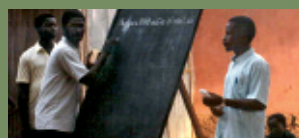


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Topic in Focus: Knowledge Management

Knowledge management, as a systematic and institutionalised approach in Development Cooperation, is essential. This is due to the sheer amount of data, information and experience accumulating over the years, the need to work more efficiently with limited resources, and the management tasks of complex programmes as a consequence of donor harmonisation. Furthermore, knowledge management is underpinning the GTZ policy on capacity development. This AGRISERVICE Bulletin looks at the current practice of knowledge management in development institutions, in projects and programmes, in emerging farmers' organisations, and at the knowledge flow between these bodies. Most articles were written as inputs for the international workshop on "Communicating Knowledge", held in Assisi in June 2007 with GTZ, FAO, CTA, CGIAR and the University of Perugia, Italy. The following generic success factors were identified from the analysis of cases in the light of knowledge management theory:

1. linking knowledge management to the *strategy of the institution* (serving targets),
2. developing a *culture* of knowledge sharing (trust, reward, procedures),
3. *involvement and participation* of stakeholders (ownership, user logic),
4. *capacity development* (training, technology, organisational development),
5. *contextualisation of information* (content, quality, retrieval, communication),
6. *monitoring and evaluation* (use, impact).

The flow of knowledge between field projects and headquarters was identified as a particular bottleneck. The articles elaborate on the success factors and cover major aspects of the theory and practice of knowledge management. In addition, we supply some new tools for practitioners. More background can be found in our new reader (www.gtz.de/agriservice > further information > thematic readers). We hope this bulletin provides insights that will be useful for your knowledge management tasks ahead.

Mathias Braun
Editor



Theory of Knowledge Management

Knowledge as a Factor of Production: How to Make it Effective with Knowledge Management Methods

Some key empirical success factors for sustainable knowledge management – from an experienced practitioner's perspective

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Knowledge is seen as the fourth factor of production besides labour, capital and land. But unlike the classic production factors, dealing with knowledge as a factor of production has proved difficult. One reason is that the type of knowledge with the potential to be a factor of production – i.e. not just data or information – cannot be separated from people with their particular knowledge and experience. Managing the fourth factor of production therefore means managing processes, teams and organisations in a way which allows people to turn their knowledge potentials into persistently flowing knowledge sources for the benefit of all participants. Knowledge management (KM) can deliver the methods and the platform to ensure systematic and sustainable knowledge flows, but is only successful if it is oriented at and linked to the participating stakeholders' shared business goals. Particular knowledge needs derive from these goals and, like them, they are subject to permanent change. If the change is not just reflected in retrospect through KM, but if KM acts as a promoter and agent of change, sustainability of knowledge flows can be achieved and thus KM becomes an enabler of faster innovation and increasing efficiency.

KM is therefore about faster and more effective learning in order to solve problems more swiftly and efficiently and improve decision-making, and to identify, develop and apply innovations faster and better – and finally to be successful in business, be it as an individual, a team, organisation or company.

Based on the author's many years of experience in practising KM and implementing KM initiatives in various companies in different private-sector industries, some empirical key success factors for effective and sustainable KM are formulated below.

No successful KM without a clear business strategy

KM must be linked to the participating stakeholders' business strategy. A common understanding of this strategy and the desired goals and the ways of achieving them is an indispensable prerequisite for starting and running a KM initiative. Often there is uncertainty about or different views of what the common goals are and how they can be achieved. If this is not recognized and made transparent to the participating stakeholders at the start, the KM initiative is likely to fail: trust cannot emerge and knowledge sharing processes have no chance of becoming established. The KM initiative becomes deadlocked as a result.

KM goals should be determined by the business strategy. The more clearly the strategy is formulated, the more specifically the KM goals can be defined, adapted and pursued. Consequently, relevance and quality of the KM content (i.e. the knowledge to be shared) are derived from this strategy:

- What is important to know, communicate and share in order to facilitate successful current practice?
- Which challenges are likely to arise in future, and what is the appropriate response to them?
- Which knowledge and experience are crucial for success?

High quality and relevance of the knowledge shared are fundamental to ensure sustainability of knowledge flows. One of the core processes of KM is therefore to scrutinize continuously the relevance and compliance of KM content with the strategy. In this way, KM also becomes a sensor to determine how successfully the strategy is being implemented and also make any changed goals and strategies transparent to all participants.

No successful KM without a contribution to value creation

KM is not an end in itself. KM must help to increase innovation, performance and efficiency through systematic, methodical handling of knowledge – internal, external, implicit, explicit, past and future, existing and miss-



ing knowledge – thus contributing to value creation. KM must help to solve specific problems and increase the problem-solving capacities of the participants. Like a tireless tracker dog, KM must help detect new ideas, new technologies, new methods and new competences wherever they occur in the value chain and beyond, and must make them transparent, transfer them into an applicable form or tool set if needed, and ensure usage, application and reflection.

This only works if KM processes become part of the business and are integrated into the participants' work processes. Involvement of KM methods in (daily) processes is crucial so that a contribution to value creation can actually emerge and be accomplished sustainably. This involvement and integration require the strong and ongoing commitment of all stakeholders: new procedures need to be established, existing procedures must be adapted, and additional resources must be allocated. This is the most difficult aspect of implementing and running a KM initiative. Quick results and goal achievement are therefore especially important. Nonetheless, the sustainable contribution to value creation is the measure for success of KM.

No successful KM without a win-win situation

Everybody should be able to profit from KM at any time: the individual, the team, the organisation and the company. This can be achieved if knowledge flows and KM processes are designed in a way which creates a win-win situation for both the contributor and the recipient by and during participation in KM.

The contributor, as an individual, benefits from the systematic reflection on his/her experience and the lessons learned – good practice as well as failures – when solving a problem, developing new methods in applying existing methods or creating completely new ideas. His/her expertise and competence are revealed and communicated to others, e.g. through participation in expert networks or documentation and publication of high quality content on the KM platform. An organisation as the contributor benefits from making available its knowledge assets to individuals and teams by fostering efficiency, improving performance and stimulating innovation.

The recipient, as an individual, profits from the cumulative knowledge that ideally delivers all that is needed to perform well and develop his/her skills further, whereas the organisation profits from a sustainably growing knowledge asset which helps it to perform well as an efficient and innovative organisation and detect and close knowledge gaps.

Crucial for the emergence of a win-win situation for all participants is quality: the quality of KM processes as well as the quality of KM content. If the processes of knowledge creation, detection, evaluation and dissemination are too complicated, with too many interfaces and laborious procedures, knowledge drains away and content quality suffers. Irrelevant, unimportant and trivial content dries up the knowledge flow and is the death of KM. It frustrates the users, contributors and recipients, makes them tired and undermines their confidence that investing and participating in KM will bring any advantages.

No successful KM without a common language

Knowledge can only be shared if people understand each other. This sounds simple but it is far from being trivial and it is often underestimated in organisations. To share knowledge effectively, a common language must be developed in order to ensure that all participants in the process are able to communicate. Expert language must be “translated” and structured in a way that laymen, “non-experts”, are guided to the relevant content – “expert” here primarily means the process participant with his/her specific expertise in doing things successfully.

The development of a common language is another core process of KM which gives a voice to each relevant stakeholder. Furthermore, the common language must be kept up-to-date: new stakeholders with their particular interest and contribution of expertise, knowledge needs and requirements ought to be included as well as changes in market conditions, competition, own positioning – thus creating awareness and making new knowledge accessible for all participants.

The basis of the common language is the joint understanding of goals, the commitment to goal achievement, and the roles and tasks in the process. Here, the circle closes: without a common strategy, no common language can develop, resulting in restricted, fragmented communication and above all, a lack of knowledge sharing.



No successful KM without trust

Trust is obviously the most fundamental prerequisite for knowledge sharing. Only if participants and stakeholders trust each other openness and transparency can arise and “real” knowledge be shared. The “hot stuff”, the exciting new insights, the learning from failures – this is the content of greatest interest, the elixir of the knowledge flows making them so valuable. Recognition of and respect for each other's competence are the basis of trust.

KM must stand for strengthening trust and guarding against the disadvantages resulting from openness. One important element of gaining trust is respecting the ownership of knowledge and intellectual property. Participants can rely on KM to address issues relating to the theft of intellectual property and the misuse of knowledge and experience.

Another important element is the balance of 'give and take': every participant must be both a contributor and a recipient. Pursuing compliance with this rule is a key task of KM. The instruments to achieve and sustain this balance should rely on motivation but should not dispense with sanctions. Incentives, key performance indicators, personal targets or stipulations are all part of the toolbox here.

Finally, trust can only arise if collaboration among individuals is based on clear rules which are accepted and followed. This also applies to teams, organisations, networks, and companies. These rules must be established and developed via an ongoing and open-ended negotiation process which is closely linked to the joint business strategy. KM can support this process with its specific methods, but it cannot take the place of consistent and clear leadership and ongoing management (and stakeholder) commitment to fostering a collaborative and innovative culture, where people's knowledge potentials turn into perpetually flowing knowledge sources – and thus become operative as a factor of production.

(The author is an independent consultant specializing in Knowledge Management & Engineering and Knowledge Exploitation with 14 years experience in consulting and practising KM, the latter in pioneering the very first KM projects in the early 1990s. She has headed the internal Global KM unit / processes of an international management consulting firm for the past seven years).





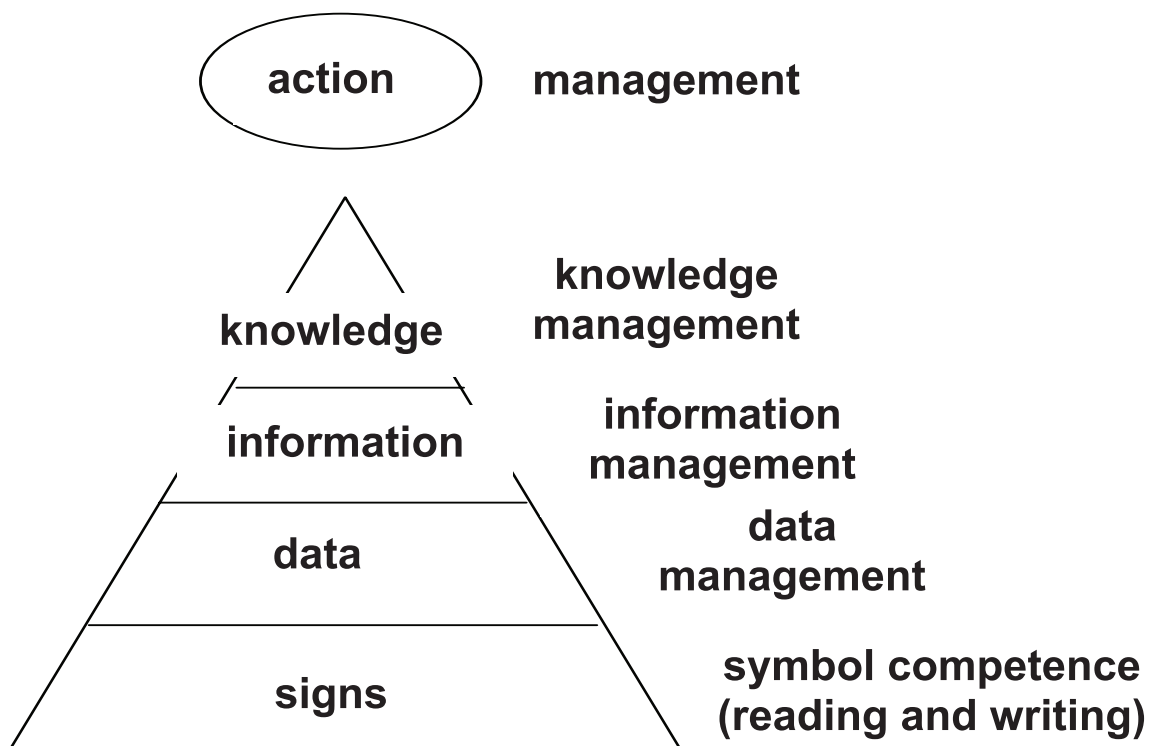
Knowledge management: what are we talking about?

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At the Assisi Workshop we discussed knowledge management at length, but at the beginning nobody dared to give a few basic definitions. I can understand why, because the literature on knowledge management has not yet been consolidated, which leaves it rather confusing. At the end of the workshop I offered a sample of one of my basic lectures, and some participants found it useful - as I do – and that is why I am offering a few selected elements here.

Knowledge links information with action. Information is built on data, which is composed of signs. Signs stand for something else. Their meaning is fixed by convention and must be learned. Data are signs to be analyzed, and this is also possible when they are electronically stored, as bits and bytes. The handling of the elements of the pyramid can be called management.

Figure 1: The knowledge pyramid



Going up and down the knowledge pyramid requires certain competences, which are normally acquired in literate societies.

Can knowledge be stored?

No, at least not directly, not outside of living human brains. But it can be stored indirectly as information. Knowledge can be acquired through learning and internalizing, and it can be passed on by teaching and externalizing. That means that information can be regarded as externalized knowledge, and also as processed data serving a purpose or reducing uncertainty. This extends our knowledge pyramid as shown in figure 2.

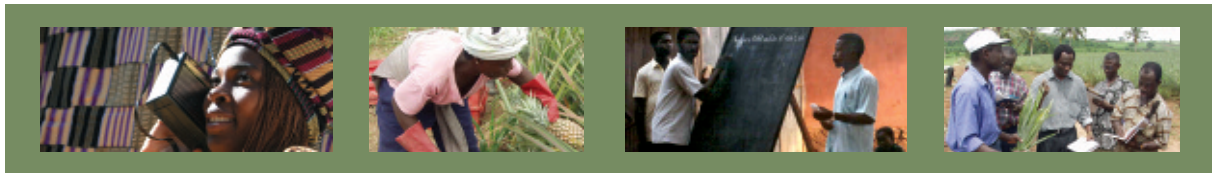
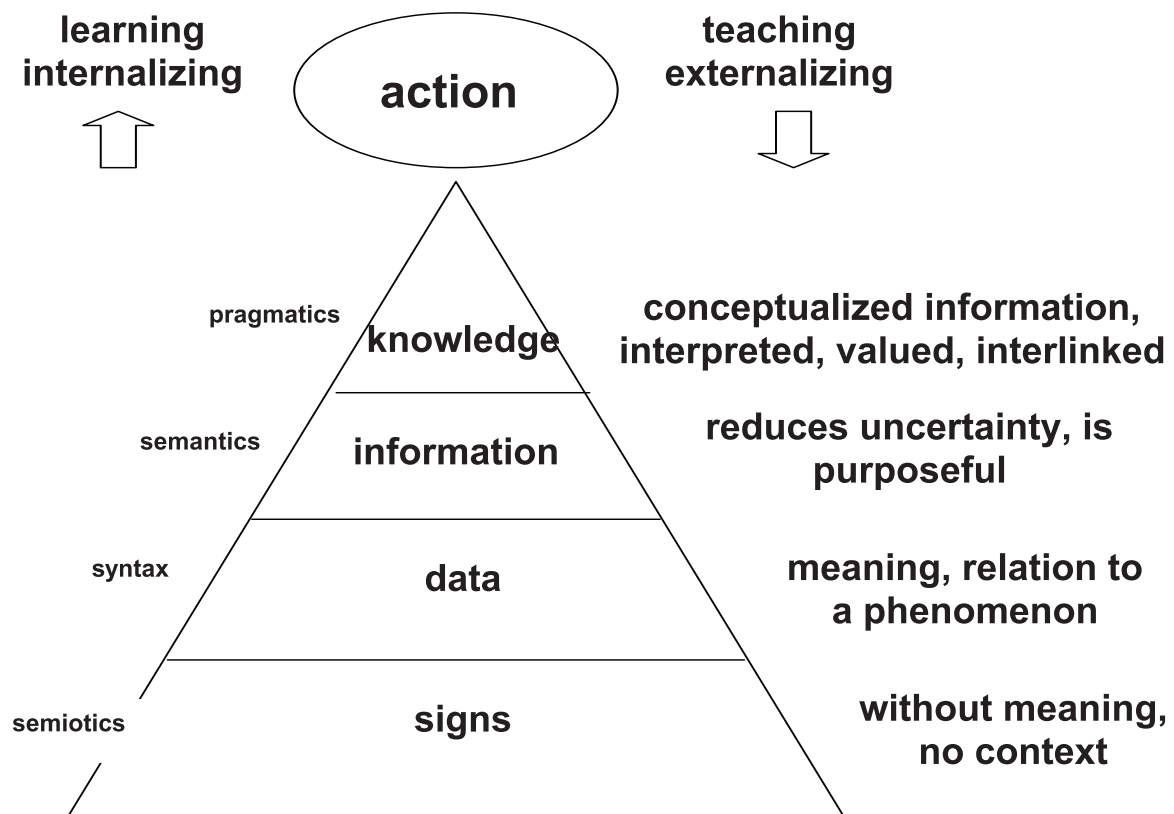


Figure 2: The extended knowledge pyramid



The knowledge pyramid only depicts a part of all knowledge processes, the explicit part. This can be used to pass on information, based on signs and data. However, there is also implicit knowledge. POLANYI said that *“we know more than we can tell”*.

Implicit knowledge

is knowledge from experience

is the part of knowledge that is difficult to describe

is used subconsciously and intuitively

is a special feeling, a talent, e.g. “green fingers” when dealing with plants

cannot be copied, or programmed for robots, and is a basis for sustainable competitive advantage

Computers and other machines can process data, but not information. Semantic interpretation, i.e. the assessment of meaning, is a capacity requiring human intelligence, often paired with creativity - and no machine can be taught this, even if the term artificial intelligence suggests it.

The special trick is to find ways of rendering implicit knowledge explicit, of converting it into information that can be handed on to others. This is where the distinction arises between knowledge and capability. To acquire

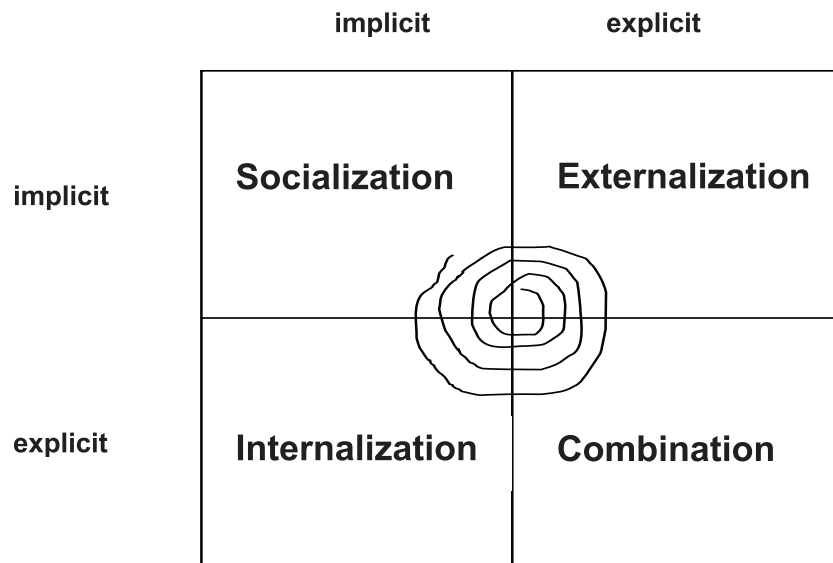


skills, reading is not very helpful. Progress only comes through repeated practice, by doing something again and again, and by training. Skills are implicit. Training that is successful in guiding and motivating is another teaching skill. Not every expert is also a good trainer or teacher.

Knowledge transformation

NANOKA and TAKEUCHI, (1997, p. 85) were the first internationally recognized academics to point out the importance of converting knowledge between implicit and explicit forms, which they depicted with their famous spiral.

Figure 3: Transforming knowledge



If knowledge is available in explicit form, then acquiring it means internalizing it. Once internalized it is implicit, and to acquire it one must go through socialization in this field of knowledge and action. You grow into it and acquire it by helping and assisting, by imitation and training, often to a great degree by trial and error. When you want to pass it on to others without time-consuming socialization, you should externalize it and make it explicit. If different contents of explicit knowledge arise, new knowledge may emerge through a process of combination that has to prove its usefulness in actions. Therefore it has to be internalized first.

Because this process between humans is never static, the spiral is an appropriate symbol for representing it. The authors describe how to externalize knowledge, even against all resistance, in their story of the development of the bread-baking machine. When the leader of the development department was near to despair because the bread made in the new automatic machine did not taste good, she became an apprentice to a famous baker in a five-star hotel in Tokyo. Observing what he was doing did not help, so she started to pound dough herself, and practice makes perfect. After some weeks her bread was as good as his. But in addition, she could explain in technical terms (although he could not) what she was doing. Pounding dough means pulling, pushing and twisting it. The machine was only twisting the dough. To pull and push, some side bands had to be added. The rest was routine work, so by systematic variation her engineers were able to optimize the machine. In the first six months 500,000 small automatic household units were sold.

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Knowledge Management in Organizations

Success Factors for Knowledge Management in Organisations

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The question of how an organisation can become a “learning organisation” has been the subject of discussion in the KM community since the mid-1990s. However, for most larger organisations, it has proved to be a difficult challenge. On the one hand, they accept that learning from experience is essential for their future viability. On the other, virtually no other topic arouses as much controversy as the purpose and objectives of knowledge management initiatives, which are being launched in increasing numbers with the aim of identifying experience and disseminating it organisation-wide. GTZ’s success record here has also been extremely patchy, and hindsight reveals a picture from which we can learn today. The aim is to develop a simple approach which also assists other organisations to further systematise their learning from experience and translate it into successful practice.

Looking into the organisation, there is clearly a great desire for experience to be utilised more effectively as a work tool. All too often, mistakes have been repeated, resources wasted and good ideas forgotten. There is hardly a manager within the organisation who has not regretted this fact and looked for opportunities to learn from experience. The fact is that individuals’ knowledge is not synonymous with new organisational knowledge. If GTZ knew what knowledge it has available, mistakes could be avoided, strengths could be harnessed more purposefully, and projects could be designed more effectively. Yet the organisation’s learning process is generally limited. There are various reasons for this:

1. Many staff members view their knowledge as their private property. They fear that they will become replaceable once their knowledge is documented and stored in an anonymous database. However, to facilitate the organisational learning process, it is essential to share knowledge with others.
2. The diversity of knowledge within an organisation is immense. Hundreds of specialised fields of work, methodologies, decisions and contexts contribute to the knowledge existing within an organisation. Whose task is it to maintain an overview? And how should this be done? To make the matter even more complicated, GTZ has more than 130 outposts worldwide.
3. Knowledge is always linked to people. Even if they are willing to share their knowledge, much of this knowledge is subconscious and remains hidden. Furthermore, fluctuation of staff is increasing in many organisations.

These three challenges must be mastered if the organisation is not to go round in circles like a goldfish in a glass bowl, perceiving every circle as a new experience. Instead, it should view and pursue its own development as a continuous process. This means that learning should no longer be regarded as a task for individual staff members alone, but as an element which must be built into and clearly reflected in the structure, strategy and work processes of the organisation as a whole. The key success factors in this context can be summed up as follows:

Success factor 1: Allocate real responsibility and resources for KM and its elements

The GTZ Division “Environment & Infrastructure” with 70 staff requires large-scale services in debriefing, knowledge communication, impact monitoring, event management etc. The small Management & Communication Team was set up to provide these services. They were quickly absorbed by high expectations and failed to meet demand. Due to a boom in the division’s operative business, priorities excluded KM, and adverse selection of team members further reduced quality of the M&C team. Several attempts to relaunch the team failed in 2004. Acceptance of KM issues in the division has suffered lasting damage. Today, the division’s knowledge is



still deteriorating without proper re-investment. Fluctuation of staff further hinders the task of safeguarding important experience in the division.

This leads to the “first golden rule” of KM: Without an appropriate KM structure, there will be no sustainable organisational change towards learning.

The principles to foster success are straightforward:

- **(Re-) invest in your knowledge.** It is a delicate but extremely valuable resource that needs to be continuously developed.
- **Always name the persons responsible for KM issues.** Because only owners care for knowledge, instruments and processes.
- **Avoid unfunded mandates.** If you can't deliver you will seriously damage both the image of your self and KM as a whole.
- **Allow KM staff free access to leaders.** This is indispensable for an appropriate dialogue about corporate strategy.

Success factor 2: Create ownership on staff and management level

Different technologies of GTZ's major databases confuse users, and inefficient search strategies waste time. Since 2001, the Wissensspeicher (knowledge repository) has provided a google-like meta-search function as well as unified access to four major databases. Benefits were seriously questioned by staff and management until 2004. An analysis showed that search times had fallen by a factor of 10. In 2005, the IT Management Board approved the extension of the Wissensspeicher to cover all relevant information sources of GTZ. IT project management procedures are applied, involving users, KM and IT on an equal basis. Today, the Wissensspeicher is one of the most popular KM tools used by GTZ staff worldwide.

This leads to the “second golden rule” of KM: Only strong ownership helps you to “survive” inevitable hard times brought about by change processes.

Lessons learned:

- **Always treat KM initiatives like (small) projects.** A good “business case” convinces both leaders and staff, and keeps them committed.
- **Achieve early results.** Focus on feasible goals and assume step-by-step changes; avoid inflationary expectations and “nice-to-haves”.
- **Keep it small and simple.** Your “clients” want to feel the benefits immediately.
- **Listen to the demand side.** Don't assume you know “what is best”. Instead, ask stakeholders, and enable staff and leaders to participate.

Success factor 3: Always regard KM as a support process, not as a goal in itself

GTZ project teams have always learned a lot from evaluations. Other projects, however, have hardly been informed. Evaluation reports usually include valuable lessons learned for the entire sector community. But new reports are rarely known or read. GTZ's management board therefore asked KM to improve the organisational learning process. In line with a new process design, since 2006 managers of all operational departments have been responsible for communicating lessons learned from evaluations. KM provides support, instruments and advice to management and staff. The scope and use of evaluation tools have been reformed. Other KM tools, such as debriefing and impact reports, have been significantly reduced and adapted. The GTZ scorecard now includes learning goals. The new process directly addresses those who must learn from evaluations. As a result, sector networks, products and training sessions make lessons learned accessible to field staff worldwide. The first impact reports are expected for 2008.



This leads to the “third golden rule” of KM: KM initiatives are bound to fail if they are not part of the organisation’s core business processes.

Lessons learned:

- **Integrate KM into core processes.** As an “add-on” or “on-top work” it will not be accepted. Instead, make it part of every-day business.
- **Small is beautiful.** A small number of mandatory KM tools is better than a cloud of options. Reduce complexity for clients, don’t increase it!
- **Keep your feet on the ground.** You get more clout if you establish your KM structure closer to practical operations than to IT or HR.
- **KM requires service orientation.** Keep the focus on people and their workflows. In particular, avoid IT-driven change!

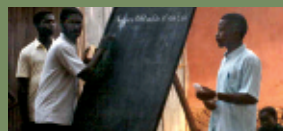
In addition to these three “golden rules”, the knowledge management literature has identified a number of other important factors.¹ In work practice, knowledge management tasks often conflict with competing tasks on the operational side, e.g. the acquisition of new contracts, implementation of project measures etc.

Only when knowledge management is perceived as integral – not supplementary – to “normal” business practice and is utilised on this basis can it make its contribution to the success of the organisation as a whole. Then – and only then – can and should investments be made in knowledge management. In reality, far too many initiatives are still being launched on the basis that they would be “nice to have” – often with dubious outcomes or, at best, cosmetic significance. Effective knowledge management is a practical tool which assists organisations to overcome operational bottlenecks, e.g. by providing better research opportunities and faster knowledge transfer.

The importance of these success factors increases rapidly and exponentially with organisation size. At local level, the focus is mainly on organising practical knowledge exchange. However, in organisations whose work processes are based on a division of labour, process management issues are becoming an increasingly important priority.

In both cases, targeted knowledge management facilitates better and faster decision-making.

¹ See also GTZ 2007: Wissensmanagement-Brevier für Projektleiter und andere Entscheidungsträger, Eschborn



Knowledge Generation and Facilitation within a National System for Agricultural Innovation: Lessons Learned from the Bolivian System for Agricultural Technology (SIBTA)

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Introduction

This paper presents lessons learned on knowledge generation and facilitation in rural areas within the complex institutional setup of a national system for agricultural innovation.¹ Countries around the world have developed programmes for agricultural research and extension in order to promote innovation and development in the agricultural sector. However, the efficiency of such programmes has been increasingly called into question and approaches to generate knowledge and innovation within them vary widely.

The main question for policy-makers is how to encourage and guide the various public and private actors effectively on the national, regional, and local levels so they can contribute to the generation, diffusion, and application of innovations. Issues are to what extent the government should be involved in formulating innovation policies, to what extent certain activities can be delegated to decentralized local institutions, and to what extent knowledge and innovation generation start with the farmers themselves.

Background

Bolivia, among other indicators, is characterized by having the largest rural population and highest percentage of rural people living below the poverty line in South America (up to 90% in some rural areas). It is achieving some success in cash crops in the tropical lowlands (soy beans) but average yields and productivity are among the lowest in Latin America. To improve this situation, Bolivian governments in the 1970s, with World Bank funds, set up the *Instituto Boliviano de Tecnología Agropecuaria*, IBTA, composed of 15 research centres, designed largely by a top-down-approach.² After some years of existence, IBTA was closed because it could not prove any wider impact on farmers effectively applying innovations that had been researched and thereby could not prove any impact on farmers' life conditions. This was followed by a period without research, innovation and extension services in the country, until the end of the 1990s, when the Bolivian government started preparing a new system. This process, led by the Ministry of Agriculture, took nearly three years. It ultimately involved six donors, representing the first "real" basket funding in the sector in Bolivia and the only one in Latin America, with a financial volume of around US\$ 60 million for five years.

Philosophy

In 2001, the Bolivian government formed the System for Agricultural Technology, *Sistema Boliviano de Tecnología Agropecuaria* (SIBTA)³, a governing and funding mechanism to promote applied research and technology transfer for agricultural development. SIBTA is unique in its organizational structure; it is based on the principles of decentralization, demand orientation, a market for technology, and the privatization of research and extension services. It enables the identification of local demands and the funding of research and development projects at the level of autonomous regional foundations, oriented by prioritized value chains for each of the four agro-ecological regions (see Jansen, in AGRISERVICE Bulletin #12, <http://www.gtz.de/en/themen/laendliche-entwicklung/8165.htm>).

Actors involved

Farmers (organizations): The system depends mostly on the demand of farmer groups who propose project

¹ Adapted for the Assisi Conference based on an article by Frank Hartwich (IFPRI) and Heinz Gerhard Jansen (PROAGRO GTZ-Bolivia): "The Role of Government in Agricultural Innovation: Lessons from Bolivia" (2007) and drawing on experience with SIBTA by PROAGRO-GTZ in the Chaco region.

² IBTA is not discussed in detail in this paper

³ www.sibta.gov.bo



profiles. They identify and communicate their demand for technological innovation to the regional foundation. These profiles are standardized and put out for tender by appropriate public or private service providers. The requirement for the beneficiaries to contribute a minimum of 15% of the value of the project to the foundation is critical for approval. The design process behind the development of projects ensures broad-based participation of the civil society - or private sector - involved in agriculture. The civil society approach is open to the entire community to develop proposals that become projects.

Autonomous regional foundations: They act as brokers between the demand and offer of services and are in charge of the management of regional funds from SIBTA. The system involves four foundations, for each of the four agro-ecological regions (High Andes Plains, Valleys, Humid Tropics, Chaco) in the country. The government has delegated to them the function to organize agricultural research and extension at producer level. About 70% of the members of the foundations are private organizations (farmer unions, producer organizations etc.) and the other 30% are public institutions (municipalities, public universities etc.). The foundations have technical and administrative autonomy to manage public funds as well as to organize a market between demand for and supply of agricultural technology. The foundations define the most promising commodities for agricultural development within their regions. Analysis of the corresponding value chains and production bottlenecks are the guiding principles for the demand-based projects of technical innovations. The foundations themselves do not implement projects. The projects may take up to three years and cost between US \$20,000 and \$100,000.

National Government (Ministry of Rural and Agricultural Development and Environment): The Ministry is in charge of policy-making, structural priority-setting and steering, funding and monitoring, supported by a technical unit and an administrative coordination unit. The National Government convokes the joint steering committee with donors' participation.

Service providers: They include technology and knowledge consultants, NGOs, research centres and universities. They develop innovative services and participate in a tender system. In response to farmers' demands, expressed in project profiles, service providers compete on project implementation, submitting proposals in which they develop these profiles into projects.

Donors: The donor community has supported the development of this model by pooling and focusing their resources into the common channel of the SIBTA model. They generally assume co-tasks in monitoring and steering in coordination with the government. Some also accompany the implementation process, facilitate access to the system and empower farmers (associations).

Interaction mechanisms

Besides the demand-oriented projects at farmer level, the system includes strategic research on projects of national interest. These are implemented by the Ministry of Agriculture through public or private service providers as well. In all, there are three mechanisms to enable interaction among agents to deliver services to beneficiaries:

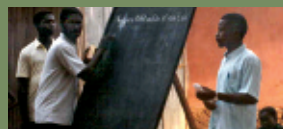
Applied Technological Innovation Projects (PITAs): based on farmers' knowledge and demand documented in profiles which are put out for tender. Service providers submit proposals, often joint proposals in alliance with the producers. The regional foundations provide funding to the most promising proposals.

National Strategic Innovation Project (PIEN): the Ministry (technology unit) approves funding for strategic research consortia (e.g. soil fertility management, peanut value chain).

Genetic resource programme (SINARGEAA): led by the Ministry to preserve genetic material and carry out basic research.

Some results from Chaco region

Here, SIBTA reached over 40% of the rural population. Over 83% of beneficiaries claimed to be satisfied with services. This percentage was even higher among indigenous beneficiaries: 88% satisfied. 12% of PITAs have been demanded by women producers and associations and 25% of PITAs by indigenous communities. Around 17% of PITAs included demand for marketing. In many cases the income of farmers benefiting from PITAs more than doubled.



Aspects for improvement

The required 15% contribution tries to ensure the “buy-in” of the private sector into the process and is taken as a guarantee that the demand is real. However, this point is a permanent matter of discussion in a country with a high level of rural poverty. One of its consequences is that the poorest of small farmers most probably do not participate and do not benefit from the system. There is no clear strategy or mechanism within the SIBTA system to reach these groups, develop their knowledge or facilitate their access to innovation.

SIBTA has become so responsive to farmers’ demands that it began to neglect the identification of strategic problems and opportunities through mechanisms other than calling for proposals through the foundations. Weak leadership and limited commitment have prevented the Bolivian government from fostering priority-setting and decision-taking on meta issues or opening up new windows of opportunities in the system for important matters still not being dealt with by SIBTA or any other policy or system in the sector.

The main farmers’ demand related to production technology for traditional commodities, especially in marginal regions like the Chaco. In this remote area, far from markets, the predominantly small-scale farmers have low education, technology levels and financial capacity. Searching for real innovations and new technologies therefore has its limits, as does the demand for more market-oriented production. Only a few projects are geared towards market or consumer demands and focus on marketing or product quality for improved market chances.

Conclusions

SIBTA shows that the orientation to farmers’ demand leads to better technology adoption by which new knowledge and technology innovation facilitate real improvement in living conditions. At the same time, it shows that knowledge generation and innovation in strategic, often meta-level aspects, cannot be left to farmers or to decentralized actors alone.

Starting from farmers’ demand, knowledge generation is best facilitated by decentralized, autonomous structures, bringing together demand and offer of knowledge and services, allowing alliances between multiple actors who are involved and interested, with its inherent consequences for governance aspects and actors’ roles in such a system:

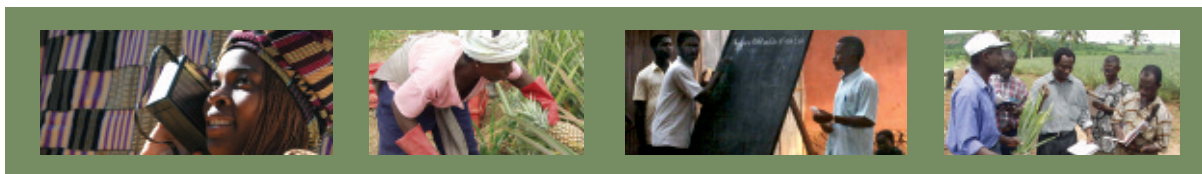
The governance of innovation systems has to do with how decision-makers develop hierarchies and programmes that foster and stimulate the generation and diffusion of knowledge and technologies in a given national or regional context in response to stakeholder needs. Good governance rules suggest taking into consideration complex structures and multiple agents, the uncertainty and multicausality of innovation, the limitations in controlling the innovation process, and the anticipation of risk. It can focus on central, regional, or local governments.

Governance in innovation systems is less about executing research and administering extension services, and has more to do with guiding diverse actors involved in complex innovation processes through the rules and incentives that foster the creation, application, and diffusion of knowledge and technologies.

In order to foster efficient agricultural innovation processes in a decentralized funding scheme such as SIBTA, the government needs to actively establish priorities, ensure that others participate, guarantee transparency and accountability, maintain responsiveness to the demands of users, focus on impact, delegate administrative responsibilities to local agencies that are closer to the farmers, strengthen linkages among the various innovating agents, and provide a strategic vision. For a more effective governance of national agricultural innovation systems, governments should focus on general development issues and pursue opportunities via incentives to a broad range of actors involved in innovation processes, including farmers, commercial agents, NGOs, government agencies, and producer organizations that promote new knowledge and technology.

Discussion points at Assisi Conference:

- Participants observed that the presentation at the conference lacked focus on knowledge management. This lack of focus was avoided in this paper.
- The example was interesting in that it showed the mechanisms of knowledge management in complex, multilevel state systems.



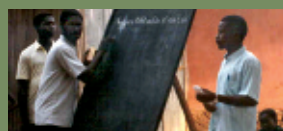
Other bibliographic reference:

In October 2007, after the edition of this paper was finished, DFID – Programa Facilitando la Innovación Tecnológica, presented the following publications:

- Gary Montañó H., Diego Muñoz E., Vicente Zapata S., Miguel Angel Pedregal P: Innovación Tecnológica para los pequeños productores – Lecciones aprendidas del Programa FIT (Facilitando la Innovación Tecnológica), octubre 2007
- Gary Montañó H., Diego Muñoz E., Vicente Zapata S.: Lecciones aprendidas sobre innovación agropecuaria en Bolivia – Sistematización del Programa FIT (Facilitando la Innovación Tecnológica)

Both publications also look at communications and learning aspects of the system SIBTA, but could not be taken into account in the present paper.





Knowledge Management in Projects

Sustainet: Knowledge Management within NGO and GO Networks in Developing Countries

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1. Introduction

Sustainet – “Sustainable Agriculture Information Network” – is a cooperation project of leading rural development organizations in Germany and pilot regions. It aims to systematically evaluate, communicate and disseminate successful approaches to and concepts of sustainable agriculture. Sustainet has established networks and facilitates regional and international communication structures. Its networks have been formed among institutions at local, regional and international level. Sustainet is composed of a German and three further networks in the pilot regions of India, Kenya/Tanzania and Peru/Bolivia.

The goals of Sustainet are: to demonstrate the importance of sustainable agriculture for poverty reduction and global food security; and to scale up promising pilot approaches and ensure that they no longer remain one-off solutions. On that base, Sustainet partners undertake lobbying to improve framework conditions for sustainable agriculture in the national context.

Effective communication, knowledge exchange and knowledge management within Sustainet's diverse networks are essential for their viability and functionality. At the same time, sharing of condensed information/knowledge is the basis for further scaling-up and for the active exchange and strategy dialogue with key actors based in the partner countries or involved in German and international development cooperation.

This article will differentiate between two different forms of knowledge exchange: on the one hand, the planned and relatively formal knowledge exchange that forms the basis of the official ‘products/ outcomes’ of Sustainet, such as the documentation and tool development processes. On the other hand, there is the more informal and spontaneous knowledge exchange within the Sustainet networks during the face-to-face meetings and through electronic means (information technologies). Following is a summary of challenges and success factors occurring in the process of knowledge exchange.

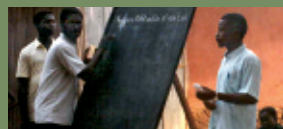
2. Knowledge exchange and documentation of knowledge

The documentation process: To initiate the process of formal knowledge exchange, Sustainet groups in the pilot regions selected examples of good practices in sustainable agriculture. The local partners evaluated the pilot projects using a self-assessment tool developed in the course of Sustainet. The process of analysis and self-assessment was closely accompanied and supported by Sustainet staff. As a next step, the partners documented their success stories during a Writeshop. This methodology is a way to produce a publication within a relatively short time, ensuring ownership, quality of the contents, plus exchange of knowledge. The results have been published in a book series: “Sustainable Agriculture – A pathway out of poverty for the rural poor” (available at: www.sustainet.org).

The documentation of good practices in sustainable agriculture provides a basis for lobby work and proves the viability and importance of sustainable agriculture for rural poverty reduction. It also documents some of the partners' experiences and approaches in agriculture and thereby contributes to the knowledge management/exchange within and beyond the networks.

Challenges of written documentation

A typical bottleneck of written documentation is that the short form of articles does not allow fully describing and condensing the partners' knowledge. Still, all the documented good practices are part of holistic ap-



proaches and not stand-alone practices as such. Instead, documented “knowledge” in the books is an entry point for further enquiries. For successful scaling-up of the good practices, it has to be combined with other forms of knowledge exchange/communication.

To facilitate the exchange between the members in such an international and multilingual network, the good practices are translated into the member countries’ languages (Spanish, English). For the dissemination within the respective countries, the practices were translated into local languages (Hindi, Kiswahili). However, a direct exchange between the members in Latin America on the one hand and Africa and India on the other will remain difficult due to the language barrier.

3. Informal/spontaneous knowledge exchange

The networks between formerly separate partners allow horizontal peer exchange, both formal and informal, about topics initiated by Sustainet. The “instruments”/fora for communication in Sustainet are an electronic forum, e-mail conversation, face-to-face meetings and of course telephone.

Face-to-face meetings

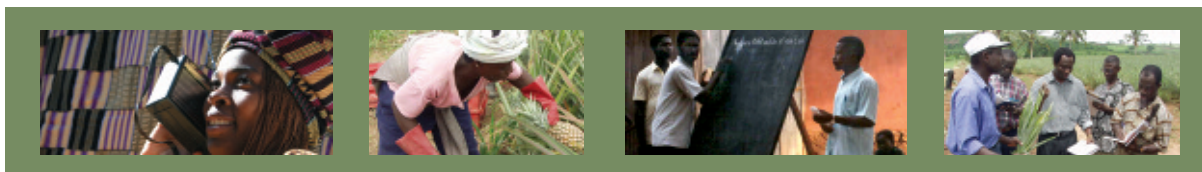
The meetings of the regional networks form the basis for cooperation and communication. These are the occasions where trust is established between the partners as well as with the project secretariat and where social capital is generated. Without the basis of trust and regular meetings (every six months), all e-mail and fora communication would be meaningless to partners and the momentum of the network would fade. Furthermore, the meetings provide a platform for direct knowledge exchange, or “trading” of good practices: an obvious example is the exchange of a breed of goats (with the information on keeping) for a bag of peanuts (specifically developed to suit the conditions in the area) among two partners. Another example is on-the-job training offered by a competent partner (here: organic certification) to others. The trust fostered by the regular meetings is the basis for further cohesion and the ability of the network to do lobby work based on a common understanding.

Electronic forum

The electronic forum has yet to gain momentum. In contrast to the initial forum, the new platform is more accessible. However, the habit of checking and responding to issues via the forum has yet to develop. The forum provides a platform to share information on conferences, protocols, etc. and to discuss pending issues (e.g. to find a common stance on the definition of organic agriculture). The technology gap is therefore not a major issue, although hierarchy in the use of/access to computers may be a challenge (sometimes operational staff have restricted access to computers).

4. Success factors

- *Trust:* This is the main basis for any communication and collaboration as well as knowledge sharing in the network. It can be established on the basis of regular face-to-face meetings around a common cause.
- *Capacity development:* Some instruments and procedures for knowledge exchange require a certain proficiency on the part of the partners. The partners needed support and training for writing and documenting their knowledge/experiences. The use of new technologies, such as the electronic forum, also needs training and organizational changes.
- *Momentum:* The network needs a common goal and appropriate activities that are leading towards it. These can be joint achievements, such as papers developed, the publishing of the books, or regular meetings which ensure and demonstrate participation of all other members and the pathway towards the common goal.
- *Ownership:* The ownership of the information created is essential for motivation. This was ensured in the processes of self-assessment and writeshops.
- *Visible benefits and successes:* The partners need to see the successes and benefits of the network, forum and knowledge exchange. It is useful to foster all the members’ pride in their quality outputs.



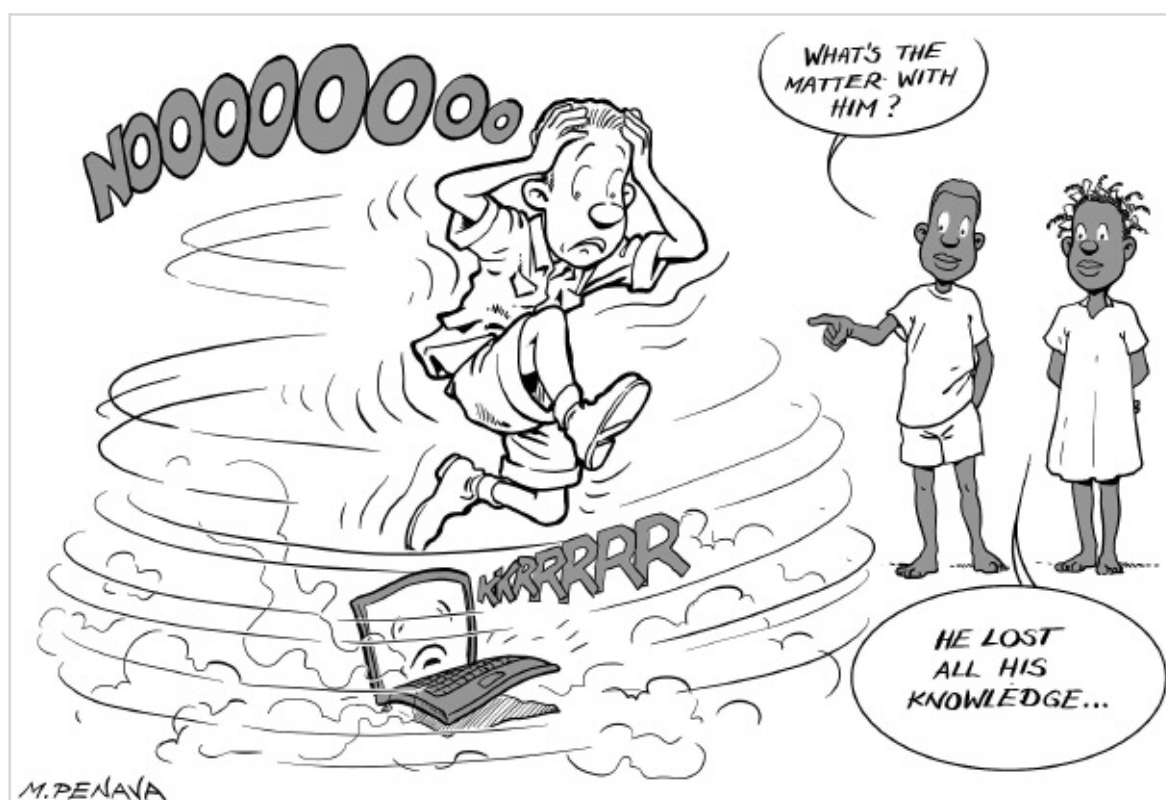
Literature (all in www.sustainet.org):

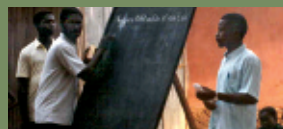
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Sustainet 2006: Sustainable Agriculture: a pathway out of poverty for India's rural poor.

Sustainet 2006: Sustainable Agriculture: a pathway out of poverty for East Africa's rural poor.

Sustainet (in preparation): Agricultura Sostenible: una salida a la pobreza para la población rural de Bolivia y Peru.





Multi-Stakeholder Fora for the Management of Mobile Livestock Production Systems

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Introduction

LUCOP is an anti-poverty programme adopted by Germany and Niger which focusses on soil and water conservation, land improvement and value chain development. Its natural resource management (NRM) measures are part of the overall support for newly created "Communes". In pastoral lands, however, only a small part of the total land can be covered by these relatively costly, high-intensity measures.

In the past, pastoralism in its global dimensions has not been addressed. Recently, inspired by traditional ways of decision making, communication and knowledge management, large-scale stakeholder fora for consensus-based resource management were applied. A mix of modern and traditional media helped in the diffusion of results.

The pastoral zone of the LUCOP programme stretches over 700 km north-south in a highly variable eco-climatic zone with rainfall ranging from 25 mm to 350 mm. The resource base of the area is rather good, with the exception of some limited aureole degradation around major settlements and water points and on agricultural land. Although there is some agriculture in the more rainy south, the dominant production system is mobile livestock production. However, mobile pastoralism is under severe threat in the zone from a combination of diverse factors such as:

- an inappropriate and very weak judicial, administrative and public service framework (which has western and sedentary roots);
- increasing land encroachment and fragmentation by agriculture (with population growth, illiteracy and lack of alternatives as root causes);
- land grabbing for exclusive pastoral use by wealthy and influential people;
- a generally negative attitude on the part of public officials towards mobile livestock production and the mobile way of life. It is treated as irrational, belonging to the past and non-productive.

The pastoral zone of the programme of some 70,000 km² is exploited by migrating pastoralists with their home base found somewhere in an area stretching much further over hundred of thousands of square kilometres. Using such a large area and having to cope with constantly changing climatic conditions, pastoralists have developed considerable skills in communication, negotiation and information gathering. It can thus be concluded that mobile pastoralism is an information- and communication-based production system. Despite the above-mentioned constraints, pastoralists still highly value the economic, ecological and even cultural virtues of mobility.

Thus the customary knowledge base and information system, although under stress, are still intact and are even evolving, making more and more use of modern transport and communication technologies. However, the facilitation of livestock mobility poses a challenge for the knowledge management system. The following paragraphs show what kind of knowledge management and decision making tools have been used during the LUCOP programme to reach different stakeholder groups. The article also summarizes the key effects of these tools on sustainable resource management.

Getting the scale right: Multi-stakeholder fora

To address pastoralism and thus NRM, LUCOP has opted for system-wide multi-stakeholder fora of decision makers (thus stretching far beyond the official programme area). Since early 2006, after a period of consultation and preparation, three fora have taken place. They focus on key issues in vaguely homogeneous large-scale areas. The objective of these fora was to reach free-will commitments of groups of key stakeholders.



Each forum brought together about a hundred representatives of the resource users and decision makers, only some of whom – typically for the pastoral zone – are residents of the zone, such as:

- traditional chiefs (they are always the majority as they still have the primary legitimacy in resource management in the eyes of the population)
- elected members, e.g. commune councillors and parliamentarians
- key opinion leaders
- producer organizations
- administration and technical services
- project representatives.

These fora take four days each. They start with inputs on the subject from resource persons. This is very important, as after a hundred years of exposure to top-down intervention and subsequent “brainwashing”, many participants when speaking in public have a tendency simply to reproduce what they think is officially expected from them and what could trigger outside assistance. On the other three days, the participants work in groups and plenary sessions, analysing the existing situation and identifying good and bad practice and potentials. They then work out a general strategy to promote good practices and combat bad ones. Finally, each group of stakeholders agrees on specific actions they can commit to without significant external support.

LUCOP is supporting the extension/distribution of the fora results through various channels:

- each participant receives a workshop report and copies of the commitments as well as audio tapes s/he can use to spread the message;
- when the fora are held and afterwards, local community radio as well as regional and international radio (Hausa programme of “Radio Deutsche Welle”) and national TV cover the events. In addition, public community radio debates are organized;
- posters of the commitments are displayed at key gathering places (pastoral meetings, municipalities, administration, public buildings and NGOs);
- theatre performances are created on key commitments and performed at key sites and pastoral gatherings. A DVD of the performance is also produced for further dissemination;
- newsletters are distributed to decision makers and literate members of the pastoral communities.

Impact

We are on track to evaluate the initial results, up from the level of ordinary herders to the one of decision makers. One year after the first forum took place, we note:

- that audio tapes are most appreciated as a dissemination tool. This is not surprising given the extremely high level of illiteracy. Tapes fit well with pastoralists’ oral tradition. People can hear the voice of their representatives committing themselves to good practice and action;
- better comprehension among pastoralists;
- revalidation of positive customary values and practices;
- conflicts less violent;
- vigorous rejection by customary and “modern” authorities of practically all land appropriation attempts shortly after the forum, with clear reference to the commitments taken;
- communal development plans, developed in parallel to the fora, have taken up key elements or even embraced the strategies and commitments in their entirety;
- out-of-area effects (other organizations and regions were inspired by the approach, organizing their own forum and/or applying the “commitments”. Pastoral law has taken up some practical elements).



In short, these initial results of the fora have already facilitated livestock mobility and are thus supporting sound resource management practice. All stakeholders agree that social capital is essential for the functioning of highly complex fluid systems like mobile livestock production. To build social capital, communication among stakeholders is essential and the participants highly value the opportunity given by the fora to communicate with their peers residing over an extremely vast area stretching over hundred of thousands of square kilometres. As one Tuareg herder puts it: "If people talk to each other and if there is peace, herders will always find ways to go along with each other, and mobility and thus livestock production can go on."

Outlook

The forum approach was inspired by the traditional meetings of chiefs of diverse nomadic people. They would gather to find arrangements for the annual migration to the salt pans and high-value pastures of the north of the pastoral zone. Here, people and an enormous number of livestock met each year in the rainy season. The people gathering on this occasion were not always on good terms with each other and livestock raiding was common practice. The meetings thus found ways and means to allow the migration to continue without great harm. Since colonial times, intertribal meetings of this nature have been either forbidden or tightly controlled by the new authorities, afraid that they might assume a political character. Finally, they were lost altogether. With the damage done by "divide and rule politics" still evident in pastoral lands, it is difficult for customary chiefs from different areas to gather at their own initiative these days. Still, the customary chiefs hold most of the legitimacy (and in much lesser degree the legality) for the management of and access to natural resources.

Projects, however, are phased out sooner or later. Although LUCOP is designed to run until 2015, we have to consider the sustainability of its impacts, and therefore the eventual handover of its intervention, from the outset. The forum approach (or something serving the same objectives) has to be taken up step by step by the stakeholders themselves. The communes and pastoral organizations, new actors in the field (but with close links to the customary actors as well as to the higher level administration) could play a key role in this effort. Semi-public land tenure committees, an institution specific to Niger and in charge of land allocation, transaction and management, are another key player to consider for institutional durability and follow-up.

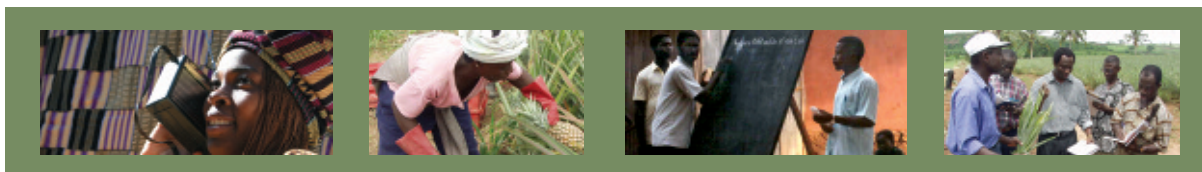
Assisi workshop and lessons learned

Mobile livestock production was somehow an "exotic" issue for most participants, although this production system covers about one third of the land mass of our planet. Communication and information management are key elements for the functioning of the system. Classical (sedentary) extension approaches have had little impact on pastoralism, even if the message being sent out was appropriate (which was generally not the case, due to the false paradigm that mobility is irrational and belongs to the past). Mobile pastoralism as such cannot be questioned, but needs to be secured and further developed on its now largely recognised knowledge base and merits.

The Assisi workshop showed that there is renewed interest in rural knowledge and information systems and counselling services. The recognition that specific methodologies are needed according to sectors and producer group characteristics offers scope to design specific systems for mobile livestock. The forum approach may be one of the methodologies worth being further developed, tested, monitored, evaluated and the results disseminated.

You can find additional information on the LUCOP programme and the multi-stakeholder for approach in the LUCOP bulletins:

http://niger.ded.de/cipp/ded/custom/pub/content,lang,1/oid,3010/ticket,g_u_e_s_t/~LUCOP_Info.html



Knowledge Management with Farmers

Social Networks for Information and Knowledge Management

Dora Arévalo V. (dparevalo@cgiar.org), International Center of Tropical Agriculture (CIAT)

To improve the sustainable livelihoods of rural communities, diverse strategies have been generated. One is to enhance small rural producers' capacities with new skills and knowledge for their production, transformation and commercialization activities. This permits them to establish market linkages under more competitive conditions and increase their earnings to improve their living conditions. The approach improves access for both men and women to new knowledge and information, enabling them to innovate in their production practices.

From 1999 to 2007, the International Center of Tropical Agriculture (CIAT) developed several strategies oriented toward providing information to the rural communities and improving their access to, use of and dissemination of information relevant for small rural producers. In these processes, different components were linked, integrating new and traditional information and communication technologies (ICT): information intermediaries were trained as promoters of information and communication; information systems were developed; and local networks for information and knowledge management created.

In these experiences, three integrated axes of work were contemplated: the generation of local contents, the strengthening of social networks, and the development of the information and knowledge management capacities of different social actors.

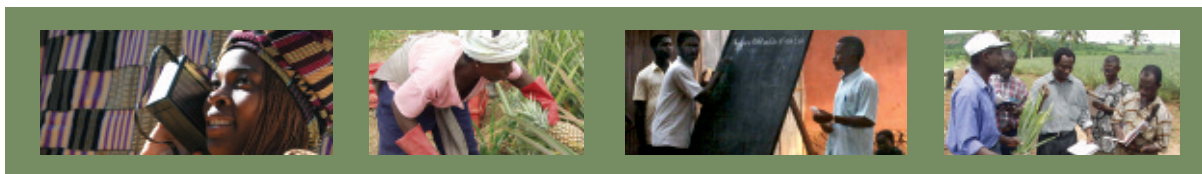
During this time a model was developed to operate community telecenters with the strategic participation of local organizations that implement and accompany productive processes together with farmers and a key indigenous organization in south-western Colombia. The work with telecenters had important results with respect to strengthening the local organizations and the topics and processes that were of main concern for them; that is, there was a real social use of Internet to support community processes.

Nevertheless, one of the principal findings was the need to promote processes for constructing local contents that address the information and knowledge needs of the rural communities, connecting communication processes for strengthening social capital and, at the same time, making use of local information resources for disseminating the information and knowledge generated.

Based on the foregoing, a strategic option – from among the overall strategies defined and developed for information and knowledge management in rural areas – has been to strengthen social capital, expressed in the strengthening of social networks for information, communication and knowledge exchange.

Thus, in the search for a work scheme complementary to the telecenters, it was decided to focus on the creation and/or strengthening of local networks for information and knowledge management. In this approach, the social networks in which the small rural producers interact are characterized, identifying the information and communication processes that are conceived from them, the intermediaries of key information, the social actors and the organizations in the territory that should be part of the communication network. In addition, roles for the actors in the network are defined, capacities for information and knowledge management are strengthened, local contents are built and shared, and dynamics for the knowledge exchange among the different actors are designed.

Contemplating the total or partial nature of elements in this work scheme, CIAT developed experiences in Colombia (SIDER Project http://www.ciat.cgiar.org/agroempresas/pdf/sider_propuesta_metodologica.pdf) and in Bolivia (Field Network Project, CIP Promotion Project), where information and knowledge management processes were implemented on a territorial scale (municipalities); and in some cases, value chains were facilitated, generating important learning. The importance of recognizing and understanding the nature of rural



communities in the first place was made evident, as well as the way in which they get informed, how they communicate and how they learn, identifying the actors that interact in these processes.

Importance of the social networks for information and knowledge management

The social networks permit access to and the exchange of information, with individuals making use of their primary networks (family, friends, neighbours, members of the community) and secondary networks (other contacts and relations outside their primary networks or closer circles such as organizations, work or business contacts, and other intermediated contacts), not only to obtain their information and gain access to new knowledge, but also to share it. The social networks constitute a possibility for gaining access to information and knowledge that the rural producers would not acquire through individual efforts.

This approach to the social networks can be a natural, intuitive approach that can become more systematic through well-planned and targeted management, assigning roles for the different actors and establishing dynamics that will generate contents, share them, use them, internalize them and generate new knowledge. One strategy for managing the networks takes advantage of the existing connections of producers and technicians for disseminating information in a territory, creating opportunities for exchanging experiences, strengthening the extension agents and technicians' capacities in their role as communicators and intermediaries of information, and orienting the role of the organizations in the territory that provide support services for the productive activities such as suppliers of information and knowledge.

The natural scenario for management of the social networks oriented toward the creation and exchange of information and knowledge is the primary network, where the management takes advantage of the relations of friendship and solidarity that actors such as the producers have developed with their neighbours, friends and members of the community. In these primary networks oral tradition and empirical learning are the principal ways of transmitting knowledge.

A different but complementary scenario is the secondary network, where the understanding of the structure of relationships existing among different actors and the characterization of the local knowledge systems orient the information and knowledge exchanges through processes that contemplate the codification of the tacit and explicit knowledge existing in the network; where information technologies such as the radio and Internet are linked, and where knowledge assets such as manuals, databases, workshops, etc. are produced. It is in the secondary networks where the rural producers enter the scenario of the local support systems through the links and contacts that are established in this process.

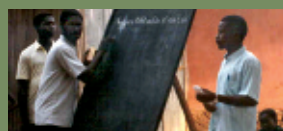
In the rural context the social networks that have been strengthened for managing the knowledge have the potential for:

- Strengthening the processes of rural innovation (match supply with demand, facilitate learning)
- Decreasing the transaction costs in value chains to provide information services to small producers
- Supporting the processes of training and rural education
- Generating mechanisms that facilitate the socialization and exchange of information in the sites of influence, strengthening the ones that already exist (radios, telecenters, murals, posters, etc)
- Establishing linkages with different social actors in the construction of knowledge

The networks in operation

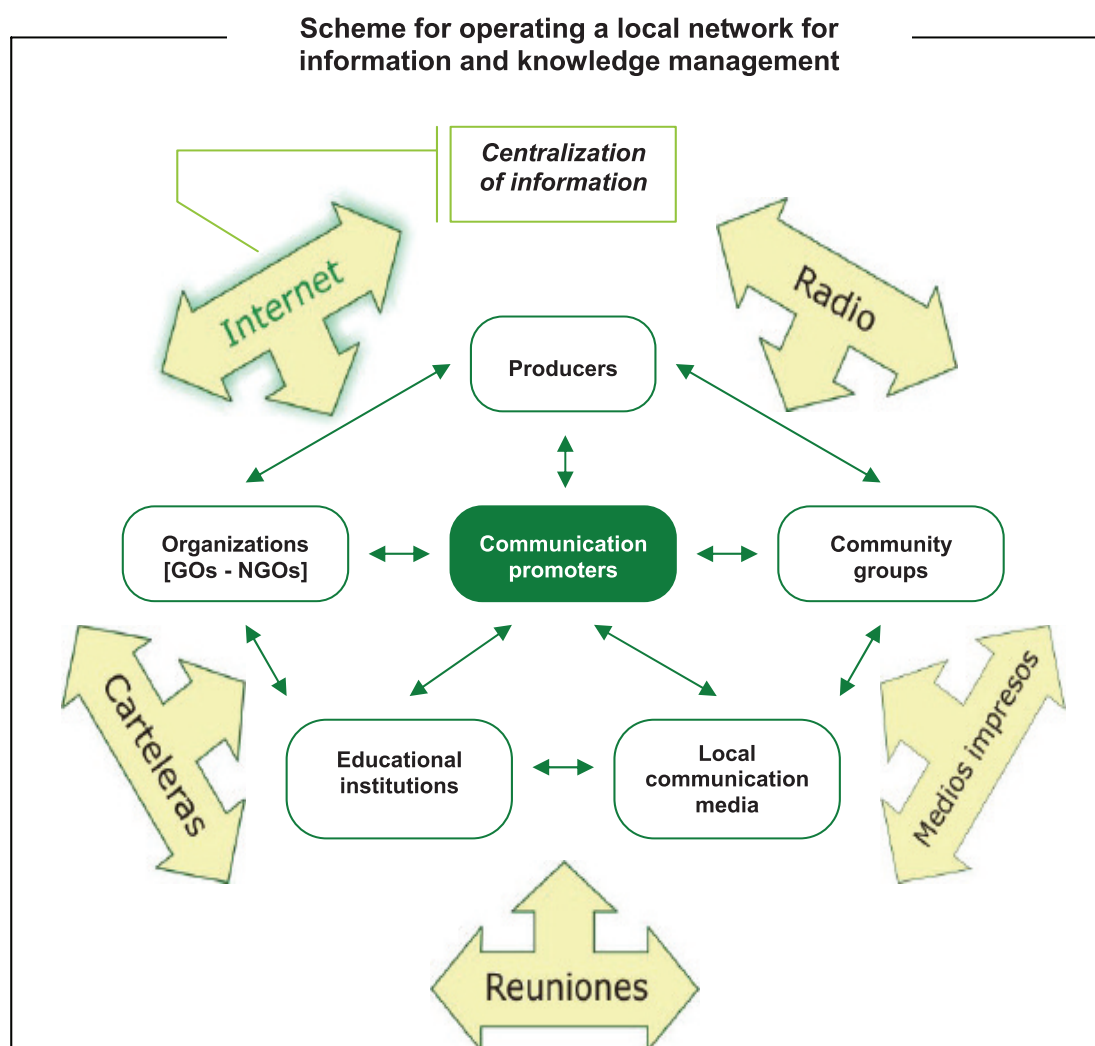
The components that are contemplated in this work approach are:

- The actors of the network (people and organizations)
- The contents (arising from the demand)
- The information and communication technologies (both new and traditional such as Internet, radio, written media)
- The mechanisms of intermediation for information and communication (promoters of communication)



- The generation of capacities for managing information and communication (training to: systematize experiences, produce messages, produce communications media, and use the radio and Internet).

The integration of these components can be seen in the following scheme:



Source: SIDER Project. CIAT.

This operating scheme seeks to strengthen dynamics to create and share knowledge among different local actors (rural producers, governmental organizations, nongovernmental organizations, local communication media, grassroots groups and educational institutions). Among the dynamics that are promoted are face-to-face encounters; systematization and codification of traditional knowledge; comparison, complementation and integration of traditional and scientific knowledge; integration of information, production of communications media and dissemination; practical experiences for new learning.

The *promoter of communications* is the central or leadership figure in these dynamics. This refers to a group of trained people who generate, access, use and socialize information, leading communicative processes that are integrated in the development dynamics of their community and whose strategic function is intermediating among the organizations and other rural actors such as the small producers in order to generate and exchange information and knowledge.



The work approach that was followed is summarized in the following matrix:



Source: Prepared by author.

This matrix presents the three strategic axes of work in the columns (vertical axis) in relation to the five stages in which the process (horizontal axis) is developed.

Learning principles

- The principal limitation identified for information and knowledge management is not specific to rural areas. It is a constraint inherent in processes of this nature: the absence of policies for information and communication at the local level. This lack of institutionalization of the information processes in a territory not only complicates the call for and the support of the local organizations for creating oppor-



tunities for information exchange and their commitment to participating in the process, but also limits the continuity and sustainability of local activities.

- There are other limitations related to the rural areas that have to do with the possibilities to access information (technological infrastructure, absence of linkages between those who supply and demand information), which complicate information and knowledge management in the secondary networks. Thus it is always necessary to contemplate strategies for management through primary networks of the producers or other priority actors. This means that a network approach should complement the management of information and knowledge in parallel through primary and secondary networks.
- The processes of information and knowledge management, which occur in the interaction space, are the result of the collective construction of the different actors. This occurs primarily in the spaces of personal encounters, where there is an opportunity to share experiences. For this reason, one of the principal strategies should be oriented toward strengthening social capital to develop relations of co-operation and trust among the actors so that there is a real motivation to share their information and knowledge.
- Having established the mechanisms for socializing information and knowledge, these should contemplate the cultural and linguistic differences of the actors, so as not to limit anyone's participation.

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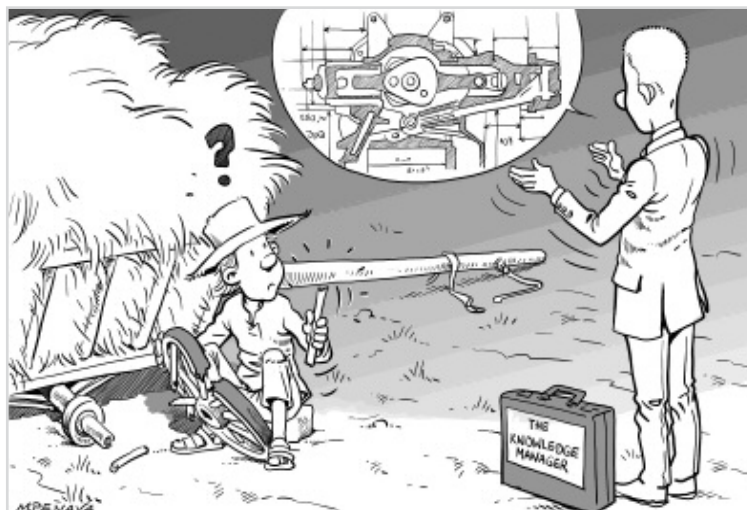
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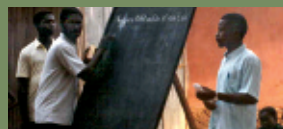
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Knowledge Management and Communication in Smallholder Organisations – Lessons Learned

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The following article deals with the topic of knowledge management and communication at various levels. First, it looks at the term itself and the meaning of knowledge management, focussing especially on the question whether knowledge can be managed at all. The next section summarises the lessons learned from a study of knowledge management and communication in a smallholder organisation in Ecuador. The final section describes some of the experiences gained from attending the workshop “*Communicating Knowledge – from good practices to systematic change*” in Assisi, which was organised by GTZ and the FAO. The three sections present different approaches to the issue of knowledge management - from a theoretical, practical and learning perspective.

1. Knowledge management – a management task? Theoretical aspects

Knowledge management in organisations aims to conserve knowledge, as one of the most important resources of a company or organisation, and make it available for the long term in the interests of maintaining and improving market competitiveness. The underlying processes are described in knowledge management literature as a sequence of relatively mechanical management steps in which knowledge is treated as a product that can be identified, digitised and transmitted (Probst, Raub et al. 1999)¹. The merit of the approach presented by the Japanese authors Nonaka & Takeuchi (1997, 1998)², on the other hand, is that it emphasises the implicit dimension of knowledge, which takes the form of intuition, ethical values and convictions and is linked to specific contexts and individuals; this makes it difficult to access. These authors therefore attach great importance to the transformation from implicit to explicit knowledge and the (co-)development of new knowledge as a driver of innovations. According to this model, knowledge development is a dynamic learning process which facilitates problem-solving and brings about change. If knowledge management – rather than the straightforward management of data or information – is to fulfil this goal, self-reflection and openness in the sense of “double-loop learning” are required, according to Argyris and Schön (1982; see also Argyris, Putnam et al. 1985)³. Knowledge management thus goes beyond “technical”-sounding management functions, being more akin to mediation, a process which balances out interest and power differences and encourages knowledge exchange and learning. This is clearly distinct from the management of data and information.

The communication process makes a key contribution to the success of knowledge exchange. So that a message can be transmitted from a sender to a recipient and properly en-/decoded, the correct selection of communication channels and media must be made (Berlo 1960)⁴. The communication process is made even more complex by the recognition that each message contains not only objective information, but also self-revelatory

¹ Probst, G., S. Raub, et al. (1999). *Wissen managen. Wie Unternehmen Ihre wertvollsten Ressourcen optimal nutzen*. Frankfurt a. M., Frankfurter Allgemeine Zeitung GmbH.

² Nonaka, I. and N. Konno (1998). “The concept of “Ba”: Building a foundation for knowledge creation.” *California management review* 40(3): 40-54.

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³ Argyris, C. (1982). *Reasoning, learning and action. Individual and organizational*. San Francisco, Washington, London, Jossey-Bass Publishers.

Argyris, C., R. Putnam, et al. (1985). *Action Science*. San Francisco, London, Jossey-Bass Publishers.

⁴ Berlo, D. K. (1960). *The Process of Communication. An Introduction to Theory and Practice*. New York, Holt, Rinehart and Wiston, Inc.



and relationship aspects, as well as performing an appeal function (Schulz von Thun 1981)⁵. Effective communication which takes account of these aspects is therefore a key prerequisite for successful knowledge management.

2. Knowledge management and communication in smallholder organisations – lessons learned from Ecuador

The question whether and to what extent knowledge management plays a role in smallholder organisations was addressed in a study which I carried out in 2005/6 with an association of smallholder cooperatives in Ecuador.

FAPECAFES is an association of around 1000 small coffee producers from four cooperatives in the southern highlands of Ecuador. It purchases raw coffee beans from producers, processes and packages them at its own plant, and manages the export of the beans. FAPECAFES markets coffee certified to organic and fair trade standards as well as conventionally grown coffee and small volumes of high-quality specialist coffee. A massive slump by comparison with the expected export volume in 2005 due to inaccurate forecasts, poor coordination and changes in weather conditions prompted in-depth reflection on the issues of knowledge management and communication within the association. The key challenges and proposed methods of overcoming them are summarised below.

- Democratising communication flows – decentralising information: Although on paper the democratic organisational structure offers opportunities for optimum information and knowledge exchange between the various levels of the organisation, numerous problems exist in practice. It is difficult for the representatives of the local groups to communicate and manage complex information such as pricing, quality criteria, and the composition of organisational and export costs etc. The lack of written media at this level makes it more difficult to pass on important information, so a handful of people simply keep it in their heads. As a result, the members – especially the more geographically remote groups – are poorly informed, which leads to mistrust, a sense of alienation from the organisation, and ultimately to “fuga de café”⁶. Clarification of roles between the various levels in the communication process and use of simple, locally adapted media would appear to be sensible solutions here.
- Integrating key links in the chain – closing communication loops: In order to achieve strategically important goals (such as better quality management), contact between knowledge bearers and decision-makers is essential. For example, the warehouse manager who takes delivery of the coffee and is the first step in the quality assessment chain is an important source of information for the association’s quality manager, whose task is to respond to demand and prepare the coffee for export; the warehouse manager also plays an important role vis-à-vis the technical extension service, which is there to deal with quality problems in direct dialogue with the producer. Knowledge management should contribute to attaining the organisation’s strategic goals and must therefore be integrated into its work processes.
- Recognising knowledge bearers and sharing knowledge: The wealth of empirical knowledge and experience of the smallholders themselves is an untapped resource. Complex and deep-rooted dependencies between extension service providers and the association/its financiers and the blind faith in technology that has been instilled in producers have created a situation in which local knowledge is not valued. The technical extension officers’ role should consist of promoting and mediating the horizontal exchange between producer groups on specific topics. Discussions with smallholders showed that minga⁷, involving collaboration on the practical aspects of coffee cultivation, can be an entirely

⁵ Schulz von Thun, F. (1981). *Miteinander Reden. Störungen und Klärungen 1*. Reinbek bei Hamburg, Rowohlt Taschenbuchverlag.

⁶ The term “fuga del café” refers to the sale of coffee to local middlemen who, in the short term, can offer slightly higher prices at local level. However, due to insufficient export volumes this may result in non-compliance with contracts and an increase in export costs.

⁷ *Minga* is an indigenous word for the practice of providing mutual assistance, especially among neighbours, which was common practice in Inca societies in the Andean countries.



appropriate forum for “knowledge management”.

- Cost-benefit analysis for the use of media: Strategies for knowledge management and communication must be in proportion to the organisation’s present transaction costs. An increase in the number of meetings can greatly inflate the opportunity costs for smallholders. At the level of the smallholders, radio broadcasts should be used in preference to print media such as newsletters and flyers, whereas these latter media are useful at the level of the association and its partners in cooperation.

More of the lessons learned on the topic of knowledge management in value chains will appear in the *Knowledge Management for Development Journal* (www.km4dev.org/journal) in the near future.

3. Knowledge managers’ meeting – lessons learned at Assisi

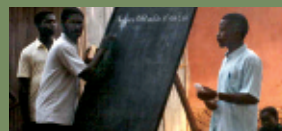
The workshop “*Communicating Knowledge – from good practices to systematic change*” in Assisi (18 – 22.06.2007) was organised by GTZ and the FAO and brought together experts from various countries to look at the issue of knowledge management in rural regions. These are the lessons I learned at this meeting:

- Differentiation between organisations: Despite similar problems, it is important to select/adapt knowledge management tools and processes according to the size and type of the organisation concerned. For large companies, knowledge management is a business strategy, whereas small and micro enterprises struggle to cope with their day-to-day problems and limited resources. Although learning processes are key, personnel and time are the constraining factors for managers in micro enterprises, who often have to take on a wide variety of roles and are overstretched as a result.
- Differentiation between organisational learning and communication processes in rural regions: In contrast to organisational learning processes which are designed to facilitate the attainment of corporate goals, communication and learning processes in rural regions take place in a less structured way via social networks and loose groups or between individuals. Typical knowledge management tools are inappropriate here – instead, it is essential to promote existing networks and foster their links to key actors. Smallholder organisations play something of a hybrid role here: on the one hand, they pursue specific common goals as an organisation, but on the other, their individual members come from rural regions where integration into a variety of social networks plays a more dominant role. In order to promote knowledge management and communication processes here, it is important to focus on strengthening the interaction between local networks and organisational structures.

However, the workshop also raised a number of issues for me, as outlined below:

- What type of executive personnel do smallholder organisations need in order to initiate knowledge and learning processes alongside their routine work? Are we expecting far too much from the heads of smallholder organisations? What changes are required to encourage capacity-building in this group?
- What type of structures facilitate knowledge-sharing and learning? Can learning also take place in an unstructured environment, or are minimum structures – such as groups or networks – essential? Are democratic structures within organisations a prerequisite for learning processes?

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Knowledge Management Tools

'Knowledge Profiling' – Promoting easy access to knowledge generated in projects and programmes

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Abstract and Introduction

A new and simple method has been developed to capture and exchange knowledge generated in projects. It is described in a Manual, which was jointly prepared by GTZ and IFAD. It is entitled "Knowledge Profiling - promoting easy access to knowledge and experience generated in projects and programmes". The Manual is meant as a supporting tool to knowledge management in Development Cooperation and its purpose is three-fold: First, it provides a quick reference to the knowledge generated in projects and programmes. Second, it puts the focus on those areas of knowledge judged to be worth mentioning by the stakeholders themselves. And third, it presents a method that facilitates comparison of knowledge acquisition between projects and even cross-sectorally. In the following, a short outline of the Knowledge Profiling method is given and the actual status of its application is discussed.

The Concept

Knowledge profiling offers a simple and easily applicable method to secure and exchange knowledge generated by development initiatives.

It builds on ideas developed by GTZ in Namibia, where it was applied by several projects/programmes and met with enthusiastic acceptance. It will now become a component of the GTZ package of debriefing instruments.

Knowledge profiling also aroused the interest of the IFAD Water Desk (IFAD/WD) in Rome. IFAD joined forces with GTZ to fine-tune the method and promote its application.

'Knowledge profiling' takes a look at project outcomes with a new 'pair of glasses'. Traditionally the focus has been on reaching goals, achieving results and compiling lessons learned. Knowledge profiling does this, too, but it adds a new perspective: the spotlight is on the knowledge and experience gained by the major stakeholders. Moreover, documentation of this knowledge is arranged to allow quick reference to details. Finally, knowledge profiling facilitates comparison of knowledge acquisition between projects and even cross-sectorally.

The main principles are easy accessibility, comparability and stakeholder perception, which are in fact seldom observed during documentation of project-generated knowledge. To change this in future, the method emphasises the "4 Ss" of knowledge profiling: Stakeholder feedback, Shortness, Structuring, and Standardisation

Stakeholder feedback: The major stakeholders identify the knowledge generated by the project/programme that they value most and think should be remembered and shared. This step ensures that the profiling exercise focuses not on 'expert knowledge' but on knowledge gained by the local people.

Shortness: The topics or areas of knowledge identified by the major stakeholders are termed "modules". For each module a brief and concise knowledge profile is elaborated, specifying the details of the knowledge gained and the lessons learned in connection with the module. Knowledge profiles are presented in brief, "bullet point" listings.

Structuring: The knowledge profiles have a special structure. While outputs, outcomes and impacts achieved by the project (or project phase) are briefly mentioned, the emphasis is on knowledge, innovations and experience gained in certain areas defined beforehand.

Standardisation: Knowledge profile structure should be standardised, so that specific information can be easily traced and compared among different projects.

A central feature of Knowledge Profiling is the identification of so-called 'knowledge modules'. These are major



clusters of themes in which, in the opinion of the stakeholders, essential knowledge and experience were accumulated in the course of the project. More often than not, these knowledge modules relate to central issues of capacity development (e.g. organizational development, institutional issues, process related aspects etc) and hence allow comparison of knowledge generation and experiences between projects and programmes with a different sectoral focus.

The sequence of steps

A knowledge profiling exercise follows a sequence of steps which centers around semi-structured interviews with selected stakeholders who are supposed to have gained knowledge during project implementation. First, a number of key '*knowledge modules*' are pre-selected and then these major clusters of themes in which, in the opinion of the stakeholders, essential knowledge and experience were accumulated in the course of the project, are verified and closely scrutinized during the interviews.

A useful structure of the interviews should differentiate with respect to:

- methods, tools and instruments applied
- processes employed
- furthering / hindering factors occasioned by frame conditions
- people and organisations knowledgeable about the module
- available documents with valuable information related to the module

Application

As mentioned above, knowledge profiling exercises have originally been initiated in GTZ projects in Namibia. Up to now, a total of four knowledge profiling studies have been implemented in that country, concentrating on projects in the area of livestock management, biodiversity, water management and, most recently, land reform. IFAD has conducted a full knowledge profiling exercise in a project on agricultural water management in Ghana and has financed the elaboration of the Knowledge Profiling Manual. The Manual can be downloaded from: <http://www.ruralpovertyportal.org/english/topics/water/ifad/manual/kp.pdf>

Example of an elaborated Module

The following example of a completed module description is extracted from the knowledge profiling study undertaken in the second phase of the "Namibian Water Resources Management Programme" in the Cuvelai Basin in Northern Namibia.

The lessons learnt through the project in the period 1998 to 2005 were grouped around 7 main areas of experience and knowledge ("Modules"), as follows:

Module 1: Establishment of basin management organisations

Module 2: Capacity building of professionals in ILWRM

Module 3: ILWRM knowledge base

Module 4: Co-operation, networking and awareness raising

Module 5: Development of policy and legislation

Module 6: Training and education

Module 7: Institutional reform of the water sector

After the screening of the interviews, Module 1 has been structured as follows (excerpts):

Excerpts:

Short description of module:

The establishment of Basin Management Committees (BMCs) is one of the corner stones of Integrated Water Resources Management (IWRM) as laid down in the National Water Policy White Paper and as



stipulated in the new Water Act of 2004. GRN strongly favoured the piloting of BMCs in the Cuvelai area in northern Namibia. NWRM promoted a participatory approach to demarcate sub-basins in the Cuvelai and to select a particular sub-basin as the pilot area to start with. A process of discussion, information sharing and joint decision making was supported by NWRM that led to the establishment and official launching of the Iishana BMC in October 2005 by the Minister of MAWF.

Specific steps/activities implemented ("outputs"):

- Two study tours were undertaken to Australia and the UK to look at water management agencies and stakeholder involvement. The Minister of MAWRD participated in one tour and became convinced of the basin management approach as a means for increased involvement of local people in water management.
- Based on a theme report on the participatory approach, an implementation plan was developed during Phase 1, with a sub-section on the establishment of BMCs.

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Use made of specific outputs ("outcome")

- Local stakeholders have taken a decision to select the Iishana Sub-Basin of the Cuvelai-Etoshia Basin as the pilot area to start with

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Methods, Tools, Instruments applied:

- Study trips were undertaken as a method/instrument to make key stakeholders aware of new concepts and approaches in water resource management.
- Meetings and discussions with some key stakeholders over a two year period were the main instruments of introducing ILWRM and the basin management concept.

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Specific experiences made during implementation, what functioned well, what problems were encountered:

What functioned well

- Study trips abroad (to Australia and UK), while not without drawbacks in general, resulted in substantial awareness raising for high government officials with respect to the need for a perspective of "Integrated Water Management" and the establishment of River Basin Organisations. These trips generated substantial political will to move into a new direction with water policy and with the institutional set-up.

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What did not go well (what needs to be improved)

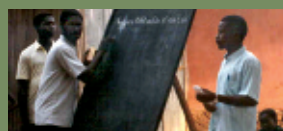
- The process of establishing BMCs is first and foremost a facilitation process. Some interviewees were of the opinion that more professional facilitation is required. The decision to charge those hydrologists of DWA who are responsible for the whole project with the additional responsibility of facilitation, risks overloading these professionals, whose main tasks fall outside the project.

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Important frame conditions relevant for the module / learning area:

Promoting factors

- It was of great importance that several highly placed professional and political protagonists identified with the process and gave it explicit backing. The project benefited of the explicit political



will of the former Minister of Agriculture, Water and Rural Development. The hope is that the new Minister will continue to support the programme in a similar way.

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Hindering factors

- The establishment and success of the BMCs in counteracting resource degradation in the Cuvelai Basin hinges on an overall national vision and strategy to reverse resource degradation in this region. However, such a strategy has not been formulated so far.

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Assessment of impact of module:

- So far the overall impact of the project in the area of this Module is limited, since the ISBMC has not yet identified its major areas of intervention and – in cooperation with the governmental stakeholders - the outline of a sub-basin management plan. However, with the official establishment of the BMC the preconditions for such impact achievement are created.
- However, one impact of the project in the area of this Module is that the planned intervention of GEF in Northern Namibia is likely to be in a neighbouring sub-basin of the Cuvelai-Etoshia Basin.

Assessment of sustainability:

Sustainability of the BMC approaches in the Cuvelai and success of the ISBMC are dependent on a number of preconditions:

- People in the Sub-Basin must see the immediate benefits of having and running such a BMC, even if these benefits are not only centred around tangible results such as the provision of water.
- Political commitment and commitment of the DWA toward Basin Management must persist at a high level.

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Assessment of replicability:

- Replicability seems to be high in similar environments and especially in the Cuvelai Basin. This opinion is shared by the GRN and GEF, who are discussing to set up a project with similar BMC approaches nearby (CPP).
- Final assessment of replicability will be possible at later stages of ISBMC and of CPP.

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Who is knowledgeable about the module or elements of it?

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In what documents can one find relevant information?

1. Amakali, M 2004 'Experiences with Basin Management Committees in Cuvelai'. Presentation at Planning Workshop: Integrated Land and Water Management, Nampower Convention Centre, 10-11 March 2004
2. Desert Research Foundation of Namibia (DRFN) n.d. [2005] *Basin Management Approach. A Guidebook*
3. Fitter, J. (compiler) 2004 *Planning Workshop Integrated Land and Water Management in Basins*. Nampower Convention Centre, 10-11 March 2004



4. Government Gazette of the Republic of Namibia, 2004. Water Resources Management Act, 2004 (Act No.24 of 2004)
5. Huppert, W. 2004 'Issues in Integrated Land and Water Management in Basins. Presentation at Planning Workshop: Integrated Land and Water Management'. Nampower Convention Centre, 10-11 March 2004
6. Ministry of Agriculture, Water and Rural Development (MAWRD) 1999 *Guidelines for the implementation of community based management and cost recovery for rural water supply*
7. Ministry of Agriculture, Water and Forestry (MAWF) and Gesellschaft für Technische Zusammenarbeit (GTZ) 2006 *Namibia Water Resource Management Project. Background Information Planning Workshop on Integrated Land and Water Management in Basins*, Namibia Water Resource Management Project Planning Workshop. Integrated Land and Water Management in Basins, 2-3 March 2006, Oshakati Country Lodge. Windhoek, Namibia
8. Van Langenhove, G., Shixwameni, L., Ngurare, E., De Bruine, B. 2000 *Managing of Water Basin areas for Namibia, Conservation and Sharing water resources in a water scarce environment*. Proceedings 4th Biennial Congress of the African Division of the International Association of Hydraulic Engineering and Research, Windhoek, Namibia

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Debriefing as Part of the GTZ Knowledge Management Concept

Carolyn Bothe-Tews (bothe-tews@carolineum.de), Information and Knowledge Management Consultant

The experience and information acquired through day-to-day work are a vital source of “knowledge” for a company. At best, know-how, know-who, know-where, and above all “why” are presented as objective factual information in formal reporting. A special type of added value, however, resides in harnessing personal experience and lessons learned. Debriefing helps to salvage these valuable resources.

The first attempts at debriefing in GTZ took place in the 1990s and focussed on project experience and know-how. Practical implementation of debriefing strategies started in 2005.

Purpose and objective – The overarching goal of any debriefing interview is to facilitate institutional learning from practice. A debriefing interview is essentially an oral and/or documented follow-up discussion for the sharing of individual experience and key work outcomes. Unlike an evaluation, it focusses primarily on subjective reflection on lessons learned, and the outcomes of the debriefing should generally be made available for internal use.

Debriefing arises from the conviction that the knowledge held by staff is the company's real capital. Debriefing therefore aims to tap into this knowledge systematically by applying simple interrogative methodology (focussing on learning experiences, good practice, key lessons learned) and passing it on to relevant recipients in a targeted way. Debriefing can thus make a major contribution to the economic effectiveness of operational work.

Evaluation of staff and their work also plays an important, although secondary, role in debriefing.

Target groups – The users of debriefing tools are primarily GTZ staff working in operational areas and managers. However, in an appropriately adapted form, debriefings can be held, and may be useful, for all other members of staff as well.

Scope and timescale – Debriefings can last between two hours and three days. This great time variation results from the very different applications and evaluation interests. The debriefer must generally allocate a further two or three days for comprehensive preparation and follow-up.

There are many good opportunities to hold debriefings: when changing jobs, leaving the GTZ, ending or restructuring a project, when overseas staff spends time at headquarters, in connection with network meetings, or during preparation and follow-up to formal reporting. A debriefing interview should not take place when the general conditions are at a critical stage, or when there is a lack of clarity over strategies, compulsory staff changes or acute conflicts in the team or with the partner.

Content – Debriefings are geared towards the specific needs of the user. It is therefore helpful to demarcate the themes in advance. The focus on specific project priorities or topics with good outcomes is reflected in the high quality of documented experiences at the end of the debriefing. The target groups here are experts and managers, project staff and consultants.

The selection of topics depends on the intended later use of the debriefing outcomes.

Tools and methods – Debriefings should be flexible. The tools mentioned here can be selected by users as appropriate, according to experience and knowledge goals. The three basic tools are the debriefing interview, the debriefing workshop and debriefing bulletins.

- The **debriefing interview** serves to extract information about experience gained via a tandem constellation. It is generally based on a standard questionnaire comprising a multiple-choice checklist. The interview should take no longer than three hours. Additional time must be allocated for preparation and follow-up. The individual interview is especially useful to extract knowledge when an indi-



dual is leaving the organisation, before redeployment, and at the end of a project.

- **Debriefing workshops** are useful for the systematic exchange or extraction of experience and lessons learned by the team. The workshops, with 10-15 persons, must be well-prepared by the workshop leaders. It is extremely important for the success of the workshop that knowledge goals are defined in advance or as the first stage of the workshop at the latest.
- **Debriefing bulletins** facilitate day-to-day knowledge transfer. They are compiled following the hand-over of tasks and after working visits. They are usually short written texts which record the key facts, lessons learned and contacts.

In addition to these three tools, guidelines are available which provide all actors with a detailed introduction and guidance for practical work.

There are many other tools which can also be deployed flexibly according to the goal and expedience. For example, the use of impact statements, timelines, mindmaps and actor mapping has often proved useful as part of the debriefing process.

Using the findings – A debriefing with all its findings makes little sense if its purpose is simply to put knowledge “on file”. It becomes valuable only once a specific objective is pursued, e.g. project and topic development, induction of a co-worker or new appointee, preparation of a brochure, preparation of missions or similar. Otherwise, co-workers’ capacity to absorb new information is soon exhausted if they have to spend a great deal of time on “required reading”.

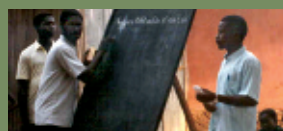
Success factors and limits – Debriefing is not a substitute for evaluation or formal reporting. The outcomes of debriefings very often contain information and assessments which are sensitive in company policy terms. Unlike reports and evaluations, they are therefore intended for internal use only.

Debriefing must be based on openness and trust. Only then can successes, but also failures, be understood and utilised as a learning opportunity. The fact is that we learn the most from our failures.

In context – Within GTZ, debriefing is firmly embedded in the overall knowledge management strategy.

Further information – Within GTZ, current information on debriefings, the guidelines mentioned above, the questionnaires, samples and more detailed information can be found on the Intranet at *Home > Wissen > Zum Dazulernen > Debriefing*.

If you require further up-to-date information, please do not hesitate to contact the GTZ Knowledge Team (wissen@gtz.de) or the author.



Making a Database Come to Life “From Web to Field to Web”: OISAT, Online Information Service for Non-Chemical Pest Management in the Tropics

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OISAT, the Online Information Service for Non-Chemical Pest Management in the Tropics, was developed by PAN Germany. OISAT is an Internet platform to provide English-language information about alternatives to toxic chemical pesticides. This knowledge management concept was developed on the basis of systematic consultation with experts and potential users, plus capacity development among intermediaries. The aim was to achieve maximum user acceptance.

OISAT went online in July 2004. The information service addresses extension workers and agricultural trainers, primarily as the intermediaries to the farmers, the final target group. From the beginning, OISAT was considered as an open information database with a pro-active process character. To this end, primary users were invited to take part in the development process: key stakeholders in information management in the fields of non-chemical pest management, training, extension and ICT in East Africa were involved in a series of three workshops. As a result, the database was set up and a pilot project was implemented in Kenya, testing the OISAT database under poverty conditions. Local training and extension services have tested how OISAT-derived information can be put into practice in areas where there is no electricity. The architecture of the OISAT concept was developed during this process. The concept encompasses three key pillars:

1. OISAT database
2. Interactive information management concept “From Web to Field to Web”
3. Capacity building (pest identification, use of PCs, OISAT information search, satellite radio/OKN)

During the pilot project, a comprehensive understanding of the concept “From Web to Field” was gained. This covers the installation of ICT equipment, the establishment of a suitable organizational set-up, capacity building, data retrieval, and some field validation of OISAT-derived information. The concept pillar “From Field to Web” still needs to be improved on the professional level. The component on feeding relevant field-validated information back to the OISAT database has not yet been covered. The duration of the pilot project was too short to work on all components with the same intensity. With the forthcoming OISAT Introductory Workshop, the need for sufficient time to implement the full concept will be taken into consideration.

Which were the main results of the pilot project?

- It is still difficult to change pest control management from a curative to a preventive approach;
- OISAT-derived pest management practices were considered as practical, inexpensive and easy to apply by farmers;
- OISAT-derived pest management practices helped to reduce production costs.

Which “soft factors” were identified during the pilot project?

- Team spirit and partnerships among NGOs, government, local leaders and communities are relevant for successful implementation;
- Internet information centres should have a wider perspective on community information needs (farmers, students, teachers, extension staff, local leaders etc);
- Use of local resource persons was advantageous for farmers to get OISAT information translated into local languages;
- The selection of focal farmers who play other roles in society stimulated the dissemination of OISAT, as they were respected by the local communities;



- Marginalized farmers proved to be 'information thirsty';
- The location must be easily accessible;
- There was enthusiasm among young farmers to learn ICT skills and also to use OISAT information at schools and homes.

Which features play a major role for the adoption of OISAT information by farmers, thus making the databank come to life?

- Relevance and re-packaging of information
- Combining external and local knowledge
- Building local capacity
- Comprehending and involving local structures
- Facilitating sharing, networking, feedback
- Sharing benefit

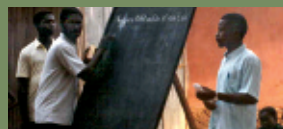
PAN Germany offers a tailor-made introductory workshop to the OISAT concept for agricultural training and extension services (Detailed information may be obtained from carina.weber@pan-germany.org).

General recommendations from the pilot project:

- Technical content should reflect the user logic regarding information and format;
- Building trust face-to-face, e.g. via consultation workshops, is extremely important;
- Suggestions from potential users should be systematically integrated;
- The local network of contacts and links (personal and institutional) should be tapped;
- For the collaboration with local partners, key criteria and a monitoring methodology should be defined.

Lessons learned for knowledge management and communication:

- To bring external and local knowledge together, it is important to live and express a culture of respecting each other – despite cultural differences. It also requires a clearly defined position by the donor partner(s).
- The OISAT concept is quite complex – this requires interdisciplinary work.
- Knowledge management needs to be embedded in local cultures and in a social fabric. This requires time, the development of empirical knowledge and experience, and the sensitivity to transform. The time requirement should not be considered as an obstacle but as a resource.
- Ownership in international knowledge management systems can be developed through a combination of electronic and face-to-face communication.
- Sustainable knowledge management results from the real benefits arising from the use of information, easy-to-use technologies, institutional strengthening and an improved image of the user.
- Essentially, even though at first sight it seems that we are dealing with a technical issue – looking at it deeply, we are dealing with human experiences and values.



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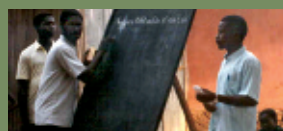
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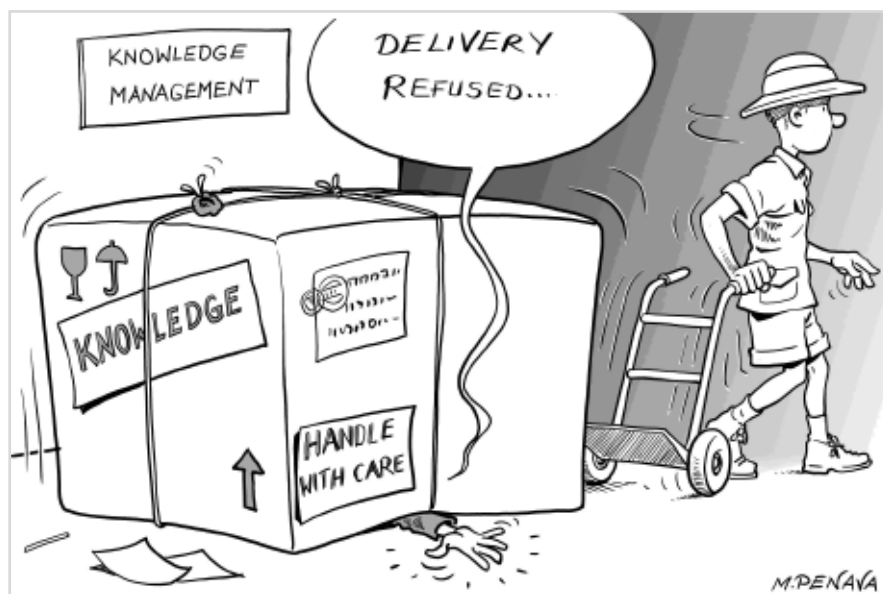
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Forthcoming Events

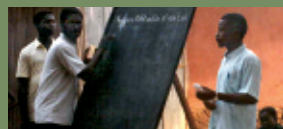
CGIAR - Annual General Meeting 2007 and Associated Events

The Consultative Group on International Agricultural Research (CGIAR) will welcome some of the world's leading agricultural research experts to its Annual General Meeting (AGM) in Beijing, **China, from December 3 to 7, 2007**. Over 1,000 AGM07 participants will explore how agricultural research and technology and food policy initiatives can more effectively continue to address critical global agricultural challenges and to bring the benefits of agricultural research to poor farmers in the developing world quicker.

The CGIAR is privileged to have a strong and expanding partnership with China. It works primarily through the Chinese Academy of Agricultural Sciences (CAAS), the research arm of the Chinese Ministry of Agriculture. <http://www.cgiar.org/meetings/agm07/index.html>

EPPO Workshop on Quality Assurance

From **4 – 7 December 2007**, EPPO (European and Mediterranean Plant Protection Organization) is organizing a workshop on quality assurance with the NPPO (National Plant Protection Organisation) of Denmark near Copenhagen at the Hotel Comwell Holte (**Holte, Denmark**). This Workshop will provide an important opportu-



nity to exchange experience in the area of quality assurance and accreditation. For more information please click on: http://www.eppo.org/MEETINGS/conferences/quality_assurance/quality_assurance.htm

Fachtagung 2007: Capacity Development in Agriculture, Fisheries and Food

This year's annual meeting of GTZ's Division 45 will outline GTZ's spotlight of the year 2007: Capacity Development with focus on the issues of Division 45: Agriculture, Fisheries and Food. It is scheduled to take place from **17 -19 December, 2007 in Königstein/Taunus, Germany**. For further information please contact: Klaus.Pilgram@gtz.de; Nadia.Weidner@gtz.de

Policies against Hunger VI

On behalf of the Bundesministerium für Ernährung, Landwirtschaft und Verbraucherschutz (BMVEL) GTZ organises this International Workshop from **16. - 19. December, 2007 in Berlin, Germany**. The Workshop is part of a series of annual conferences on important issues about global food security. It aims to discuss options for action and recommendations on food security due to a rising demand on biomass and bioenergy. Please contact Marlies.Lindecke@gtz.de, Manfred.Eckert-van@gtz.de and/or take a look on the conference's website: <http://www.policies-against-hunger.de/>

Agrar-Potentiale nutzen!

Tapping the agrarian potentials - challenges for agriculturists and society. This is the slogan of the next "DLG Wintertagung" which takes place from **January, 8 10, 2008 in Münster, Germany**. The German Agricultural Society (DLG), based in Frankfurt, Germany, successfully bridges the gap between agricultural and food theory and practice. Serving the European and world interests at large, the society is one of the leading food and agricultural organisations in Europe. Information is available on www.dlg.org/wintertagung and info@dlg.org

6th European Motor BioFuels Forum 2008

The Motor Biofuels Forum and IEA Bioenergy (International Energy Agency) have decided to combine their congress programmes during the 6th edition of the Motor BioFuels Forum on **9 -10 January, 2008 in De Doolen, Rotterdam, The Netherlands**. Over 70 experts of the bioenergy sector from 20 countries worldwide will speak on this topic. In addition, a number of car manufacturers have confirmed to demonstrate its use of biofuels for motor transport by showing some of their vehicles at the outdoor trade show. Please take a look at <http://www.europoint-bv.com/events/?biofuels2008>

Second Green Week Scientific Conference: "Enhancing the Capacities of Agricultural Systems and Producers"

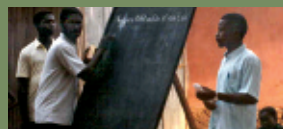
The Institute for Agricultural Economics and Social Sciences of the Humboldt-University in Berlin, together with its partners within the Marie-Curie Programme and ATSAF will conduct the Second Mace Conference at Green Week 2008 in **Berlin from 16 - 17 January, 2008**. The conference will provide a special forum for eligible researchers to build contacts with their peers from across Europe and leading researchers. Young scientists are expected to play an active role at the conference. The second Green Week Scientific Conference will have a systems' focus, looking at the rural sector as a whole and examining important factors of change. Natural as well as socio-economic issues will be discussed. Conferences are closely linked to the summer schools and training courses which will enable junior researchers to gain access to state-of-the-art knowledge and methods, employing a variety of proven and innovative work forms. For further information please consult the following website: <http://www.mace-events.org/greenweek2008/greenweek2008.html>

International Green Week 2008

The IGW is a one-of-a-kind international exhibition for the food, agricultural, and horticultural industries. Established in 1926 it will take place for the 73 rd time from **January 18 – 27, 2008 in Berlin, Germany**. Producers from all over the world use the IGW to test-market food and luxury items and establish a brand image. Changing annual themes typically include such topics as renewable resources or scientific livestock breeding and production. These trade show elements are of particular interest to those involved in the developing markets of central and Eastern Europe. More information on: http://www1.messe-berlin.de/vip8_1/website/MesseBerlin/htdocs/www.gruenewoche.de/en/Messeinfos/DatenundFakten/index.html

Transmediale 2008

The transmediale 08 takes place from **29.01.- 03.02.2008 at the Haus der Kulturen, in Berlin, Germany** and



is one of the leading international festivals for art and the creative use of digital media presenting artistic positions on socio-cultural, political and economical effects of the new technologies. It puts emphasis on the way we create, experience and perceive these technologies that influence nearly all aspects of our daily life. In the field of development cooperation different forms of media are significantly involved in social transformation processes in many parts of the world like China, Kenya, Venezuela or India. Knowledge transfer constitutes an important factor of sustainable development. If you are interested in this more artistic approach please take a look on the festival's website: <http://www.transmediale.de/site/home1+M52087573ab0.html>

Fruit Logistica

This international trade fair for fruit and vegetable marketing takes place from **February 7 - 9, 2008 at the Messe Berlin, Germany** and provides industries involved in fruit trading an opportunity to present their range of services from growing to selling. In particular, it offers developing countries exhibitors marketing "exotic" produce as well as newcomers from Central and Eastern Europe an excellent venue for presenting their products to an international trade public and establishing new business contacts. More information on: http://www1.messe-berlin.de/vip8_1/website/MesseBerlin/htdocs/www.fruitlogistica.de/en/General_Info/Dates_Facts/index.html

Underutilized Plants for Food, Nutrition, Income and Sustainable Development

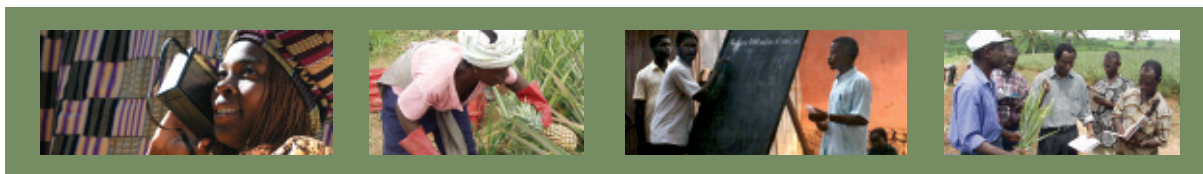
This 5-day Symposium will be held in **Arusha, Tanzania 3 - 7 March 2008**. It is organised under the auspices of the International Society for Horticultural Science (ISHS), recognising the need to provide a global forum for exchange and debate on issues related to the promotion of underutilized plants. Underutilized plants are species with under-exploited potential for contributing to food security and nutrition by combating 'hidden hunger' caused by micronutrient deficiencies. They often have medicinal properties and other multiple uses; they provide options for improved incomes to the poor, and for environmental services to the global community. Further information is available on <http://www.icuc-iwmi.org/Symposium2008/>

Tech for Food

TV Agri, CNES, FARM jointly organise this International Symposium on **6 March, 2008 in Paris, France**. Tech for food" solutions are all technical means for combating hunger. They are derived from advanced technologies adapted to the agricultural and agribusiness domains: satellite imagery, Internet, wireless communications, portable physical and chemical tests and others yet to be invented or explored. Aid in land and natural resources management, in the prevention of natural risks, training, information, commercial exchanges: new technologies offer a great many levers for agricultural development and food production as long as we are able to master their advantages and weaknesses. Further information on: <http://www.techforfood.com/index.php>

IAALD World Congress 2008. Agricultural Information Community of the future: Progress, Development, Partnerships

From **24 - 27 August 2008**, IAALD will co-organise the World Conference on Agricultural Information 2008 co-sponsored with AFITA and WCCA. This 12th World Congress of the International Association of Agricultural Information Specialists, the 6th World Congress on Computers in Agriculture, and the 6th Asian Conference of IT in Agriculture will jointly be held at the Atsugi Campus of the **Tokyo University of Agriculture**. The local organisation is led by the Japanese Society of Agricultural Informatics and the Japanese Association of Agricultural Information Specialists. More information is available on: <http://iaald.blogspot.com/2007/05/iaald-world-congress-2008.html>



Impressum | The Editors: Paul-Mathias Braun, Lucie Bosotti, Lea Herberg, Joachim Hofer. GTZ Sector Project "Knowledge Systems in Rural Areas". World Wide Web: www.gtz.de/agriservice. To contact the editors, write to: Lucie Bosotti P.O.Box 5180 65726 Eschborn, Germany. Tel.: +49-6196-791409 Fax: +49-6196-79801409 Email: lucie.bosotti@gtz.de
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