 2: “Systems thinking”). Subsequent “**proposal development writeshops**”, organized around specific and competitive research funding opportunities (calls), and where partners had to agree on specific joint objectives and activities, to facilitate funding, were also regarded as key opportunities for knowledge exchange.

These partnership inception workshops and project proposal writeshops by themselves were regarded by farmer organizations and NGOs to be insufficient to adequately share knowledge on research needs. The subsequent “user-led process” developed included an initial

“**desk study**” (to summarize existing explicit knowledge on the theme identified by farmer organizations), followed by **stakeholder induction/partnership formation workshops**, **additional “research question workshops”** (to further exchange the knowledge of different stakeholders and identify researchable issues), as well as subsequent **joint proposal development**. PAEPARD made funding available for external facilitators for these early interactions between stakeholders, although this limited remit did not allow the opportunity to tackle broader organizational issues and knowledge differences; and facilitate exchange of tacit and explicit on a more continuous and sustainable basis.

Although many project management systems exist, PAEPARD developed a **bespoke information management system** to encourage communication within and between ARD partnerships. OSARIS (Online system improving relationships by information sharing) allowed partners to co-write and share documents, plan joint activities, etc., thus allowing PAEPARD partnerships to both collaborate internally, and to communicate externally.

### Tools used between PAEPARD project and external stakeholders

One of PAEPARD’s goals was to advocate for balanced partnerships in ARD projects (as described above), and the need for brokerage and suitable processes to achieve these ARD partnerships. The project therefore used international network and project meetings as spaces to for such advocacy. These included: **regional policy dialogues and congresses** organized by African sub-regional farmer organizations (PROPAC, FANRPAN, EAFF, ROPPA); **conferences** by research and education networks (e.g. Agrinatura in Europe, FARA and RUFORUM in Africa); **meetings of donors and other projects** (e.g. EU “European Development Days” and EC funded project meetings, the Netherlands NWO-WOTRO meetings, etc).

As tools to promote communication with external stakeholders, PAEPARD developed the **project website** ([www.paepard.org](http://www.paepard.org)), **PAEPARD blog** (<http://paepard.blogspot.com>) and **Dgroup** (with more than 8,750 users as of 2017), **YouTube videos**, **slideshares**, etc. More formal communication with the funder included standard project narrative reports. Documentation of lessons learned aimed at a wider audience included a series of working papers and condensed “**policy briefs**”, as well as this series of **thematic briefs**. Individual project partners also promoted knowledge exchange via their own websites, blogs, social media and print media.

## Sharing knowledge on chicken feed

**THE RISING DEMAND** for agricultural products such as maize, soybean and groundnut have pushed up the prices of animal feed in Nigeria. At the same time, the Department of Animal Science and Technology of the Federal University of Technology at Owerri has considerable expertise in locally available and novel feeds made from cassava, palm kernels, spent brewers’ grains and leaf meals, etc. How to share this knowledge with those who need it?

**PAEPARD BROUGHT TOGETHER SCIENTISTS** from the university, the Poultry Association of Nigeria, and the Feedmillers Association of Nigeria to form the Nigerian Poultry Feeds Research and Development Consortium (NIPOFERD). The project also provided the services of two “**agricultural innovation facilitators**” to help these different organizations exchange knowledge and establish joint activities, and funds to develop research proposals based on these joint ambitions.

**IN ADDITION TO DEVELOPING** new explicit knowledge through research into low-cost feeds, activities planned by the NIPOFERD consortium included sharing knowledge through trainings, demonstrations, farmer discussions, consultancies and other exchanges between different stakeholders, as well as publication of books, pamphlets, posters and videos.

To achieve project objectives, the project design included a dedicated communication work package. Even so, “*ensuring that appropriate information was made available to users in a timely manner and in a form that can be understood and used was, understandably, a major challenge*”. Not surprisingly, different partners had different knowledge needs, different preferred tools and procedures to share this knowledge, and also different incentive structures to offer knowledge in ways appreciated by partners and stakeholders. As with many multi-stakeholder projects, these differences were not always overtly recognized or made explicit.

As with most ARD partnerships, PAEPARD demonstrated the value of (and resources needed for) communication and information systems. However, an even more explicit

focus on knowledge management – especially through more efficient and systematic efforts for joint reflection and learning, could enable future ARD partnerships to further improve knowledge management and encourage the embedding of this knowledge into the structures, practices and cultures of ARD partner organizations.

The external evaluation in 2017 concluded that the communication component and information system of the project had generally been successful. However, it also suggested that the system could be further improved into a “knowledge management system”, with webinars, topic discussions and e-learning, better follow-up on received information, and more “ownership” by partners via interactivity and social media.

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# PAEPARD



## Executive summary

### **Agricultural Research for Development**

(ARD) partnerships exist to co-create knowledge and to stimulate learning. However, the diversity of cultures, mindsets and social backgrounds of the actors within such a multi-stakeholder platform, and the relative value they give to different types of knowledge (such as explicit as opposed to tacit knowledge), can often lead to conflict and hinder the process of knowledge exchange, creation and learning.

**Knowledge is information** which has been internalized, contextualized and which then leads to action and beneficial outcomes for rural livelihoods. When knowledge is shared, and then embedded in a group or organization, its capacity for innovation is enhanced. Without effective knowledge management, ARD partnerships are themselves less effective.

**Enough time and space** for (formal and informal) interaction is critical for effective knowledge co-creation. Unfortunately, ARD partnerships often underbudget for these activities, trying to keep “transaction costs” to a minimum and focussing more on tangible outputs. Such saving can reduce the accumulation of knowledge by a partnership, its performance, and sustainability over time.

**The PAEPARD project** was designed to promote mutual learning between European and Africans, researchers and research users. It organized knowledge management at three levels, and met success but also challenges. In this brief we discuss the various KM tools used.

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