Learning by Writing:

Applying Continuous Improvement and Innovation Principles to Project Management by Formal Documentation and Publication

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> **"**I have acquired many things by writing them. There are allegedly those who know what they have to say before saying it, but I have never counted myself in their number. Argument seems to me a means of developing rather than merely demonstrating theories, and articulation a means of amassing rather than just disseminating insight. Writing is as much the cause as the result of having something to say." (Clardy 1977*)*
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> "The difficulty is not to write, but to write what you mean; not to affect your reader, but to affect him precisely as you wish." (Robert Louis Stevenson)
>
> "The role that language plays in simultaneously deepening individual understanding and allowing that understanding to be shared with others is 'truly wondrous'". (John Dewey)
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> "Wollongong-based Pillar is being transformed from a state-owned corporation into a world of discreet transactions, efficiency ratings and whiteboard scoring systems. Driving the new creed has been the organisation's commitment to a continuous business improvement program and its adoption of management tool kits. It may sound like meaningless jargon, but try telling that to people whose lives are being turned upside down by the drive for maximum flexibility." (Anon 2009)

Abstract

In recent years we have been involved in designing, implementing, monitoring and assessing a number of agricultural RD&E projects that have had a specific outcome focus on increasing the profitability of the participating businesses. These projects are based on ongoing research and development of the Sustainable Improvement and Innovation (SI&I) model which has Continuous Improvement and Innovation (CI&I) as its key process. A number of issues and dilemmas have arisen in managing these projects. One solution has been to write down in a formal way, at frequent intervals, what we have designed, what we have done, what we have achieved, and consequently what we need to do better. In this paper we describe several of these recent writing tasks, spread over several years. Apart from attempting to resolve the broad range of issues and dilemmas noted above, we have had two additional objectives: first, to expand interest in the concept of CI&I in the broader RD&E community and to stimulate its adoption in RD&E projects; and second, to use the writing task itself as a CI&I process to stimulate new thinking and action and to improve and innovate in our project management. We conclude by offering some lessons we have learnt from this process.

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The authors have benefitted from the incisive comments and suggestions of John Mullen.

Introduction

As the last quote above suggests, "continuous business improvement programs" often receive bad press (see also Watson 2004). This could be due to poorly designed programs, poorly implemented programs and/or poorly communicated programs. Yet we know that well-designed, well-implemented and well-communicated continuous improvement programs have generated substantial positive impacts on peoples' lives, especially in developing countries like the Philippines and South Africa (see for example Clark *et al*. 2005c, Madzivhandila *et al*. 2008c). This paper canvasses some of these issues, with a focus on the role that effective communication plays in improving program management.

Background

By way of background, we have been part of a larger team of multidisciplinary research partners involved in designing, implementing, monitoring and assessing a number of agricultural research, development and extension (RD&E) projects, for some years now. These projects were designed to be different to traditional, linear RD&E. The projects focused on working in partnerships with participating businesses to increase the rate and scale of improvement and innovation, and profitability. Most recently, projects have been run in Australia and New Zealand (Griffith *et al*. 2007), in South Africa (Madzivhandila *et al*. 2008c, Clark *et al*. 2007) and in the Philippines (Clark *et al*. 2005b). The underlying theoretical framework on which all of these projects are based is the Sustainable Improvement and Innovation (SI&I) Model (Clark 2008, Clark *et al*. 2005a, 2008a, 2009a) and the Continuous Improvement and Innovation (CI&I) process (Clark, Timms and Griffith 2008, Timms and Clark 2007, see also Lindberg and Berger 1997). A key organising principle is partnerships between participants. Each partnership is encouraged and supported to use the CI&I process (Figure 1) and the associated mechanisms and tools to achieve desired results, improvements, and innovations in meeting the project focus on increasing profit.

Figure 1. The steps of the Continuous Improvement and Innovation process designed to achieve improvements and innovations for impact on profit

The design and use of a good measurement framework in line with the use of Critical Success Factors (CSFs) is a key part of the SI&I and CI&I. Participants are encouraged and supported to regularly report their thinking, actions and results – to share ideas, methods, successes and failures within and across partnerships. Further, since we as project managers have asked agricultural businesses to use the CI&I process to make improvements and innovations in their businesses, we use exactly the same process to make improvements and innovations in project design, measurement and management.

Over the years that we have been involved in this area of RD&E, a number of broad issues have arisen in relation to the effective and efficient management of current projects and in the design of new projects. First, while CI&I tools and technologies have been used successfully in many different industries and businesses throughout the world for almost 80 years, they have not previously been offered to agricultural businesses in developed countries like Australia and New Zealand, on a larger scale. There are a large number of new and different concepts and principles embedded in the CI&I

way of doing things, and in many ways it is the reverse of the traditional 'technology-push' approach that has been offered in the past. Further, the process and the language are often challenging. This means that in the businesses being targeted in these projects, there are significant gaps in the higher level knowledge and skills needed to achieve sustainable business improvement and innovation. There are also significant gaps in the knowledge and skills needed to facilitate the partnerships, and to lead and manage improvement and innovation at the industry or institution level. This capacity is not readily available through the current agricultural education curriculum.

In response, a number of training programs have been designed, implemented and evaluated. These have ranged from formal five-day university-accredited programs, to shorter one- to three-day introductory workshops about the projects and the core processes and tools, to one-day "refresher" workshops and "master-classes" focusing on factors critical to the success, and to the failure, of these projects[2]. However, while these workshops have been well-received and have been highly valued by participants, they are expensive to run and numbers of participants have been quite low. To be able to achieve more rapid and more widespread adoption of the SI&I model and the CI&I process across the whole agricultural sector, we have tried to communicate the core ideas, concepts and principles in other ways.

Second, there is an explicit system focus to the SI&I model. Designing these projects as a system requires regular and frequent management, measurement, improvement and innovation of the project system and its component elements, and a structure is required to manage the dynamics and interaction between the project system and the broader RD&E environment in which it operates (Timms *et al*. 2009a,b). However, systems approaches and the skills to design, lead and manage projects as systems, are also not common in agricultural contexts in Australia and New Zealand. Therefore it is to be expected that many of the constraints and challenges that come with applying new or different approaches will arise during implementation of these types of projects. We had to overcome these expected negative perceptions and the consequent adverse impacts on actions and outcomes, if the projects were to succeed.

Third, in recent years we have advocated the development of a set of project strategies, broadly aligned with the elements of the SI&I model, as a means of managing all of the distinct components of these types of projects, as a system. This has involved articulating precisely Why, What, and How: why it is of value, what we want to achieve, and how we implement it. However, the various strategies have been developed more or less independently, and it is only when problems in implementation arise that the critical need for an integrated set of strategies becomes apparent. We had to be able to measure and manage the strategies in the context of the underlying theoretical framework, and then modify activities and practices that were not closely aligned with the stated strategies, if we were to be able to jointly meet all target outcomes.

Our solution to these issues and dilemmas has been to attempt to write down in a formal way and at frequent intervals, what we have designed, what we have done, what we have achieved, and consequently what we need to do better.

In this paper we describe several of these writing tasks that we have been involved in over recent years. Apart from attempting to resolve the broad range of issues and dilemmas noted above, we have had two additional objectives. First, in these writing tasks we have made a conscious effort to attempt to simplify and communicate the core set of thoughts and ideas, theories and models, and practices and processes from the specialised field of CI&I to readers and practitioners in other fields. That is, we have aimed to expand interest in the concept of CI&I in the broader RD&E community and to stimulate its adoption in RD&E projects[3]. Second, we have made a conscious effort to attempt to learn from our writings. That is, we have aimed to use the writing task itself as a CI&I process and so improve and innovate in project management.

[2] These refreshers have been particularly useful as they have allowed individual partners to modify how they implement and practice CI&I to achieve their stated outcomes.

[3] This aim is related to the concepts of effective communication of social science concepts advocated by McCloskey (1983, 1987a, 1987b) and of effective policy analysis promoted by Pannell (2003) and others. In a similar vein, Garcia and Nelson (2003) promote the use of what they term 'structured professional dialogue' as a communication strategy for graduate students.

Thus, we also describe how undertaking these writing tasks in this way has led to a greater understanding of the underlying concepts and principles and the ways we have applied them in different projects, and the subsequent improvements in project conceptualisation, design, measurement and management that have resulted from these insights.

An Aside on Jargon and Communication

Each and every area of endeavour has its own set of words, its own ways of expressing thoughts and ideas, and its own style of communicating. This is what we call "jargon".

According to Wikipedia (http://en.wikipedia.org/wiki/Jargon), "Jargon is terminology which is especially defined in relationship to a specific activity, profession, or group. In other words, the term most often covers the language used by people who work in a particular area or who have a common interest. Much like slang, it can develop as a kind of short-hand, to express ideas that are frequently discussed between members of a group, though it can also be developed deliberately using chosen terms. A standard term may be given a more precise or unique usage among practitioners of a field. In many cases this causes a barrier to communication with those not familiar with the language of the field."

Similarly, the Free Online Dictionary (http://www.thefreedictionary.com/jargon) defines jargon as any of the following:

1. Nonsensical, incoherent, or meaningless talk.
2. A hybrid language or dialect; a pidgin.
3. The specialized or technical language of a trade, profession, or similar group.
4. Speech or writing having unusual or pretentious vocabulary, convoluted phrasing, and vague meaning.

Teenagers, shop assistants, plumbers and electricians use jargon, lawyers, medical practitioners, economists and management consultants use jargon, and of course public servants and politicians use jargon. In fact almost everyone uses some form of jargon at particular times, in particular places or in particular contexts.

Jargon is not necessarily a bad thing – as defined above, jargon can impart a precise or unique meaning to words or phrases for specialists and practitioners in a field. The problem arises when the words, phrases and style of language of a particular activity, trade, profession or similar group are used outside of that group. So molecular geneticists know exactly what a SNP is, but not many people outside of the genetics world know anything about it. Thus, by definition, unfamiliarity with the jargon causes communication problems. This can arise in a number of contexts. One is what Don Watson in his wonderful little book *Death Sentence: The Decay of Public Language* calls "public language" (Watson 2004): "the language of public life: the language of political and business leaders and civil servants – official, formal, and sometimes elevated" (page 1). It is the language of marketing and management, of power and influence. It is contained in political speeches, in government reports, in letters from companies to staff and clients, etc. And it spills over into the media through media releases, commentaries and investigations of specific issues. It is illuminating that Watson uses many examples containing the words "continuous improvement" to illustrate poor public language. The quote at the front of this paper emphasises the point.

Another context for potential communication problems is where practitioners in a particular field are attempting to explain and/or advocate their thoughts and ideas, their theories and models, their practices and processes, to practitioners in a related field who potentially could make use of these concepts. While it is important to achieve clarity and distinction between the key terms used in different fields e.g. "continuous improvement and innovation" is fundamentally different to "participative action research", to bridge the gap we often include a glossary of key terms in our communications precisely for this purpose (see Appendix 1).

So jargon is important for communicating with individuals, and within groups and partnerships, but getting around jargon is important for communicating between groups. This is the issue we face when attempting to communicate the concepts of SI&I and CI&I to non-practitioners such as agricultural business managers, extension staff, researchers involved in R&D, public sector managers, etc.; people and institutions who we believe could make effective use of these concepts if they only knew more about them.

The RD&E Projects

One of the RD&E projects that we have attempted to communicate about is a project based in the Philippines known as the Leyte Livestock Improvement and Innovation project (LLIP) (Clark *et al*. 2005c) that was implemented over the period 1999-2005. Partners included the Australian Centre for International Agricultural Research, the then Queensland Department of Primary Industries and Fisheries, University of Queensland, Curtin University of Technology, University of Sydney, Visayas State University, provincial Departments of Agriculture in the Visayas region, and local government units. The mission of the project was to 'Enhance the wellbeing of smallholder families in Leyte by increasing the capacity of farmers to continuously improve their enterprises to achieve 5% improvements in profit, environment and efficiency each year, and into the future'. The project was designed to achieve outcomes from the outset i.e. short; medium and long-term goals (Clark et al. 2005b). It was also designed to achieve sustainable improvement and innovation, and part of this involved establishing the Leyte Improvement and Innovation Network (LIIN) with many partners throughout the Leyte region (Timms *et al*. 2005). Partners in the network used the CI&I process to achieve demonstrable improvements in profit, environment and efficiency, and shared their results across the network. The original LIIN consisted of partnership teams in various locations in western Leyte; impact has grown since the end of the project with partnership networks now operating in nine provinces in the Philippines and across cropping, horticulture, aquaculture, livestock and retail enterprises.

The second project was based in South Africa. This was the first Beef Profit Partnerships (BPP) project – a partnership that officially ran from mid-2001 to mid-2007 (Madzivhandila *et al*. 2008c). Partners in the original project included previously disadvantaged farmers in the Limpopo and North West Provinces, municipal, provincial and national governments, the Agricultural Research Council and universities in South Africa, the Australian Centre for International Agricultural Research, and the then Cooperative Research Centre for Beef Quality and its partner organisations in Australia. The focus of the project was to achieve rapid improvements and innovations in beef enterprises that would lead to increased income for beef enterprises and communities, and greater industry productivity and efficiency. A number of Farmer Teams were formed and they were asked to adopt the CI&I process (Figure 1) and to meet regularly (every 30, 90 and 180-days). They were assisted by Farmer Support Teams that included extension, technical and economics specialists. Project data were regularly collected, analysed and assessed for progress towards achieving the project objectives.

The third project was based in Australia and New Zealand and was funded by the Cooperative Research Centre for Beef Genetic Technologies (Beef CRC) and its partner institutions from mid-2005 until mid-2012. This project is also commonly known as the Beef Profit Partnerships project (Griffith *et al*. 2007). It was designed so that the Beef CRC would work in partnerships with individual beef businesses, value chains and the broader Australian beef industry to accelerate improvement and innovation and assist in meeting the overall Beef CRC target outcomes. A large number of BPP partnerships were set up across the various beef production environments in Australia and New Zealand. The members of the partnerships were encouraged to follow the CI&I process and to measure and report their successes and failures. Each partnership had access to a trained CI&I facilitator and CI&I manuals, workbooks and tools, and specialist economic and other technical expertise and support as required. The Australasian BPP project specified the following target outcomes: (a) rapid and measurable improvements in productivity, profit and growth; (b) supportive network of rewarding partnerships, contributing to accelerated industry growth, and improvement and innovation; and (c) partners equipped to achieve sustainable improvement and innovation. For the last couple of years the project management team has been developing a proposal to continue the project after CRC funding ceases, and this has placed additional pressure on being able to effectively communicate what the project has achieved to date and what potential investors might recoup in the future.

During the course of these three outcome-focused R&D projects there has been the usual formal written progress and annual reports to funding agencies, less formal verbal and electronic presentations, and a number of irregular and mostly once-off presentations to professional and industry conferences on specific aspects of the projects or the results. Here we want to focus on four examples of additional formal project documentation and publication activities that were explicitly designed to communicate the core ideas, concepts and outcomes of the whole project so as to achieve greater awareness and more widespread adoption of the SI&I model and the CI&I process across a range of agricultural RD&E projects.

Set of Three Papers for the International Conference on Engaging Communities

The International Conference on Engaging Communities in August 2005 was an initiative of the United Nations and the Queensland State Government. The objectives of the conference included sharing practice knowledge across the globe, exploring "what works", and sharing conceptual and theoretical frameworks that underpin good practice.

The LLIP and South African BPP project teams decided this conference was an excellent opportunity to describe and share experiences about the use of the SI&I model and the CI&I process in South Africa and the Philippines. Three interconnected papers were presented in the conference session on "Engaging Communities to Achieve Sustainable Rural and Agricultural Development". One paper presented the then current version of the SI&I model and demonstrated the impacts being achieved. A second paper emphasised one of the important points of difference between the SI&I approach and traditional RD&E i.e. designing and managing R&D projects to achieve outcomes from the outset. The third paper focused on the critical role of partnerships and networks in achieving rapid and sustainable improvement and innovation.

The process of preparing these three interconnected papers and associated presentations took six months and involved eleven authors from the Philippines, South Africa and Australia. The collective and iterative thinking–writing–rethinking–rewriting synthesised the key messages that would help people to begin to understand the SI&I model and the CI&I process. There was as much value for the authors in clarifying and describing these key messages as there was for the people involved in the conference session. Bringing together perspectives from two separate projects with shared and developing methodologies provided a sound foundation for the key messages in each paper.

Special Edition of the Australian Farm and Business Management Journal

The *AFBM Journal*: *Australian Farm Business and Farming Systems Management* is a refereed publication of the Australian Farm Business Management Network (AFBMNetwork). According to the journal website[4] "the objective of the *AFBM Journal* is to present original and meaningful R&D outcomes that are of interest to both the scientific world and the industry sector related to farming and agribusiness. The *AFBM Journal* reflects the multidisciplinary character of the AFBMNetwork, encompassing related disciplines concerned with farm business and farming systems management: Crop and Plant Systems, Livestock Systems, Applied Ecology, Farm Economics, Management and Decision Making, Global Issues of Farming, Social Issues of Farming and Sustainable Farming Systems. The *AFBM Journal* accepts papers in these areas".

The Australasian BPP project management team decided that this journal would be an appropriate vehicle for describing the project and for explaining and promoting the use of the SI&I model and the CI&I process in RD&E projects in Australasia and elsewhere. With the support and guidance of the Editor, we designed and prepared a special edition of the *AFBM* Journal that described this project. We wrote 13 separate papers, discussing the genesis of the project, the underlying theory, the main elements of the project applied as a system, how it is organised and managed through a set of strategies, the achievements to date, and the opportunities such a project presents to beef businesses to improve their economic performance. The cover page of this special edition is reproduced as Appendix 1.

The process of preparing this special edition took almost a year – the concept was approved by the journal in February 2008 and the issue was published in December 2008. Once the overall framework was agreed to, individual members of the project management team took responsibility for revising existing material or for drafting new papers. Each individual paper was then reviewed and discussed by the relevant co-authors, and in most cases each paper was then offered for formal external review. A range of other feedback was also received including from institutional colleagues or managers who were not part of the project. Drafts were revised based on the feedback received, and then the complete set of draft papers were read by a subgroup of the project management team. We were looking for consistency in the use of concepts, principles and terminology, the quality of the communication, and the clarity of the key messages we wanted to convey. Finally, after further revision, the whole set of papers were sent to the editor, who provided another round of feedback. This was subsequently incorporated and the final version was formally submitted for publication. The

[4] *http://www.csu.edu.au/faculty/science/saws/afbmnetwork/afbmjournal/index.htm*

thinking and action generated by the writing experience enabled many improvements and innovations in the Australasian BPP project.

Set of Six Papers for the World Congress on Animal Production

During mid 2008, we became aware that South Africa would be hosting the 10th World Congress on Animal Production, incorporating the 42nd South African Society for Animal Science Congress and the 5th All-Africa Conference on Animal Production, during November 2008. There were also satellite events planned that addressed specific themes.

The South African BPP project management team decided that this conference would be an appropriate vehicle for describing the methods and outcomes of that project and for explaining and promoting the use of the SI&I model and the CI&I process in RD&E projects across Africa and in other developing countries, particularly in their livestock industries. We designed and prepared six separate papers that described various aspects of the project – the role of R&D in poverty alleviation (Madzivhandila *et al*. 2008b), the underlying SI&I theory (Clark *et al*. 2008a), components of project design and implementation including capacity-building (Timms *et al*. 2008), evaluation mechanisms (Madzivhandila *et al*. 2008a), institutional mechanisms (Clark *et al*. 2008b), and the main economic results (Griffith *et al*. 2008).

The process of preparing these papers took about three months. Individual members of the project management team took responsibility for drafting the abstracts which were then discussed and reviewed within the authorship group before formal submission. Feedback from the conference organisers indicated that one paper (the SI&I model paper) was accepted for formal delivery, while the remainder were accepted for delivery as posters[5]. However we decided that we would write a formal paper for each topic and make that available for interested participants at the conference. Each individual paper was then drafted by the lead author and then reviewed and discussed by the relevant co-authors. Again, we were looking for consistency in the use of concepts and terminology, the quality of the communication, and the clarity of the key messages. A range of other feedback was also received including from colleagues who were not part of the project. Drafts were revised based on the feedback received, and then the posters were developed to explain the concepts in the simplest way and to capture the key messages.

Two Papers for the 10th International Continuous Innovation Network (CINet) Conference and Two Related Papers for the Australasia-Pacific Extension Network Conference

The 10th International Continuous Innovation Network (CINet) Conference was held in Brisbane, in September 2009 and the Australasia-Pacific Extension Network 5th International Conference was held in Busselton, Western Australia, in November 2009.

The theme of the latter conference was "Shaping Change in Communities - Dimensions of Excellence". According to their website[6], the Australasia-Pacific Extension Network (APEN) “is the peak body for professionals working with people to manage change in agricultural and natural resource management communities.”

The joint BPP project management team decided that these two conferences would be appropriate vehicles for describing two particular aspects of the Australasian BPP projects. The first was focussed on explaining the evolution of, and promoting the use of, the SI&I model in RD&E projects that involved the provision of goods and services by government agencies, such as state government extension services (Clark *et al*. 2009a, b). The second was focussed on describing and highlighting the critical importance of a systemic performance assessment framework to support the SI&I model and provide the evidence needed to make the best choices about project performance management and improvement (Timms *et al*. 2009a, b).

The process of preparing these papers proceeded in parallel. However, while the papers for the CINet conference were destined for an audience of CI&I academics and practitioners, many of whom work in the manufacturing or service sectors, the audience for the APEN conference were agricultural-based extension staff in the general sense. Further, both conferences had different styles and lengths for the

[5] However production of these papers and posters stimulated interest from other project participants and two related papers were presented at congress satellite sessions.
[6] http://www.apen.org.au/

written papers. Thus the CINet papers had to be substantially modified to fit the APEN conference and audience requirements. It took roughly six months to generate the final versions of these four papers.

Again, individual members of the project management team took responsibility for drafting the abstracts which were then discussed and reviewed within the authorship group before formal submission. Following acceptance by the conference organisers, each individual paper was then drafted by the lead author and then reviewed and discussed by the relevant co-authors before submission. Referees' reports and other feedback were used to revise the papers and in the APEN case, they were resubmitted in camera ready form for publication in a special edition of the *Extension Farming Systems Journal*, a joint publication of the APEN & AFBM Networks.

Concluding Remarks and Lessons Learnt

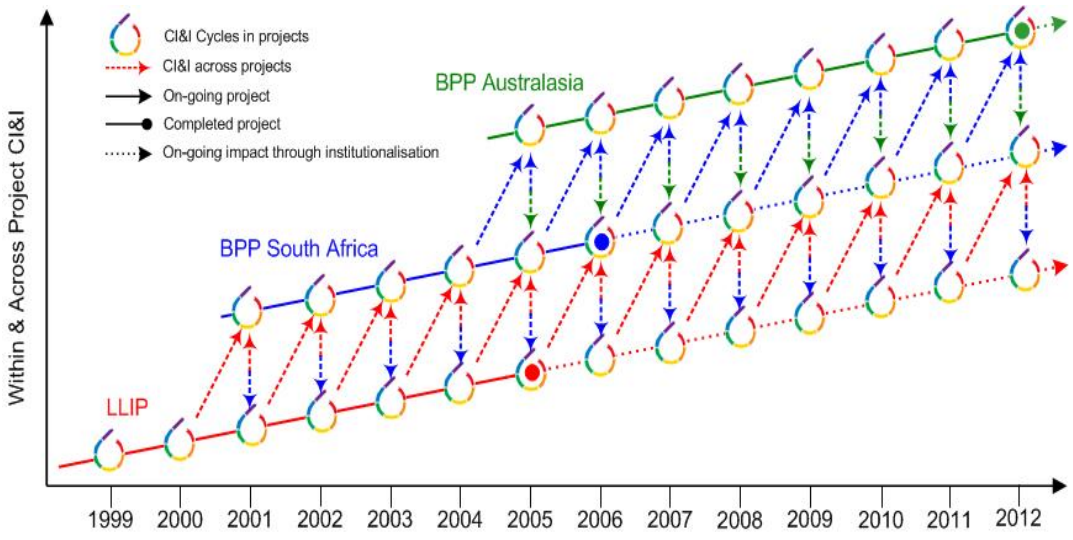
These formal writing tasks contributed to better thinking, understanding and learning to improve the project system in a number of ways.

We have treated each writing task like a mini-project. Thus, we have applied the CI&I process to writing just as we have to project design, operations and management. We followed the CI&I steps as detailed in Figure 1. We have had an explicit focus on consistency of logic and terminology, of simple communication tools and of clear messages and learnings. We have used the drafting, reviewing, refereeing and responding phases of the publication process to assess how well we are going in meeting our target communication and reporting outcomes, and what opportunities may exist for improving and innovating the communication process. This naturally leads to an ongoing assessment of the performance of the project we are writing about, and the creation and synthesis of opportunities for re-focusing of thinking and action to improve the performance of the project in the future. This process made a significant contribution to improvements and innovations in the projects and the system.

External reviewer input has been especially important in this process. Typically, these are people who are not involved in the project, and in some cases, people who have little knowledge of either the theory or application of SI&I or CI&I. Fresh views on content and argument, unencumbered by prior perceptions, quickly provide an indication of whether the communication is clear and the jargon is adequately explained.

Given this common approach across the writing tasks we have described, this means we have been able to build on what we have learnt across both time and space. A graphical representation of this is given in Figure 2.

Figure 2. The cycles of CI&I that were conducted in partnerships every 30, 90 and 180-days within and between the projects



Since each project applied the SI&I model and the CI&I process and there were some common project management staff, lessons learnt in one project were quickly passed on to the other projects. There was a common understanding of the tools and methods being used and the outcomes that were being targeted. For example, design and implementation issues and solutions in the first project (the LLIP project in the Philippines) were passed forward to the second project (the BPP project in South Africa). However, there were also feedback processes in place so that new ideas and ways of doing things in South Africa were passed back to the Philippines RD&E team. Much of this transfer of information occurred through formal documentation and publication processes, so much so that strong professional bonds developed between the Philippine and South African RD&E staff (see the authorship lists in Clark *et al*. 2005a, 2005b).

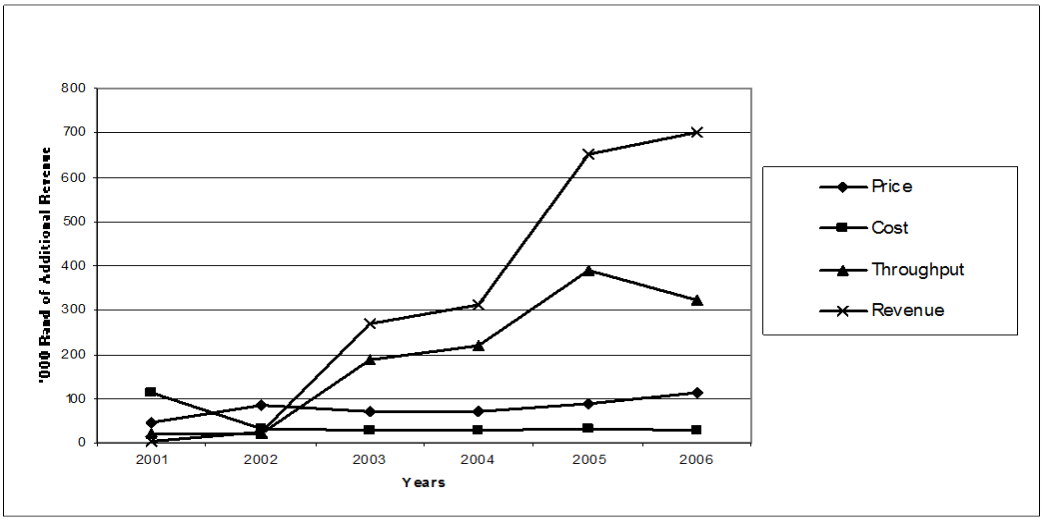
A similar thing happened when the Australasian BPP project came on stream. The design and implementation of this project was informed by the continually improving South African project, which itself had been informed by the continually improving Philippine project. For example, writing papers for the *International Conference on Engaging Communities*, held in Brisbane in mid 2005 (Clark *et al*. 2005a, 2005b), substantially improved the team's understanding of the underlying theoretical framework and the need to focus on rapid improvement and innovation to achieve outcomes during the life of a project. These lessons were transferred directly into the Australasian BPP project design that was occurring at about the same time. Again a strong professional relationship has developed between the South African and Australasian RD&E staff (see the authorship lists for the *World Congress on Animal Production* papers: Clark *et al*. 2008a, 2008b, Griffith *et al*. 2008, Madzivhandila *et al*. 2008a, 2008b, Timms *et al*. 2008). The notion of project strategies developed in the Australasian BPP project have also been passed back to the South African project through a series of capacity building exercises conducted in 2007.

Furthermore, this interactive process is continuing, although the initial funding for all of the LLIP, South African BPP and Australasian BPP projects has now ceased. SI&I master-classes have been requested by, and provided to, municipalities and regions in South Africa and the Philippines. Certified training courses in SI&I have been developed and provided to agricultural industries. SI&I support systems (with SI&I mechanisms) have been created for state governments, industries, regions and SI&I-Networks. CI&I and SI&I manuals, workbooks, tools and e'support systems have been created. These experiences have stimulated the whole RD&E team to learn from other industries and contexts where systems approaches and CI&I processes have been applied, and hopefully to more effectively plan for and manage the dissonance that comes with change and innovation.

Another key lesson has been that a mix of communication styles and levels is required to properly reach different target audiences. For example, we have written two papers about the evolution of the SI&I model (Clark *et al*. 2009a, 2009b), but because the target audiences are quite different (CI&I professionals on the one hand and mainly agricultural extension officers on the other), the concepts and ideas, methods and tools had to be communicated in quite different ways. The "jargon" suitable for the *Continuous Innovation Network Conference* was not suitable for the *Australasia-Pacific Extension Network Conference*, and vice versa. We aim to write in as simple a language as possible, but then provide a glossary of the key terminology (see Appendix 1) and/or extensive reference lists for readers who wish to delve deeper into the literature. The Australasian BPP project has also had to report at frequent intervals to the Beef CRC Board. Again, this has required different language and style, but has then resulted in further learning.

Related to this is a key learning about the power of simple graphics. The information contained in Figures 1 and 2 above would take several pages to explain in text. Another example is Figure 3 below, which shows the aggregate financial outcomes for the South African BPP project teams as of 2006. This shows at a glance the benefit of a focus on rapid improvement and innovation and the accelerated adoption of worthwhile technologies. This shows how SI&I can contribute to significant return on investment, arguably more than from the traditional linear "technology adoption" type of projects.

Figure 3. An analysis of the additional price, throughput and income, and reduction of costs (in thousands of Rand), achieved year by year from 2001 to 2006 in the South African BPP project



On the other hand, the writing group is a diverse mix of co-authors from different trainings, backgrounds, work environments, writing experience and writing styles, often located far apart. As a CI&I partnership, we had to both accommodate this diversity and find ways to reach consensus on communication style and messages to promote. We have applied a number of partnership support mechanisms to do this e.g. we have used teleconferences a lot, in combination with supportive feedback tools, to agree on targets, to plan actions and to jointly review drafts. We have scheduled and led regular 30; 90; 180; and 360-day sessions and forums to enhance, learning, improvement and innovation as part of the CI&I process. Most importantly though, we have worked as a team, sharing roles, responsibilities and lead authorships.

An obvious but often overlooked element of the SI&I model is the critical need for a simple but sufficiently comprehensive project reporting framework. This relates not only to continuous improvement of the key performance indicators of project success, but also the systems in place for effective reporting, monitoring, assessment and support of those variables. Deficiencies in this area in both the South African and Australasian BPP projects in the past, and the consequent lack of sufficient evidence to convince project investors of progress during the projects, caused a major refocus on this area of project operation (Madzivhandila *et al*. 2008c, Timms *et al*. 2009a, 2009b). This refocus has led to stronger evidence of success and impact.

Finally, each of the projects described above have involved government research or extension specialists as key partners in project design, measurement and management. However, as we have said above, the systems approach to project design, leadership and management embedded in the SI&I model, and the overt application of CI&I within projects, are not common in agricultural contexts in Australia and New Zealand. Many constraints and challenges arise from trying to apply these new and different ways of doing things. We have taken an active role in formally involving public service partners in the CI&I process and system, especially at the leadership and management interface, and in promoting the concepts of SI&I and CI&I for use in the provision of government goods and services (see Clark *et al*. 2009a, 2009b, Griffith and Mullen 2009). Issues related to promoting improvements and innovations in public services are covered in a relatively new area of the CI&I literature (Albury 2005, Bessant 2005, Hartley 2005, Moore 2005).

To summarise, as partners involved in designing, implementing, monitoring and assessing a number of agricultural RD&E projects using the CI&I process, we have committed to write down in a formal way, at frequent intervals, what we have designed, what we have done, what we have achieved, and consequently what we need to do better. We have done this to expand interest in the concept of CI&I in the broader RD&E community and to stimulate its adoption in RD&E projects. We have also used the writing task itself as a CI&I process to stimulate new thinking and action and to improve and innovate in our project management. We are confident that we have truly learned from our writing; that we know more about the projects we are involved in, how they should be managed to achieve the

outcomes that are sought, and how those achievements should be communicated. Writing has also helped us to know more about each other as project managers, and what are our own strengths and weaknesses. We will continue to use such a "learning by writing" process in future projects because of the consistency and credibility it provides in achieving behavioural change in agriculture. As Clardy (1977) says in the opening quotation "Writing is as much the cause as the result of having something to say."

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