

## Embedding information management into all operational areas of an agricultural organisation: lessons learned from the Pacific

**Peter Walton**

Agricultural Information Specialist  
Darwin, Australia



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### Abstract:

*In 2008, the Technical Centre for Agricultural and Rural Cooperation (CTA) began a series of regional workshops in the ACP region to provide training on developing information and communication management (ICM) strategies. The fifth regional workshop in late 2011 confirmed the essential elements of an integrated training programme. Two manuals – a users’ manual and a facilitator’s guide – have been published by CTA and are now available for distribution. Several organisations have commenced the process of developing their own ICM strategies, with some support from CTA.*

*Developing and implementing an ICM strategy is very likely to result in organisational changes and for there to be significant learning requirements both of information practitioners and ‘users’. So it’s not just about better management of information, communication and knowledge assets, products, services and activities. In the agricultural context, it’s about better research management, improved extension and outreach programmes, and support for policy and planning.*

*In this paper, the development and implementation of an ICM strategy in a ministry of agriculture in the Pacific will be explored in order to highlight the impact that this process has had (and is having) on all aspects of its operations and activities. In particular, the paper will look at:*

- *The roles of staff and how they may change/are changing; for example, redesignation of research and livestock staff as ‘information officers’;*
- *The physical reorganisation of departments and the concomitant rise of cross-cutting, virtual teams that sail across traditional organisational boundaries to deliver specific outputs;*
- *The impact on the internal policies and procedures as ICM practices become more deeply embedded in departmental work programmes; and*
- *The extent of learning at the individual and organisational level necessary to implement the transition towards a more integrated way of managing information and knowledge.*

## **Introduction**

Before I begin, there are a couple of things I want to get out of the way. Firstly, as you've already seen, this paper is being written in the first person. The reason for this is so that I can more accurately reflect my experience and observations. It's not unusual these days that papers are written in the first person, but I wanted to ensure that you – the reader – know that I am addressing you, including you in the story that unfolds, in the hope and expectation that you will find things that resonate. It's not the first time I've written a paper in the first person, I did so back in 2000 and it too was on a similar topic (Walton 2000).

Secondly, the idea of maintaining the anonymity of the country being used as a case study is not to save face or avoid embarrassment, it is simply because the situation being described is all too familiar, not just in the Pacific and other developing regions, but to lesser extent in the more economically advanced countries and so the name and location of the specific institution is just not that relevant. To this extent Country X is being used to channel an Everyman experience.

## **Information needs assessments**

Ten years ago, the Technical Centre for Agricultural and Rural Cooperation (CTA) commenced a series of agricultural information needs assessments in the Pacific ACP<sup>1</sup> region. The primary reason for undertaking these studies was to enable CTA to identify the agricultural information needs of key actors and beneficiaries for CTA products and services, including the beneficiaries' needs in terms of building capacity for information and communication management (ICM). The Pacific studies were conducted during 2004 and 2005; in 2005, information needs assessments were commenced in the Caribbean ACP region, and in the following years in the African ACP regions.

The assessment reports were used to lay the groundwork for a novel priority-setting exercise that was carried out in the Pacific and Caribbean ACP regions in 2006 (Walton, Gumbs & Webster 2008). The intention, given the limited funds available, was to identify the most important, useful interventions CTA could make. Based on interviews, questionnaires and focus groups embracing 332 people in 129 institutions located in 15 countries in the Caribbean and Pacific, the top-ranked priority was addressing the lack of information and communication management (ICM) strategies in agricultural organisations in the two ACP regions. It is salutary to note that the request for help to develop ICM strategies was ranked first in subsequent priority-setting exercises in the African ACP regions. For this reason alone, CTA was justified in pursuing the development of ICM strategies with its partner organisations.

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<sup>1</sup> Refers to countries in Africa, the Caribbean and the Pacific (ACP) that are signatories to the Lomé Convention (1975) and Cotonou Agreement (2000). The Lomé Convention was a trade and aid agreement between the European Community and 71 ACP countries; the Cotonou Agreement that succeeded Lomé is a partnership agreement between the European Union and 79 ACP countries. CTA is a joint international institution of ACP Group of States and the European Union.

## **Information and communication management strategy**

A well-designed and successfully implemented ICM strategy can be a major contributing factor to an organisation achieving its strategic goals and objectives; the lack of an effective, coherent ICM strategy can be considered a major obstacle to agricultural and rural development. With this in mind, CTA began a series of ICM strategy development workshops in October 2008. Earlier, in March 2006, the Food and Agriculture Organisation of the United Nations (FAO) developed an e-learning module entitled ‘Investing in information for development’ in its Information Management Resource Kit (IMARK) series, and this module was the basis for the first CTA workshop held in St Vincent and the Grenadines for participants from the Caribbean ACP region.

Many lessons were learned from the Caribbean workshop and subsequent workshops<sup>2</sup>, and over time the course design and training materials changed completely; and it’s true to say that the delivery improved. The fifth workshop in Uganda in November 2011 was partly intended to be the final test of the two ICM strategy development manuals – a user’s manual and a facilitator’s guide – prepared by CTA. Based on lessons learned from this last workshop, and following yet more fine-tuning the two manuals were published by CTA in 2012<sup>3</sup> (Gumbs 2012; Walton & Kebede 2012).

## **Strategy development**

Eager to implement ICM strategy development in a real situation, I was fortunate to be working with a government ministry of agriculture at a time when they were seeking to revitalise themselves. In a nutshell, the ministry was not managing its information and communication activities well; and staff were drifting, with no strategic direction, little enthusiasm and few appropriate skills. The consequence of this was that products and services to their primary stakeholders – farmers, men and women – were out of date, inadequate, no longer needed and poorly realised. Common answers to questions such as “Why are you making this video?”, “What are your expectations of this radio broadcast” and “Where do you find information for your research activities?” were mostly inadequate and lacking in strategic awareness. An information and communication management strategy was very much needed.

Using the CTA ICM strategy development manual, I began to hold a series of meetings with senior staff to identify the issues to be addressed and the way in which we would go about this. At the forefront of our discussions was the impact ICKM strategy development would have on the organisation, i.e. the ministry. The major impacts were identified as:

- The roles of staff and how they may change/are changing; for example, redesignation of research and livestock staff as ‘information officers’;

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<sup>2</sup> In Fiji, for Pacific ACP participants, September 2009; Namibia, southern African participants, November 2009; Ghana, Anglophone West African participants, October 2010; and Uganda, East African participants, November 2011.

<sup>3</sup> FAO also took the opportunity to revise its IMARK e-learning module based on the Facilitator’s Guide; and there are cross-references between the Guide and the revised IMARK module. The revised IMARK module is due to be launched in 2013.

- The physical reorganisation of departments and the concomitant rise of cross-cutting, virtual teams that sail across traditional organisational boundaries to deliver specific outputs;
- The impact on the internal policies and procedures as ICM practices become more deeply embedded in departmental work programmes; and
- The extent of learning at the individual and organisational level necessary to implement the transition towards a more integrated way of managing information and knowledge.

In order to understand the environment in which these questions are pertinent, I have chosen to examine, in detail, just one aspect of the ICKM strategy implementation: the role of information and knowledge management in a research team. I will examine first, information management, before then assessing its role in research management.

### **Information management**

Managing research activities within a ministry of agriculture (or any type of organisation, for that matter) is quite complex, particularly from the point of view of information, communication and knowledge. Researchers invest heavily in information and knowledge because it is the foundation for knowledge generation. It follows that if access to past research, particularly information about past research in their own country or region is hard to find, then current research is compromised. Similarly, if access to recent information relating to the topic of their current research is inadequate or non-existent, then that too compromises the quality and adequacy of the research being carried out. This was how it was with the ministry of agriculture. Naturally, the solution (and the one recommended) is to improve access to information, by better collection, organisation and management of historic research literature, and by providing gateways to up-to-date, appropriate scientific information from external sources. That's the easy bit, but how to put this into practice?

In common with many similar organisations in the developing world, lack of resources and skills are significant constraints. This might mean that many key activities, such as those outlined above, are not implementable without intervention of one kind or another. For example, the collecting, organising and managing of historic research literature requires high-level librarianship skills, as well as an understanding of the research process and some awareness of local agriculture practices and techniques. In the case of the ministry, there is either an awareness of local agriculture practices and techniques, or there is an understanding of the research process; there are no high-level librarianship skills. The implication is that unless a different approach is tried, there is no chance of successfully implementing this strategy.

The solution is to turn the approach on its head: this is not a library responsibility but a research management issue, and to look at transferring the specific high-level cataloguing and indexing skills to a member (or members) of the research team. The proposal is to identify a suitable member (but preferably more than one person) of the research team, and provide intensive training on cataloguing and indexing within a framework of collecting, organising and managing information resources. A new position of 'research information officer' is being created within the research team. Whilst the successful candidate will report to the head of research, he/she will also be a key member of the ICKM team, comprising similar key people from other

departments and the information section. Supervision of departmental information officers will be the responsibility of respective department heads, the work programme – and thus its priorities – will be determined solely by the ICKM strategy, which is an integral part of the overall corporate plan. With effective monitoring and evaluation, this should eliminate the emergence of new activity silos, and lead to better deployment of resources.

### **Research management**

If the above takes care of managing historic research literature (and in time, primary research data), it does not in and of itself ensure the participation of the researchers, other than as basic ‘users’ of information. Discussion and observation of the members of the research team in the ministry indicated that they had by and large very poor information and knowledge management skills; in other words, they are not information literate as defined by the most concise, often quoted definition of ‘information literacy’: "To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information" (ALA 1989).

Participation by researchers in information management is critical for two reasons: 1) for their own good, so that they become more effective researchers; and 2) so that resources developed as tools for research management are actually used, i.e. the investment (time and energy, and funds) pays off. Too often I have seen very useful resources created for the benefit of a particular group of people being underused, or not used at all. This has as much to do with *how* a particular resource was created as it has to do with the *form* it takes – its accessibility and ease-of-use. The only way to ensure a resource is used – and useful – is to design and develop it in participation with the intended beneficiaries.

Most of the researchers in the ministry did not have an adequate, effective filing system for important research documentation and data, neither for printed materials nor for digital files. This became apparent when a request was made of staff that they enter details of their research projects into a new information system (designed in participation with the same staff). With rudimentary awareness of the different components (e.g. objectives, inputs, outputs, outcomes) of research project design – not helped by the variability of external donors’ use of terminology – coupled with poor file management, it was difficult for individuals to locate the relevant materials and transfer the data to the new information system.

### **Integration of ICKM and research management**

Based on the above, the main issues are limited access to research information (historical and current), poor research management skills and issues with project terminology. On the plus side, we do have a documented strategy for improving access to research information (historic and current) and management of research projects and activities, so the solution is to bring everything together and develop a new set of research management guidelines and procedures. It is generally accepted by staff that existing research management procedures were not well documented and as a consequence, not adhered to, so here was an issue that needed addressing anyway. A project colleague began working with the research team to design a

simple, effective process to manage research, and then I came in and together we looked at how we might embed ICKM into the process. The idea was to incorporate elements of both ‘pull’ (incentives) – here are all these tools and resources you *can* use – and ‘push’ (obligations) – here are all these tools and resources you are *required* to use.

Three distinct phases in the process were identified (the word ‘project’ refers to any distinct activity such as a particular trial, whether or not it is part of a project or a project):

- Project conception
- Project implementation
- Project conclusion

*Project conception* is the point at which a researcher determines that a research activity is needed. At this point the researcher (or research team) needs to know what research has been carried out in the past (to ensure no duplication) in order to be able to show or justify that the new proposal is innovative and builds on past research. Once fully operational, the information system would be used to generate a list of all past research activities, with information about each activity including the main findings/outcomes. The current draft of the research management guidelines requires that a proposer present a review of past research as well as a justification for the new activity. If the project proposal is approved, a record is created in the information system with salient information about all aspects of the activity. The idea is that from this point on, the information about the activity is publically available and searchable.

*Project implementation* – once the research activity is implemented, the information system enables the research team to continually update the project activity record; for example, by adding in reports of milestone achievements, linking project reports or publications, adding new team members. In this way, at any given moment in time, a complete picture of this and other research activities is available to whoever needs it. This is in complete contrast to the previous situation where a request for a simple list of current research activities would have everyone scurrying about looking for the information. The information system is more than just a repository for information; it is a key component of the organisation’s knowledge base. In order to add value to the data being contributed, the research information officer oversees the process to ensure that data are compliant with the guidelines, and descriptors and tags added are correct.

*Project completion* – at the point at which the project activity concludes, a full set of project reports and other materials ought to be linked to the activity record. Materials include anything, printed or digital, including conference papers, journal articles, newspapers articles, radio programme scripts, and perhaps most importantly training and extension materials, from leaflets and self-help guides to YouTube videos<sup>4</sup>. In other words, at a glance any individual can see the anticipated project outcomes, actual project outcomes, and have access to the information. In the new draft research guidelines, the information system is to be used to produce and manage periodic and

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<sup>4</sup> Some thought has been given to archiving research data as part of the information system. At present, no effective, coherent way of managing data – trial results, questionnaires, etc. – has been implemented, and as a consequence data are easily lost/misplaced/erased.

terminal reports; in other words, if your quarterly report is not in the information system, it cannot be presented and you cannot be said to have done the work. Since this is currently being linked to a new performance appraisal system, this is a significant incentive and is the most important change in the way research will be managed and reflects the push-and-pull impact of implementing a new research (information) management system.

### **Capacity building for ICKM**

In this section, I will reflect on a key component of ICKM strategy development, namely:

- The extent of learning at the individual and organisational level necessary to implement the transition towards a more integrated way of managing information and knowledge.

From the outset, it was clear that the **ICKM skills of researchers** in the ministry were mostly lacking, and at best limited. But what does this really mean? In practice the skills' gap covers a multitude of things. For example, the inability to effectively manage information materials, in print and digital formats, is about the capacity to organise and retrieve information materials, e.g. project documents, journal articles, and reports. Training has already commenced on such 'mundane' though critical skills as how to organise files and folders on a disk drive, and how to organise printed documents and other materials so that they can be retrieved easily.

Another significant capacity issue was the ability to identify and locate information needed. In part, this limitation has to do with an awareness of resources available (internal and external) as well as access to those resources and knowledge of how to retrieve them. Thus even if the necessary information resources were made accessible, the researchers have only limited awareness of what they are and how to access them. An interrelated aspect of this limitation has to do with the ability to formulate the right question. Given that there is now great emphasis on 'innovation' in agricultural development – a positive attribute seen in the same light as 'sustainable' and 'participatory' development – it is worthwhile considering how the initial research (and thus information) question is posed. I think this quotation from Google co-founder Sergey Brin, in conversation with Jemima Kiss, says it all: *'Any conversation I have about innovation starts with the ultimate goal – in this case what the reader is trying to accomplish, and what would make that better [...] I don't have a solution for you – I'm just saying that I think posing the problem correctly is perhaps more important than defining the solution'* [*The Guardian*, 18 June 2009, Technology Section, p. 1–2]

The position of **research information officer** – a new post – is critical in achieving the stated ICKM capacity building needs. It's a new position so there is no precedent, although there are precedents in university libraries in Australia and elsewhere: a librarian with special responsibility for assisting researchers and research students. The following is a list of nine critical skills identified in a study undertaken in mid-2010 for the Research Libraries UK (Auckland 2012, p.39):

- Excellent knowledge of **bibliographic and other finding tools** in the

discipline/subject

- Excellent skills to **design information literacy training** (both face to face and online) to meet the identified needs of different types of researchers
- Outstanding skills in **information discovery**, literature searching etc.
- Knowledge to advise on **citing and referencing, and the use of bibliographic management software**
- Ability to pro-actively **advise on and market appropriate library services** to researchers
- Good knowledge of **data sources** available in the discipline/subject
- Excellent knowledge of **content** available in the discipline/subject
- Awareness of current and changing **local research interests**
- Ability to gain an appreciation of **individual researcher/project needs**, including effective listening skills.

A very clear example of the skills required by a research information officer. However, such high-level skills don't exist in Country X, so a major programme to help develop those skills in the new research information officer has begun. It is necessary that the incumbent familiarise themselves with all aspects of ICKM, and fully understand the information system, its software, processes and procedures. It is also necessary that the incumbent adopt an attitude that befits the role they are performing; namely, that they are able and willing to work as part of a team, that they have excellent communication skills and that they are able to train others. Although this is quite a list of capacity needs, I have started working with existing staff to try and some of these skills. When the post is finally filled, my role will change from that of trainer to include being a long-term mentor.

## **Conclusion**

In the example I've described, I have sought to show how one translates a strategic imperative into a series of incremental steps, at the heart of which is the embedding of ICKM into all operational areas. Looked at in another way, it is an attempt to co-opt all staff as information and knowledge workers, not just in name but by providing the necessary support so that they gain the skills and confidence necessary to fulfil that role. In the past, librarians and other information workers have tended to go beyond the library in providing information literacy training, but they are still 'librarians'; the next step is to go beyond this confining nomenclature and embed the practice and transference of such skills into all operational areas of an agricultural organisation.



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