AIDING AID:

A monitoring & evaluation framework to enhance international aid effectiveness

Doctoral Dissertation
by Paul Crawford
2004

institute for
sustainable
futures

U|T|S
University of Technology, Sydney

STATEMENT OF ORIGINAL AUTHORSHIP

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of the requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of candidate:

Production Note:
Signature removed prior to publication.

Paul Ward Crawford

ACKNOWLEDGEMENTS

office, Amy Wilsey, Dr David Ameyaw and Dr Solomon Wako have indirectly supported my research through enabling learning opportunities.

Numerous people have guided and influenced my thinking. Some important influences at ISF/UTS include: Dr Neil Hamilton, Rod Hayes, Dr Mark Diesendorf, Dr Juliet Willets (my 'unofficial' supervisor), Associate Professor Peter Petocz, Eva Cox and others including my fellow doctoral researchers. Other non-university staff who generously read my material and offered insights include: Dr Doug Shaw (CSIRO), Dr Basil Cracknell (formerly of DFID Evaluation), and Dr Linda Kelly (Praxis Consulting).

In terms of the preparation of this document, Ann Hobson, Vaughan Hughes, Michelle Crawford, Karen Zeuschner, Leanne Voigt, Tonia Crawford, Deon Goosen and Jason Cook all variously assisted with editing[1], data entry, information sorting/analysis, IT help, and generally feigning interest in my omphaloskepsis[2].

The greatest contribution to this work has come from my supervisors, Associate Professor Cynthia Mitchell and Adjunct Professor Paul Bryce. Quite simply without this pair of brains, this work would not be. They somehow managed to find the balance between my need for freedom of thought and the pragmatics of sound academic writing. They appropriately criticised, praised, cajoled and restrained me. As annoying as the 'good cop, bad cop' routine may have been, it worked.

Cynthia, who in her own words, has "a reputation as a tough critic to protect" provided valuable quality assurance in terms of the arguments presented. Her insights into the domain of learning and the challenges encountered with applying 'hard' concepts (e.g. engineering) within 'soft' contexts (e.g. society) were tremendously instructive.

Paul, whose years of experience in the NGO sector, and whose appreciation of the complexity of the aid operating context, constantly challenged my thinking. As a highly regarded academic, his 'editor's eye' for detail was also much

---

[1] The editing of this document was in accordance with UTS Graduate School Policy.
[2] Omphaloskepsis \ahm-fuh-loh-SKEP-sis\ (noun): contemplation of one's navel as an aid to meditation.

appreciated. Although officially retired, Paul's countless hours spent pouring over my 'opus' was beyond the call of duty. His consistency throughout my candidature amid changes in supervision was greatly appreciated.

Finally, I am fortunate to have a large network of supportive friends and family, many of whom have 'chewed the fat' with me on philosophical topics relevant to this work. Beyond this, is the unquantifiable moral support that I have received. The chief protagonist in the 'come-on-Paul-you-can-do-it' stakes is Michelle Crawford, my partner in life.

Thank you.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF RELEVANT PUBLICATIONS

Crawford, P., Perryman, J. & Petocz, P. (2004) Synthetic Indicators: a method for evaluating aid project effectiveness, *Evaluation*, 10 (2): 29 – 46

Crawford, P. & Bryce, P. (2003) Project monitoring and evaluation: a method for enhancing the efficiency and effectiveness of aid project implementation, *International Journal of Project Management*, 21 (5): 363 – 373

Crawford, P. (2002) The aid project cycle: an effective vehicle towards ESD? *Conference of Australian and New Zealand Society for Ecological Economists*, Sydney, December 2002

Crawford, P. (2001). *M&E Handbook: Guidelines for the monitoring and evaluation of humanitarian projects implemented by Oxfam Angola*. Luanda, Angola, Oxfam GB. (unpublished)

ABSTRACT

This thesis aims to provide a coherent theoretical framework to guide the development of monitoring and evaluation (M&E) information systems within international aid agencies. The thesis applies soft systems methodologies (SSM) to explore the research question and to develop conceptual models.

The theoretical basis for the M&E framework proposed is drawn from a transdisciplinary review of three academic fields: information systems, organisational effectiveness and project management. It is argued that inadequacies in the operationalisation of M&E systems arise from divergent epistemological and ontological assumptions about the nature of information and its role within organisations that are concerned with effecting social change. The M&E framework proposed seeks to resolve the dilemma posed by these divergent assumptions. This involves a M&E information system (i.e. MEIS) that is novel in terms of its scope, purpose and application.

Firstly, the *scope* of the proposed MEIS takes in the entire aid organisation, going beyond the dominant, conventional approach, which is project-centric. This enables alignment of project strategies with organisational mission. Further, it aims to promote the institutionalisation of lessons learned within projects (conceived as 'social experiments') for organisational learning, thereby enabling informed debate about the effectiveness of the organisation in fostering sustainable development.

Secondly, the *purpose* of the proposed MEIS has been defined as being concerned with promoting organisational success. The critical success factors of learning and accountability are identified, and the role of M&E in encouraging responsive management decision-making and critical inquiry and reflection is described.

Thirdly, the *application* of the proposed MEIS involves a modified logframe. The '3D-Logframe' serves as a conceptual basis to address limitations found

with the conventional two-dimensional logframe matrix when employed for M&E purposes.

The proposed M&E framework was developed out of iterations of action in the field and reflection. Further research will involve applying the framework in its entirety.

Chapter 1 Introduction

This chapter:

- Contextualises the research question

- Justifies the research paradigm

- Establishes the researcher's legitimacy within the are of concern

- Outlines the broad argument of the thesis

- Defines the notion of 'transdisciplinarity' and argues that this thesis is aligned with its principles

- Describes the layout and structure of the dissertation

1 INTRODUCTION

1.1 Background

The compelling question that I continue to ask is "how can we do aid better?"

It is a truism that in order to successfully embark on a PhD journey one must find the topic and research questions personally compelling (Mellish 2000). I am fortunate in that my professional career, academic field and personal passion are virtually indistinguishable.

The opportunity to pursue doctoral study presented itself as a unique chance to explore deep questions about the value of aid. Having been raised in developing nations in the South Pacific, then having pursued a career in aid work in Africa, Asia and the Balkans, I now see that my research has been inextricably linked to a personal need for validation.

On the one hand, my exposure from childhood to global inequity combined with a strong service ethic provided an impetus for a career in 'welfare'. On the other hand, some of my own observations align with literature that questions the effectiveness of aid to foster desirable changes for its intended beneficiaries (Madeley 1991; McMichael 1996; Smillie 1995; Cassen 1986; Kaplan 1999). My experience in over twenty aid agency missions bridging humanitarian and development operations has served to highlight the complexity of the issues. Hence, although perhaps not explicit from the outset, one motivation for this research has been the quest for validation of a career in aid work, and perhaps at a deeper level, validation of self.

My involvement in the aid 'industry' began following the completion of undergraduate studies in Rural Science when I was posted as an Agricultural Advisor to an Australian-funded project in Uganda. At the onset of civil unrest in Rwanda and the subsequent mass refugee exodus into the neighbouring Democratic Republic of Congo (DRC) I quickly found myself in positions of responsibility where, as Chambers (1983) identifies, my only qualification was holding a foreign passport. Although fortunate to be part of apparently successful interventions, I was nonetheless confronted with the challenges of

cultural imperialism, dependency syndrome, unsustainable development and inefficient resource deployment, all interacting with the altruistic, economic and political motivations for aid.

In a naïve reaction to my self-evident inadequacy in this area, I completed a Master of Business Administration degree[3] with the expectation that once better equipped to manage aid projects, my capacity to contribute to the pursuit of global equity might be enhanced. Further field exposure only served to underscore that naïvety.

In late 1997, I learned of the establishment of the Institute for Sustainable Futures (ISF) at the University of Technology, Sydney (UTS). A tenet of the Institute is that the complexity of global issues demands a transdisciplinary approach to research (ISF 2002). This pragmatism balanced with the idealism of a quest for 'sustainable futures' resonated with me.

The notions of sustainable futures and sustainable development are intimately linked. Further, there is wide agreement that sustainable futures are contingent on global equity, which demands poverty reduction (WCED 1987; Diesendorf 2000). International aid, as one mechanism to reduce poverty, while vulnerable to criticism, remains the dominant means[4] by which wealthy countries officially contribute to global equity. Thus, there is a strong case for the topic of international aid generally and hence my candidature specifically, to fall within sustainable futures study. Within the current portfolio of research topics at ISF, emphasis leans towards tackling issues associated with the unsustainability of 'Western' livelihoods. While this is undeniably legitimate, the existence of 1.2 billion members of the 'global village' living in extreme poverty (IFAD 2002) contradicts the principles of sustainable development, and hence demands attention by researchers.

This thesis, as an action research (AR) thesis, documents my research *findings* and the research *journey* towards a Doctorate in Sustainable Futures. More

---

[3] A major in systems analysis.

[4] While other paradigms to address global inequity exist (e.g. human development via corporate involvement in free markets), this thesis focuses only on official development assistance (ODA) as the predominant paradigm.

importantly, it is an attempt to improve global equity through 'doing aid better'. As already noted, I began this candidature with burgeoning questions about the philosophical merit of the aid paradigm as a vehicle to address global inequity. At the time of writing, I am pragmatic about the philosophy, but am optimistic that at least the *process* of aid delivery can be improved[5]. The title of this thesis is indicative of this optimism.

In the remainder of this chapter, I will identify the research question and justify the approach adopted in pursuit of answers. The academic fields in which the work is located will be identified and linked. The structure and layout of this thesis document will be explained. But first, I will summarise important assumptions that I have made in order to arrive at the research focus.

1.2   Hierarchy of Assumptions

At various points throughout this candidature, I have considered different philosophical questions to be the research focus. Although grappling with each of these questions increased my appreciation for the underlying issues, I found most to be unresolvable. Thus, the systematic abandonment of each of these questions suggests assumptions that underpin my ultimate research focus. A hierarchy of these assumptions follows:

- There is no consensus on what constitutes *'human development'* (Max-Neef 1991). For the purpose of this thesis I take human development to be an endogenous process within human evolution (Diamond 1997) in which there is an 'unfolding of human potential' (Daly 1996; Fowler 1997). The narrower notion of *'development'* I take to imply the economic and social actions of humans in their environment[6]. These actions are normally expected to enhance choices (Streeton 2000). *'Sustainable development'* then, is one possible outcome of development actions. Sustainability, a contestable concept (Jacobs 1991; Wolfenden 1999; Daly 1996), is a particular values-set through

---

[5] I take *improvement* to mean increased aid project *efficiency, efficacy* and *effectiveness*. These important concepts will be expanded further throughout this thesis.

[6] "The overarching understanding that has motivated the Human Development Reports…is the elementary recognition that human beings are the primary ends as well as the principle means of development" (Anand and Sen 2000).

which development outcomes may be judged, and is broadly considered to involve balancing the ecological, social and economic dimensions of development actions (Diesendorf 2000)[7].

- From this, I then consider *'aid'* to be one formal (predominantly Western) institution created to implement development[8] actions (McMichael 1996) aimed at improving global equity[9]. This normally involves the transfer of resources[10] from materially wealthy countries to materially poor countries (Kaplan 1999). The focus of aid interventions has shifted over the years as development assistance theories have changed[11], however, the current paradigm of aid may be taken to align with the concept of fostering 'sustainable development' (IFAD 2002; AusAID 2001; Gomanee and Morrissey 2002; World-Bank 2002).

- Aid is predominantly administered by organisations that act as an intermediary between beneficiary and benefactor—organisations separate from either[12]. The effectiveness of aid in fostering sustainable development is at least partly contingent on the *performance* of the implementing agency. The performance of an aid agency is in turn contingent on a complex interaction of factors that include organisational culture, personnel competencies, leadership behaviours[13] and *management systems.*

- Management systems are essentially concerned with accountability and/or learning. Both these intentions imply a need for relevant, accurate and timely *information*. A management information system

---

[7] Diesendorf (2000, p 21) contends that "sustainable development comprises types of economic and social development which protect and enhance the natural environment and social equity".

[8] I take 'aid' to bridge the entire spectrum from humanitarian relief through to development. Within this spectrum, however, I align myself with the philosophy that even humanitarian relief should (where feasible) be 'developmental'.

[9] 'Equity' is used here in the sense of 'equal opportunity' rather than 'equality' (see Diesendorf 2000).

[10] Aid involves both the transfer of financial and non-financial resources (World-Bank 2002; Gomanee and Morrissey 2002).

[11] Further, it is acknowledged that there is no single motive for aid; rather there is a co-mingling of self-interest (economic and political) and altruistic motives. The typical focus of the NGO sector, however, is on altruistic motives.

[12] There are examples of aid agencies conjoined or inseparable from either beneficiary (e.g. Community Based Organisations) or benefactor (e.g. some foundations and implementing donors). This thesis concentrates on the model of a separate institution since this model dominates aid resource transfers.

[13] See Kazama, Foster, et al. (2002) who found that organisations where CEOs exhibited reflexivity were more likely to foster innovation.

(MIS) is a strategy and set of protocols to support the need for information. A **monitoring and evaluation information system** (MEIS) is one type of MIS commonly required by aid agencies. The deployment of a MEIS is assumed to promote accountability and learning within aid agencies, thereby contributing to aid agency performance and ultimately effective aid.

The underlying theme of this work is that one way to improve aid is to improve the organisations involved. However, given the complexity of the problem, 'improvement' is subjective and requires an iterative learning approach. This *organisational learning* about the effectiveness of aid implies ongoing discourse and debate. The subject of this thesis is the deployment of systems that promote informed debate.

It is important to declare the scope and relevance of this work. Firstly, while much of the content of this thesis may be applicable to other types of organisations in the aid industry[14], this thesis is specifically grounded in the work of a form of aid organisation known as an international non-government organisation (INGO)[15]. According to Edwards and Hulme (1992), there are over 4,000 development INGOs in OECD member countries alone, dispersing more than three billion US dollars' worth of assistance every year. In Australia, the proportion of Official Development Assistance (ODA) transferred through NGOs varies between AUD80 and 105 million per year. In addition to the importance of the NGO sector within the aid industry, most of my experience, and hence legitimacy as an action researcher, lies with this form of aid organisation.

Secondly, this work recognises the ubiquitousness of the project approach in the aid industry[16], though attention has been given to critiques of this thinking (see Section 3.6). The MEIS framework developed in this thesis assumes that

---

[14] For example bilateral and multilateral aid agencies and professional aid project contractors.

[15] In this thesis, I use the labels 'NGO' and 'INGO' more or less interchangeably. I take INGOs to be a subset of the wider NGO sector. Therefore, references to 'NGO' throughout this thesis, while referring to the sector in general, imply the unique perspective of INGOs.

[16] I have assumed that readers of this thesis are familiar with aid project management practice, and in particular, the logframe approach to project planning and M&E.

aid will continue to be delivered predominantly through a project management approach[17].

Thirdly, while the central focus of this work is on the development of an information system framework to support aid project monitoring and evaluation (M&E), I acknowledge that organisational performance is contingent on more than the deployment of an information system. While I make reference to other organisational success factors, an in-depth study of these is beyond the scope of this work.

Finally, the MEIS framework proposed here is relevant to the internal stakeholders of an aid agency. That is, this work emphasises the internal information requirements of aid agencies in support of management and organisational development. I align with the value of participatory approaches for engaging with external stakeholders such as beneficiary communities, but a detailed review of these approaches is beyond the scope of this study.

1.3   The Research Question

The research question ultimately posed in this candidature is: *how can aid agencies best operationalise the concept of 'monitoring and evaluation' to continually enhance their effectiveness?*

The process of arriving at the research question has been convoluted. This is a function of the complexity of the field and of any study of a human activity system (Checkland 1981). The Action Research (AR) paradigm and in particular, Soft Systems Methodology (SSM) adopted in this work[18], has emerged from a recognition of the fact that some research projects do not begin with a clearly defined objective. Checkland (2001, p 64), in describing the emergence of SSM, states that:

---

[17] I recognise the emergence of alternative approaches to aid delivery (e.g. the 'programme approach', the 'sector-wide approach', the 'livelihoods approach' etc.). In this thesis, I focus on the 'project approach' since this approach remains the most widely employed. Further, at their core, most of the alternative approaches align with the essence of the project approach (discussed in Section 3.6) which is frequently used as a device to ensure accountability.

[18] A justification for the AR paradigm is presented in Section 1.4, and a detailed description of the methodology adopted (Soft Systems Methodology) is offered in Chapter 2.

In our research we found ourselves seeking an approach to problem solving which would cope with messy situations in which objectives were themselves problematical.

This situation has also been recognised by Rittel and Webber (1973, p 160) who proposed a problem typology comprising "wicked"[19] (ill-structured) and "tame" (well structured, but not necessarily trivial) problems. The implication of their work being, that wicked problems demand a holistic or 'systems approach' and do not lend themselves to reductionist methods of inquiry (Conklin, accessed 2002).

Thus, the iterative cycles of planning, action, observation and reflection that comprised the early part of my candidature were an integral part of the process of defining the problem or research objective. My experience has been congruent with the description of AR by Dick (1993, p 12) who advises that:

Your initial research question is likely to be fuzzy. This is mainly because of the nature of social systems…your methodology will be fuzzy too. After all, it derives from the research question, which is fuzzy, and the situation, which is partly unknown.

Dick (1993) represents this situation as a cycle of increasing clarity as in Figure 1.
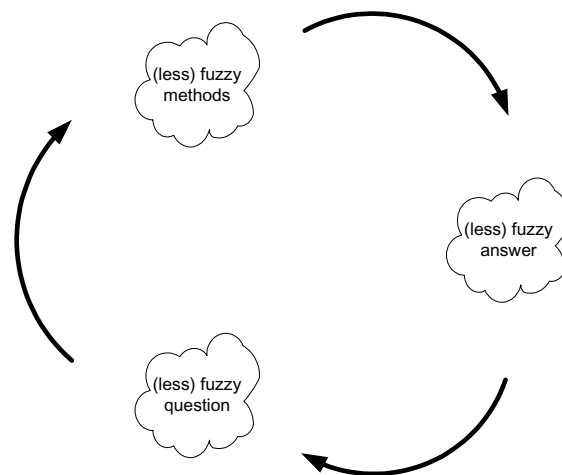
• Figure 1: Increasing clarity with AR cycles (Source: Dick, 1993)

---

[19] A problem is "wicked" when the specification of the problem is subject to controversy; the method of resolution is subject to debate; the solution cannot be tested unambiguously.

The focus on aid project M&E information systems emerged out of a pragmatic realisation that the philosophical questions about the worthiness or merit of the aid paradigm were difficult to answer because of the absence of a rigorous system to enable assessment of even the smallest unit of analysis, the aid project. Therefore, the use of a common approach to assessing aid agency project success is arguably a useful step toward determining the merit of the whole aid paradigm (i.e. aggregated project success).

Aside from appreciation for the complexity of the philosophical questions, the shift to a narrower research focus was prompted by the opportunity to conduct fieldwork with an aid operation in Kenya during the early part of my candidature, in the role of 'Consultant M&E Officer'.

In trying to meet the requirements of the M&E Officer role, I was confronted with the ambiguity surrounding the concept of aid project M&E and the lack of a framework to guide the development of an information system (IS) to support M&E processes (i.e. a MEIS). The basis for operationalising a MEIS that emerged from the Kenyan case study involved the definition of at least four elements:

- The purpose of the MEIS (i.e. *why* have it?)

- The data and information required of the MEIS (i.e. *what* does it deliver?)

- The stakeholders of the MEIS (i.e. *who* wants it?)

- The mechanics of the system (i.e. *how* will it work?)

In Chapter 5, the italicised adverbs/pronouns above are used to frame discussion about MEIS operationalisation.

I began my candidature needing to examine the philosophical merit of the aid paradigm, and I have concluded it with a narrower focus on aid project performance management information systems. This narrower topic is grounded in the same motivation as the original broad focus—to improve global equity through better aid.

A core assumption in this work is that performance information is an essential ingredient for organisational learning and development. That is, a rigorous MEIS should provide aid agencies with information to enable critical assessment of their *efficiency, efficacy* and *effectiveness*[20]*,* thereby promoting greater understanding and more appropriate action. However, given this core assumption, I recognise that effective aid requires much more than a rigorous information system. A MEIS is simply a tool. Like all tools, in the hands of a skilled operator it can contribute to effective results or it can damage that to which it is applied, if used within an agency setting of inappropriate culture or skill base.

1.4 Aid Researcher / Action Worker

The heading of this section acknowledges the complexity of my roles in this study. I am a hybrid of 'aid worker' and 'researcher'. Acknowledging the difficulty of drawing a distinction between researcher and participant underpins the AR paradigm. In this section I will provide a brief overview of the tenets of AR and justify why I have aligned this thesis with its principles.

My academic background is in the sciences. I am strongly influenced by positivism and the principles of reductionism, repeatability and the refutation of hypotheses. The tension between this expectation of research and the pragmatic reality encountered in examining the issues within the aid field stimulated an exploration of other research paradigms.

Three important factors were clear from the outset:

- The research problems that intrigued me were qualitative in nature and were themselves ambiguous.

- My interest was in addressing a practical problem by active participation within the 'system' to be studied.

---

[20] I recognise that the distinction between 'efficiency' and 'effectiveness' is widely used in management literature, but that 'efficacy' is less commonly appreciated. While some readers may query the necessity of including 'efficacy', I request the suspension of judgement until Chapter 5 since these words have precise meaning in the context of the soft systems approach adopted in this thesis.

- My unique contribution as a researcher was the perspective brought from the field—both from previous experience and through periodic consulting assignments throughout this candidature.

These three factors led me to AR which, as Zuber-Skerritt (1996) believes, has become established as an appropriate research paradigm for education, professional, managerial and organisational development over the past ten years.

An early examination of AR literature revealed that this approach to research resonated with my circumstances. As defined by Grundy and Kemmis (1982), action research is "research into practice, by practitioners, for practitioners". Sarantakos (1998, p 7) defines AR as:

> …the application of fact finding to practical problem solving in a social situation with a view to improving the quality of action within it, involving the collaboration and cooperation of researchers, practitioners and laymen.

Zuber-Skerritt (1991) attributes the first conceptualisation of AR to Lewin (1952) and further early developments to Kolb, Carr & Kemmis and others. In brief, it consists of a spiral of cycles of action and research with four major phases (Zuber-Skerritt 1991):

- **Plan:** includes a problem analysis and a strategic plan.

- **Act:** refers to the implementation of the strategic plan.

- **Observe:** includes an evaluation of the action by appropriate methods and techniques.

- **Reflect:** involves reflecting on the results of the evaluation and the whole action and research process.

Argyris, Putnam et al. (1982) identify the elements of AR commonly believed to be crucial:

- A collaborative process between researchers and people in the situation.

- A process of critical inquiry.

- A focus on social practice.

- A deliberate process of reflective learning.

Sarantakos (1998) reports that practitioners of AR criticise the theoretical and methodological basis of conventional research. In a similar vein, Winter (1987, p 2) states that AR:

> …challenges a scientific method of inquiry based on the 'outside' observer and the 'independent' experimenter, and it claims to reconstruct both practical expertise and theoretical insight on the different basis of its own inquiry procedures.

According to Zuber-Skerritt and Perry (2002, p 6) traditional research has "limited relevance and utility for professional and organisational learning". They contend that AR not only investigates and improves professional practice, but also develops the management competency of the researchers involved.

While some AR literature appears evangelical in its own defence to the point of attacking more conventional research methods (Dick 1993), Richard Bawden, a systems agriculturalist from the University of Western Sydney, acknowledges the legitimacy of a range of ways of knowing. The identification of an appropriate research methodology should be determined by the individual circumstances. To highlight this point, Bawden (1991, p 20 – 21) provides an agricultural example:

> A research problem involving the need to understand which plant nutrients are limiting growth lends itself to positivistic, reductionistic, deterministic natural science. On the other hand a research problem involving the need to explore with rural communities how they might design their own, more sustainable futures, lends itself to methods of post-positivist, constructivist, interpretative social science.

Bawden (1991, p 20) believes that the difference between conventional reductionist scientific experimental methods and systemic participative action research methods lies in underlying assumptions in three areas:

- The nature of 'reality' and the way the 'real world' is organised (ontological assumptions).

- The nature of knowledge and of knowing (epistemological assumptions).

- The nature of the world view of the researcher and the ideologies and political economies (dispositional assumptions) in the environment in which the research is being carried out.

Checkland and Holwell (1998) draw on work from the 1960s of Geoffrey Vickers who developed the theory of 'appreciative systems' through which he sought to make sense of his 40 years of experience in the world of 'human affairs'. Checkland cites (1981, p 19) conversations with Vickers in which he pointed out that whilst Copernicus and Ptolemy offer very different hypotheses about the structure of the solar system, the actual system is entirely unchanged by the theorising; whereas when Marx propounds a theory of history, this changes history. Checkland, an analytical chemist, concludes:

> The methods of natural science, extremely productive in enabling external observers to discover the regularities of the natural universe, are exceptionally difficult to apply to human affairs.

Hence, although my academic training is grounded in the positivist paradigm, to be authentic to this research problem I am engaged with the more interpretive AR paradigm. As Bawden encourages, I have endeavoured to appropriately apply thinking and methods from both paradigms. This dual approach is influenced by, among others, the classic work of Pirsig (1974) and Wilson (1998) who appreciate both the 'classical' (functionalist) and 'romantic' (interpretive) world-views as authentic positions to hold simultaneously. At times, my attempts to seek congruence have been challenged, since the tensions between the paradigms evident in academic writing are also manifested within the aid industry. On one hand there is a demand for demonstrable impact and measurable results. On the other hand, there is a pragmatic recognition that human development is an extremely

complex and emergent phenomenon that does not lend itself easily to the project approach and the desire for objective measures of progress.

The less structured approach to problem solving encouraged by AR has been applied in this work in at least three phases:

- The general process of inquiry into the paradigm of aid enabled by periodic field assignments interspersed with times of reflection. This has been largely an unconscious, or semi-conscious process of seeking congruence between rhetoric and reality.

- The more formal, but still largely unstructured process during the early part of my PhD candidature in which the scope of the research focus was determined as described above in Section 1.3.

- The deliberate process of constructing a framework for the deployment of project M&E information systems.

This hierarchy of enquiry is captured by Bawden (1991, p 21):

> As we go about our business of using our methods of enquiry into issues pertinent to our professional expertise, so we must also go about the business of enquiry into our enquiry…All learning in this context involves two sets of experiences and theories: There is the "first order" issue relating to the situation we are exploring, and there is the "second order" issue relating to the way we are enquiring into the "first order" issue. We must find out; find out about finding out; take action to improve the situation; and take action to improve our action taking!

Peter Checkland, who pioneered much of the work in soft systems methodologies (Checkland and Holwell 1998; Checkland 1981) frequently notes the importance of declaring one's *weltanschauung*[21]—set of values, outlook, point of view, world-view—when constructing models to explain 'human activity systems'. He identifies that it is a person's *weltanschauung* which makes their model of 'purposeful action' meaningful and he poignantly notes that it is an observer's *weltanschauung* which determines whether they

---

[21] The usual English translation of the German word *weltanschauungen* (VELT-ahn-show-ung – "ow" as in "cow") is 'world-view', however, Checkland (2001) believes that this English translation is bland in comparison with the intent in German. The word will be used throughout this thesis in the sense adopted by Checkland.

see for instance a particular 'purposeful action' as being that of a 'freedom fighter' or of a 'terrorist' (Checkland and Holwell 1998, p 13).

As noted in the heading of this section, I am a hybrid of 'action researcher' and 'aid worker', I bring to each of those roles a *weltanschauung* that colours my perceptions of the research problems and their relative significance. Further, my *weltanschauung* underpins the research outcomes and my conclusions.

One influence within AR writing has come from feminist perspectives (Dick 1993); in particular abandoning the pursuit of objectivity and embracing the subjectivity of the researcher. Shulamit Reinharz (1992) succinctly expresses this:

> I, for one, feel most satisfied by a stance that acknowledges the researcher's position right up front, and that does not think of objectivity and subjectivity as warring with each other, but rather as serving each other. I have feminist distrust for research reports that include no statement about the researcher's experience.

As acknowledged earlier, I have found relevance in the disclosure of 'dispositional assumptions'. This I believe, especially given the cross-cultural implications of my career, is the position integrity demands. The declaration by LeMoncheck (1985, in Mills 1994) resonates with me:

> …as a white, middle class, educated, heterosexual woman and feminist, it would be naïve to profess any sort of so-called objectivity.

Clearly, the fact that I am a white, middle-class, Australian, heterosexual male with social democratic views, educated in conventional scientific/managerialist styles of thinking, underpins both prioritisation of the research problem, and the conclusions I reach.

1.5   Intellectual Framework

In this section, I will introduce the academic fields that frame this research. As with the process of identifying the ultimate research question (discussed in Section 1.3), the process of locating this thesis within established academic fields involved iterations.

Checkland and Holwell (1998) report that a legitimate criticism of the AR paradigm is the tendency for researchers to overlook the importance of declaring an 'intellectual framework' that constitutes 'knowledge' about the situation researched. They argue that:

> This is essential, since what constitutes 'knowledge' in human situations should not be taken as a given. The research might lead to the framework being modified, or, in an extreme case, abandoned; but without a declared-in-advance epistemological framework it is sometimes difficult to distinguish researching from novel writing (Checkland & Howell 1998, p 23).

They go on to present a generic model to describe any piece of research in which a 'Framework of ideas' (F) embodied in a 'Methodology' (M) is applied to an 'Area of concern' (A) such that M yields learning about all of F, M and A and they conclude (Checkland & Howell 1998, pp 23 – 24):

> If we are going to plunge into the flux of events and ideas in a real situation…and hope to be able to extract lessons from the experience (in other words, do the 'research' part of action research) then we must…define the epistemology which will be the source of what counts as 'knowledge' in this experience.

From the argument above, Checkland proposes the rich picture[22] presented in Figure 2 to describe AR.

---

[22] Checkland uses the term 'rich picture' to describe a particular style of diagram in which concepts or ideas (frequently expressed as pictures) are linked by verbs. Rich pictures will be used throughout this thesis to convey systemic concepts. N.B. the hand-drawn/hand-written character of rich pictures is a deliberate attempt to enhance their affective appeal.
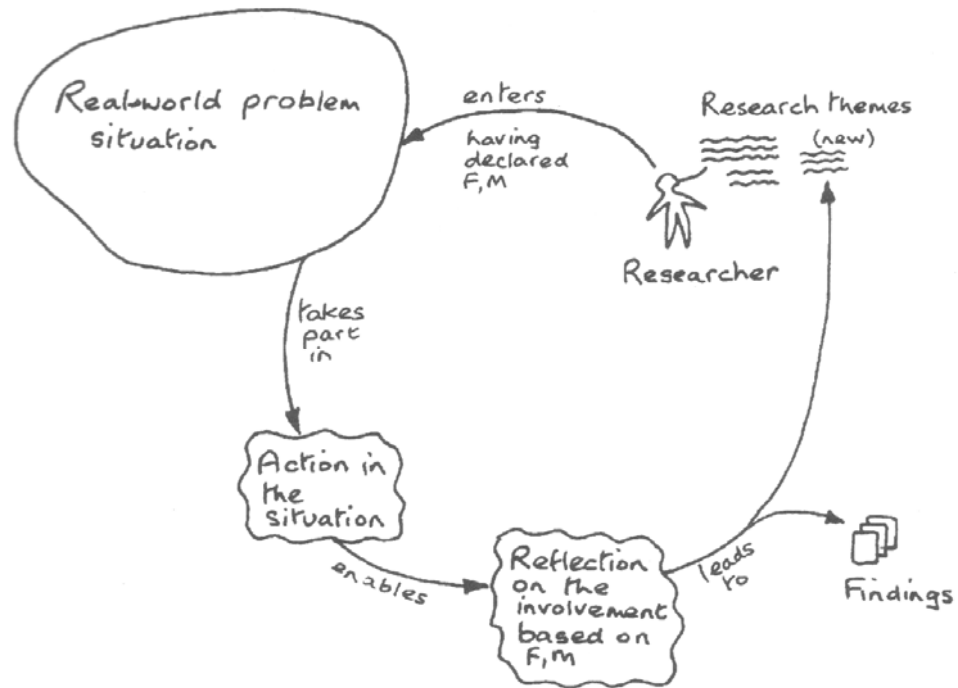
• Figure 2: The cycle of AR in human situations (Source: Checkland and Holwell 1998, p 26)

The rich picture in Figure 2 succinctly describes the iterations mentioned in Section 1.3 that led to the formulation of my ultimate research focus. Implied in these iterations were revisions of both framework of ideas and area of concern. As stated, my ultimate area of concern (A) was the operationalisation of MEIS; the methodology applied (M) was Soft Systems Methodology (SSM); the intellectual framework (F) through which the area of concern was explored involved transdisciplinary research across the following three fields of knowledge or academic fields:

- Information Systems.

- Organisational Effectiveness.

- Project Management.

That is, this research applies thinking from the field of *information systems* in order to improve the *organisational effectiveness* of agencies who manage *projects* in the aid industry.

A more comprehensive discussion of the literature and role of each of these fields and their respective contributions within the unique operating environment of the aid industry is presented in Chapter 3, however, for the

purposes of introduction, the relationships between these fields are described in Figure 3.
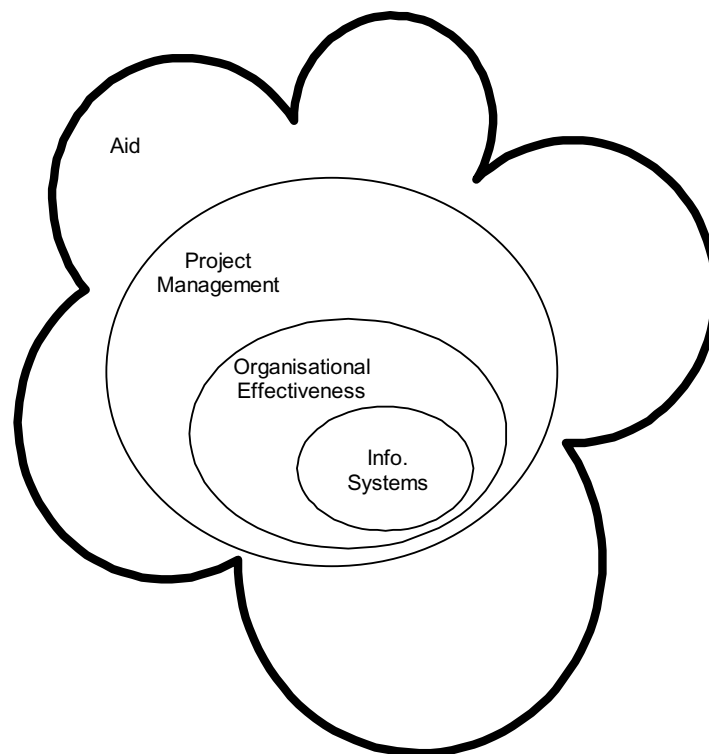
• Figure 3: The fields which underpin the intellectual framework for this action research

The form of Figure 3 is a conceptual model that Levett (1998) calls the "Russian Doll model", which he offers as an alternative to the interlocking circles model (or "three-ring circus") that is more commonly used to express the idea of related fields of study. The layers of Figure 3 express the rationale for the scope of this transdisciplinary research as a hierarchy of inter-related fields. The widest sphere, 'Aid', is included since this is the area of concern in which relevant insights from the three academic fields are applied[23].

But what is transdisciplinary research beyond the exploration of the three academic fields and their application to a distinct area of concern? In the following section I explore in more detail the implications of this approach to research.

---

[23] It may also be useful to imagine an additional, wider sphere, 'Sustainable Development', in recognition of the fact that 'Aid' is but one vehicle to address global inequity that is a recognised critical factor in sustainable development.

1.6   Transdisciplinarity

As implied in Section 1, the Doctorate of Sustainable Futures awarded by UTS is a transdisciplinary degree.   This tenet of ISF research stems from a recognition that issues that impact on sustainability frequently transcend academic boundaries, thereby eroding the value of a reductionist approach to research.   Transdisciplinarity resonates with the spirit of The Enlightenment as expressed by Edward Wilson, the Harvard biologist (Wilson 1998, p 6) who believes:

> …the ongoing fragmentation of knowledge and resulting chaos in philosophy are not reflections of the real world but artefacts of scholarship.

This perspective implies that a transdisciplinary approach to researching real world issues may offer greater insights than conventional, more focussed approaches.

The etymological roots of transdisciplinary research (i.e. *trans* meaning across and *disciplinary* in the usual academic sense) defy its subtlety.   Wolfenden (1999) believes that the epistemological basis of the concept has been all but ignored in mainstream literature and that many people seem to imply that *transdisciplinary* is synonymous with *multidisciplinary* or *interdisciplinary* and use the words interchangeably.

Piaget (1970 in Wolfenden 1999, p 38) is attributed with coining the word 'transdisciplinary'.   He expressed the hope that the interdisciplinary method would proceed to the higher stage of transdisciplinary research.   While the former is characterised by interactions and reciprocities between the disciplines, the latter was to develop a systems' perspective in which the disciplinary boundaries and their links were crossed.

Nicolescu (1985 and 1993 in Wolfenden 1999, p 38) distinguishes transdisciplinarity from multidisciplinarity[24] and interdisciplinarity.   He asserts that multidisciplinarity concerns the study of a topic from within a particular disciplinary perspective, but with the addition of insights from other

---

[24] Which he seems to hold as synonymous with pluri-disciplinarity.

disciplines. In other words, there is an enrichment of the topic from several disciplines, while remaining within the framework of the parent discipline. Interdisciplinarity, he holds, is similar but has a different goal, namely the application of methods from one discipline in another. This may lead to the establishment of a new discipline (as in econometrics, which applies methods from statistics within economics).

Transdisciplinarity is different since it does not remain within the limitations of a particular discipline. According to Nicolescu (1997, p 2):

> …transdisciplinarity concerns that which is at once between the disciplines, across the different disciplines, and beyond all disciplines. Its goal is the understanding of the present world, of which one of the imperatives is the unity of knowledge.

In a similar vein, Mills (1994) suggests that transdisciplinary work draws on a variety of disciplines to give a fuller picture of the object of study by providing more perspectives on that object of study—as we understand a building better when we have seen it from all its sides.

The thinking that underpins transdisciplinarity approaches what Wilson (1998) calls 'consilience'. Wilson traces the notion of consilience to William Whewell who published *The Philosophy of the Inductive Sciences* in 1840 and spoke of a 'jumping together' of knowledge by the linking of facts and fact-based theory across disciplines to create a common groundwork of explanation. Wilson (p 7) suggests that:

> …the belief in the possibility of consilience beyond science and across the great branches of learning is not yet science. It is a metaphysical world-view, and a minority one at that, shared by only a few scientists and philosophers.

This style of thinking is appropriate in grappling with complex ('wicked') and inter-related systems. Wolfenden (1999, p 31) states that:

> …disciplinary approaches, even if robust within their disciplinary domain, are soon found inadequate when applied to problems where system inter-relationships are significant. This is because they are not designed to deal with the problem space between the disciplines, but only the problem space within the disciplines.

A problem focus thus requires the development of methodologies that explicitly take account of the system complexities.

Wolfenden (1999) goes on to identify transdisciplinarity as being coherent with systems thinking as an approach to exploring chaos and complexity. He specifically identifies sustainable development as an area of concern that demands a transdisciplinary approach. Similarly Max-Neef (1991), who proposed a 'human-scale development' framework, contends that the study of human development demands a transdisciplinary approach.

Although there is a certain integrity associated with an endless quest for relevance and integration across disciplines, it is necessary to define the scope of research. This is in line with Checkland's admonishment that AR should include a clearly defined intellectual framework, if for no other reason than to benchmark increases in knowledge.

As noted in Section 1.5 the foundations of this research are derived from three academic fields:

- Information Systems.

- Organisational Effectiveness.

- Project Management.

Each of these academic fields has particular relevance within the context of the aid industry, which is itself, one contributor to the wider notion of sustainable development[25]. Hence, I argue that a MEIS is one kind of information system (IS) that is concerned with supporting purposeful activity within aid organisations[26] that manage projects believed to foster sustainable development, and as such, requires the application of transdisciplinary thinking.

Checkland and Holwell (1998) demonstrate that the concept of a single 'intellectual field' implies a group of individuals with a shared concern to accumulate knowledge in a particular area, and to resolve issues, thereby

---

[25] Recall that this rationale was depicted in Figure 3 using the 'Russian Doll' construct.

[26] Specifically a form of organisation known as an INGO.

influencing action. They further argue that as a result, a 'body of knowledge' will grow, spawning institutional activity; for example conferences, journals and professional bodies. They depict this process in the rich picture reproduced in Figure 4.
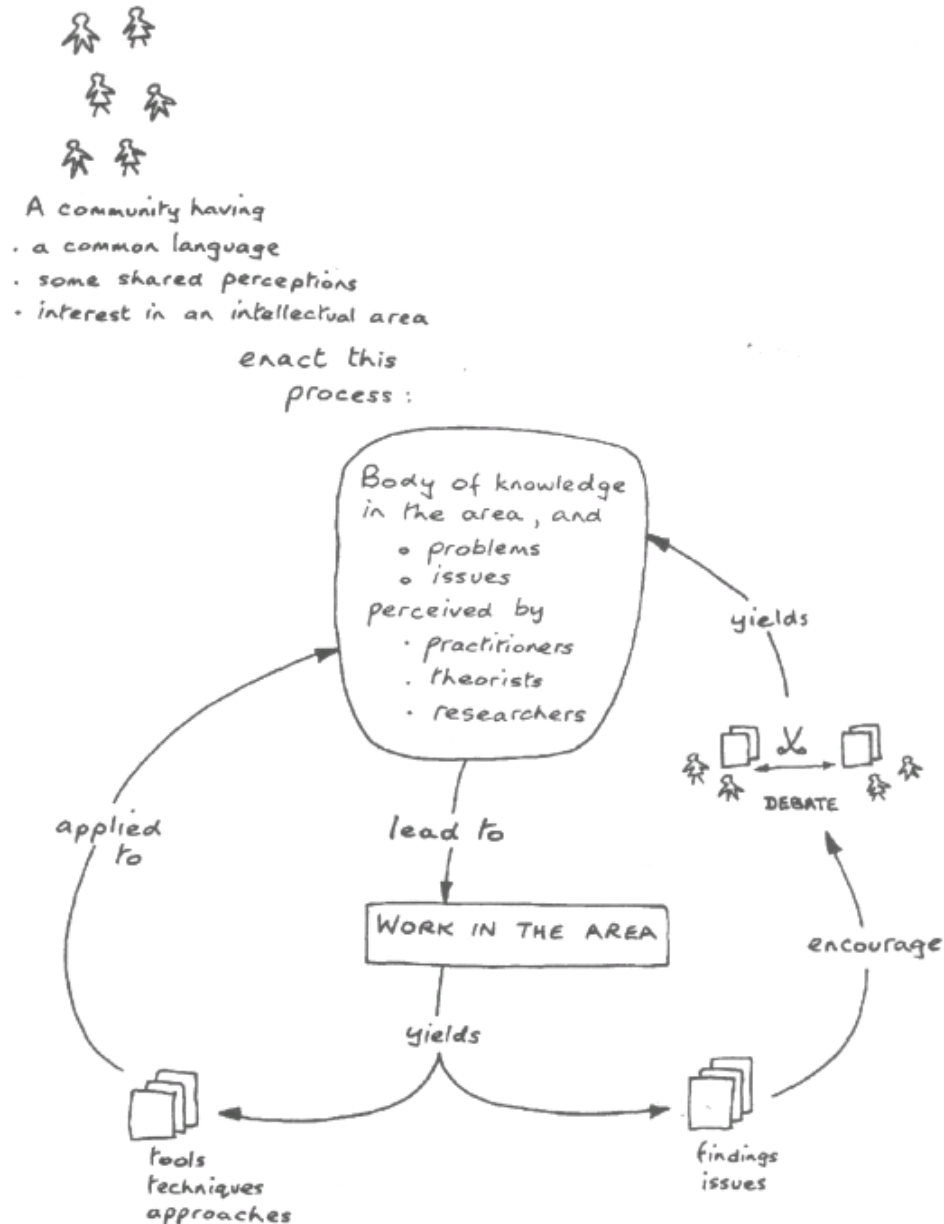
● Figure 4: Rich picture of an 'intellectual field' (source: Checkland and Holwell 1998, p 32)

Through extending the notion of an intellectual field introduced by Checkland and Holwell (1998) and applying the arguments for transdisciplinarity presented above, I have conceived of the transdisciplinary research presented in this thesis as the rich picture in Figure 5. This rich picture identifies the

relationships between each of the academic fields nominated and the area of concern of this work.
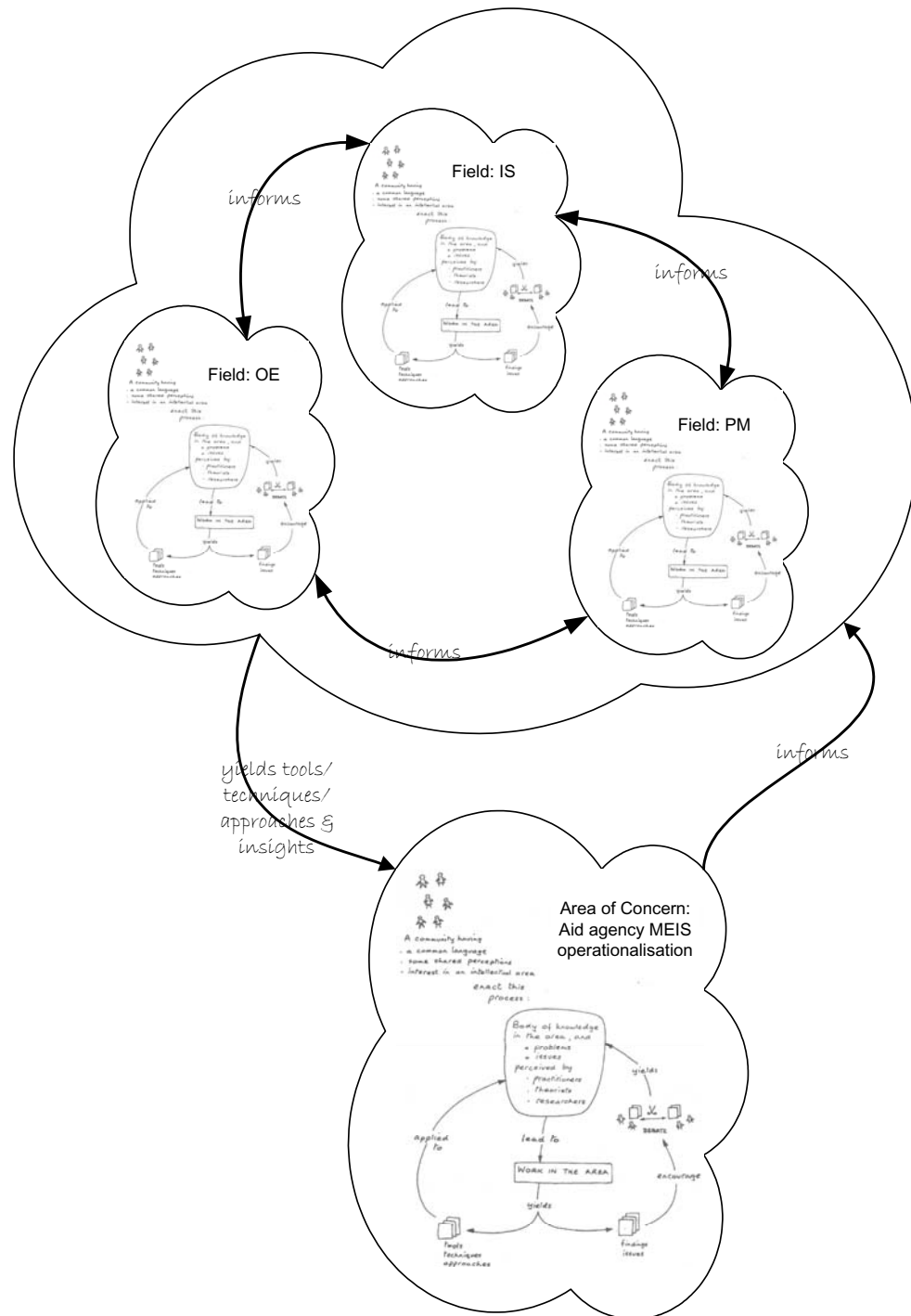
● Figure 5: Transdisciplinarity in this work

Examing the three discrete academic fields selected produced valuable isights. However, as will be shown in Chapter 3, each academic field has its own contestable areas. Further, the dominant epistemological and ontological

assumptions within these fields at times raise questions of inappropriateness to the area of concern. Hence, I submit that the work presented in this thesis is transdisciplinary since, following Wolfenden (1999), it seeks to appreciate issues 'between disciplines' that are found to be problematic. This study is between the three academic fields identified above. It is beyond their boundaries, rather than a part of one. That is, appreciation of the 'problem space' of aid agency MEIS development and deployment has involved the assimilation, reflection and synthesis of personal experience and relevant themes from the three academic fields.

1.7   Terminology, Layout and Structure of this Dissertation

As recognised by Smillie (1995, p xiv), the aid industry has "more acronyms than there are people in Peru". Appendix A lists the main acronyms used throughout this dissertation. The first time that an acronym is presented I have stated its meaning in full, thereafter using only the acronym. Similarly, important terminology is defined upon first usage and then used consistently throughout unless otherwise stated.

Aid industry vernacular is full of ambiguous and value-laden terms such as 'developing', 'development', 'progress', 'third-world', 'wellbeing' etc. In this thesis, I am less concerned with the political (in)correctness of certain terms than I am with the processes that underpin them. For example, while I am cognisant of debates over the use of words such as 'beneficiary' (Fowler 1997), I nevertheless use the term since it is commonly understood to describe the recipients in humanitarian and development efforts. This should not imply disregard for vigorous debate, or respectful and appropriate use of language. Rather, it is a function of the fact that the central theme of this work is the operationalisation of internal aid agency processes.

A particular case is the use throughout this thesis of the word 'aid'. I recognise (and even support) the view that this word may convey a paternalistic dependency-promoting style of thinking. Further, I recognise its ambiguous use even within the industry, with some applying it specifically to humanitarian relief. Throughout this work, however, I have used it broadly to

cover the entire spectrum from humanitarian aid to development assistance. That is, I use the word to capture the broad concept of formal transfers of assistance from rich to poor countries in line with the usage of the word in the mass media.

In the heading structure of this dissertation, numbering is sequential up to third order headings (e.g. 1.1.1). Sections within chapters are identified by second order headings, sub-sections are third order headings. A 'rich picture' is presented at the start of each chapter to depict the line of argument. In addition, a statement of purpose for each chapter is provided along with introduction and conclusion sections to ensure a coherent link with the preceding and succeeding chapters.

In the next chapter, I identify and justify the specific AR methodology adopted, SSM. The rationale and application of SSM presented is followed by a description of how the methodology was applied in this work. The chapter concludes by showing how the research question emerged through the building of SSM 'conceptual models'.

In Chapter 3, I review aid industry literature on M&E, and then synthesise the three academic fields identified earlier that underpin the transdisciplinary approach to the research problem. I identify gaps in the academic basis for M&E as practiced in the aid industry, thereby justifying this research, and identify concepts to assist with the resolution of the research problem.

In Chapter 4, I explore the issues that emerged out of the AR with a case study of a project in Kenya in which I was involved with the development and deployment of a MEIS.

Chapter 5 draws together the outcomes of my research. A framework for the development of a MEIS will be presented drawing on fieldwork, aid industry literature and an integration of concepts from project management, organisational effectiveness and information systems.

Chapter 6 concludes with implications for policy and practice and the identification of further research directions.

Chapter 2 — Methodology

This chapter:

- Justifies the AR methodology adopted in this research (SSM)

- Summarises the background and rationale of SSM

- Describes how SSM is applied generically

- Demonstrates the application of SSM in this research

- Reflects on the process which led to the ultimate 'area of concern' or research question

The Action Research Paradigm

requires selection of a

Methodology

of which one is

Soft Systems Methodology

which emerged from

Systems Engineering & Systems Analysis

which failed when applied to

Human Activity Systems

allows organised 'finding out' about

involves

5 'stages'

Finding out

Formulating root definitions

Building conceptual models

Using models/defining changes

Taking action

which were iteratively applied through consulting assignments for

which led to a narrow focus on problems concerning the

which are

Aid agencies

which is comparable with

required of

M&E Information Systems

'monitoring & control sub-system'

2   AN AID WORKER IN RESEARCH

2.1   Introduction

This chapter will provide the background and rationale for soft systems methodology (SSM), the AR methodology adopted. A justification for this selection is provided in the following section, followed by a description of how the methodology is generally applied. Finally, a description of how the methodology was specifically used in this research is presented with SSM 'conceptual models' that provide the underlying rationale for this thesis. I will refer to these models periodically throughout this thesis.

2.2   Selection of an AR Methodology

As identified in Section 1.4, inquiry into the research question posed in this thesis has been pursued through the interpretive AR paradigm. Dick (1993) defines a research hierarchy comprising paradigm → methodology → method and identifies AR as a research paradigm within which a variety of research methodologies is appropriate. He cites, among others, Patton's approach to evaluation (Patton 1997), Argyris' action science (Argyris, Putnam et al. 1982) and Checkland's SSM (Checkland 1981)[27].

SSM has been adopted as the research methodology within this AR thesis. This selection was made for four reasons. Firstly, there is recognition of the relevance of 'systems thinking' to management science in general (Haslett 1998), and project management in particular (Yeo 1993; Crawford and Costello 1999). Given that the vast majority of aid is delivered through the project management approach, and given the 'soft', 'non-linear' nature of aid projects, adopting SSM as a framework to explore these issues is defensible.

Secondly, SSM is recommended as an approach to assist with organisational problem solving, and has been shown to have particular merit in the development of information systems (Winter, Brown et al. 1995; Dick 1993). Checkland and Holwell (1998, p 155) state that SSM is an:

---

[27] In this thesis I rely heavily on references authored and co-authored by Peter Checkland. While there is some secondary literature on the topic of Soft Systems Methodology, much of this cites Checkland directly.

> …interpretive approach to organisational problem solving which can be used to provide a structure for action research in which desirable change and organisational learning are the aims. Frequently that change and learning is associated with the design, introduction and use of information systems.

Further, Checkland (p 19) defends the use of AR methodologies for information system development since:

> …the setting up of an information system is itself a social act, requiring some kind of concerted action by many different people; and the operation of an information system entails such human phenomena as attributing meaning to manipulated data and making judgements about what constitutes a relevant category. And of course meanings and judgement will be different from one person to another. Thus IS [information systems] and IT [information technology] are hardly part of the physical regularities of the universe to be unambiguously explored using the hypothesis-testing approach.

The selection of this methodology is consistent with the focus of this research emerging from the recognition of M&E information systems as problematic within organisations that implement aid projects.

Thirdly, SSM was selected since it is fundamentally a 'learning system' rather than an 'optimising system' (Checkland 2001). Since a core assumption of this thesis is that organisational learning is an important vehicle of organisational effectiveness, the adoption of SSM as a methodology enables both learning about the research problem and the development of a learning system to enhance the effectiveness of aid agencies.

Fourthly, the SSM literature is sufficiently descriptive to enable a researcher formally schooled in positivist methods to appreciate and apply. Further, Checkland's insistence[28] that AR methodologies must explicitly define a methodological framework allayed my initial concerns about the rigour of constructivist methods of inquiry.

The following section describes SSM.

---

[28] See keynote address to the Action Learning Congress in Brisbane in 1992 (cited in Dick, 1993)

2.3   Soft Systems Methodology

This section will describe the generic use of SSM. The subsequent section (2.4) will describe how SSM was applied in this research, but first, the terms 'soft', 'systems' and 'methodology' will be clarified.

2.3.1   The notion of 'soft'

The distinction between 'hard' and 'soft' systems thinking is attributed to Peter Checkland, who led a thirty-year action research programme within the Department of Systems Engineering at the UK's Lancaster University. Initially, Checkland's research examined the possibility of using the well-developed methods of systems engineering in management problem situations rather than in technically defined problem situations. The difficulties encountered in this research led to the hard/soft differentiation. In discussing the origins of SSM, Checkland (2001, p 61) reports that:

> …systems engineering, impressive enough as a way of carrying out technological projects, failed when attempts were made to apply it…to the messy, changing, ill-defined problem situations with which managers have to cope in their day-to-day professional lives.

The notion of 'soft systems' emerged to recognise that some problems cannot be resolved unambiguously to the satisfaction of all stakeholders. In this sense, 'soft systems' and 'wicked problems' (noted in Section 1.3) are comparable notions (Barry and Fourie 2001).

A 'wicked' problem may be contrasted with a 'tame' problem. 'Tame' problems are not necessarily trivial problems, but by virtue of the maturity of certain fields, can be analysed using established methods, and it is clear when a solution has been reached[29] (Buckingham Shum 1997). In contrast, 'wicked' problems (Rittel and Webber 1973; Buckingham Shum 1997; Conklin, accessed 2002):

- Cannot be easily defined so that all stakeholders agree on the problem to solve.

---

[29] For example, putting man on the moon while technically complex, was a fundamentally tame problem.

- Require complex judgements about the level of abstraction at which to define the problem.

- Have no clear stopping rules.

- Have better or worse solutions, not right and wrong ones.

- Have no objective measure of success.

- Require iteration (every trial counts).

- Have no given alternative solutions (these must be discovered).

- Often have strong moral, political or professional dimensions.

The development of formal methodologies for solving 'tame' problems is attributed to engineers in the 1950s and 1960s (Yeo 1993). These methodologies have been broadly classed by Checkland and others as 'hard systems' approaches,

The classic work of Hall (1962), *A Methodology for Systems Engineering*, which attempted to generalise the experiences of the Bell Telephone Laboratory research and development projects, is acknowledged as the genesis of modern systems engineering methodology and hence the intellectual and practical parent of SSM. Parallel approaches led to the development of 'Systems Analysis' by RAND Corporation (Yeo 1993) and 'Operations Research' initiated by Ackoff and Churchman, which grew out of the application of the scientific method to wartime military operations.

Hall's generalisation of systems engineering defines a methodology, which begins by defining the requirements and objectives of a system that will meet them. Alternative systems are appraised in light of the objectives and the most promising alternative is selected for development. The criteria for 'promising' include such considerations as fitness for purpose and economic aspects. Finally, the selected system is realised, operated and maintained.

Thus, in essence, 'hard systems' approaches involve the selection of an appropriate means to achieve an end, which is defined at the start and thereafter as given (Checkland 2001; Yeo 1993; Barry and Fourie 2001; den

Heyer 2001a). The major criticism is that they assume that an important class of real-world problems can be formulated as a search for an efficient means of achieving objectives known to be desirable, and that the search can be conducted systematically by defining the objective to be achieved (Ackoff 1979; Gharajedaghi 1999; Checkland 2001).

Several commentators cite practical challenges associated with applying hard systems methodologies in 'soft', 'wicked', multi-perspective problem situations (Rittel and Webber 1973; Checkland 1981; Yeo 1993; Barry and Fourie 2001; den Heyer 2001a; Conklin, accessed 2002). It was this realisation that led to the development of SSM[30].

Checkland (2001) recalls that the methodological model provided by systems engineering seemed:

> …very naïve and simplistic in the face of the failings, fears and farce of the actual situation. Systems engineering like the other 'hard' approaches—assumes a relatively well-structured problem situation in which there is virtual agreement on *what* constitutes the problem: it remains to organize *how* to deal with it.

SSM finds problematical precisely what is taken as given by 'hard' systems methodologies as their objectives. SSM treats 'what to do' as well as 'how to do it' as part of the problem. According to Checkland (2001, p 67), whereas 'hard' systems methodologies are concerned only with achieving objectives, SSM is a learning system:

> The learning is about a complex problematical human situation, and leads to finding accommodations and taking purposeful action in the situation aimed at improvement, action which seems sensible to those concerned.

In this subsection, I have identified theoretical and practical differences between the notions of 'hard' and 'soft' systems. In the following subsection, I explore the notion of 'systems thinking'.

---

[30] For a full account of the emergence of SSM see Checkland (1981).

2.3.2   The notion of 'systems'

The concept of a 'system' embodies the idea of a set of elements connected together to form a whole, this whole showing properties which are properties of the whole, rather than properties of its component parts (Kauffman 1980; Checkland 1981; Bawden 1991; Gharajedaghi 1999). This phenomenon is known as the 'emergent property' of systems (Gharajedaghi 1999). 'Systems thinking' then, makes conscious use of a particular set of ideas about wholeness to order our thoughts about the world's complexity.

Yeo (1993) believes that 'systems thinking' has emerged as one of the most important intellectual disciplines in the past three decades since it provides a powerful mental frame of reference for decision-making in day-to-day problem situations. This is in line with Checkland (1981) who believes that 'systems thinking' is a 'meta-discipline' since its subject matter can be applied within virtually any other discipline. He states (p 5):

> [Systems] is different in kind from most other disciplines. Its concern is not a particular set of phenomena, as is the case with chemistry and physics, for example; neither is it, like biochemistry, a subject, which has arisen at the overlapping of existing subjects. Nor is it a subject which exists because a particular problem area is recognised as important and requires the bringing together of a number of different streams of knowledge—as do town planning or social administration, for example. What distinguishes systems is that it is a subject which can talk *about* the other subjects. It is not a discipline to be put in the same set as the others, it is a meta-discipline whose subject matter can be applied within virtually any other discipline.

The argument for systems as a 'meta-discipline' is supported by the commonly touted phrase a 'systems approach'. Checkland (1981, p 5) defines a 'systems approach' as:

> …an approach to a problem which takes a broad view, which tries to take all aspects into account, which concentrates on interactions between the different parts of a problem.

In this way, a 'systems approach' may be compared with other ways of grasping 'organised complexity' such as the 'scientific approach'; although science (as a whole) is now only studied by a relatively small group of philosophers, with most work being done within the more detailed areas into which it has been split (Checkland 1981; Wilson 1998).

The hypothesis of 'systems thinking' is that the apparently chaotic universe can be understood as a complex of interacting wholes rather than a set of phenomena reducible by experiment. It is not surprising that although there have been several attempts to classify possible types of system, no generally accepted classification has emerged. Attempts frequently mix logical categories[31], which might not matter in a single area, but invalidate any general systems description. Checkland attempts to address this gap in the literature by drawing on Boulding (1956) and Jordan (1968) (cited in Checkland 1981) to propose a system typology consisting of five[32] kinds of system:

- **Natural systems:** we may *learn* about systems and systemic properties by observation and experiments.

- **Designed physical systems:** we may *use* designed systems which are created to serve some human purpose[33].

- **Designed abstract systems:** we may *use* abstract systems such as mathematics, philosophy or poetry which are the ordered conscious product of the human mind[34] to serve some objective (including the urge to express the inexpressible).

- **Human activity systems:** we may aspire to *engineer* sets of purposeful human activities. The human act of design is itself an example of this class of system.

---

[31] See for example, Burton (1968) writing on a systems approach to international relations, who identifies: basic, operational, behavioural, purposeful and controlling systems, linked by administrative systems.

[32] Checkland (1981, p 122) indicates that the first four system classes are the minimum to describe the whole of reality.

[33] Checkland (1981, p 119) finds merit in distinguishing between 'purposeful' and 'purposive'. The former he uses to describe conscious human action; the latter to describe the more neutral 'serving a purpose' as in the stimuli-provoked behaviour of other animals.

[34] N.B These may be captured in designed physical systems such as books, film or blue prints.

- ▪ **Transcendental systems:** this class of systems (following Boulding, 1956) include systems beyond knowledge.

The relationship between the five system classes is depicted in Figure 6.
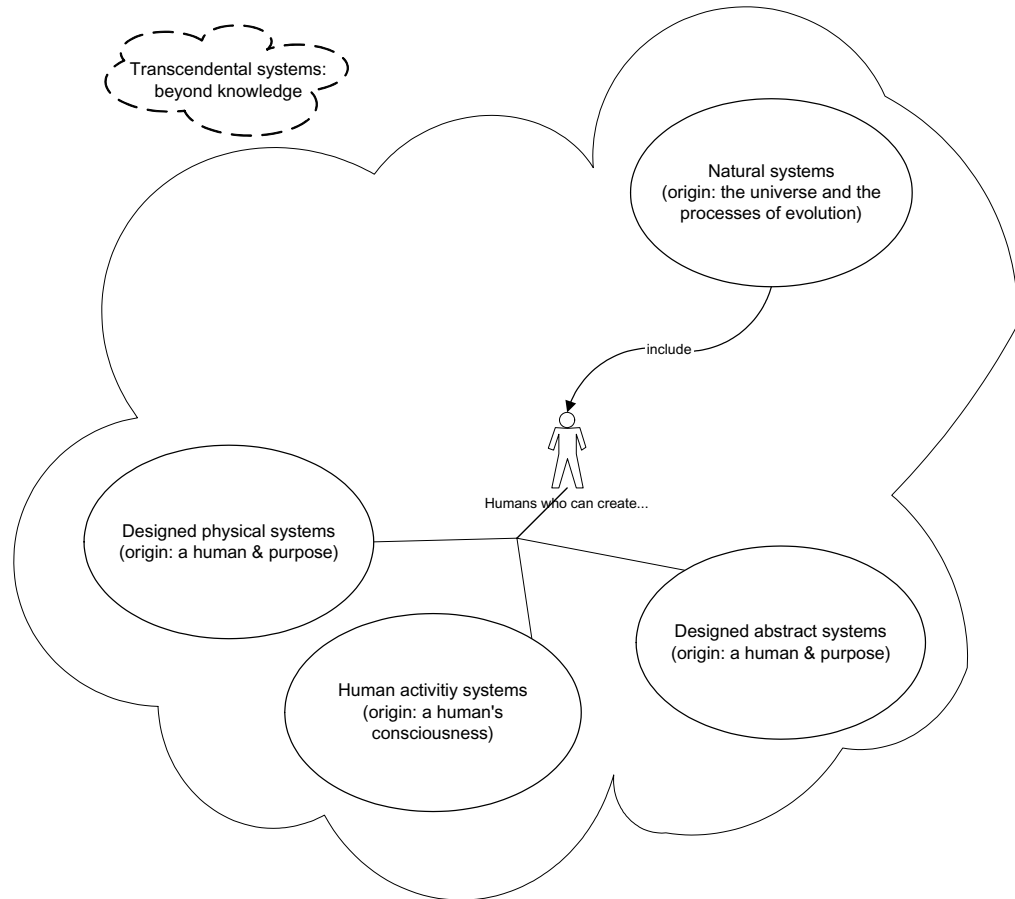
• Figure 6: Five classes of system proposed by Checkland (Source: 1981, p 112)

Although a thorough understanding of natural systems and designed systems had developed prior to the 1970s, such ideas were not rich enough concepts to cope with the complexity of human situations—in particular, *human activity systems* involved in *purposeful activity*.

Human activity systems are crucially different from other systems since the others, once they are manifest, 'could not be other than they are', but human activity systems can be manifest only as perceptions by human actors who are free to attribute meaning to what they perceive. There will thus never be a single (testable) account of a human activity system, only a set of possible accounts, all valid according to particular *weltanschauungen*. Checkland (2001, p 69) contends that:

our *weltanschauungen* are the stocks of images in our heads, put there by our origins, which normally go unquestioned.

Thus, purposeful activity by humans will inevitably be described in terms of a particular interpretation, bias, prejudice or value system.

This perspective on social reality implied by SSM is different from that implicit in the application of 'systems theory' as more widely applied within social science, namely functionalism. Functionalism is a part of the Durkheimian (or positivistic) tradition in sociology. SSM implies rather, a model of social reality as found in the alternative (phenomenological) tradition deriving sociologically from Weber and philosophically from Husserl (Checkland 1981). The method is also compatible with the ideas[35] of 'Critical Sociology' or 'Critical Theory' of the Frankfurt School, although ironically, Habermas (its contemporary theorist) opposes systems theory.

2.3.3   The notion of 'methodology'

In defining SSM, Checkland (1981, p 162) takes care to differentiate between 'method', 'methodology' and 'philosophy':

> I take a methodology to be intermediate in status between a philosophy…and a technique or method. A philosophy will be a broad non-specific guideline for action…A technique is a precise specific programme of action which will produce a standard result…A methodology will lack the precision of a technique but will be a firmer guide to action than a philosophy. Where a technique tells you 'how' and a philosophy tells you 'what', a methodology will contain elements of both 'what' and 'how'.

Checkland (2001) warns that effective use of SSM requires appreciation for its status as a methodology. He contends that this concept is much misunderstood and problems arise when SSM is applied as a 'method'. A sophisticated user, he believes, will remain situation-oriented not methodology-oriented and will thus create an approach appropriate to the particular situation. He states (p 87):

---

[35] SSM may be argued to promote the 'Communicative Competence' of unrestricted discussion sought by Habermas.

Practitioners, honed and chastened by experience of the complexity of the everyday world, are, in my experience, much more likely to understand SSM as methodology and to bring to it the necessary flexibility, the light-footedness, which effective use calls for.

Kotarbinski (1966, in Checkland 1981, p 162) distinguishes between three conceptions of methodology:

- **praxiological**: "the science of…ways of expert procedures".

- **logical:** "the study of methods of using one's mind".

- **epistemological:** "the study of sciences as historical products and processes".

SSM, Checkland believes, is aligned with praxiological methodologies since it is not a *method* but a set of *principles of method,* which in any particular situation are reduced to a method uniquely suitable to that particular situation. Checkland defends this position by arguing that if 'soft' systems thinking were reduced to a method (or technique) it would eliminate much of the "munificent variety we find in real life" (p 162).

The remainder of this section will describe how SSM is implemented in a generic form. The subsequent section will present the specific application of SSM to the area of concern defined by this thesis—aid agency monitoring and evaluation information systems.

2.3.4   Implementation of SSM

SSM is itself a 'Designed Abstract System' to explore 'Human Activity Systems' (Checkland 1981)*.* As such it is fundamentally a 'learning system'. Checkland (2001, p 70) states:

SSM learns by *comparing* pure models of purposeful activity (in the form of models of human activity systems) with perceptions of what action is going on in a real-world problem situation [emphasis in original].

Users of SSM never take the models to be *descriptions* of the real world, only devices to explore it. As such, SSM articulates a process of organised 'finding

out' about a problem situation and the finding out leads to deliberate action to bring about improvement in the situation.

In the words of Checkland (2001, p 88) SSM explores a situation perceived as problematical via:

> …the device of modelling systems which pursue a pure purpose from a declared point of view. It accepts that real-world action will be much messier than these pure models, and uses the models to structure a debate in which different conflicting objectives, needs, purposes, interests, values can be teased out and discussed.

In this way, SSM tries to encompass cultural myths and meanings as well as testable facts and logic. It seeks to articulate a process in which an accommodation between conflicting interests and views can be sought. An accommodation should enable action to be undertaken which is aimed at feasible improvement. This means that SSM is a learning, rather than an optimising system.

In the early years of the development of the methodology the process was understood to follow the sequential steps depicted in Figure 7.
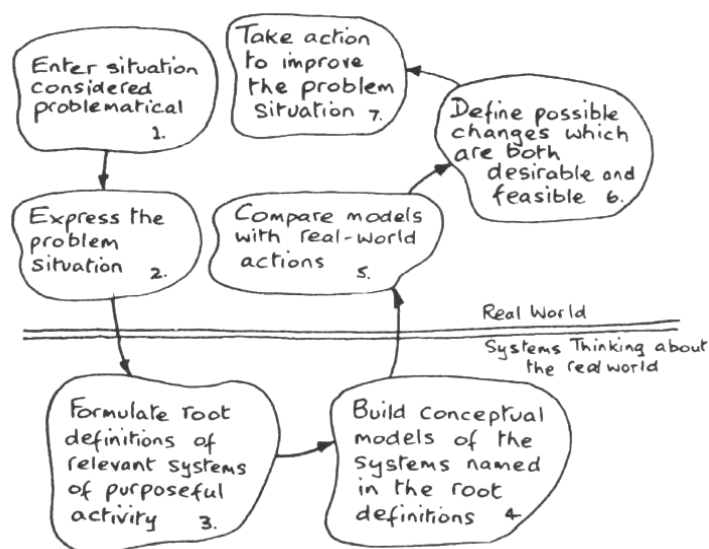
● Figure 7: The early '7-step' representation of SSM (Source: Checkland, 2001, p 71)

Although it is helpful for inexperienced users to conceive of SSM as a seven-step process, Checkland (2001, p 70) suggests that:

> …as users gain experience of SSM, as they internalise it, they cease to think of it in this algorithmic fashion. Instead…they [use SSM] as an *aide memoire* of its principles as they fashion a form of it suitable for a particular situation.

This more 'mature' representation of SSM is depicted in Figure 8.
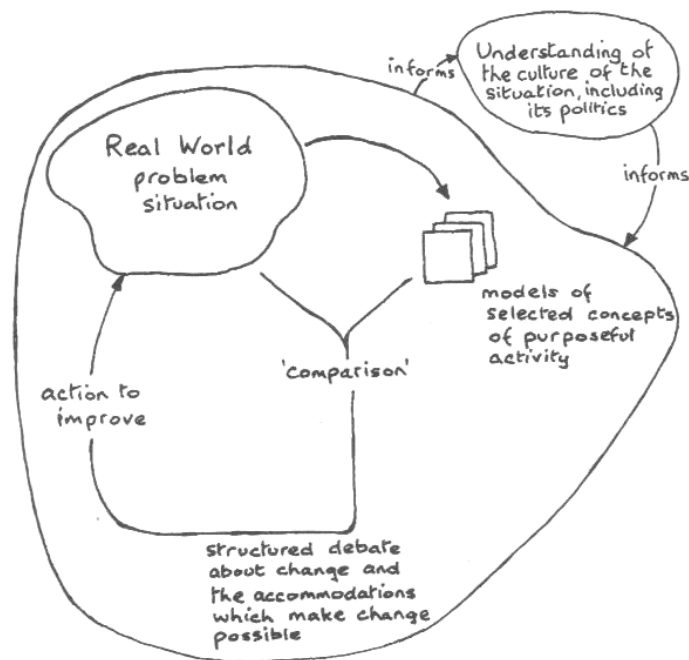
● Figure 8: A representation of mature SSM (Source: Checkland 2001, p 72)

It is evident from Figure 7 that SSM contains two general kinds of activity. Steps 1, 2, 5, 6 and 7 are 'real world' activities that necessarily involve people in the problem situation. Steps 3 and 4 are 'systems thinking' activities that may or may not involve those in the problem situation depending upon the individual circumstances of the study.   In general, the language of the former steps will correspond to the normal language of the problem situation, while the latter steps will use the language of systems since it is in these steps that real-world complexity is unravelled and understood.

In view of the these two general kinds of activity ('real world' and 'systems thinking'), and the non-algorithmic representation of SSM presented in Figure

8, Checkland (2001) proposes five broad 'stages' that are not necessarily sequential as a guide to implementation of SSM:

- Finding out.

- Formulating root definitions.

- Building conceptual models.

- Using models, defining changes.

- Taking action.

Each stage in turn will be discussed.

Finding Out

The first stage, 'finding out' involves three related analyses:

- Analysis One takes the intervention in the situation as its subject matter and identifies the occupiers of the roles: 'client(s)' and 'would-be problem solver(s)'. 'Client' can be understood to be the person who causes the intervention to take place, while 'would-be problem solvers' are those who conduct the study. Those in the latter role then name a list of possible people who could be taken to be the 'problem owners'. This list normally includes the 'client' but also many different people with an interest in the situation. This list later provides a good source of potentially relevant systems for modelling.

- Analysis Two ensures that attention is paid to the problem situation as a culture by establishing what social roles are significant in the situation, what norms or behaviour are expected from role holders, and by what values performance in a role is deemed to be good or bad.

- Analysis Three examines the political situation by asking questions about the disposition of power.

Normally, the 'finding out' about complex, problematical, human situations enabled by the above analyses is represented by 'rich pictures'. According to Checkland (2001, p 74):

SSM 'rich pictures' follow from the realisation that where human affairs are concerned their complexity always stems to a large degree from the existence of multiple interacting relationships. And since linear prose is a rather poor medium for representing relationships, SSM users develop their skills in drawing pictures which enable the complexity being tackled to be viewed more holistically than is possible via strings of words.

Formulating Root Definitions

The formulation of 'root definitions' stage is essentially the naming of systems thought to be relevant for deeper exploration within the problem situation. In practice, the root definition is a concise statement that embodies all the elements that describe and influence a system.

Checkland (1981) has proposed a rule that ensures root definitions are well formulated. Root definitions should be constructed by consciously considering the elements of the mnemonic CATWOE, described in Table 1.

	Formulation of Root Definitions Consider the following elements: CATWOE	
C	Customer	Who would be victims/beneficiaries of the purposeful activity?
A	Actors	Who would do the activities?
T	Transformation Process	What is the purposeful activity expressed as: **Input → Ṯ → Output**?
W	Weltanschauung	What view of the world makes this definition meaningful?
O	Owner	Who could stop this activity?
E	Environmental Constraints	What constraints in its environment does this system take as given?

• Table 1: Formulation of root definitions (based on Checkland 2001, p 75)

The core of the root definition is said to be 'T', the transformation process that changes some defined input into some defined output[36]. Checkland (2001, p 74) reports that this concept is frequently misunderstood:

> The usual error is to confuse the system input (that entity which gets changed into the output) with the resources needed to bring about the transformation.

Thus, in expressing 'T', the inputs must be represented in the outputs by a changed state. An abstract input must yield an abstract output. A concrete input must yield a concrete output. Thus the transformation:

---

[36] The terms 'input' and 'output' in this context should not be confused with the use of these terms elsewhere in this thesis with reference to elements of logic-based project strategy.

(Input = football players) → (Output = football skills displayed/entertainment)

is incorrect. A correct transformation process could be:

(Input = football players) → (Output = tired football players)

According to Checkland (2001, p 82):

> …any root definition necessarily describes a hypothetical 'situation': one in which an instrumental transformation process, converting some defined input into an output, is being carried out under various constraints.

Thus, well-ordered formulation of root definitions yields a handful of definitions, both 'task-based' and 'issue-based', which can then be modelled for use in a debate about change.

Building Conceptual Models

Whereas the root definition is an account of *what* the system is, the third stage, 'building conceptual models', is an account of the activities that the system must *do* in order to *be* the system named in the definition (Checkland 1981). This involves modelling the system under examination by creating an 'operational subsystem' connected to a 'monitoring and control subsystem'. As will be shown in Section 2.4, the distinction between these two subsystems is of profound importance in this thesis.

The creation of an 'operational subsystem' involves assembling verbs describing the activities which would have to be in the system named in the root definition and then structuring them according to logical dependencies. An arrow from activity *x* (say 'obtain raw material') to activity *y* ('convert raw material to product') shows that *y* is contingent upon *x*. These considerations govern the assembly of the operational part of the system which would achieve the transformational process(es) named in the root definition. Checkland

(2001) indicates that experience has shown that for most models, 7±2 activities[37] are useful.

In addition to the 'operational subsystem', creating a 'monitoring and control subsystem' is necessary to enable the whole system to adapt and survive in a changing environment. The 'monitoring and control subsystem' examines the relative efficiency, efficacy and effectiveness of operations and takes control action to change and/or improve them via processes of learning and control. The generic form of a SSM conceptual model is represented in Figure 9.
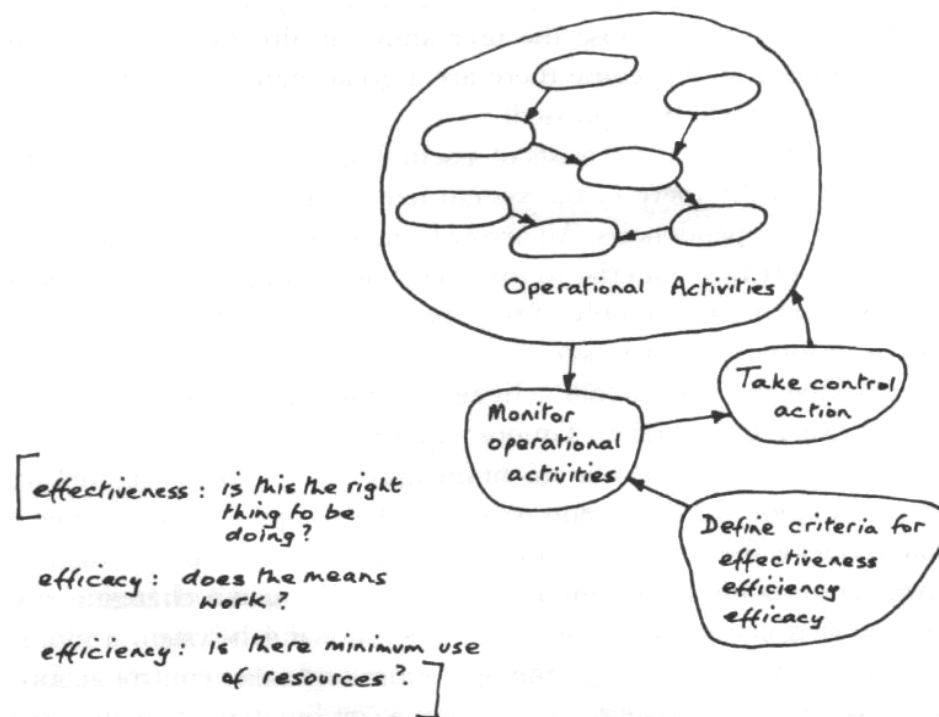
- Figure 9: The general structure of a conceptual model of a purposeful activity system (Source: Checkland, 2002, p 78)

Checkland (2001) cautions that the greatest difficulty in conceptual model building lies in maintaining the discipline to work only from the words in the root definition. Since root definitions are relevant to real-world activity, it is easy to start feeding into the model elements from real-world versions of the purposeful activity being treated as a system—elements not justified by the words of the root definition. He states:

---

[37] Checkland (2001) cites the cognitive psychologist Miller (1956) who found that the human brain has limited capacity to cope with more than 7±2 activities simultaneously.

model building should focus only on the root definition; every phase in it will lead to a particular activity in the model; every element in the model should relate to a particular part of the root definition. The aim is a justifiable combination of root definition and conceptual model. It is not expected that different modellers will derive exactly the same model from a root definition, simply because words carry different connotations for different people. What is sought is a model, which is coherent and defensible rather than 'correct' or 'valid' (Checkland 2001, p 80).

Using Models, Defining Changes

At this third stage of SSM, comparisons are made between the models and the real-world situation thought to be problematical. The purpose of this comparison is to foster structured and organised debate about changes that may bring about improvement in the problem situation. Such improvements may include changes to structure, process, attitude or a combination of parts. However, Checkland (2001) cautions that for changes to be implemented they must meet two different criteria simultaneously. Firstly, changes must be 'systemically desirable'. That is, the changes identified through comparison of models with reality must have a logical basis. Secondly, since people are not always motivated to implement change that is justified merely by logic, the debate must find its way to 'accommodations' between people holding conflicting views. In other words, the changes must be 'culturally feasible'.

> [SSM] makes use of system ideas together with a concept of purposeful activity, in a combination which tries to address not only the facts and logic of a problem situation, but also the myths and meanings through which the people in the situation perceive it and relate to it (Checkland 2001, p 86).

Checkland (2001) believes that this need for both cultural and systemic desirability is something which scientists and engineers sometimes find difficult. The history, myths and meanings hidden within a human activity system are one reason why it is so important to carefully consider the w*eltanschauung* of each root definition and model.

Thus, each model under consideration directs attention to taken-as-given assumptions about the world, highlights alternatives and provokes rethinking of aspects of real-world activity. Checkland (2001, p 83) reports that this is:

very often the point from which one recycles to earlier stages in the methodology, as learning is achieved through the comparisons between models and the real world.

Checkland (2001, pp 83–84) describes four methods to enable comparison:

- Simply record differences, which stand out between the handful of models and current perceptions and events. Having listed the differences, discussion can then be facilitated to determine whether or not they matter.

- Use each model to define a series of specific questions concerning activities, and links between activities for which answers are then sought in the situation itself.

- 'Operate' the activity system on paper by writing down scenarios describing how things might happen given the root definition in question. Such scenarios can be compared with historical events known to people in the problem situation.

- Build a model of a part of reality similar to a model thought to be relevant to it, following as closely as possible the structure of the latter model itself. If this can be done then overlaying the two models reveals the differences starkly.

Taking Action

The final stage, 'taking action', occurs when systemically desirable and culturally feasible changes have been identified and accommodations between conflicting views have been found or created. The resulting 'slightly-more-structured-problem-situation' can then be addressed through subsequent SSM cycles. In fact, a 'system' to implement the defined changes may also be modelled into a coherent process via root definitions and CATWOE.

A subtle but important point is that the 'defined changes' permitted by the accommodations between conflicting views are provisional. That is, whereas the notion of 'consensus' implies final resolution of a matter, 'accommodation' implies acceptance of a model of reality only until a better model can be

developed. Thus, there is a sense that SSM enables members of a human activity system to iteratively fumble towards acceptable solutions to 'wicked' problems.

In the remaining section of this chapter, I will describe the application of SSM in this research.

2.4   Application of Soft Systems Methodology in this Thesis

The broad principles of SSM discussed in Section 2.3 were applied in this research both as a means to clarify the research focus, and to learn about the 'human activity system' found to be problematic. In this section I describe the application of the methodology in this study, and present the models produced that have informed the MEIS framework proposed in Chapter 5.

Checkland insists that SSM is not a method that demands strict adherence to sequential steps. In passing around the AR cycle depicted in Figure 2 there was considerable iteration between the five SSM stages outlined in Section 2.3.4. Therefore, there is little value in a detailed chronology of the research. However, I will begin with an overview of the 'finding out' stage and show how this led to identifying the research focus on M&E. Subsequent SSM stages are evident in the narrative but not necessarily made explicit. A detailed description of the actual MEIS framework proposed will be reserved for Chapter 5.

Finding Out

The first stage, which Checkland (2001) calls 'finding out', involves what Bawden (1991) describes as immersion in the flux of life. Dick (1993) believes that this stage of SSM is comparable to participant observation as described by Lofland and Lofland (1984).

In my case, immersion in the reality of the situation began several years before commencing doctoral research and was facilitated by employment with international aid operations in several countries in Africa (principally Rwanda and Democratic Republic of Congo) and Asia (principally Cambodia). This experience initiated a process of critical inquiry that led to this research.

At the start of this research, 'finding out' about the situation was assisted by the opportunity to work with an INGO in Kenya, in a household food security project funded by the United States Agency for International Development (USAID). This project offered the chance to do a case study exploring issues at the interface of conflicting objectives and motives between the various project stakeholders. My 'area of concern' was the merit of the predominantly Western project management approach to fostering sustainable development outcomes.

The evaluation of US Government funded projects is a matter of public law (section 407(h) of P.L. 480). In addition, the USAID grant was a Title II Food-for-Peace grant which is believed to have among the most stringent requirements for project monitoring and evaluation of any grant scheme (Mugo, pers. comm. 1998). Given this strong emphasis on M&E, the project budget included allocations for a Consultant M&E Officer[38], Kenyan M&E staff and substantial funding for surveys, Participatory Rural Appraisals (PRAs) and other processes of critical inquiry. The role of Consultant M&E Officer offered a unique opportunity to legitimately conduct action research into the merit of aid (for an overview of the project design see Appendix B).

At three times during the period of my engagement by the INGO in Kenya, I was seconded to operations in other countries:

- An evaluation of a USAID Title II emergency food umbrella project in Khartoum, **Sudan**.

- The establishment of a MEIS to support a World Food Programme (WFP) and United Nations High Commissioner for Refugees (UNHCR) emergency food distribution project for Kosovar refugees in **Albania**.

- Needs assessment, strategic planning, project design and start-up of an emergency response operation in **Kosovo** immediately following the NATO–Yugoslav ceasefire and the commencement of Kosovar refugee repatriation.

---

[38] The role I filled for the first twelve months of the five-year project.

Subsequent to my contract with the INGO, I undertook additional fieldwork as an independent consultant:

- Rapid assessment of humanitarian needs in Ingushetia and North Osetia (Chechan region), **Russian Federation.**

- Design of two emergency–development transition projects in **Liberia**, namely

  o a household food security/smallholder farmer capacity building project

  o an income generation/micro-credit project.

- Review of the US Embassy Bomb Survivors project in Nairobi, **Kenya** and planning of an extension/expansion.

- Assessment of humanitarian needs and NGO capacity analysis in **Ethiopia**.

- Needs assessment and design of a rehabilitation project following the 2000 winter *dzud*[39] in **Mongolia** in which an estimated two million head of cattle died.

- Assessment of humanitarian needs and NGO capacity analysis in **Serbia** following the collapse of the Slobodan Milošovic regime.

- Mid-term evaluation of the **Kenyan** Title II project (i.e. the primary case study project identified above).

- Review and refinement of an INGO MEIS in **Rwanda**, and enablement training for agency personnel.

- Needs analysis and project design for a household food security project in **Rwanda**.

- Review and refinement of a NGO MEIS in **Angola**, and enablement training for agency personnel.

- Management systems analysis for an **Australian**-based INGO.

---

[39] A severe winter-time disaster manifested in widespread livestock losses.

- Project design for an AusAID bilateral grant targeting food security in **Malawi**.

- Appraisal of INGO project designs for food security projects in **Uganda, Lesotho**, **Mozambique** and **Zambia**.

- Design of an HIV/AIDS intervention in **Ethiopia.**

- Review of information requirements and development of a technology-supported MEIS for an AusAID funded project in Siem Reap, **Cambodia**.

- Design of a DFID Civil Society Challenge Fund project in **Rwanda**.

- Mid-term evaluation of rural institutional strengthening project in **Cambodia**.

- Design of a multi-country program addressing the 'new variant famine' in Southern Africa (**Mozambique**, **Malawi** and **Zambia**) caused by HIV/AIDS.

Each of the above short-term assignments enabled observation, which prompted reflection with subsequent opportunities to re-plan and act. The experience of this action (consulting) → learning (research) process has been in line with the Zuber-Skerritt (1993) conception of AR spirals depicted in Figure 10; the upward trajectory of which is indicative of continuous improvement of practice and extension of knowledge.
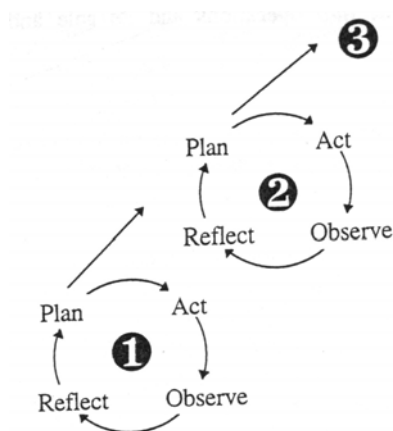
• Figure 10: Action Research spirals (Source: Zuber-Skerritt, 1993)

Mellish (2000) and others have found merit in combining organisational consulting with AR as a means of 'finding out' about an 'area of concern'. Each opportunity to immerse myself in the 'area of concern' yielded new insights and new opportunities to apply earlier lessons. The learning was frequently supported by differences in both the situation and the role that I was required to fill—thereby facilitating new perspectives on the issues.

Elliot (1988) classifies different roles embedded in action research approaches, and in particular differentiates between insider and outsider roles, as in Table 2.

The outsider as:	The insider as:
Expert and detached researcher	Practitioner of the activities the outsider researches
Participant observer	Reliable informant
Neutral broker	Contributor of personal perceptions and judgements
Critical theorist	Self-reflective practitioner
Reflective teacher	Reflective teacher

• Table 2: Outsider – Insider relations in educational research (Source: Elliot, 1988)

I have at various times played all of the above action researcher roles. The roles have been frequently blurred. Within the main case study project in Kenya the outsider–insider boundary was blurred because:

- As part of the implementation team, required to fill a defined role and purpose, I was accepted as an insider.

- As an expatriate I was fundamentally an outsider; both as an Australian on a predominantly Kenyan implementation team, and as a *mzungu*[40] within *Ukambani,* the region of Kenya within which the project was located.

- Having to grapple with project management and development issues along with the rest of the implementation team, while musing and reflecting on the process and outcomes as an 'impartial' observer, I was simultaneously outsider and insider.

In addition to blurring the broader insider-outsider categories, there have been times when I have experienced a fusion of Elliot's action researcher roles. For

---

[40] *Kiswahili* for foreigner

example, during my involvement with the case study project there were times when I was aware that I played each of the following roles simultaneously:

- **self-reflective practitioner**: since I was part of the implementation team, engaged for the purpose of establishing a MEIS (a role which is fundamentally reflective).

- **reflective teacher**: since part of my role included training a Kenyan counterpart to act as 'M&E Officer' for the life of the project.

- **expert and detached researcher**: since I was engaged to fill the role based on experiences and expertise and since my use of the project as an action research subject (or case study) was explicit from the outset.

- **participant observer**: since as a member of the implementation team, I was actively involved in all aspects of project activity planning, observing, learning and replanning. This was particularly the case given that the focus of the MEIS was to foster observation and learning about the impact of the project within the target community.

SSM Modelling

The primary outcome of the 'finding out' stage of SSM was an appreciation for the complexity of the issues and inter-relationships between the key groups of stakeholders in the aid industry, in particular, within INGO administered aid projects. The 'rich picture' in Figure 11 presents a simplistic overview of the relationships and roles of the key stakeholders in an INGO aid project system[41]. An important realisation was that definitive assessment of the effectiveness of aid is difficult owing to the wide variety of *weltanschauungen* among the various players.

---

[41] In modelling the system it proved useful to separate the 'implementing NGO' from 'the project'. However, as will be shown, the NGO bubble is itself a complex system which can be unpacked further to exhibit at least three 'zones' of management, one of which, the 'operational zone', is responsible for project implementation.
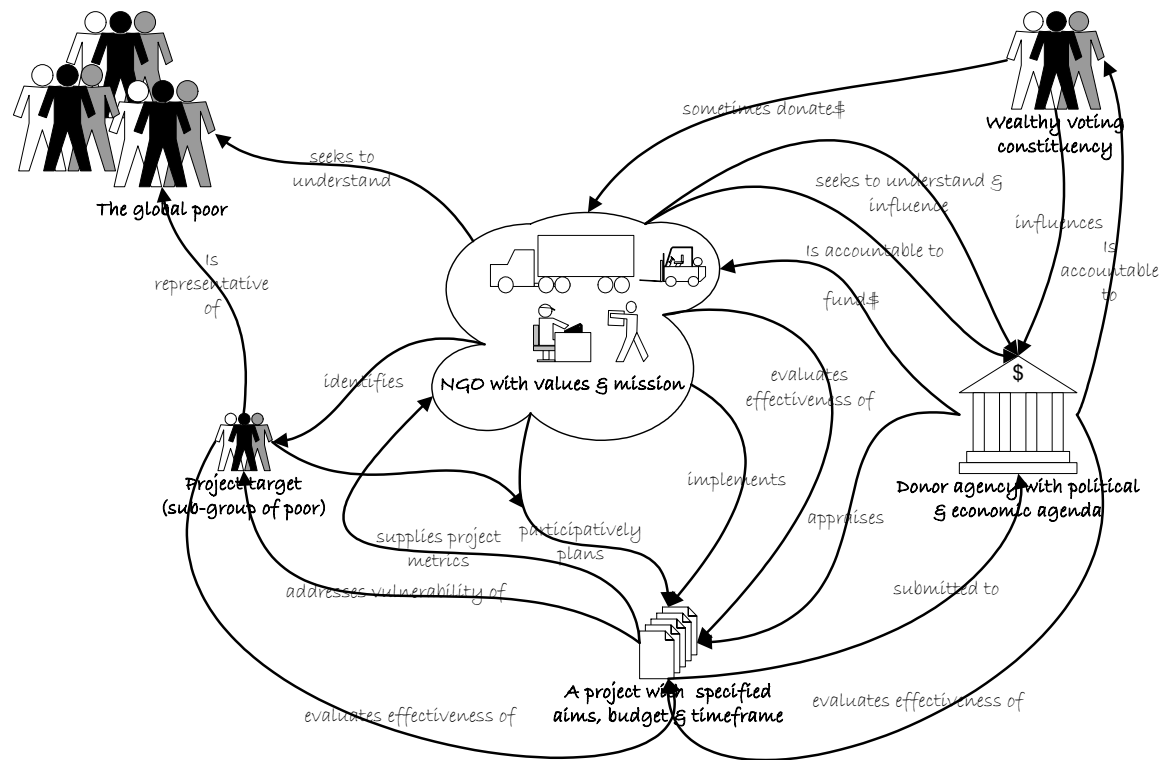
● Figure 11: Rich picture of NGO-administered aid system

From the rich picture presented in Figure 11 the following root definition of the industry-wide NGO aid system was developed using Checkland's mnemonic CATWOE:

- **Customer:** 'the poor'

- **Actors:** the NGO

- **Transformation process:** vulnerability to poverty → vulnerability reduced

- **Weltanschauung**: NGO administered aid projects are appropriate mechanisms for poverty reduction

- **Owner**: donor agency

- **Environmental constraints**: social, technological, ecological, economic and political constraints

Thus a root definition of the global NGO aid system may be phrased as:

A donor-funded NGO-implemented system of aid projects reduces the vulnerabilities of the global poor within a complex set of constraints.

With respect to the particular system contained by the case study project in Kenya, a more precise root definition was developed:

- **Customer:** households in Ikutha Division of Kitui District, Eastern Province, Kenya

- **Actors:** the implementing INGO, particularly the implementation team

- **Transformation process:** reduction in the number of food-insecure households

- **Weltanschauung**: training 140 Extension Farmers in improved farming methods will result in a diffusion of the innovations throughout Ikutha Division, such that there will be a net improvement in household food security

- **Owner**: Title II, Office of Food-for-Peace, Bureau of Humanitarian Response, USAID

- **Environmental constraints**: social (willingness of farmers to participate in training, adopt and promote innovations), technological (quality of training and farm inputs), ecological (enabling environmental factors), economic (affordable supply of project inputs) and political constraints (support of the Government of Kenya and local political factors)

Thus, a root definition for the case study project system may be phrased as[42]:

A USAID-funded INGO-implemented farmer-training project system reduces food insecurity among Ikutha households within a complex set of constraints.

The generic form of SSM conceptual models (Figure 9) was used to develop a model of the Kenyan case study project, depicted in Figure 12.

---

[42] To define any system, it is necessary to appreciate its wider context, or 'parent system'. This is in fact what Checkland (1981, p 237) calls the 'law of conceptualisation' which states that "a system which serves another cannot be defined and modelled until a definition and a model of the system served are available". In the context of the models proposed, the parent system of the Kenyan case study project may be deemed to be the international aid system.
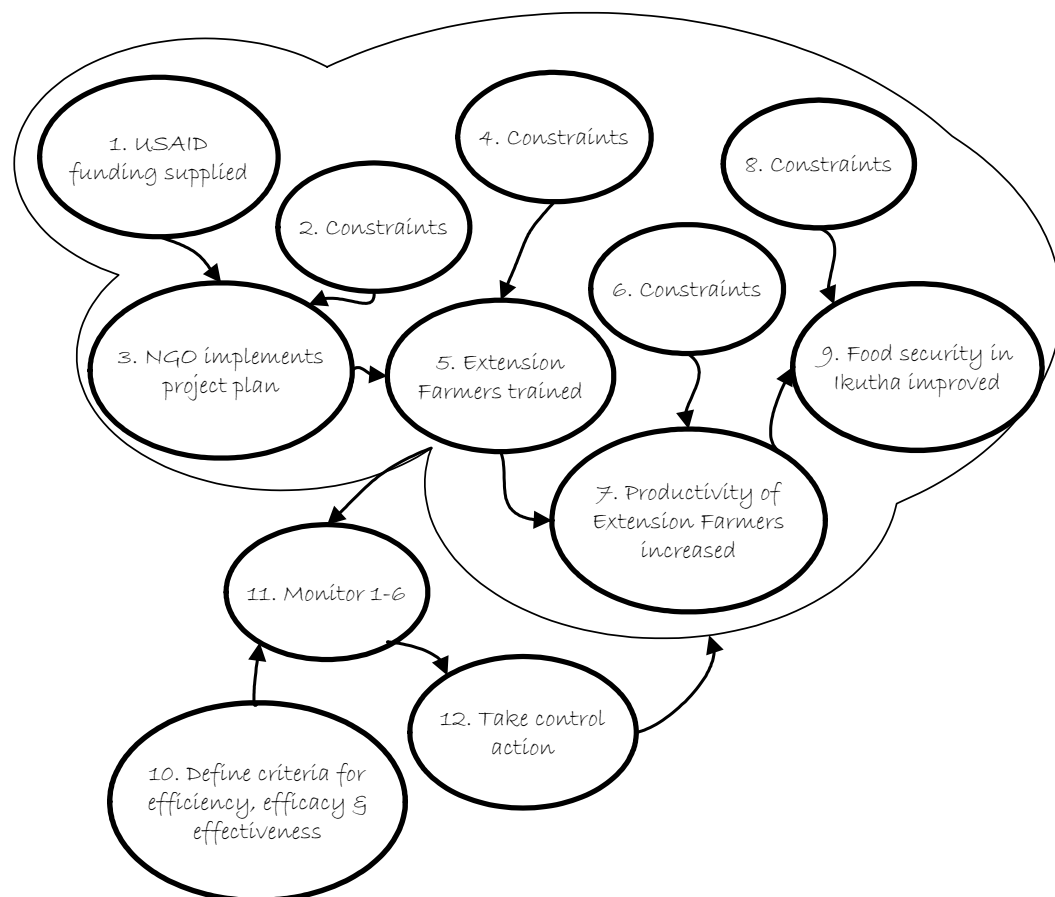
• Figure 12: SSM Conceptual Model of the Kenyan case study project

Defining the Research Focus

Developing the model shown in Figure 12 led to two important realisations that influenced the ultimate focus of this research. The first was conceptual in nature, the second, prompted a critical shift in my research focus.

My first realisation was that Checkland's 'monitoring and control subsystem' (activities 10, 11 & 12 in Figure 12) is analogous to the aid industry's 'monitoring and evaluation system' in terms of its apparent purpose. In both, the aim is to enable the 'operational subsystem' (or the 'aid project') to adapt and respond to the environment through processes of critical inquiry. Both are concerned with critical inquiry into dimensions of system success or failure. In Checkland's conceptual models, the process of inquiry is enabled by the 'monitoring and control subsystem'. In the aid project context, the process of inquiry is, in theory, enabled by the 'M&E system'.

My second realisation was that the 'monitoring and control subsystem' was itself problematic for the aid agency. My intention had been to use SSM to explore issues within the 'operational subsystem' (i.e. 'the project') perceived by various stakeholders to be problematic due to conflicting *weltanschauungen*. However, in the course of modelling the 'operational subsystem', I began to suspect that part of the problem faced by the aid agency stemmed from the 'monitoring and control subsystem'.

Perhaps the fact that conflicts emerged at the interface of competing *weltanschauungen* was less important than the ability of the NGO to gather relevant information to support decision-making about how to deal appropriately with this reality? Further, was it not the role of the 'monitoring and control subsystem' to enable 'informed debate' such that there could be 'accommodations' found between the various *weltanschauungen*?

This realisation triggered a subtle but profound shift in my research focus. Whereas I had seen myself as a researcher *utilising* the role of M&E Officer within an INGO to evaluate the effectiveness of aid, I now saw myself as a researcher *studying* the role of M&E Officer to foster an effective NGO. My research focus shifted from the 'operational subsystem' to the 'monitoring and control subsystem'. The role of M&E Officer had shifted from being part of the method of inquiry to being the subject of inquiry.

Pursuing this line of thinking, it became clear that there was a hierarchy of AR in process:

- The project, concerned with household food insecurity in Ikutha Division. That is, I realised that the project could itself be conceived as AR since it sought to explore an area of social concern, and in particular, to test an approach believed to be useful in dealing with issues considered problematic.

- The MEIS, concerned with AR into the performance of the project in tackling the problem of food insecurity.

- ▪ The implementation team members responsible for the M&E process, and involved with AR into the merit of the MEIS in promoting improved project performance.

- ▪ Myself as an action researcher concerned with the development of a MEIS framework.

The first point has profound implications for the role of a MEIS within an INGO, and in fact the role of 'the project' within the 'aid system'. These implications will be discussed in Section 5.5.3.

The MEIS as a 'Monitoring and Control Subsystem'

The shift in research focus led to an examination of the relationship between the two SSM subsystems. In particular, I began to explore the notion that it was possible to identify a generic framework to guide the development of the MEIS for the case study project and perhaps for any aid project.

The first breakthrough came when I noted that the structure of the operational subsystem of the case study project (as presented in Figure 12) was apparent in project design documents—specifically the logical framework matrix[43] (or 'logframe'). The fact that the project design was grounded in a generic theoretical model such as the logframe suggested that it was possible to represent any logframe-designed aid project as a SSM conceptual model. This generic conceptual model is presented in Figure 13 using terminology common[44] in logical framework analysis.

---

[43] Logical Framework Analysis (LFA) is essentially the aid industry standard tool for project design. Modifications to the logframe to address limitations encountered when it is applied for monitoring and evaluation purposes will be presented in Subsection 5.5.1.

[44] The various activities identified in the 'operational subsystem' are drawn from the 'vertical logic' of the logframe—specifically the left-hand column ('Description') and the right-hand column ('Assumptions') of the logframe matrix. The 'monitoring and control subsystem' implies the 'horizontal logic' of the logframe—the middle two columns comprising the 'Objectively Verifiable Indicators' (OVI) and 'Means of Verification' (MOV).
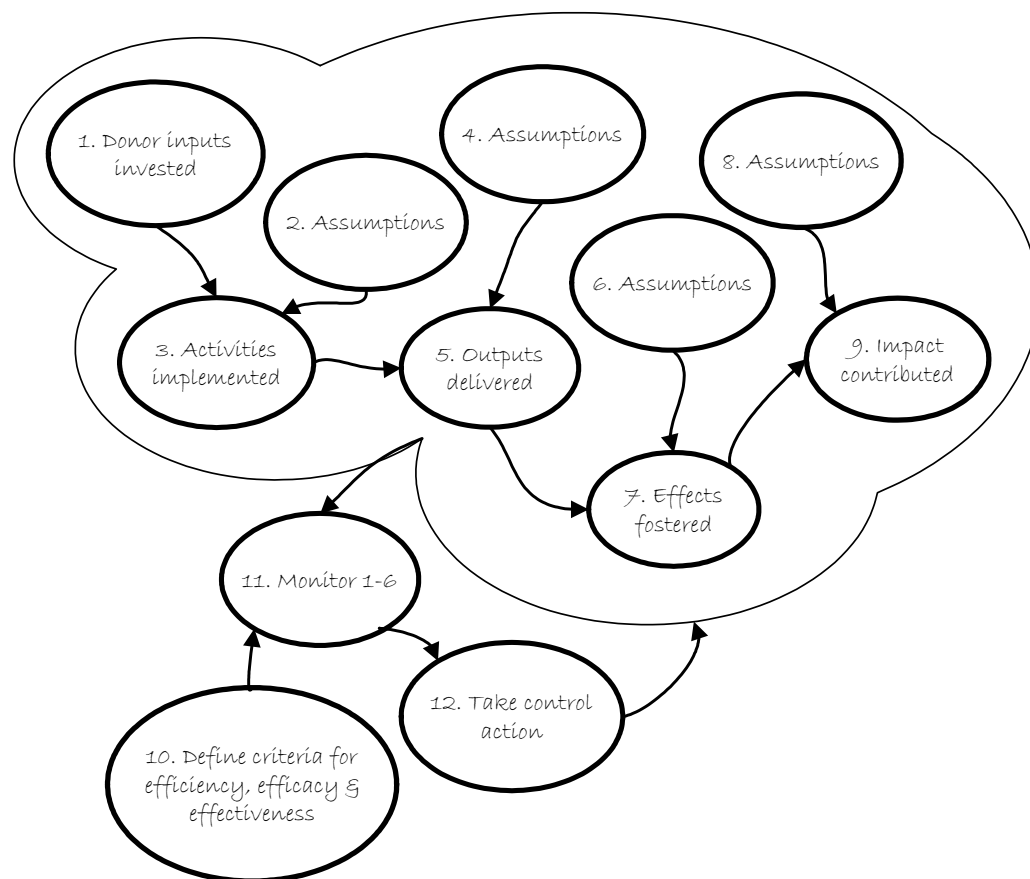
• Figure 13: Generic SSM Conceptual Model of a logframe-designed aid project

The generic nature of the model in Figure 13 suggested that it may be possible to dissect the 'monitoring and control subsystem' to derive a general model of a MEIS for any logic-based project design. Further, given the origins of SSM in information systems development and its apparent compatibility with the aid project system, there appeared to be merit in persisting with SSM as a methodology of inquiry into aid monitoring and evaluation. A deeper analysis of Checkland's interpretation of 'monitoring and control' ensued.

System-wide Performance Criteria

Forbes and Checkland (1987) elaborate the concept of 'monitoring and control' by asking: how could the system fail? They propose three dimensions of success/failure:

- Efficiency

- Efficacy

▪ Effectiveness

These terms are derived from the Latin *efficere,* to accomplish, but within the context of system (or project) success/failure, can have subtly different interpretations. Both efficiency and effectiveness are widely used in general management literature (e.g. Limerick, Cunnington et al. 1998), and aid project management literature specifically (e.g. Coleman 1987; Broughton and Hampshire 1997; Nichols 1999; Kelly 2002), however, their use has frequently been imprecise (Cracknell 2000)[45]. Efficacy, while not as widely used, offers a third dimension to the concept of project performance. Checkland (2001, p 78) states that "any monitoring and control subsystem must pay attention to all three of these 'Es'". I draw on Checkland's definitions of these terms but apply them to the context of the aid project system:

▪ **Efficiency** ('doing the thing right'; 'is there minimum use of resources?') concerns cost and process management, and is a core emphasis of the managerialist paradigm in general (Rees and Rodley 1995) and project management literature in particular (PMI 2000). Much work has been done in developing methods to increase the control exerted by project implementation teams, and hence improve project efficiency. A project is efficient if it delivers the planned outputs on or ahead of time and cost estimates. Within certain constraints, the efficiency of a project is a function of the management capacity of the implementation team. Checkland's 'monitoring and control subsystem' is concerned with efficiency since a system is likely to fail to achieve the desired ends without an economy of resource usage.

▪ **Efficacy** ('doing a successful thing'; 'does the means work?') concerns the merit of the theory of change of a given project. Every aid project is based on an implicit 'theory of change' (Davies 2002), or "intervention hypothesis" (Crawford, Perryman et al. 2004, p 32) that assumes that the deliverables (outputs) of the project will foster

---

[45] For example, the common phrase 'cost effectiveness', used to express the achievement of desired results within expected costs actually implies 'efficiency'.

changes in knowledge, attitude or practice (KAP) among people/communities with whom the project interacts (beneficiaries). That is, the extent to which the 'means' produce the anticipated 'ends'. Efficacy tends to be the focus of most evaluation literature and is a function of the project design—the extent to which the causality of the project is grounded in well-established theory and utilises appropriate mechanisms of social transformation[46]. A project design may be deemed efficacious when the outputs of the project result in the anticipated effects. Checkland's 'monitoring and control subsystem' is concerned with efficacy since the failure of a system (project) could stem from a failure of the means selected to bring about the transformation (T) expressed in the root definition.

- **Effectiveness** ('doing the right thing'; 'is this the right thing to be doing?') concerns the philosophical and developmental worthiness or appropriateness of an initiative (Crawford and Bryce 2003). Ultimately, effectiveness is determined by the ecological, social and economic sustainability of interventions and hence is a function of the policies and strategies adopted by the project implementing agency. Whereas efficacy is concerned with the performance of a single project in fostering social transformation, effectiveness is concerned with the performance of the whole system (i.e. the whole aid agency) of which any given project is a part. That is, given a project deemed to be efficacious, effectiveness is concerned with whether or not the project was worth doing. Checkland's 'monitoring and control subsystem' is concerned with effectiveness since the system under study may be deemed to have failed when it is perceived to have not contributed to high-level, longer-term goals (i.e. agency mission). In other words, effectiveness is a measure of the extent to which a particular system contributes to the wider context that gives that system purpose.

Thus, given accommodations between various *weltanschauungen*, aid is likely to be *effective* if:

---

[46] Although beyond the scope of this work, it is important to highlight the critical role of appropriate consultation and participation in efficacious project design.

- the project as the delivery mechanism is implemented *efficiently* and

- if the project design is *efficacious* and

- if enabling external factors (*assumptions*) persist.

Modelling a MEIS

Effective aid is a political and ethical imperative. In situations where concern for effectiveness is particularly high, Checkland (2001, pp 79–80) has found value in expanding the generic form of the SSM conceptual model (Figure 9) to distinguish judgements about effectiveness from judgements about efficiency and efficacy as shown in Figure 14.
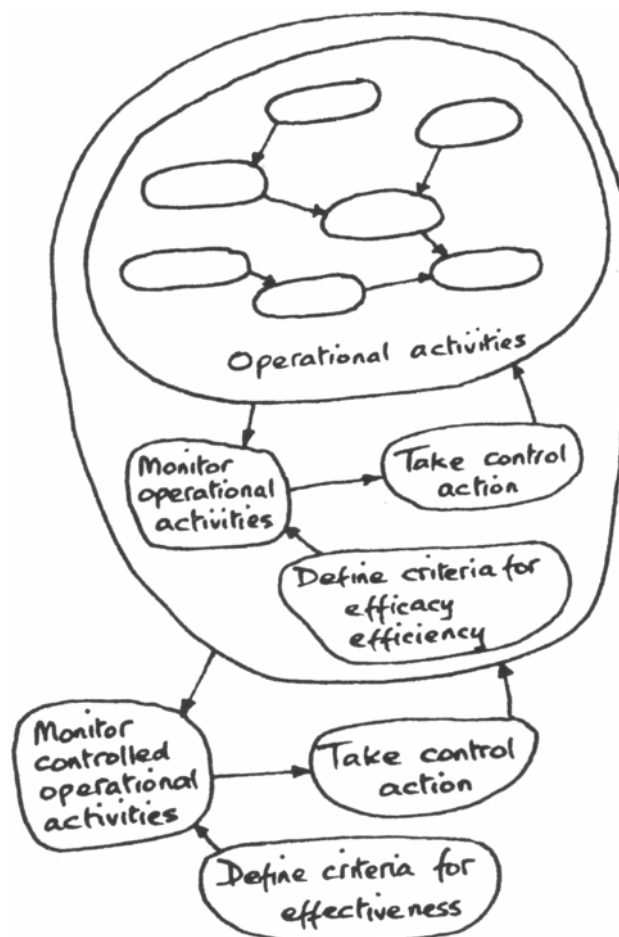
● Figure 14: The expanded structure of a SSM model (Source: Checkland 2001, p 79)

Figure 14 is a more sophisticated version of Figure 9 and draws attention to the fact that questions concerning the effectiveness of a system can be answered only by taking account of the wider system(s) of which the system in question

is a part. By building a system hierarchy[47], system designers can manage complexity without losing detail and without breaking the useful rule of 7±2 activities. Although Checkland does not specifically suggest it, there appears to be no reason why the model cannot be further extended so that efficiency and efficacy are similarly abstracted. This idea is modelled in Figure 15[48] and profoundly influences the MEIS framework proposed in Chapter 5.

---

[47] Checkland offers the term "stratified order" for situations where the word hierarchy conveys unhelpful connotations.
[48] N.B the terms 'operational zone', 'tactical zone' and 'strategic zone' refer to functional levels within international aid organisations. These terms will be elaborated in Subsection 3.5.1.
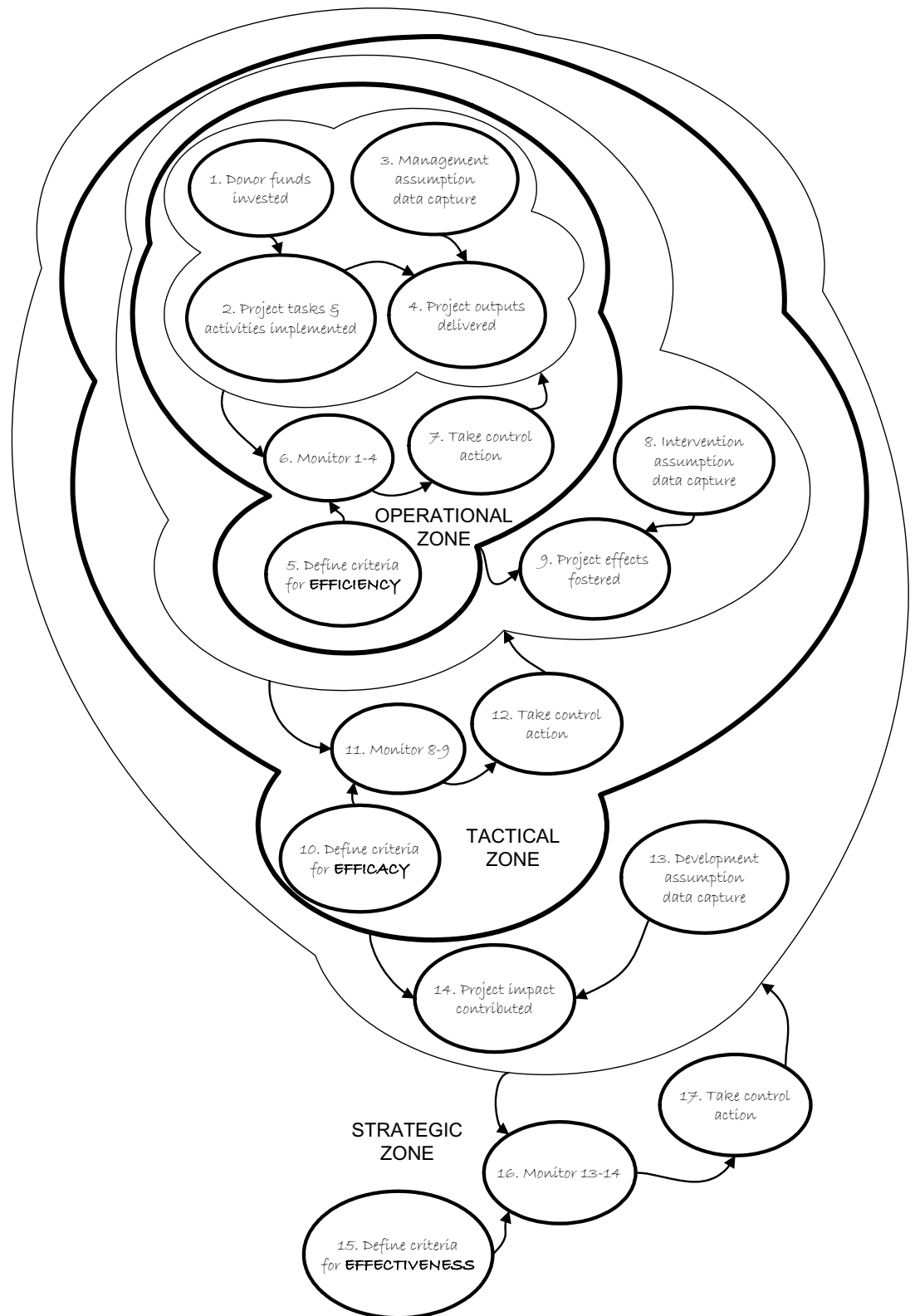
● Figure 15: A SSM conceptual model enabling individual attention to efficiency, efficacy and effectiveness

Given that the role of a MEIS may be considered as enabling AR into the performance of a project within a wider system of social transformation, the

idea of using SSM modelling to look into the mechanics of such a system was explored further. The following root definition was developed to elaborate the elements thought to influence the system:

- **Customer:** NGO personnel required to perform certain roles (operational, tactical and strategic roles) within the agency.

- **Actor:** the 'information system'.

- **Transformation process:** data → analysed data in a form relevant to the customers.

- **Weltanschauung**: information is an important ingredient for NGO success.

- **Owner**: Project donor.

- **Environmental constraints**: NGO personnel *comply* with information system protocols; adequate *skill* exists within the organisation to conduct relevant analysis; appropriate *mechanisms* to disseminate information are provided; *incentives* for organisational members to utilise information are apparent.

A possible root definition for a MEIS is therefore:

An information system, within a donor-funded aid project system, that converts data to knowledge about project performance for the benefit of NGO personnel, but is constrained by compliance, skill, mechanism and incentive.

The process leading to the model presented in Figure 16 proved useful to identify what was actually required within the 'operational subsystem'[49] of a MEIS. In essence, Figure 16 itemises the activities embodied in the transformation ('T') identified within the root definition[50].

---

[49] N.B. the 'operational subsystem' in Figure 16 is essentially an elaboration of the 'monitoring and control subsystem' (step 11) in Figure 13.
[50] That is, the transformation of data → knowledge.
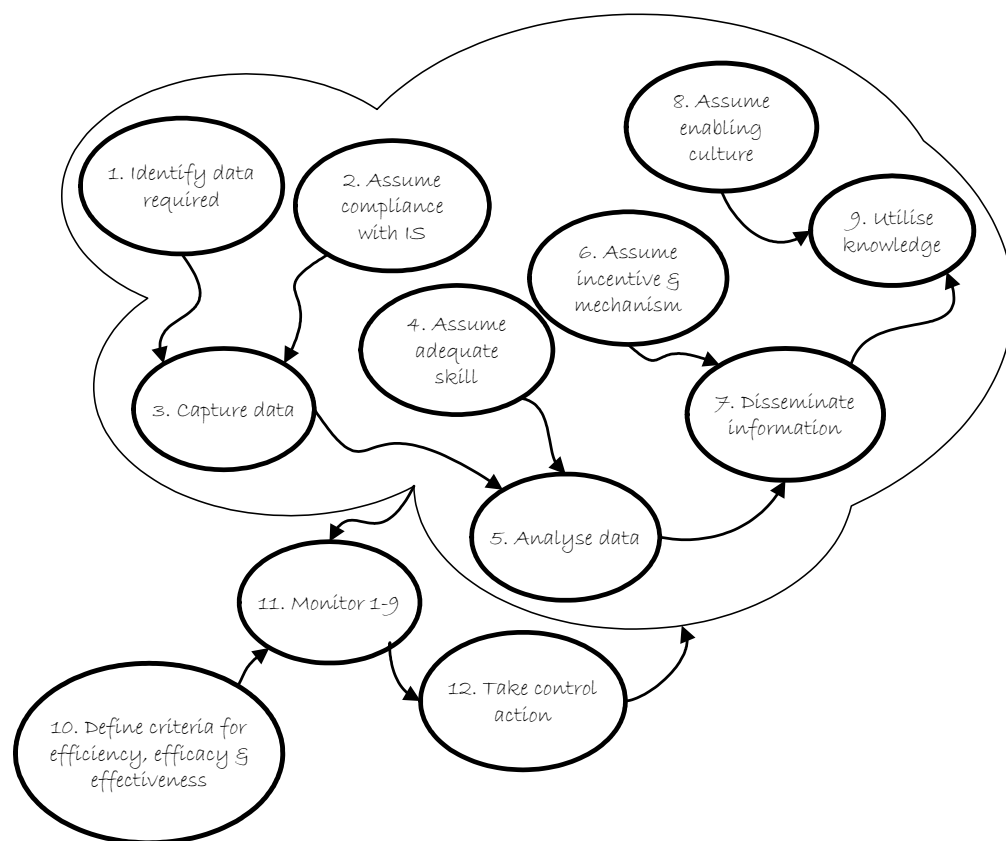
● Figure 16: SSM conceptual model of a MEIS

The implications of the model in Figure 16 will be discussed in Chapters 4 and 5. However, here it is worth noting that the model reflects the earlier realisation that the MEIS itself conducts a form of action research into the project. Each of the key steps in AR is evident:

- Plan (step 10)

- Act (steps 1–9)

- Observe (step 11)

- Reflect (step 12)

The roles 'observe' and 'reflect', which relate to the 'monitoring and control subsystem' of the MEIS 'operational subsystem', suggest further that an important function of the M&E staff is to conduct action research into the performance of the MEIS itself. That is, not only is the *project* required to exhibit efficiency, efficacy and effectiveness, but the *MEIS* is also expected to be efficient, efficacious and effective. Hence, there is a requirement for the

M&E staff to implement a continuous process of critical inquiry. They must determine whether the MEIS is gathering relevant data (efficiency) and converting this to knowledge (efficacy) that is in fact useful for the agency (effectiveness) in pursuit of its mission. This is comparable with what has been called 'triple loop learning' (Kitcher 1983; Bawden 1998):

- 'Knowing' (i.e. the efficiency with which the activities within the MEIS operational subsystem in Figure 16 proceed)

- 'Knowing about knowing' (i.e. the efficacy of the MEIS activities in supplying relevant or meaningful information about performance) and

- 'Knowing about the nature of knowledge' (i.e. the effectiveness of the MEIS in assisting aid agencies to reduce poverty).

The remainder of the task of establishing a MEIS is to identify what would serve as 'measures' of efficiency, efficacy and effectiveness and how to embed such thinking within the working culture of NGOs. The assumption is that with these things defined, corrective action can be taken if the system is not performing well according to these measures. These issues will be explored further in Chapter 5.

2.5   Conclusion

In this chapter, the selection of SSM as the research methodology has been justified. The background and rationale for the emergence of the methodology has been described and the broad steps involved with its implementation in this research have been outlined.

In describing how SSM was applied in this work, a general description of the fieldwork undertaken has been presented together with the various models developed using SSM thinking to interpret the NGO project system. These models proved useful not only as a tool to understand the 'area of concern', but as a means of clarifying the research focus. Specifically, the use of SSM modelling techniques led to a shift in focus from the 'operational subsystem' (the aid project) to the 'monitoring and control subsystem' (the MEIS). It was

proposed that a MEIS plays an important role supporting critical inquiry by NGOs into their effectiveness.

Applying SSM, a broad framework for a MEIS was developed based on Checkland's understanding of the three dimensions of performance: efficiency, efficacy and effectiveness. A sophisticated SSM model was proposed as the basis for operationalising the MEIS. This structure will be further explored in Chapter 5. A further SSM model was developed to define the process by which a MEIS operates. Constraints to each stage in this process were identified, and will be explored further in Chapter 4.

Finally, through the application of SSM thinking, it has been shown that three tiers of action research within this work are: myself as the action researcher of M&E systems, the MEIS as the 'action researcher' of the project system and the project system as the 'action researcher' of the poverty system. The elements of the AR cycle were noted in the SSM model of the MEIS developed in this chapter.

In the following chapter, I present a review of literature that informed the process of MEIS operationalisation. Specifically, relevant work from the fields of Information Systems, Organisational Effectiveness and Project Management will be applied to the unique issues encountered by aid agencies required to develop performance management systems, or Monitoring and Evaluation Informations Systems.

Chapter
3

Literature

This chapter:

- Identifies a dilemma inherent in the structure of the international aid industry

- Explores the role of information (and hence M&E) in grappling with this dilemma

- Reviews aid industry literature on M&E and highlights three conceptual issues that affect MEIS operationalisation

- Reviews three academic fields of inquiry (information systems, organisational effectiveness and project management) that underpin the topic of M&E

- Isolates divergent epistemological and ontological assumptions within each of the three fields reviewed, and identifies merit in both the functionalist and interpretivist perspectives for the purposes of aid M&E

Transdisciplinary research

draws on different

Academic fields

which in this thesis include

convert

data→ 'capta'→ info→ knowledge

Underpin the topic of

Monitoring & Evaluation

Project Management

Organisational Effectiveness

Information Systems

which supports

which is confused in the

Is the dominant approach in the

applies various

has the same epistemology as

also used as a framework to measure

Concerned with

which take an interest in their past

International aid industry

which is the dominant method in the

Organisations

to measure

Performance

traditionally concerned with

that contributes to

Tools & methods

LFA

such as

Systems Engineering & Systems Analysis

CSIRO's OPM

with 3 governing principles

alignment

practicability

Systems thinking

Financial performance

Sustainable development

but can be criticised because it is a

to manage

9 knowledge areas

using systems such as

Non-$ performance

but increasingly interested in

which is a

which can be viewed in 2 ways…

'Wicked' problem

that are not appropriate for

which are

Functionalist/biological/ teleological/Simons

Interpretive/socio-cultural/ teleonomic/Vickers

Structured problem solving apprdaces

make

organisational members

set

Organisatoinal members

debate /find

assumed to be appropriate by

Decisions

goals

the outcomes of which

accommodations between weltanschauungen

to acheive

considered problematic by

shared intention to act purposefully

and reach

3 AN INTELLECTUAL FRAMEWORK

3.1 Introduction

In Chapter 1, I outlined the motivations and assumptions that underlie this research along with the explication of a research question. In Chapter 2, I described the methodology adopted to explore the research question and its particular application in this work. The purpose of this chapter is firstly to defend the area of concern as appropriate for research and secondly to explore concepts in the literature that inform the response to the research question: *how can aid agencies best operationalise the concept of 'monitoring and evaluation' to continually enhance their effectiveness?*

I will begin by generalising the underlying factors that appear to have motivated interest in aid project monitoring and evaluation. I will reflect on the inherent tensions within the aid system that justify research in this area, and I will explore conceptual issues encountered. I will then examine more closely the thinking that underpins the notions of M&E through a review of relevant parts of the literature from the three academic fields identified in Section 1.5 and noted in the 'Russian doll' diagram (Figure 3). Recall that the rationale for these three fields was that M&E involves an *information system* concerned with improving the *organisational effectiveness* of agencies that implement *projects* in the aid industry.

I will argue that while these fields make valuable contributions to the topic of aid project M&E, the dominant epistemological and ontological assumptions that underpin them are in conflict with the transformative objectives of aid as an enabling mechanism of human development. That is, while these dominant assumptions are appropriate for dealing with 'tame' problems, or 'hard' systems, they are less appropriate for 'wicked' problems or 'soft' systems such as those encountered within the aid industry. Consequently, a philosophical shift may be required in the way that M&E is conceived of and in fact in the way that the 'aid project' is conceived.

3.2   The NGO Dilemma

The *raison d'être* of an aid agency is change[51]. In other words, aid agencies exist to foster social transformation (Lavergne 2002). Seemingly, the motivation for this agenda derives from an *ethical imperative* to address the problem of global inequity (Madeley 1991). The means by which most aid agencies achieve this end is through public funding—both via direct donations and via government support through the official aid system (Madeley 1991; Fowler 1997). The fundamental dependency of aid agencies on contributions from the public poses a *business imperative*—the need to engender ongoing donor support to ensure organisational sustainability.

INGO administered aid involves a nexus between three groups of actors[52]: the donor, the beneficiary and the aid agency. The role of the aid agency within this nexus is reflected in the common language use of the word 'agent'—a person or organisation that performs a particular service; typically one that involves liaising between two other parties. Thus, it may be said that an INGO sits astride the 'North–South Divide' since it essentially brokers the interests of the donor (the 'North') and the beneficiary (the 'South'). The ethical imperative noted above derives from the mission of the aid agency to address limits to sustainable development encountered by the beneficiary. The business imperative derives from the need to satisfy the accountability requirements of the donor[53].

The competing demands of these imperatives place aid agencies in a situation of dilemma (Smillie 1995; Fowler 1996; Kaplan 1999; Roche 1999). In the following two sub-sections I will discuss aspects of the two imperatives that comprise the 'NGO dilemma', and then its implications for this research.

---

[51] For example, the marketing 'tag-line' of the INGO responsible for implementing the Kenyan case study project was: "Changing the world, one life at a time".

[52] Refer to the SSM root definition (CATWOE) of an aid system on page 52 that identifies the 'customer' (C), 'actor' (A) and 'owner' (O).

[53] I acknowledge that reality is considerably more ambiguous than implied in these statements; that is, donors are not uninterested in learning, and beneficiaries are not uninterested in accountability. I have used these seemingly polemical statements as a device to isolate the *predominant* concerns of these stakeholders and to highlight the structural tensions inherent in the international aid industry. An NGO's task is assisted by the extent to which the predominant concerns of stakeholders intersect, and successful NGO's tend to work towards enhancing these intersecting spaces.

3.2.1 The Business Imperative

While the mission statements of most INGOs identify the beneficiary as their primary stakeholder, the reality for many agencies is that organisational survival is dependent on satisfying donor expectations (Fowler 1997; Smillie 1995). Thus, the business imperative acknowledges the pragmatic reality of the donor as a critical stakeholder.

The factors that motivate donor support for aid agencies are complex and typically involve a mixture of political, economic and altruistic agendas. However, regardless of the initial motivation, ongoing support by donors requires that they continue to perceive a 'value proposition'—a sense that their expectations have been met or exceeded. Shaw (2001) argues that each organisational stakeholder group makes an investment (money, labour, resources, support etc.) for which it receives some form of return (products, services, esteem, appreciation etc.). Stakeholders then continually assess the performance of the organisation in terms of the value they feel they receive relative to alternative 'investments', each with their own alternative value propositions. This 'return on investment' is described by Shaw (2001, p 3) as the "relative value added".

The demand by donors for a relative value-add is central to the donor–recipient nexus. According to evolutionary psychology, this need for reciprocity is innate within human relations (Ridley 1996; Wright 1994; Trivers 1971; Axelrod 1984; Kitcher 1993; Nowak, May et al. 1995), and hence is likely to persist as a feature of the aid industry. The aid donor requirement for reciprocal value is succinctly represented in a cartoon (reproduced in Figure 17) that appeared in Kenya's *Daily Nation* newspaper in mid-2001 at the time that the World Bank was deliberating on whether or not to assist Kenya's declining economy.
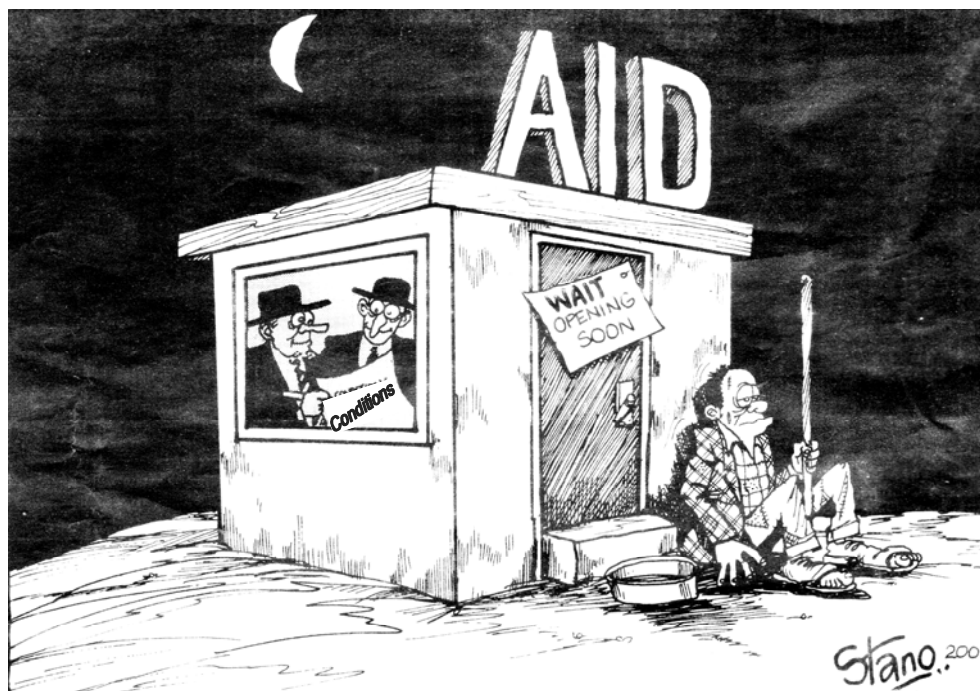
• Figure 17: The notion of reciprocity in aid as reflected in the "conditions" imposed by donors for accountability (Source: *Daily Nation*, June 2001)

The need for donors to be able to make informed judgements about the relative value added by their support for aid agencies is arguably what underpins the notion of 'accountability'. In other words, donors are dependent on a culture of accountability within their implementing partners in order to make informed funding decisions. But what does this mean in practice?

Gray, Owen et al. (1996) define accountability in terms of two responsibilities: the responsibility to undertake certain actions (or forbear from taking actions) and the responsibility to provide an account of those actions. Accountability in the context of aid agency performance has been defined by the Active Learning Network for Accountability and Performance in Humanitarian Aid (ALNAP) as (Raynard 2000, p 4)

the means by which individuals and organisations report to a recognised authority, or authorities, and are held responsible for their actions.

The Institute of Social and Ethical AccountAbility (ISEA 1999) identifies accountability as involving three main components:

- **Transparency** concerns the duty to account to those with a legitimate interest—the organisational stakeholders.

- **Responsiveness** concerns the responsibility of the organisation for its acts and omissions, including the processes of decision-making and the outcomes of these decisions.

- **Compliance** concerns the duty to comply with agreed standards regarding both organisational policies and practices, and the reporting of policies and performance.

Given these components, ISEA operationalises the notion of accountability as a cycle of four organisational processes:

- **Agreement** about the roles and responsibilities of the organisation and its members.

- **Taking action** for which the organisation is responsible.

- **Reporting** on, and accounting for, those actions.

- **Responding** to, and complying with, agreed standards of performance and the views and needs of organisational stakeholders.

In recent years aid agencies have come under increasing political and media pressure to demonstrate accountability (Hulme and Edwards 1995; van Brabant 1997; Roche 1999; Raynard 2000). Further, the scope of concern of aid agency stakeholders has widened from accountability for efficiency (i.e. donor resource utilisation) and efficacy (the traditional emphasis of much aid project evaluation work[54]), to accountability for effectiveness[55]—the extent to which the combined impact of an aid agency's portfolio of projects is in fact positively contributing to sustainable development[56].

---

[54] That is, the extent to which changes in beneficiary knowledge/attitude/practice (KAP) have been realised and can be plausibly attributed to aid interventions.

[55] A recent action research project initiated by the Australian Council for Overseas Aid (ACFOA) to explore the nature of NGO effectiveness is in part a response to pressures from the Australian Government for Australian NGOs to demonstrate a significant value-add in the aid delivery process (Kelly and Chapman 2003).

[56] That is, critical inquiry into aid policy and strategy—and in fact development theory—and the extent to which this has contributed to improved global equity.

While there is a sense that donors depend on the *intrinsic* motivation of aid agencies for accountability in any single instance, the fundamental power asymmetry inherent in the donor-recipient nexus ensures that aid agencies comply with accountability requirements of donors in order to engender their ongoing support. Hence, accountability tends to be predominantly an *extrinsically* motivated phenomenon. The more dependent on a given donor that an aid agency becomes, the more focussed they must be on satisfying their demands. Smillie (1995) reports that increased government support for NGOs since the early 1960s has in some cases, promoted a subtle alignment of NGO practice with government policy, and in other cases, outright dependency. According to Smillie (1995, p 149):

> Every NGO pays at least lip service to the notion that its primary accountability is to 'the beneficiary'. But most behave very differently. Most Northern NGOs tailor their appearance and their public messages entirely to suit the donor.

Korten (1990 in Smillie 1995) introduces the term 'public service contractors' to describe a situation where an NGO has effectively become a contracting agency of the donor, and hence is driven more by market considerations than values. He reports that such an agency is likely to be well managed and efficient, probably quite large and hence attractive to the donor. Korten outlines the pressures that drive NGOs towards this mode of operation:

- The fatigue of constantly existing at the margin of financial survival and the attraction of donor funding.

- The strain faced by more activist NGOs who must constantly fight established interests, values and practices.

- The difficulty of maintaining value consensus and commitment as the organisation grows.

- A sense of moral obligation to provide job security for paid staff.

- The belief that contracting will bring great funding and make it possible for the organisation to do more of those things it feels are truly important.

- The pressure from donors to 'professionalise'.

The increased demand for accountability by aid agencies has compelled a process of professionalisation and bureaucratisation within the NGO sector (Smillie 1995; Kaplan 1999). Fowler (1997, p 29) contends that:

> …over a period of 30 years the aid system has become an aid business demanding a high degree of professionalism from NGOs, displacing moral motivations with more functional concerns of effective delivery.

Arguably, much of the professionalisation of aid has been focussed on increasing the perceived level of control of aid managers (Earl 2002). In fact, the predominance of the project management approach[57] to aid delivery may be largely an artefact of the donor need for accountability and control (Madeley 1991; Marsden, Oakley et al. 1994; Smillie 1995; Fowler 1996; Fowler 1997; Kaplan 1999; Kelly and Chapman 2003). While specific discussion about the project management approach is reserved for Section 3.6, for the purposes of this subsection, it is sufficient to acknowledge an emerging view expressed by Fowler (1997, p 17) that "projects serve the bureaucracy of the aid system more than the micro- or macro-tasks".

Thus, the business imperative faced by INGOs derives from the predominant interest of donors in accountability. This manifests in stringent reporting requirements, and a shift towards professionalism and managerialism within aid agencies. However, much of this practice is based on assumptions appropriate for 'tame' problems within a 'hard' systems environment. This is unlikely to be appropriate in all instances and may be in conflict with the ethical imperative of aid agencies.

In the following subsection I will discuss the ethical imperative encountered by aid agencies, and then the basis for the tension between the two imperatives.

3.2.2   The Ethical Imperative

As noted at the start of Section 3.2, most aid agencies exist to foster social transformation. This typically implies a values-driven concern for improving the wellbeing of marginalised members of society (Kelly and Chapman 2003).

---

[57] In particular, the 'planning ethos' that underpins the logframe approach.

At some level, a judgement is made about the undesirability of the *status quo;* hence, there is a fundamental desire to foster change (Kaplan 1999). Thus, although the business imperative may dominate the organisational processes within many aid agencies, the ethical imperative for social transformation defines the wider reason for their existence.

However, beyond the broad *raison d'être* that most aid agencies share, diverse program strategies and approaches operationalise their values and principles. Kelly and Chapman (2003) report that the diversity within the Australian NGO sector is valued since it allows a wide range of possible responses to the complex issues of development. This diversity is indicative of the 'wicked' nature of the problem of sustainable development (Rittel and Webber 1973). That is, there is no consensus on the problem specification, the method to tackle the problem, or the basis for establishing when an adequate solution has been reached.

As noted in Subsection 2.3.1, the application of hard systems methodologies to 'wicked' problems has been shown to be inappropriate. Instead, 'wicked' problems require a 'soft', iterative process of inquiry through which the focus is on learning, rather than optimising (Checkland 2001). The iterations required by aid agencies engaged in learning about the 'wicked' problems of global inequity and sustainable development were described by the AR cycle: Plan → Act → Observe → Reflect (see page 11). In the words of Kaplan (1999, p 23):

> The development and refinement of strategy is achieved through the constant interplay between doing, planning and evaluation. The organisation has to act, has to go beyond whatever is given, has to try new ways of giving effect to its vision, of impacting on its context. It has to monitor its actions, learn from its successes and failures, even learn what it means by success and failure.

This cycle of critical inquiry and reflection requires organisational processes that promote informed debate among organisational stakeholders in order to find accommodations between the diversity of *weltanschauungen* represented, such that a shared intent to act purposefully can be reached (Checkland 1981).

Thus, while the business imperative is fundamentally deterministic and is grounded in the functionalist paradigm, the ethical imperative is fundamentally deliberative and is grounded in the interpretive paradigm. In elaborating this perspective Kaplan (1999, p 16) contends that:

> We need to take the time, and have the flexibility, to read specific situations…in order to design appropriate and necessarily transitory interventions. Such intelligent reading of development must remain supple, subtle and nuanced; it must be iterative and gradual; it must be reflective and reflexive. We must penetrate, but softly, so that we can intuit underlying movements.

3.2.3   The NGO Dilemma

Herein lies the essence of the 'NGO dilemma', and hence much of the tension evident within aid management literature and rhetoric. The different epistemological and ontological assumptions that underpin the business imperative and the ethical imperative are fundamentally in conflict. It may be said that while the business imperative is process-centric, the ethical imperative is actor-centric. The business imperative assumes that human development is linear, and can be 'project managed'. The ethical imperative recognises that human development is a complex, emergent phenomenon that by definition, requires the full participation of actors in ongoing discourse. With the business imperative there is an expectation that, provided the initial assumptions are correct, it is possible to predict the outcome of interventions and hence to hold actors in the process accountable (Kaplan 1999). With the ethical imperative, there is appreciation for the fact that, given the open systems nature of development, an adaptive, 'organic' approach to accommodate changes in contextual factors and new knowledge is appropriate.

The 'NGO dilemma' has been the focus of considerable debate among practitioners and commentators[58]. While donors, with a predominant interest in the business imperative have urged NGOs to adopt more rigorous project planning and management practices (e.g. AusAID 2002), supporters of an

---

[58] Smillie (1995, p 147) reports that NGOs "criticised by governments for lack of professionalism…are then accused of bureaucratisation when they do professionalise".

alternative view has resisted this trend. For example, in passionately arguing for the ethical imperative, Kaplan (1999, p 12) contends that:

…the concept of the 'development project' is anathema to the concept of development. It is a figment of an engineering mindset; at best, a managerial tool used by a form of management inimical to development work, at worst a donor requirement to fulfil inappropriate financial control systems.

In a similar vein, Earl (2002, p 7) argues that:

…linear 'cause and effect' thinking contradicts the understanding of development as a complex process that occurs in open systems. Pressure to demonstrate, measure, and be accountable for impact has led donors to conceptualise, implement and evaluate programs using tools and methods which seek a linear cause and effect relationship between a problem and the identified 'solution' to that problem.

The consequence is that if an NGO ignores either the business or the ethical imperative it is likely to be ineffective, and may not survive. An NGO that operates predominantly in the mode of Korten's 'public services contractor' (i.e. with a predominant focus on the business imperative) is likely to be less effective as an agent of social change because of the erosion of adaptive/responsive capability caused by the control-focussed managerialist methods employed by such organisations (Rees and Rodley 1995). On the other hand, an NGO that ignores the business imperative, even if effective as an agent of social transformation (i.e. with a predominant focus on the ethical imperative), is unlikely to remain attractive to donors and hence will be unable to garner the required resources to implement its mission.

In the following subsection I will present the implications of the 'NGO dilemma' for this research, and in so doing, justify the focus on monitoring and evaluation information systems (MEIS).

3.2.4   Implications for this Research

In the foregoing subsections I have demonstrated how international aid agencies are faced with a dilemma deriving from the predominant interests of their two main stakeholder groups: donors and beneficiaries. Donors, with a

strong need for *accountability* demand that aid agencies professionalise and adopt managerialist modes of operation. Beneficiaries, immersed in the systemic, 'wicked' reality of poverty and 'underdevelopment' expect that aid agencies participatively and iteratively engage in *learning* about the diversity of *weltanschauungen* on the nature of the problems. The methods and assumptions that underpin these perspectives are in conflict, and hence pose a dilemma for NGOs.

The consequence is that to be successful[59], an NGO must balance the dual demands of the dilemma (Roche 2001). According to Fowler (1997, p xiii):

> A…characteristic of successful NGOs is their ability to recognise, organise and manage the ambiguities and dilemmas which are built into the international aid system and are inherent in the role of civic—as opposed to state or market—actors managing social, economic and political change.

In other words, to be successful, an NGO must be competent at accountability *and* learning. An over-emphasis on accountability at the expense of learning is likely to foster a donor-dependent and defensive organisational culture, which while exhibiting strong management and control systems, is likely to be less responsive and adaptable to changing beneficiary circumstances. On the other hand, an over-emphasis on learning at the expense of accountability is likely to result in a decline in donor support.

This view is consistent with Shaw (2001) who argues that the capacity of an organisation to satisfy multiple value propositions to diverse stakeholders simultaneously is a critical factor in its success. Given the foregoing, it may be argued that the 'critical success factors' (Olve, Roy et al. 1999) facing an NGO are *learning* and *accountability.* Thus, a successful NGO is one that has managed to 'strike a balance' (Fowler 1997) between the competing demands associated with these factors[60]. Such an NGO can sit *comfortably* astride the 'North–South divide'. It is successful because it has developed mature

---

[59] Davies (1998) argues from an evolutionary theory perspective that the ultimate test of organisational success is its survival. In other words, the survival of an organisation suggests it is perceived to have offered a sufficient value proposition to its stakeholders to legitimise its existence.

[60] den Heyer (2001) notes that while few commentators explicitly align wholly with either the learning or accountability focus, most allude to a subtle emphasis.

supporting systems and an enabling organisational culture to ensure that it can address the predominant needs of *both* main stakeholder groups. A successful NGO must on the one hand appear to the donor as a professional and accountable project management organisation that reliably implements projects on time and within budget; while on the other hand appear to the beneficiary as a partner in a transformative relationship that transcends any single project.

This perspective is in line with the philosophy of consilience and transdisciplinarity that underpins this research, as outlined in Section 1.6. The seeming contradictions are real. In recognising this Kaplan (1999, p 10) states:

> Development is non-linear, therefore unpredictable and even anarchic; at the same time, there appear to be natural phases, sequences and modalities which can be said to characterise the process as a particular pattern or arrangement. The contradiction is a real one, but rather than being the kind of contradiction which demands resolution, it can be seen as the beating heart of development itself, an irreducible tension which provides the energy to fuel the process. A constant interplay between order and chaos, between form and flow.

Fowler (1997, p xiii) appears to hold a similar view in arguing that:

> …effectiveness is achieved by those NGOs who find and maintain the right balance between the contradictory forces, expectations, demands and processes associated with performing complex tasks in collaboration with resource-poor powerless people in unstable and often hostile environments.

Having recognised the need for aid agencies to balance the tensions between the critical success factors of learning and accountability, the remaining question concerns how—in practical terms—to do this. Arguably, this requires relevant, accurate and timely *information*. According to Yeo (1993):

> The overall performance of a system, and sometimes its survival…are dependent on effective communication and certain controlling mechanisms based on timely and accurate feedback information.

Within the aid industry, information for this purpose is gathered and processed through monitoring and evaluation information systems (MEIS)[61]. This perspective is implied in numerous aid industry sources; for example, the United Nations Development Program in its comprehensive M&E handbook (UNDP 2002, p 31) states that: "the focus of monitoring and evaluation is to enhance the effectiveness of UNDP assistance". Fowler (1997, p xiii) argues that "the right systems within NGOs are a critical element in promoting organisational effectiveness". Thus, the critical nature of the NGO dilemma, and hence the importance of relevant, accurate and timely information supplied by a MEIS may alone justify research in this area[62].

Further justification for this research derives from attempts to operationalise the notion of M&E that have been confronted with a range of practical and conceptual constraints. In Chapter 4, I will discuss some of the practical constraints encountered in this candidature. In the following section, I will explore some of the conceptual issues. I will then review parts of the literature from the fields of information systems, organisational effectiveness and project management in order to inform discussion about the conceptual issues raised.

3.3   M&E—the Rhetoric & the Reality

The term 'monitoring and evaluation' (and its concomitant label, 'M&E') came into common usage in the aid industry over the last 20 years (Cracknell 2000). The notion of trying to measure the performance of an aid project throughout the life of the project, as opposed to simply trying to understand what went right or wrong in hindsight, was promoted by Herb Turner in the 1970s (Cracknell 2000). During the early 1980s, Casley and Lury were key exponents for the establishment of M&E Units by the World Bank throughout the world (Casley and Lury 1981). Despite the fact that Casley partially recanted[63] this position in 1986 (Casley and Kumar 1986), the expectation that

---

[61] A MEIS is a strategy and a set of protocols to support M&E process. This concept will be elaborated in Section 5.3.

[62] N.B. Successful M&E is a necessary but not sufficient condition for resolution of the NGO dilemma. Other factors such as an enabling organisational culture are likely to be just as important as the development and deployment of an information system to support M&E processes.

[63] The recantation was not to do with the philosophical merit of monitoring and evaluation *per se*, but the cost of setting up and operating large M&E Units throughout the world.

M&E should form an important component of any aid project had already become entrenched throughout the industry.

There is wide agreement about the importance of M&E (Broughton and Hampshire 1997; Cracknell 2000; den Heyer 2001a; Earl 2002). While there are differences in wording, the broad emphasis on the supply of relevant, accurate and timely information to ensure satisfactory results for a variety of stakeholders is recognised and generally considered a high priority[64]. However, beyond this broad view, the inherent complexity of the 'NGO dilemma' ensures that aid agencies encounter both practical and conceptual issues in attempting to operationalise the ideals of M&E. In the following subsections, I will examine the conceptual issues of definition, function and perspective:

- **Definition:** how the process of 'monitoring' is distinguished from the process of 'evaluation' to enable operationalisation of a MEIS.

- **Function:** how the MEIS, as a mechanism to enable informed judgements about social change, can grapple with the divergent epistemological and ontological assumptions that underpin the NGO dilemma.

- **Perspective:** how the M&E function can be positioned such that it contributes to enhanced project performance and organisation-wide performance.

3.3.1   M&E Definition

While there is consensus at the paradigm level regarding the broad purpose served by M&E in improving aid performance (den Heyer 2001a), there appears less agreement on the specifics of what distinguishes 'M' from 'E'. In the foreword to the IDRC Outcome Mapping manual (Earl 2002), Michael Quinn Patton[65] states:

---

[64] This is consistent with the SSM root definition of a MEIS presented in Section 2.4 (page 63) in which the underlying assumption (expressed as the 'W' – *weltanschauung* – in CATWOE) was that "information is an important ingredient for NGO success".

[65] The author of *Utilisation-focussed Evaluation*. Arguably one of the most cited texts on evaluation.

> The question can overwhelm: what is the difference between evaluation and monitoring?

In the comprehensive and well-researched M&E guide developed by IFAD (2002), the authors, after attempting to elaborate definitions of 'monitoring' and 'evaluation', conclude in a footnote (p 2– 3):

> There is no consensus about terminology in planning and M&E. This Guide does not make an absolute distinction between "monitoring" and "evaluation" because, in practice, the two processes overlap and are part of a systematic participatory learning process.

In the same vein, den Heyer (2001, p 41) contends that:

> In general, program monitoring and evaluation is a set of activities that systematically gathers information on the program and determines value for accountability and learning…the concepts are often used interchangeably.

This ambiguity has created practical challenges with operationalising M&E systems, and hence their expected potential has tended to go unrealised (Broughton 1996; Cracknell 2000; Earl 2002; Broughton and Hampshire 1997; IFAD 2002; ACFOA 2002; Zaki 2000).

A possible contributor to the ambiguity surrounding 'M&E' is the fact that 'evaluation' is a recognised field in its own right, particularly in the USA, and has received considerable attention in literature (Cracknell 2000; McTaggart 1991). Conversely, 'monitoring' tends to be amorphous (Cook 1998), and rather than being a discrete field of inquiry, appears to draw on fields such as management[66] and operations research.

Despite the predominance of the field of evaluation, many commentators argue that monitoring and evaluation are distinct processes. For example, Casley and Kumar (1986) resist use of the universal acronym 'M&E' since it implies a single function. UNDP (1997) argues that monitoring and evaluation differ yet

---

[66] In particular, the emerging management field of organisational performance measurement (Shaw 2002, pers. com.) and a body of work on 'management and control' within the project management discipline (PMI 2000).

are closely related, and further, (UNDP 2002, p 24) that "evaluation is an important monitoring tool and monitoring is an important input to evaluation".

This seems to imply that the processes of monitoring and evaluation are distinct but inform each other, and hence should be planned systemically. However, attempts to precisely differentiate the practical processes tend to result in contradictions, duplications and ambiguities. For example, under the heading "The relationship between Monitoring and Evaluation" in the UNICEF (1990, p 2) M&E Guide, readers are advised that:

> Both monitoring and evaluation are management tools. In the case of monitoring, information for tracking progress according to previously agreed on plans and schedules is routinely gathered. Discrepancies between actual and planned implementation are identified and corrective actions taken. When findings are used to monitor the development results (effects, impacts) it is sometimes referred to as ongoing evaluation.

> Evaluation is more episodic than monitoring. It is facilitated by monitoring but utilizes additional sources of information. Many such sources are identified during project reviews when there is a need to understand why inputs did not lead to planned outputs. Evaluation focuses on specific questions related to effectiveness and impact in order to influence future programmes or services.

Aside from noting some form of inter-relationship, the above explanation provides little assistance with implementing an M&E system. According to this definition, monitoring and evaluation both involve identifying variance between planned and actual; both are concerned with operational-level information (outputs) and strategic-level information (impact); monitoring is "routine" while evaluation is "episodic". Further, monitoring is said to be known as ongoing evaluation, and evaluation is said to be facilitated by monitoring.

Intriguingly, the broader project management literature offers little insight into the precise definitions, thus suggesting that the emphasis on monitoring and evaluation, and in fact the term 'M&E', may be distinct to the aid industry. For instance, in the Project Management Body of Knowledge (PMBOK) periodically produced by the Project Management Institute (PMI 2000), the

subject of M&E is not represented as a discrete 'knowledge area'. Rather, a review of the subsections reveals the following M&E-related topics dispersed throughout seven of the nine 'knowledge areas':

- integrated change control (section 4.3 of 'Project Integration Management');

- scope change control (section 5.5 of 'Project Scope Management');

- schedule control (section 6.5 of 'Project Time management');

- cost control (section 7.4 of 'Project Cost Management');

- quality control (section 8.3 of 'Project Quality Management');

- performance reporting (section 10.3 of 'Project Communications Management');

- risk monitoring and control (section 11.6 of 'Project Risk Management').

Several aid industry commentators, presumably wishing to clarify and distinguish the processes, introduce additional terminology; for example:

- *program* monitoring and *impact* evaluation (Riely, Mock et al. 1999);

- *input/output* monitoring, *benefit* monitoring and evaluation (Cook 1998);

- *efficiency* monitoring, *performance* monitoring and evaluation (Kelly 2002a);

- monitoring, *review* and evaluation (Broughton and Hampshire 1997).

After reviewing numerous sources, I drafted the following table while conducting an M&E workshop with an NGO in Rwanda in an attempt to address the bewilderment of participants over the definitions. Table 3 captures what I concluded to be the conventional view of M&E.

Monitoring	Evaluation
Internal focus on management needs	External focus on stakeholder needs
Concerned with efficiency	Concerned with effectiveness
Structured top-down methods (positivist)	Participatory bottom-up methods (interpretive)
Regularly scheduled reporting processes	Periodically scheduled investigative processes
Emphasis on decision-making and accountability	Emphasis on organisational learning and accountability
Asks "are we doing the *thing right*"?	Asks "are we doing the *right thing*"?
Absolutist view ("are we doing what we said we would?")	Philosophical view ("is what we're doing actually worth doing?")
Project team accountable to project management	Project management accountable to stakeholders – beneficiaries and donors
Monitoring information system provides important ingredient for evaluations	Evaluations provide feedback about relevance of monitoring information system
Primary "clients" are internal (i.e. project management & program administrators)	Primary "clients" are external (i.e. donor, beneficiaries, host government)
Attempts to measure inputs, activities & outputs	Attempts to measure effects and impact

- Table 3: A summary of the conventional differentiation between monitoring and evaluation (Crawford 2001)

The conventional view expressed in Table 3 essentially seeks to differentiate between the processes of 'M' and 'E' by when they happen (timing), who does them (responsibility), why they are done (purpose), and what information they utilise (scope and data) (Thornton 2001). However, even these dimensions of an M&E definition, while seemingly precise, are not without exception:

- **Timing:** while most authors imply that monitoring is conducted more frequently than evaluation and adopt words such as 'continuous' (Walsch 2000) and 'regular' (IFAD 2002) when describing monitoring; and 'periodic' (EC 2001) and 'time-bound' (UNDP 2002) with reference to evaluation, these attributes are arbitrarily defined. For example, while monthly 'evaluations' conducted in a humanitarian emergency may be considered 'periodic'; annual 'monitoring' in a multi-year multi-sectoral project may be considered 'regular'.

- **Responsibility:** there is a view in much of the rhetoric and literature that monitoring is an internally implemented assessment process[67] while evaluation is expected to be an independent assessment process

---

[67] That is, 'internal' in the sense of being implemented by people familiar with or responsible for the project.

conducted by persons external to the project. However, this does not adequately cover the reality that a range of scenarios is encountered including: 'self-administered'[68] evaluations; evaluations conducted by organisational members removed from the subject project[69]; or evaluative exercises that seek the participation of a range of 'internal' and 'external' actors.

- **Purpose:** many commentators identify that monitoring plays an internal audit role to ensure accountability, while evaluation is concerned more with the philosophical or developmental merit of the actions undertaken and hence is focussed more on learning. However, other commentators identify that evaluations also play an accountability/audit role, and that monitoring of effects and impact can also contribute to learning/debate about the merit of development results (Bastable 2001, pers.com.; Cracknell 2000).

- **Scope and data:** much of the literature aligns M&E processes with logic-based models such as the logframe. Within this construct the dominant view seems to be that monitoring is concerned with operational-level data (i.e. inputs, activities and outputs) and as such focuses on efficiency. Evaluation on the other hand, is frequently identified with strategic-level data (i.e. effects and impact) and hence is fundamentally concerned with effectiveness. However, this does not recognise the reality that in conducting project evaluations, one cannot divorce oneself from the issue of efficiency; and in monitoring project performance, one must remain cognisant of the purpose and strategic intent of the project, and hence the effectiveness of the strategy employed.

The view summarised in Table 3 formed the basis for the MEIS developed in the Kenyan case study project (reported in Chapter 4). However, in reflecting on the ambiguities raised above, and the associated practical challenges inherent of this definition of M&E, I later explored an alternative way to

---

[68] That is, the situation where the implementation team is charged with the responsibility of evaluating the performance of the project and reporting to stakeholders.
[69] For example, in the Kenyan case study project, the mid-term evaluation was led by an internal evaluator based in Washington DC.

distinguish between the processes of 'M' and 'E'. This alternative perspective (discussed in Subsection 5.4.2) removes the need for the arbitrary distinctions discussed above, while recognising the interdependence of the processes in order to gain a holistic view of project and agency performance. It is hoped that this novel definition of the terms will assist aid agencies to operationalise M&E systems.

Beyond the particulars of how 'monitoring' is distinguished from 'evaluation' at a process level, is the issue of how M&E (in a general sense) promotes the desired organisational outcomes. That is, how does the function of M&E contribute to improved organisational performance? In the following subsection, I will explore the conceptual issue of MEIS function.

3.3.2   M&E Function

As noted earlier, international aid agencies exist to foster change. Given the foregoing discussion, it may be argued that the function of a MEIS is to enable informed judgements about the nature and extent of changes plausibly attributable to the work of an aid agency. But what is 'social change'? How can it be conceived or represented? On what basis can judgements about it be made?

As noted in Subsection 3.2.4, these 'informed judgements' about the nature and extent of changes fostered by an aid agency are required so that the agency can be *accountable* and can *learn*—the two critical success factors (CSF) that underpin the NGO dilemma. The essence of the NGO dilemma derives from divergent epistemological and ontological assumptions within the respective CSFs. I offer Table 4 as a summary of these assumptions and will discuss each below.

| | | Critical Success Factor | |
		Accountability	**Learning**
	Ontology	Linear	Complex
	Epistemology	Functionalist	Interpretist

● Table 4: Assumptions that underpin the NGO Dilemma

In the context of M&E function, ontology may be described as 'how we conceive of, or represent change' and epistemology may be described as 'how

we assess or judge change'. There are continuums of ontological and epistemological assumptions about social change. Table 4 presents what may be considered the extremities of these continuums. In terms of the NGO dilemma, a linear/functionalist view of social change underpins the accountability CSF; a complex/interpretist view underpins the learning CSF.

If, as argued in Subsection 3.2.4, the role of a MEIS is to contribute to the resolution of the NGO dilemma (i.e. to enable an aid agency to achieve *both* the CSFs: learning and accountability), consilence must be found in the polemic. This requires an appreciation for the underlying assumptions.

Representations of Change (Ontology)

The ontological assumptions of *linearity* that are central to the donor's demand for accountability dominate international aid project planning and M&E (Marsden, Oakley et al. 1994; Fowler 1997; Gasper 1997; den Heyer 2001a; Davies 2002; Kelly and Chapman 2003). Linearity assumes that development is predictable—that there is a direct causality between input and impact (Earl 2002). According to Kaplan (1999, p 6), this view assumes that provided initial planning assumptions are correct, "we should be able to predict output based on input". This ontological assumption is epitomised in the logframe approach—in particular, the 'impact chain' (the left-hand column of the logframe matrix) that describes the logical steps anticipated in the social change process.

The ontological assumptions of *complexity* appreciate the open systems, even anarchic (Kaplan 1999) nature of development. Much of what is written about this view resonates with the 'hard/soft' distinction discussed in Section 2.3.1. Whereas the linear view assumes that social change can be engineered, the complex view recognises that social change can only be fostered or influenced and involves multiple endogenous factors (Earl 2002).

Davies (2002) discusses representations of social change processes and offers a typology of six theories of change ranging from simple linear models (such as the 'impact chain') to complex networks of reciprocal influence. But herein lies the essence of the ontological dimension of the NGO dilemma. While

simplistic linear theories of change may lack integrity when considered in the light of complex social dynamics, more elaborate theories of change, such as those contributed from chaos and complexity (Gleick 1998; Goldspink 1999; Capra 2003), lack the useability required by all levels of international aid agencies[70]. This issue was highlighted by Davies (2002, p 1) at a conference of the European Evaluation Society:

> International aid agencies face major problems when attempting to evaluate their achievements…How can theories of change be adequately represented in summary forms that respect the complexity and diversity involved, but which also retain some economy and simplicity, and thus be useable by those in more senior positions?

Thus, the underlying assumptions about the nature of change can have a profound influence on how the MEIS is expected to function. A MEIS must be able to represent change in a form that is rigorous and yet useable.

Although widely employed in aid project planning, a major criticism of simple linear theories of change is that they ignore the reality that a project implementation team has limits to the influence that it can exert over the social change process. This notion has been expressed by Smutylo (2001) with reference to the 'impact chain' (the logic that is central to the logframe) in a diagram reproduced in Figure 18. The implication of Figure 18 is that an aid project implementation team exerts decreasing influence along the 'impact chain'. For example, the implementation team can exert almost total control over donor-supplied project inputs; reasonable control over the delivery of planned outputs; but virtually no control over the extent to which beneficiaries embrace the social change process and accommodate it within social norms.

---

[70] My experience concurs with critiques of the logframe by Gasper (1997), Davies (2002) and others who find that aid agency staff have frequently struggled to rigorously apply the simple linear theory of change that underpins the logframe. Seemingly, elaborate theories of change would pose even greater organisational challenges.
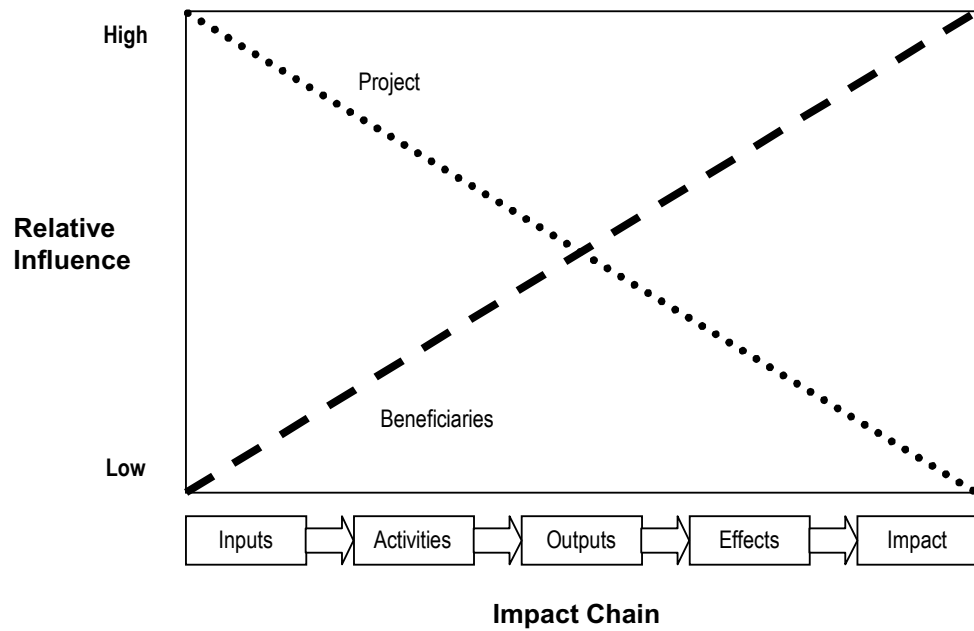
Impact Chain

• Figure 18: Relative influence of actors on impact chain elements (Source: Smutylo 2001)

Covey (1990), Fowler (1997) and others have also discussed the reality that change agents encounter limits to the control they can exert over social change processes. There is a sense that while there are some factors over which a change agent can expect to exert *control*, other factors may only be *influenced*. Still other factors, while being the *concern* of the change agent, are beyond direct influence. This hierarchy is represented in Figure 19.
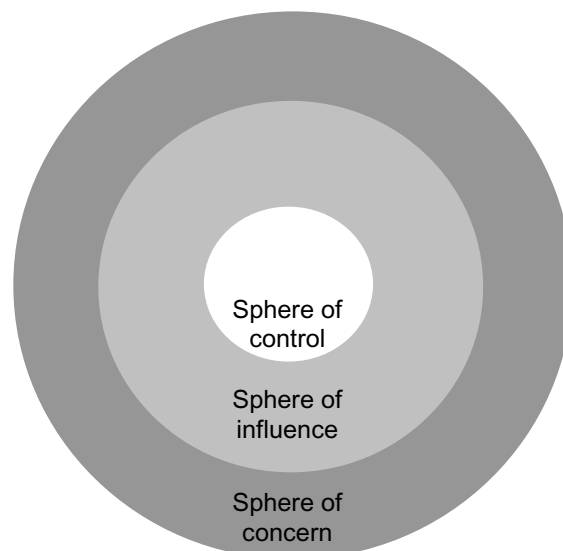
• Figure 19: The relative control of change agents on social change processes

Models of social change have been the subject of considerable work. A dominant construct to describe social change is the theory of 'diffusion of

innovations' (DoI). DoI theory is traced back through several research traditions to the work of Gabriel Tarde (1903 in Rogers 1995) who published *The Laws of Imitation* in which he sought to explain why different innovations[71] conceived at the same time spread at different rates. The classic work of Rogers (1962) highlighted the common foundations of numerous research traditions concerned with diffusion, and urged a unified cross-disciplinary viewpoint in diffusion research. In more recent work Rogers (1995, p 94) reports that:

> Although diffusion research began as a series of scientific enclaves, it has emerged in recent years as a single, integrated body of concepts and generalisations.

'Innovation' in this context refers to any novel idea, practice or object. 'Diffusion' is the process by which an innovation is communicated through certain channels over time among the members of a social system. DoI theory has been widely applied to international development (Rahim 1968; Rogers 1995) since it corresponds to the underlying mission of aid agencies wishing to foster change in the world.

A metaphor of the DoI process is the ripples observed when a stone is thrown into still water (Crawford, Perryman et al. 2004). In the context of international aid, a donor-funded project may be considered the initial splash made by the stone. The disseminating ripples may then represent the subsequent diffusion process throughout the social system. The metaphor is a useful device to express the time dimension in the diffusion process[72] and the diminishing influence that the project implementation team can exert over the social process (conveyed in the metaphor by the fact that the ripples subside as they move further from the source). It also conveys the notion that the linear theory of change expressed in the impact chain is but one possible pathway of change. Branching and/or parallel pathways may also become evident (Davies

---

[71] Tarde defined 'innovations' as words, mythological ideas, industrial processes etc. (Rogers 1995).

[72] According to Rogers (1995), the time dimension in DoI manifests in (a) the innovation decision process—the time taken for an individual to pas through the stages: knowledge → persuasion → decision → implementation → confirmation; (b) the innovativeness of an individual/unit of adoption—that is, the relative earliness/lateness with which an innovation is adopted compared with other members of a system; (c) an innovation's rate of adoption in a system—usually the number of members of a system that adopt the innovation within a given period.

2002). A melding of the concept of diminishing change agent control along the 'impact chain' (from Figure 18 and Figure 19) with the ripple metaphor is depicted in Figure 20.
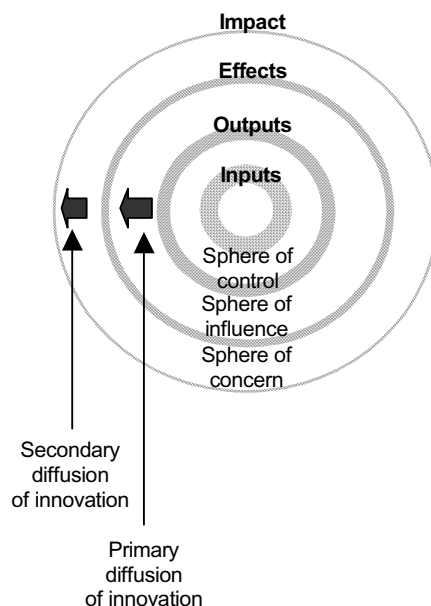
- Figure 20: The 'ripple effect' metaphor of diffusion of innovation including the linear theory of change anticipated by the 'impact chain' (Source: adapted from Crawford, Perryman et al. 2004)

Hence, while DoI theory has been widely applied to international aid in a general sense, it is specifically relevant to the discussion on the NGO dilemma. The DoI process retains a sense of linearity with regard to the functional process of diffusion; it also acknowledges the open systems nature of social change, and the myriad influences that may promote or erode the diffusion process within a social system[73]. Thus, in keeping with the philosophy of consilience, and while acknowledging the limitations of the theory, DoI has been adopted in this thesis as a conceptual framework through which to appreciate the linear view required for accountability *and* the complex view appropriate for learning about 'wicked' problems.

The implications of this stance for a MEIS are that:

---

[73] Rogers (1995) contends that the adoption of an innovation is influenced by its: (a) relative advantage; (b) compatibility; (c) complexity; (d) trialability; (e) observability.

- The limits to the control of the implementation team over social change must be explicitly acknowledged (i.e. the spheres of control, influence and concern).

- The linear change anticipated in the project design (e.g. the impact chain) must be clear for accountability purposes but alternative change pathways that emerge must also be captured for learning purposes.

Judgements about Change (Epistemology)

In the same way that the divergent ontological assumptions of linearity and complexity contribute to the NGO dilemma, divergent epistemological assumptions are apparent in the two CSFs. It may be argued that the dominant epistemology of donor stakeholders (concerned with accountability) is *functionalism*, while the dominant epistemology of beneficiary stakeholders (concerned with learning) is *interpretivism*.

Functionalism in this context is taken to imply a predominant focus on the innovation being promoted—hence a process-centric perspective. Interpretivism is taken to imply a predominant focus on the response of the human actors to the process—hence an actor-centric perspective. There is also a sense that while functionalism is grounded in the positivist paradigm, interpretivism adopts a pluralist stance.

In terms of M&E processes, the functionalist view assumes that objectively verifiable indicators (OVI)[74] of change can be identified and dispassionately measured and that these will enable precise judgements about the extent and merit of social changes engineered by an aid agency. In contrast, the interpretist view assumes a plurality of 'truth'. That is, this perspective acknowledges a large number and variety of actors in the social change process—each with a legitimate *weltanschauung*—such that there is unlikely to be a consensus on the problem to be tackled, the methodology of inquiry, the method adopted to address the problem and the merit of outcomes realised.

---

[74] The identification of OVIs is a key feature of the logframe approach to aid project planning.

This matches with Checkland's description of a 'soft' system (Checkland 1981) and the Rittel and Webber (1973) definition of a 'wicked' problem[75].

Thus, the implication of the epistemological dimension of the NGO dilemma is that a variety of methodologies[76] are employed for M&E, each associated with different expectations about the nature and role of information. The functionalist (process-centric) methodologies seek to quantify the realisation of the 'logical entity' at each stage of the impact chain—the emphasis is on identifying the magnitude of variance between planned and actual change. The interpretist (actor-centric) methodologies attempt to capture the perspectives of a variety of actors associated with the planned social change— the emphasis is on identifying the nature of changes observed from each perspective.

This methodological divergence has been the subject of vigorous debate in evaluation literature, and has been called the 'paradigm war' (McTaggart, Caulley et al. 1991; Patton 1997; Cracknell 2000). Both paradigms, when implemented in isolation, pose practical challenges. Hence, a pragmatic stance (in line with the philosophy of consilience in this work) seeks to apply different methods as circumstances dictate. This pragmatic view has become increasingly recognised, as indicated by Patton (1997, p 266), who states that the debate about evaluation paradigms "has run out of intellectual steam".

However, while philosophical pragmatism has gained traction, the practical implications of the difference between process-centric and actor-centric M&E methodologies have persisted—that is, how to operationalise the methodological pluralism. There is need for a framework through which to identify the relative merits of both paradigms and guide their appropriate application.

The construct presented in Figure 20 identifying the spheres of control, influence and concern of the implementation team relative to the stages of the

---

[75] Barry and Fourie (2001) recognise similarities between the notions of 'soft systems' and 'wicked problems'.

[76] However, most commentators identify that functionalist methodologies dominate. According to IFAD (2002, p 4 - 3), M&E is often seen as a statistical task or a tedious external obligation of little relevance to those implementing the project.

impact chain provides such a framework. The functionalist methods[77] of inquiry, while being less appropriate in the spheres of concern, can offer useful insights about project performance within the sphere of control (and to a lesser extent, the sphere of influence). In contrast, while the interpretive methods of inquiry offer less value in the sphere of control, they are particularly appropriate for critical inquiry into project performance within the spheres of influence and concern.

Although this thinking is implied in conventional logframe theory, practitioners frequently encounter challenges in elucidating the theory of change in the impact chain of the logframe matrix (Chambers 1997; Gasper 1997; Gasper 1999; Roche 1999; AusAID 2000; Bell 2000; Cracknell 2000; Gasper 2000). That is, a misallocation of logic occurs—most commonly placing 'outputs' beyond the sphere of control, or 'effects' beyond the sphere of influence. These and other practical challenges are the subject of Chapter 4. For the purposes of this discussion, a major issue is the ambiguity that arises about the nature of the 'logical entity' at each stage of the impact chain, and the linkages between each stage[78].

Some commentators find that adopting a strict actor-centric perspective helps to bring clarity. In the words of Davies (2002, p 5):

> My own experience is that when you clearly identify the groups of people who are the actors in each stage of the Logical Framework the story line becomes much more evident, along with its plausibility.

Work by the International Development Research Centre (IDRC) in Canada has also identified value in grounding the theory of change of a project in the roles of human actors in the process. The 'Outcome Mapping' approach developed by IDRC (Earl 2002) draws a clear distinction between the roles of the project implementation team and 'boundary partners'. Earl (2002) defines boundary partners as:

---

[77] For example, many classical project management methods are appropriate for M&E of international aid at this level of the theory of change.

[78] A common example of this 'misallocation' of logic (most recently seen in appraising the logframe for a major bilateral project in Indonesia by a large Australian Managing Contractor) involves the definition of project 'outputs' as 'effects' (e.g. improved teaching methods adopted by Grades 1–3 teachers); that is, outputs are defined as being beyond the sphere of control of the implementation team.

those individuals, groups, and organisations with whom the program interacts
directly and with whom the program anticipates opportunities for influence.

These actors are called boundary partners[79] the project will work with them to
effect change, but it does not control them. The power to influence
development rests with them. The project tries to facilitate the process by
providing access to new resources, ideas, or opportunities for a certain period
of time. The project is on the boundary of their world (see Figure 21).
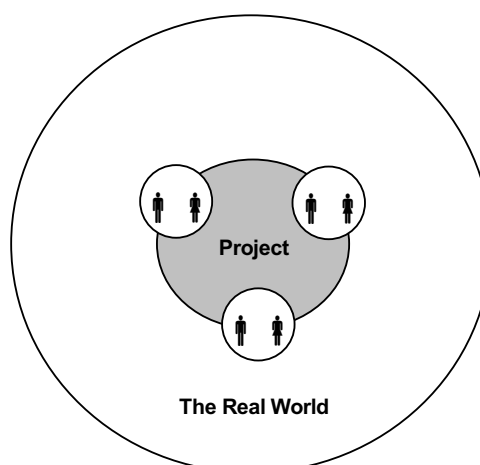
• Figure 21: Project boundary partners (source: Earl 2002, p 42)

Adopting an actor-centric perspective on social change resonates with DoI
theory (Rogers 1962) discussed above, that clearly identifies the roles of
various human actors. Specifically, the role of Rogers' 'innovators' is
comparable with the implementation team, the role of 'early adopters' is
comparable with boundary partners and the 'early majority', 'late majority'
and 'laggards' are embraced by the wider community[80] within which an aid
project is situated. This explicit identification of human actors in the theory of
change is depicted in Figure 22 (an extension of Figure 20).

---

[79] More commonly called 'primary beneficiaries'.

[80] Also called 'secondary beneficiaries'.
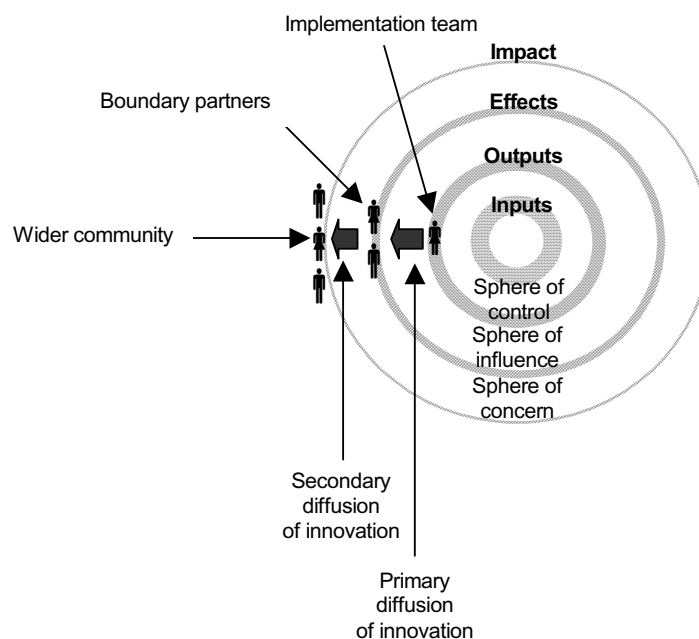
• Figure 22: Three classes of human actors in the theory of change

The integration of constructs depicted in Figure 22 may help to resolve the epistemological dimension to the NGO dilemma. In keeping with the philosophy of transdisciplinarity and consilience, I find merit in both sides of the polemic. Recognising the relative control/influence/concern that the implementation team can exert over the change process can help with defining the logic of the theory of change (as demanded by the functionalist paradigm). Recognising the centrality of the three classes of human actor in the change process (i.e. the implementation team, boundary partners and the wider community) can help to assess the nature of the changes realised (as is fundamental to the interpretist paradigm).

The foregoing subsections have provided a synthesis of notions about how, change is both represented and judged. In the following subsection I will explore issues relating to the stance or perspective of a MEIS relative to the changes anticipated. In other words, from what perspective are the representations of change, and judgements about change viewed?

3.3.3   The Issue of M&E Perspective

Earlier I acknowledged the importance of relevant, accurate and timely information supplied by a MEIS to promote aid agency performance.

However, while much of the rhetoric concerning M&E affirms this view, the practice of M&E appears to oppose it. In other words, while M&E is presumed to enable improved organisation-wide performance (UNDP 2002; Dransfield, Fisher et al. 1999; Thornton 2001), the fact that the practice of M&E tends to be located at the project level (i.e. 'project-centric M&E') may inhibit the extent to which M&E findings can promote critical inquiry and reflection about organisation-wide performance.

As noted in Subsection 3.2.1, the international aid industry is dominated by the project management approach. The fact that donor funds are deployed at this level of operations promotes a situation where 'the project' becomes the focus of an aid agency's accountability obligations. Moreover, this reality promotes a situation where aid agencies with scarce resources operate in an *ad hoc* (or donor-driven) project-by-project manner, seemingly lacking coherence or strategy—each project an 'island of excellence' (van Brabant 1997; Davies 2002). The linkage between project performance and organisational performance appears weak at best, with lessons learned being contained at the project level. Instead, aid agencies need to be able to make informed judgements about their performance at all levels—from project (operational) through programme (tactical) to organisation (strategic).

The majority of M&E literature, while alluding to a contribution to organisation-wide performance, in practice is concerned only with the performance of a single project. According to Roche (2001, p 5), M&E within NGOs has tended to:

- Be project based.

- Ignore outcomes and impact.

- Be weak in exploring how change induced by a given project combines, or compares to, other changes in the wider context.

- Rarely result in changed practice; and

- inadequately involve the people we ultimately aim to benefit.

The perspective of this dominant approach to M&E may be described as 'teleological' since the basis for system control is defined outside the system controlled (Goldspink 1999).

An alternative perspective may be described as 'teleonomical' (Goldspink 1999). Whereas a teleological perspective seeks to study 'the project' as a discrete entity from an objective distance, a teleonomical perspective adopts an internal stance in which the performance of projects is seen to contribute in an apparent or emergent way to organisational performance (Goldspink 1999). In other words, the system under study is 'the organisation'—studied from within the organisation itself. From this perspective, 'the project' is simply a unit of analysis within a wider investigation of organisational effectiveness. This view aligns with the recommendation by IFAD (2002) that M&E be approached as a system[81]. It is also implied in comments by Roche (2001), who identifies the need to balance the requirement for performance information across all projects, with the need for more in-depth studies into individual project performance.

The issue is more than one of scope. While it may be argued that all that is necessary is to widen the boundary of investigation to include the whole organisation (i.e. a teleological perspective in which the whole organisation is the unit of analysis), practical issues arise concerning who would perform the investigation and how it would be done. Further, as noted earlier, this fundamentally positivist view may be in conflict with the realities of human activity systems grappling with 'wicked' problems (i.e. does the required level of objectivity actually exist?).

Thus, there is a subtle but profound difference between the perspectives of the MEIS deployed within aid agencies—specifically, the role of M&E *vis-à-vis* project performance and organisational performance. The importance of this is affirmed by Roche (2001, p 5) who reports that:

> A lack of a consistent and agreed framework…undermines the large potential of
> the NGO community as a whole to monitor progress towards existing

---

[81] IFAD (2002, p 4-3) suggest that M&E be viewed as an "integrated system of reflection and communication supporting project implementation".

international and national agreements and targets, as well as the changes in policy and practice that are necessary to achieve those targets.

This issue is central to the MEIS framework proposed in this thesis and will be expanded in Section 5.2 and Subsection 5.5.3. There I argue that, although a telelological perspective on organisational performance may be impractical, a teleological perspective on any individual project performance as required for donor accountability is potentially compatible with a teleonomical view of organisation-wide performance as required for learning. The three logical perspectives on M&E function as outlined above are depicted in Figure 23.
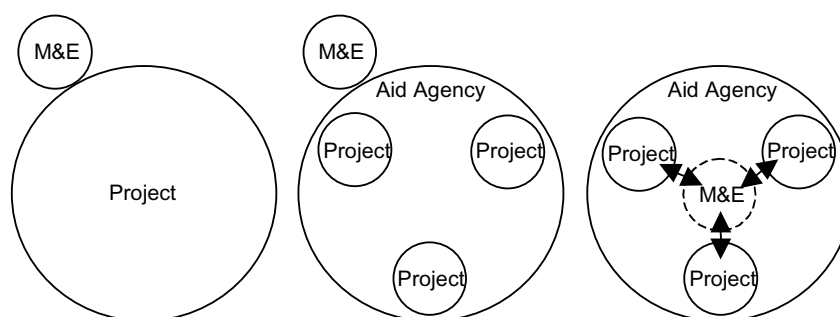
• Figure 23: (From left to right) a teleological perspective on project M&E; a teleological perspective on organisation-wide performance; a teleonomical perspective on organisational performance;

In this section, I have explored three conceptual issues and identified polemical notions that impact on MEIS operationalisation, and hence erode the purported benefit of such processes and systems for aid agency performance. As will be highlighted in the subsequent sections, international aid is not alone in struggling with tensions between paradigms.

Given the diversity of views that underpin M&E, it is prudent to seek the perspective of sources beyond the aid industry to inform debate about M&E. Firstly, given the widely agreed notion that M&E is concerned with the provision of relevant, timely and accurate information, I will examine a range of sources in the field of information systems. Secondly, given that this information is expected to promote improved organisational performance, I will explore topics within the field of organisational effectiveness— specifically, organisational performance measurement and organisational learning. Thirdly, given the pragmatic reality that the mechanism by which international aid agencies implement their mission of change in the world is

via projects, I will review aspects of the body of knowledge on project management.

3.4 Information Systems

This thesis is fundamentally about information—in particular, information systems (IS) commonly known as 'M&E systems' that are of interest to aid agencies.

In this section of the thesis I will review relevant literature from the IS field of inquiry. I will explore notions of 'information' and 'system' and the role that 'information systems' play within organisations. I will identify the dominant epistemology within conventional IS study, and acknowledge an emerging strand of IS literature that takes a humanistic (or 'soft') view of the role of IS within organisations—that is, IS as the provision of informational support to humans taking purposeful action. I will show that the conventional understanding alone is insufficient to cater for the diversity of purposes served by M&E processes within international aid agencies.

IS as a Field of Study

IS is an 'emerging' field of study (Farbey, Land et al. 1999). Checkland and Holwell (1998, p 33) suggest that:

> A field may now be piecing itself together, but it is very far indeed from being a taken-as-given structure-with-content within which energy and attention can be concentrated on substantive work.

Banville and Landry (1989) provide a detailed examination of the IS field based on work by Whitely (1984) and conclude that IS is what Whitely calls a "fragmented adhocracy" (characterised by low functional dependence, high task uncertainty and low strategic dependence) [82]. This is reinforced by the variety of views about the disciplines that underpin it. IS has been described as

---

[82] Whitely studies the structure of scientific fields and presents a schema to describe the way in which members of a field interactively produce knowledge and interpret each others' research results. His model describes three variables, each of which may have a 'high' or 'low' value, thereby providing eight possible combinations. The three variables are: (1) functional dependence (the extent to which members in the field are required to use established ideas and procedures), (2) strategic task uncertainty (the extent to which there is agreement about the importance of problems) and (3) strategic dependence (the extent to which members of the field must persuade colleagues of the importance of their work to gain a high reputation).

the *integration* of six fields (Davis 1980), as the *intersection* of three domains (Cooper 1988), as having six *necessary* disciplines (Teng and Galletta 1990), three *contributing* fields (Thuan, McBride et al. 1988) and three *necessary* *foundations* (Culnan and Swanson 1986). Ahituv and Neumann (1990 in Checkland and Holwell 1998) list 19 'foundations' of IS. In the introduction to a series on IS, Boland and Hirschheim (1985) describe the field as:

> a combination of two primary fields: computer science and management, with a host of supporting disciplines e.g. psychology, sociology, statistics, political science, economics, philosophy and mathematics. IS is concerned not only with the development of new information technologies but also with questions such as: how they can best be applied, how they should be managed, and what their wider implications are.

IS is frequently confused with the field of Information Technology (IT)[83] (Farbey, Land et al. 1999). Some authors appear to assume that IS and IT are synonyms. Checkland and Holwell (1998, p 10) illustrate this confusion by citing difficulties with locating the field within university organisational structures. They note that it is not uncommon for individuals interested in IS and their "richly ambiguous organisational consequences" to find themselves in IT departments where they feel "somewhat beleaguered" by colleagues "taken up with the delights of a fast-moving technology".

While the IT field emerged in the late 1940s with the introduction of the first computers based on vacuum tube technology, the emergence of the IS field is relatively recent. In principle there is no reason why it should not have emerged earlier as a concern within the broader discipline of management, but according to Tricker (1982), early writers who helped to create management as a field of inquiry viewed information as being "like sunlight to Victorian botanists". That is, crucially important to the process but either available or not; not a matter for scrutiny in its own right.

---

[83] IS is also sometimes confused with the field of 'information theory' which was developed during the 1940s by Fisher (a statistician), Wiener (a mathematician) and Shannon (a communications engineer). Information theory may be more appropriately called 'signal transmission theory' since it is concerned with quantifying the degree of distortion in transmitted messages.

The Notion of 'System'

While it is common within IS literature for the word 'system' to be used in the context of 'IT system', a more generic application such as was discussed in Section 2.3.2 may be more appropriate. For instance, if Checkland's (1981) systems typology (see page 34) is applied, it can be argued that a MEIS is a 'designed abstract system' to explore a 'human activity system'. This normally requires the development of a 'designed physical system', of which computer technology may be a part (Yeo 2002). This more systemic view of IS raises questions about the nature of 'information'.

The Notion of 'Information'

Within the IS field there is ambiguity around definitions of the words 'data', 'information' and 'knowledge' (Libenau and Backhouse 1990). The word 'information' is widely used in common language, but according to Checkland and Holwell (1998), its use is imprecise. They cite MSc research by Aiba (1993 in Checkland and Holwell 1998) that found a "clustering of ideas" concerning the words 'data' and 'information' in 50 definitions in IS literature, and they use this as the basis for differentiating four elements: data, *capta*, information and knowledge[84].

Data is said to be the "great mass of facts" in the world, some agreed by all; others disputed. The word 'data' comes from the Latin *dare* meaning 'to give'. Checkland and Holwell coin the word *capta*—from the Latin *capere,* 'to take'—to express the mostly subconscious process of selecting from (or 'paying attention to') small subsets of the available data in the world in order to meet particular needs. They (p 89) illustrate the difference by describing a speedometer needle in a car pointing to 30 km/hr as data, which becomes *capta* when the driver pays attention to it. The subsequent attribution of meaning to *capta* results in what they believe is 'information'. Hence, the formation of 'information' is a fundamentally human process. Checkland and Holwell (1998, p 89) describe this:

---

[84] In the absence of alternative constructs in IS literature, I will rely heavily on Checkland and Holwell's four-part schema throughout this thesis.

> Having selected, paid attention to, or created some data, thereby turning it into capta, we enrich it. We relate it to other things, we put it in context, we see it as a part of a larger whole which causes it to gain in significance.

The process (which can be both individual and/or collective) by which data is selected and converted into meaningful information, can itself lead to larger structures of related information for which another word is needed. Checkland and Holwell (1998) suggest the word 'knowledge'.

This hierarchy is depicted in Figure 24.
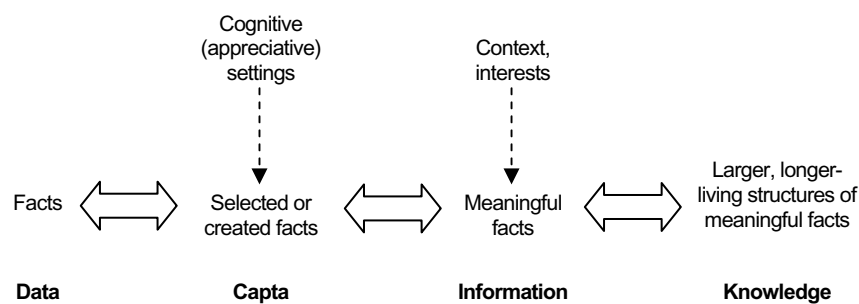
• Figure 24: The links between data, capta, information and knowledge (Source: Checkland & Holwell 1998, p 90)

The construct described above loosely matches that of Kasabov (1996), presented in his book on 'fuzzy logic'. It is also comparable with Gharajedaghi's (1999) hierarchy of 'information', 'knowledge' and 'understanding'[85]. Gharajedaghi does not discuss 'data' *per se.* Neither Gharajedaghi nor Kasabov attempt to define concepts comparable with *capta*.

Having demonstrated the emergent nature of the IS field, and having clarified the terms 'system' and 'information', I will now discuss the organisational implications of an IS.

IS within Organisations

Despite the diversity of language evident within the IS field, there is wide agreement that the central focus of the field of study is on the provision of information within *organisations*. That is, it is recognised that the *raison d'*

---

[85] Also, Britton (1998) proposes a hierarchy of 'information', knowledge' and 'wisdom', which matches Gharajedaghi's hierarchy.

être of an IS is to support organisational endeavour. For example, Checkland and Holwell (1998, p 95) state that:

> …information, in a general sense is then something needed in support of the purposeful action which goes on in organisations; needed that is, if the action is to be defensible, well informed, better than simply playing hunches or randomly thrashing about.

There is, however, very little questioning of the nature of organisations and how this affects IS. That is, the notion of 'organisations' is not generally seen as problematical in IS literature (Farbey, Land et al. 1999; Checkland and Holwell 1998). This issue marks the point of departure in IS literature by a small but growing number of commentators. A more comprehensive discussion on the nature of organisations is reserved for Section 3.5, but it is sufficient to note here that there are, broadly speaking, two ways in which an organisation may be conceived (Checkland and Holwell 1998; Farbey, Land et al. 1999):

- The conventional, functionalist ('hard') view; that organisations are goal-seeking entities and hence management is synonymous with decision-making and control in pursuit of the stated goals.

- The alternative, interpretive ('soft') view, that organisations are a social process in which the world is interpreted in a particular way which legitimises shared actions and establishes shared norms and standards.

The way 'the organisation' is conceived impacts on expectations of the IS, and hence the IS development process. Where a functionalist epistemology underpins the notion of organisation, the IS is likely to be understood as the provision of *capta* to direct goal-seeking behaviour by a rational organisation. That is, the IS is expected to perform a cybernetic function, analogous to the role of a thermostat within an air-conditioning system. In contrast, where an interpretive epistemology underpins the notion of organisation, the IS is likely to be conceived in a more humanistic way.

According to Checkland and Holwell (1998, p 96) the interpretive strand of IS study "centres on the idea that human beings continuously create and recreate social reality in social interaction, especially in conversation". This thinking is reflected in the IS model proposed by Land (1985) which comprises people, formal and informal information processing. The information user, having memory, knowledge and values, perceives the world outside herself/himself through a cognitive filter[86] which will "select, amplify, reject, attenuate or distort" messages. "Hence even simple messages may be interpreted differently by different individuals" (p 212). This leads Land to conclude (p 215) that:

> …an information system is a social system which has embedded in it information technology.

Thus, central to the interpretive 'soft' strand of IS literature is the notion that 'meaning-attribution' is fundamentally a human process. Thus, different people may attribute different meanings to the same data (*capta*), or indeed, different meanings at different times.

The social reality of organisations further compounds the ambiguity associated with individual meaning-attribution. That is, in order for purposeful action to take place, meaning-attribution must be, where possible, shared by organisational members. According to Checkland and Holwell (1998, p 221):

> The core of the ambiguity in the concept of 'information system' lies in the fact that meaning-attribution is a human act, and individuals can do it both autonomously and in groups, intersubjectively. The individual's attributions of meaning will be his or hers. The assumed meanings created by a group, on the other hand, will obviously be shared by the group to some extent; but that sharing—although it is what makes social life possible—will rarely be complete, except on trivial and uncontroversial matters.

---

[86] Checkland and Holwell draw heavily on Land's concept of a 'cognitive filter' to capture the values-based process of converting 'data' to *capta* (See Figure 24). They hold that a cognitive filter is acquired as a result of an individual's knowledge and previous experience of the world; and results in their readiness to notice certain features of their situation as significant. This thinking is also influenced by the work of Geoffrey Vickers and the theory of 'appreciative settings'.

Thus, individuals simultaneously remain free and conditioned by their group membership. The social process of meaning-attribution is not dissimilar from the individual process, but according to Checkland and Holwell (1998) it exhibits two important extensions:

- It is mediated in a complex social process described as (p 218) "the never-ending dialogue, discussion, debate and discourse in which we all try to affect each others' perceptions, judgements, intentions and actions".

- The cooperative actions which subsequently get taken will be within *accommodations* which are established among the different views and interests represented in the discourse[87]. Arguably, finding such accommodations is a pre-condition for the continued existence of the group or organisation.

In consideration of the foregoing, Checkland and Holwell (1998) propose what they believe is a "richer model" (p 105) of IS. This model, the 'Processes of Organisational Meanings (POM) model, is reproduced in Figure 25.

---

[87] Checkland and Holwell acknowledge that in many situations, the accommodations which individuals can 'live with' may well be based on asymmetries of power.
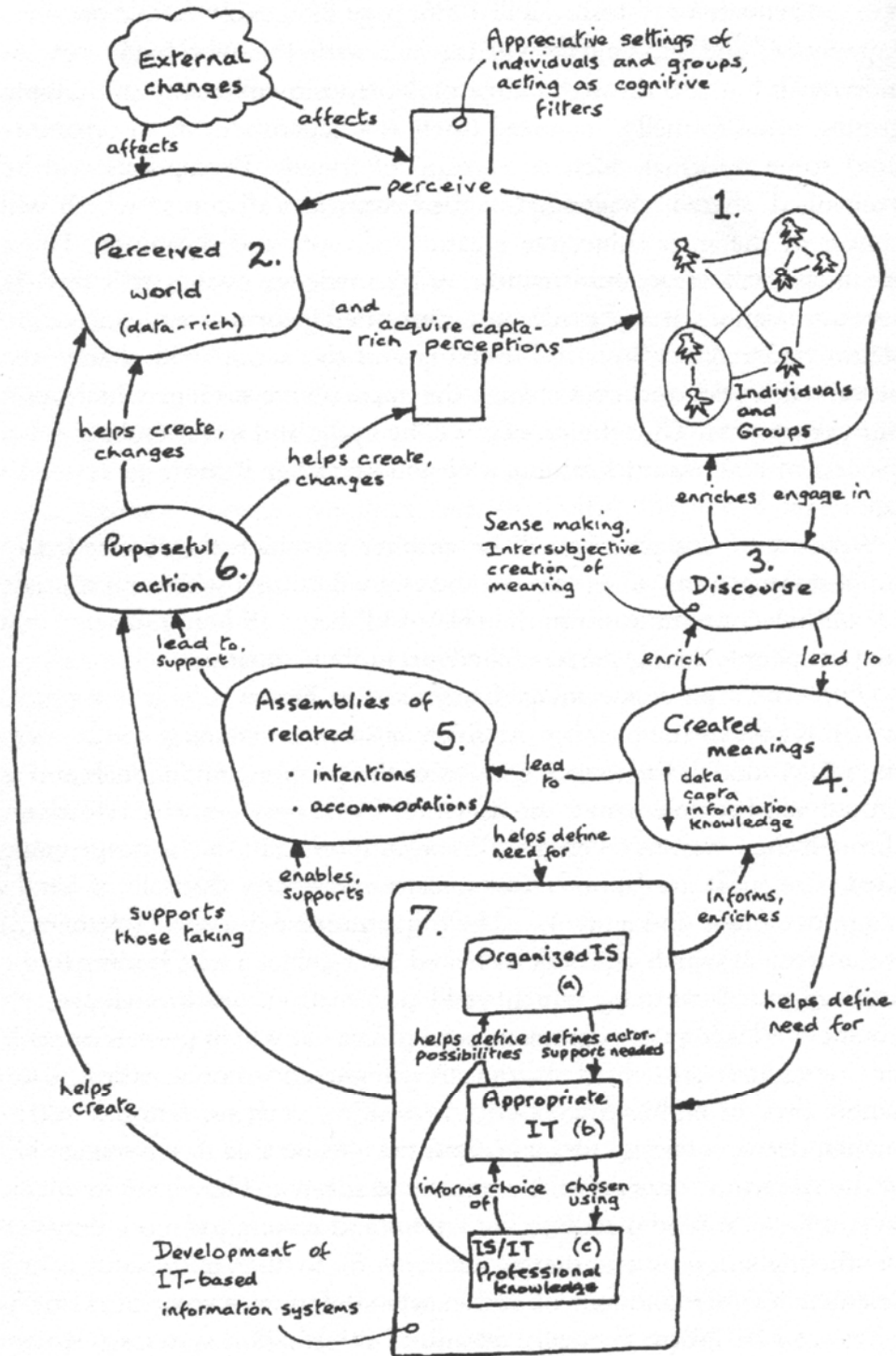
- Figure 25: 'Processes of Organisational Meanings' (POM) model: a model of social processes in which meanings are established and lead to information support for people undertaking purposeful action (Source: Checkland & Holwell 1998, p 106)

Checkland and Holwell (1998, p 230) do not offer the POM model as a "copper-bottomed *theory* of the field" but rather as a model which can be "used to *make sense*" of the core processes at the heart of IS work. The essence of the POM model presented in Figure 25 is that organisations are

conceived as a social process in which individuals and groups form intentions and act purposefully, supported with information. It is evident that these processes occur through interactions between three different elements:

- **Agents:** the people (individuals and various groupings of individuals) who interact to create the wholly or partially shared meanings which help to make sense of their world.

- **Organisation:** any structured pattern of interaction between the agents. These interactions may include typical structures such as departments, divisions or implementation teams, but may also include any organised pattern of tasks or communication.

- **Technology:** the processes by which informational support may be provided. These may involve telephones, radios, hand-written messages, maps etc, and increasingly, computers and telecommunications systems.

According to Checkland and Holwell (1998), any change to one of the above elements will have some effect on the others; the three make up a whole.

Given the predominance of the conventional functionalist view in IS literature, the polemical stance of Checkland and Holwell (1998) and others in advocating a shift to the interpretive view is understandable. However, it is important to note that some elements of IS function within organisations are in fact served by the conventional functionalist approach. That is, in the interests of efficiency, some management decision-making can be made on a seemingly objective basis. In fact, Checkland and Holwell (1998, p 95) concede that supporting management decision-making in the conventional sense is one "special case" within a richer role played by the IS[88].

Implications for this Thesis

The underlying assumptions within conventional IS literature are reflected in much of what is written about M&E. That is, approaches to developing M&E

---

[88] This aligns with the view offered in the conceptual framework in Figure 22 that identified spheres of control/influence/concern and different informational processes associated with each.

information systems have been influenced by a functionalist epistemology. While there is a role for these approaches in supporting some aspects of organisational function (e.g. management decision-making), an argument of the interpretist perspective is that conventional IS thinking is not rich enough to encompass the diversity of situations within organisations for which informational support is necessary. That is, the functionalist assumptions tend to simplify the social complexity that exists within organisations (Conklin, accessed 2002). The interpretist perspective within IS literature recognises a richer role played by information within organisations that is beyond formal cybernetic-style management decision-making.

Thus, the interpretist–functionalist debate within IS literature mirrors the discussion in Subsection 3.3.2 regarding the divergent epistemological assumptions that underpin the NGO dilemma. Reflecting on field experience in the light of this literature, I have recognised that some of the difficulties and conflict associated with MEIS development and deployment within aid agencies, stem from tensions between the epistemological assumptions which underpin the conventional thinking, and the social complexity encountered by organisational members. Thus, in this thesis, while I have acknowledged the role of conventional approaches to IS, I have also appreciated the insights offered by the interpretive, 'soft' strand of IS thinking, since this seems consistent with both organisational socio-political reality, and the 'wicked' nature of aid and human development in particular.

Hence, the position taken in this thesis requires a philosophical shift from the conventional view of the MEIS as only *directing* goal-seeking behaviour, to also viewing it as *supporting* the formation of intent by organisational members to act purposefully. Given this perspective and the fundamental notion that the desired outcome is enhanced organisational performance, I will now review relevant parts of the literature from the field of organisational effectiveness.

3.5 Organisational Effectiveness

As noted in Section 3.4, there is wide agreement within IS study that the provision of relevant, accurate and timely information is necessary to promote effective organisations (Kaplan and Norton 1992; Fowler 1997; Dransfield, Fisher et al. 1999). But how does this occur? What is the mechanism by which 'information' promotes 'organisational effectiveness'? These questions provide the impetus to explore parts of the management field of organisational effectiveness.

Within the literature, there is a sense that organisational effectiveness is an iterative pursuit (Fowler 1997). Seemingly, the role of information in these iterations is to support complex organisational processes which, for the purposes of discussion, may be simplified as involving two-stages: a process of performance assessment or measurement, which then prompts the second stage, involving corrective action, or learning. In terms of the role of an IS, this two-stage process may be identified in the Checkland-Holwell schema (Figure 24) as the conversion of *capta* to information, and information to knowledge, respectively. Recall that *capta* is the selected or created facts identified from within the global set of data. Through a process of meaning-attribution, this *capta* is converted to information. When the relevance of this information endures and combines within a wider context of meaningful facts, it may become knowledge.
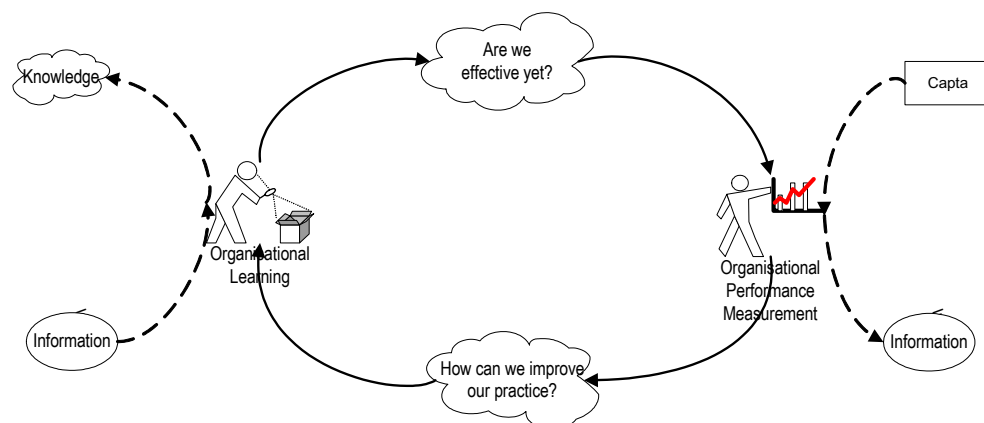
• Figure 26: A simplistic representation of two stages in the iterative pursuit of organisational effectiveness

In the iterative two-stage process that underpins the pursuit of organisational effectiveness mentioned above, organisational performance measurement involves attributing meaning to facts (*capta* → information); organisational learning involves locating the information within a wider context (information → knowledge).

In the following two subsections I will explore perspectives in literature on *organisational performance measurement* and *organisational learning*. I will then relate these to the area of concern of this thesis—aid agency MEIS.

3.5.1   Organisational Performance Measurement

The notion of performance measurement emerged during the industrial revolution, and derives from feedback and control systems in manufacturing. An early pioneer of the concept was Walter Shewhart, an engineer with Bell Telephone Laboratories in 1931 (Cryer and Miller 1994). Shewhart's work was elaborated and popularised in Japan during the 1950s by Deming (1986), who promoted an iterative concept of process improvement that has become widely known as 'Deming's wheel' (Cryer and Miller 1994). Deming's wheel involves repeated application of the steps: 'plan' (P), 'do' (D), 'check' (C), 'act' (A). Implicit in the third step (C) is a process of measurement, which then influences the fourth step (A), which involves learning and taking corrective action (Cryer and Miller 1994).

Not surprisingly, as in the IS field, perspectives on organisational performance measurement are influenced by underlying assumptions about the nature of organisations. Many different theoretical stances get adopted under the broad banner of organisational theory, influenced by the different perspectives within social science, sociology, anthropology, psychology and political science (Goldspink 1999). As stated in Section 3.4, Burrell and Morgan's (1994) frequently cited construct presents two broad epistemological perspectives on organisational theory: functionalist and interpretist[89].

---

[89] Checkland and Holwell (1998) suggest that in sociology, the functionalist perspective derives from Durkheim, while the interpretist perspective derives from Max Weber.

Functionalist Organisational Theory

Even a cursory review of conventional organisational theory literature identifies functionalism as the dominant paradigm. In discussing functionalist organisational theory, Goldspink (1999, p 87) suggests that:

> At its core, this approach is positivist, and reflects an attempt to apply the (Newtonian) methods of the natural sciences to understanding social processes. These, advocates believe, can be studied using reductionist approaches in order to identify underlying cause-effect relations and derive laws governing behaviour.

Gharajedaghi (1999) describes various perspectives on organisational theory using metaphors. To describe the functionalist organisation he adopts a biological metaphor—a "uni-minded living system" (p 11). He reports that this perspective emerged in Germany and Britain before becoming dominant in the US. The underlying assumption of the biological model of organisation is that operations are totally under the control of a single brain, the executive function, which by means of a communication network, receives information from a variety of sensing parts and issues directions that activate relevant parts of the system. Hence, malfunction is due to a lack of (or poor quality of) information (*capta*) to the brain. Silverman (1970 in Goldspink 1999) argues that the popularity of functionalism is at least partly attributable to the fact that it is well suited to the needs of management since it defines organisational problems in terms of elements over which management believe they have control.

Numerous management and organisational theory textbooks trace the functionalist paradigm to the work of Herbert Simon, who tried to establish a science of administrative behaviour and executive decision-making through his highly influential book, *The New Science of Management Decision* (Simon 1960). The core idea underlying the work of Simon is that human behaviour, both individual and corporate, can be taken to be goal-seeking. Hence, management is fundamentally a process of problem solving. In the words of Simon (1960, p 27):

> Problem solving proceeds by erecting goals, detecting differences between present situation and goal, finding in memory or by search tools or processes that are relevant to reducing differences of these particular kinds, and applying these tools or processes. Each problem generates sub-problems until we find a sub-problem we can solve…we proceed until by successive solution of such sub-problems, we eventually achieve our overall goal—or give up.

Checkland and Holwell (1998) argue that this view does not take organisations to be problematic, but instead, simplistically sees organisations as discrete entities which 'take decisions' and 'solve problems' thereby achieving pre-defined goals. They contend that this perspective is not rich enough to express the complexity of processes that take place within organisations, and hence argue for a shift towards an interpretist perspective.

Interpretist Organisational Theory

In Burrell and Morgan's (1994) model, the epistemological antithesis of functionalist organisational theory is interpretist organisational theory. According to Checkland and Holwell (1998), the interpretive strand of organisational theory is becoming increasingly recognised among organisational theorists; however, it does not yet have the level of influence of the functionalist perspective. In examining the origins of this view, they conclude that no single body of work underlies it, as Simon's work does with the functionalist perspective. However, they go on to argue that the work of Geoffrey Vickers (1965), who developed the theory of 'appreciative systems', has provided a strong influence. Vickers himself sees his work as indebted to, but in profound conflict with, that of Simon.

In seeking to understand organisational life, Vickers begins by rejecting the goal-seeking model of human behaviour as being too poverty-stricken to match the richness of life as we experience it. Fundamentally, it is the replacement of 'goal-seeking' by 'relationship managing' that marks the difference between 'appreciative systems' and Simon's model. For Vickers, goal-seeking behaviour is the occasional special case of managing a relationship. This fundamentally humanistic stance is what Gharajedaghi (1999) identifies as a 'socio-cultural' view of organisations.

Within this perspective, Checkland and Holwell (1998, p 80) contend that an organisation is a "reified social collectivity". That is, it exists as an entity[90] only because people (members and non-members) are prepared to talk and act *as if* there is a collective, which can behave like a conscious being[91]. In recognising this rather abstract reality, the interpretist view argues that members of organisations are not necessarily simply quiescent contributors to the achievement of organisational goals as the functionalist model suggests (Fowler 1997). To be an organisational member is to have a contractual relationship with it, whether a legal employment arrangement or a more complex psychological contract, or both. In illustrating this issue, Checkland and Holwell (1998, p 81) describes the situation where:

> …the volunteer middle-class ladies who run the Oxfam charity shop in High Street truly feel themselves to be members of the organisation Oxfam, and no doubt broadly support its aims.

It is within this line of thinking that Gharajedaghi (1999, p 12) considers the organisation as a "voluntary association of purposeful members" who themselves manifest a choice of both ends and means. The critical term is 'purposeful', which is applied here in the same sense as that used by Checkland (1981) to differentiate 'human activity systems' from other forms of system (see Subsection 2.3.2). According to Ackoff and Emery (1972), an entity is purposeful if it can:

- Produce the same outcome in different ways in the same environment; and

- Produce different outcomes in the same or a different environment.

Hence, 'purposeful' may be taken to mean the ability to appropriate and use resources to create ends of choice.

Within the interpretist view, individual organisational members are acknowledged as being purposeful entities. Further, the organisation is itself a

---

[90] That is, it is awarded 'ontological status'.

[91] For example, a report that 'Oxfam has decided to confront coffee industry multinationals' is considered meaningful, and hence implies that an entity called 'Oxfam' can make decisions.

purposeful system and the organisation is recognised as part of a larger purposeful whole, the society. Thus, there is a hierarchy of purposeful systems: member/organisation/society. Gharajedaghi argues (p 12) that:

> …these three levels are so interconnected that an optimal solution cannot be found at one level independent of the other two. Aligning the interest of purposeful parts with each other and that of the whole is the main challenge of the system…The purpose of an organisation is to serve the purposes of its members while also serving the purposes of its environment.

The difference between Simon's model and that of Vickers is further reinforced by the fact that in Simon's model, goal *definition* does not get much attention (i.e. the goal is taken as given). By contrast, within Vickers' appreciative system, the core activity concerns debate about possible courses of action, and the relationships these may affect (Checkland and Holwell 1998). Further, for Vickers, debate that leads to action requires participants not only to make judgements about the course of action ('reality judgements'), but also to evaluate the merit or value of the action ('appreciative judgements')[92]. For Simon, managers set goals; while for Vickers, managers set standards or norms.

Checkland and Holwell (1998) distinguish (p 82) between the "conventional wisdom" (functionalist organisational theory) which underpins most literature and a "richer model" (interpretist organisational theory), using two rich pictures, reproduced in Figure 27 and Figure 28 respectively.

---

[92] This thinking is also expressed by Gharajedaghi (1999) in contrasting the machine model and the socio-cultural model. In the former, integration of the parts is a one-time process, while for the latter the problem of integration is a continuous process enabled by debate.
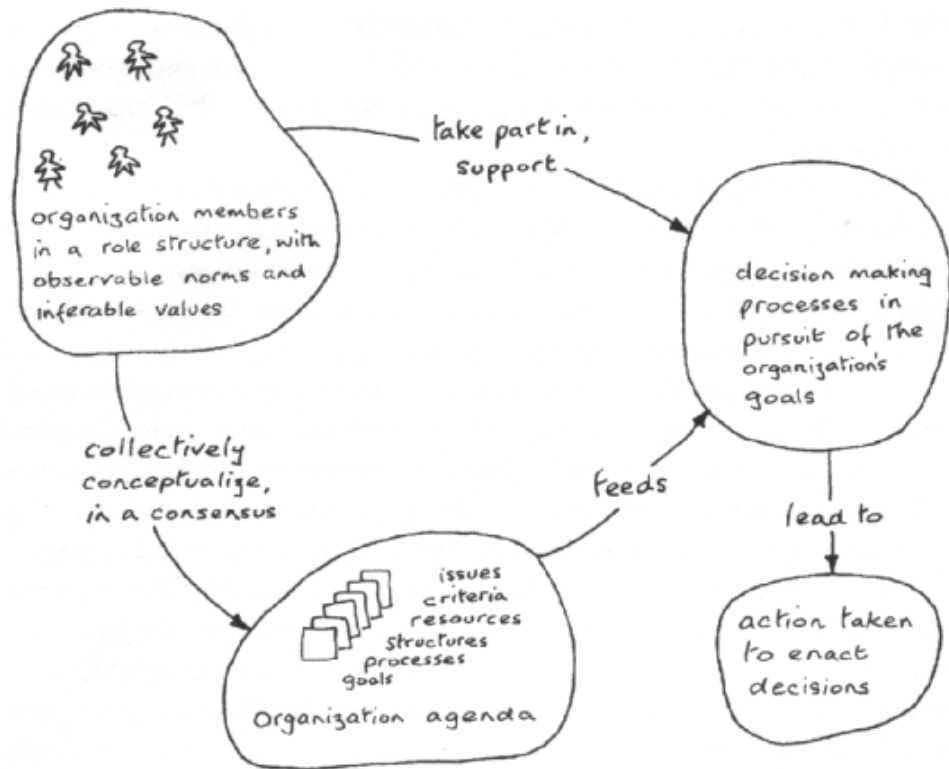
- Figure 27: A model of the conventional wisdom of 'an organisation' (Source: Checkland & Holwell 1998, p 82)
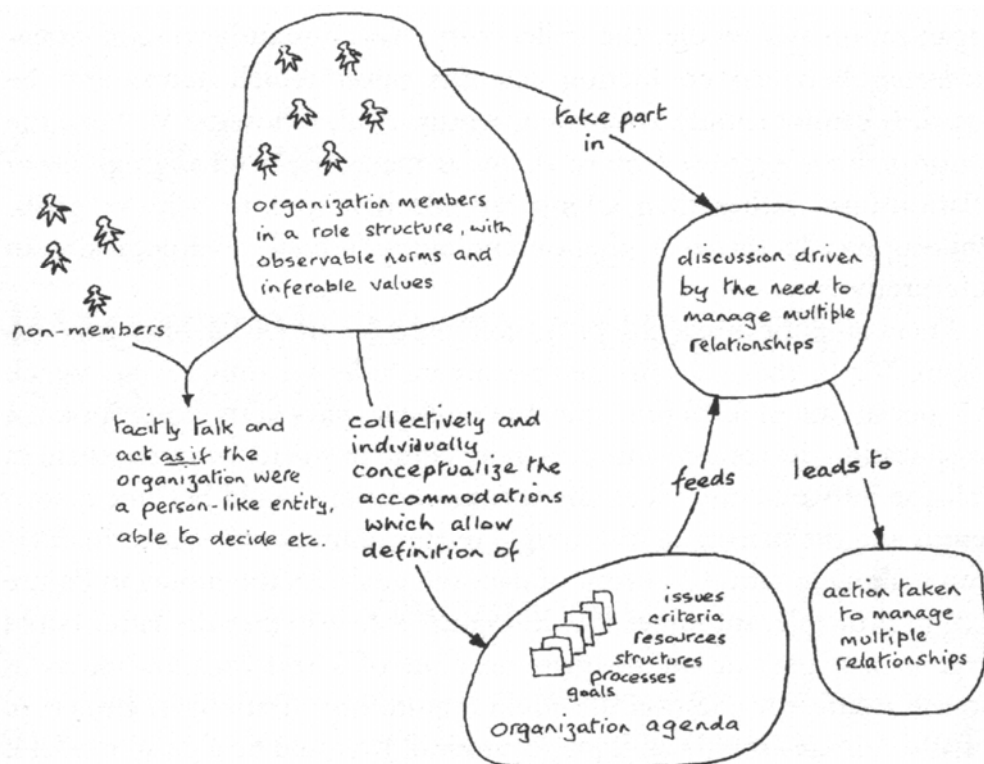
- Figure 28: A richer model of 'an organisation' (Source: Checkland & Holwell 1998, p 83)

Implications for Organisational Performance Measurement

The divergent organisational theories have practical implications for organisational performance measurement, and hence M&E. The functionalist perspective assumes that performance can be objectively measured (as implied by Deming's wheel, which explicitly seeks to apply scientific methods to process improvement), and that subsequent findings will unambiguously direct the organisation towards its stated goals.

In contrast, the interpretive perspective on organisational performance measurement acknowledges the myriad of *weltanschauungen* among organisational members regarding what is considered 'purposeful action'. This inherent subjectivity suggests that performance 'measurement' in the conventional sense may not be possible. Instead, 'appreciative judgements' (Vickers 1965) are the foundation for debate between organisational members, in order to find accommodations between the *weltanschauungen* regarding what is considered 'purposeful action'.

Whereas Deming's wheel is the conceptual foundation for the functionalist approaches, the AR cycle (plan → act → observe → reflect) depicted in Figure 10 may be argued to be the interpretist equivalent. While Deming's wheel assumes the possibility of precise measurement and definitive conclusions (i.e. a 'tame' problem) within a 'hard' system, the AR cycle assumes subjective assessment and ambiguous or contestable conclusions (i.e. a 'wicked' problem) within a 'soft' system. Thus, the emphasis of the former is on *prescription,* while the latter is concerned more with *description* (Kaplan and Davies 1993; Limerick, Cunnington et al. 1998).

Overwhelmingly, literature on organisational performance measurement is influenced by the functionalist paradigm, and is mostly concerned with financial measures of performance (Chennell, Dransfield et al. 2000; Kaplan and Mackey 1992; Buckmaster 1997). In recent years there has been a growing view that financial information alone is inadequate to communicate the multifaceted nature of organisational performance (Kaplan and Norton 1992; Buckmaster 1997). Further, financial measures (e.g. shareholder value)

are largely irrelevant for service-focussed not-for-profit entities such as aid agencies.

This situation has spawned a range of concepts including corporate social reporting (Tilt 1994), social auditing (NEF 1998), triple bottom line reporting (Crawford, J. 2002), the 'Balanced Scorecard' (Kaplan and Norton 1992; Kaplan and Davies 1993; Kaplan and Norton 1996), and OPM$^{®}$ (Chennell, Dransfield et al. 2000; Shaw 2001; Dransfield, Fisher et al. 1999). While these 'contemporary' concepts of organisational performance have resonated with increasing numbers of commentators, the deployment of approaches to enable their operation has remained a challenge (Shaw 2001). This is in contrast to 'conventional' performance measurement methods that are highly evolved.

Clearly, there is a role for both forms of information to inform debate about organisational performance.

A Framework for Developing an Organisational Performance Measurement System

In response to a Federal Government-supported study that identified (among other things) a need to promote quality and performance in Australian organisations (Karpin 1995), the Commonwealth Scientific & Industrial Research Organisation (CSIRO) embarked on a research project to isolate the major issues relating to organisational performance measurement (Barnes, Coulton et al. 1998). The CSIRO research findings identified the following common issues among attempts to deploy organisational performance measurement systems (Chennell, Dransfield et al. 2000; Shaw 2001; Barnes, Coulton et al. 1998):

- A lack of alignment between strategic intents of the enterprise and what is actually measured and reported.

- Information that is limited in scope—usually just focused on financial performance.

- Information that does not support measurement and evaluation across the range of management levels and roles.

- Information that is largely operational.

- A lack of data and information to evaluate performance at the tactical level: typically, only aggregated operational data are used to assess organisational performance.

- Scant attention to consistency of measurement (e.g. the use of operational definitions).

- Lack of processes to ensure that relevant data are available in a timely fashion.

- Approaches to measurement that reflect little or no understanding of variation.

- Approaches to measurement that reflect little or no understanding of the management and improvement of processes.

- The use of presentation formats that do not assist the appropriate analysis and interpretation of the data (e.g. limited use of appropriate graphical methods for displaying data and information).

These findings led CSIRO to propose three governing principles to form a framework that should underpin any organisational performance measurement system (Chennell, Dransfield et al. 2000; Shaw 2001; Dransfield, Fisher et al. 1999):

- Alignment

- Practicability

- Systems thinking.

I will now discuss each of these governing principles in turn.

Alignment

According to Chennell, Dransfield et al. (2000), the principle of alignment addresses a wide range of organisational issues including:

- Ensuring constancy of purpose.

- Clear role definition for organisational members

- Clarity of performance expectations (i.e. what constitutes a job well done).

- Focusing improvement-effort in areas of priority.

The principle of alignment is grounded in the management truism that 'measurement drives behaviour' (Chennell, Dransfield et al. 2000; Kelly 2002). Accordingly, the selection of performance measures must serve to encourage organisational members to align their efforts with the strategic direction of the enterprise (Shaw 2001). Alignment must relate to (Chennell, Dransfield et al. 2000):

- The ultimate impact desired by the enterprise.

- The way the enterprise is managed at each level to contribute to the ultimate impact.

- The internal processes required to produce the required outputs.

The CSIRO framework adopts the 'Three Zones of Management' (3ZOM) construct as a means of promoting alignment. The 3ZOM was popularised by Sarasohn and Protzman (1948) in management courses provided in McArthur's post-World War II revitalisation of Japanese industry programme. The essence of the 3ZOM construct is that management of organisations requires attention to be focussed at three broad 'levels'. While Sarasohn and Protzman (1948) use terms such as 'trusteeship', 'departmental administration' and 'supervisory management' to denote the zones, CSIRO uses the more contemporary and less value-laden terms: strategic, tactical and operational to differentiate between the three zones of management (Chennell, Dransfield et al. 2000).

At first consideration there appears to be conflict between the seemingly functionalist 3ZOM defined by Sarasohn and Protzman (1948) and the interpretist paradigm of organisational theory discussed above. While this is arguable, the 3ZOM concept as applied by CSIRO for organisational performance measurement purposes does not necessarily reinforce a

hierarchical structure (Shaw 2001). According to Chennell, Dransfield et al. (2000, p 3):

> Whereas traditional organisations are often described in hierarchical structural terms typically related to functions, contemporary organisations pursuing 'business excellence' are more likely to be described in terms of core processes that constitute the means by which an enterprise delivers its products and services.

Hence, the 3ZOM construct recognises that within most organisations teams of people perform tasks that are fundamentally operational in nature. Likewise teams of people perform tasks that are fundamentally tactical and strategic. Whether these core processes are viewed within the organisation as comprising a team-based structure or a hierarchical structure is more a function of the internal discourse and culture within the organisation than of the 3ZOM construct *per se*.

Regardless of the structural implications of the 3ZOM construct, there is recognition that within most organisations a differentiation of *responsibilities* and *accountabilities* exists (Shaw 2001). The notion of responsibility and accountability was recognised by Sarasohn and Protzman (1948) and has been discussed further by Dransfield, Fisher et al. (1999) who distinguish them as:

- **Responsibility:** relates to being charged with carrying out certain tasks.

- **Accountability:** relates to being charged with ensuring that certain outcomes are realised.

There is a sense that 'responsibility' refers to the performance expectations of a given role or team whereas 'accountability' refers to the wider purpose to which the role or team contributes. Although this differentiation carries the risk of reinforcing a 'machine bureaucracy' view of organisations, it can also provide a helpful description of the overlapping or interlocking of roles that takes place within organisations, and hence provides a useful framework for measuring performance. Shaw (2001, p 2) argues that the 3ZOM construct:

provides essential insight into the appropriate design for an organisational measurement framework. That is, the system of measurement should reflect and support the system of management and the accountabilities and responsibilities of individuals within each zone.

Thus, the MEIS proposed in this thesis recognises the principle of alignment through grounding in the 3ZOM construct. The application of the 3ZOM construct within an aid agency MEIS will be discussed further in Section 5.2.

Practicability

According to Chennell, Dransfield et al. (2000), without the second governing principle, practicability, the principles of alignment and systems thinking cannot be translated into a working measurement system. The principle of practicability requires that all zones in the enterprise adopt appropriate processes to identify the sorts of measurements that need to be made, and to ensure that the data actually meets the needs of organisational members in that zone (Shaw 2001).

The processes that underpin M&E were defined in the SSM root definition[93] and the associated conceptual model in Figure 16. That model defined a sequence of activities to 'transform' (i.e. 'T' in CATWOE) data to knowledge[94] about project performance:

- Data identification

- Data capture

- Data analysis

- Information dissemination

- Information utilisation

- Assessment of the foregoing

---

[93] An information system, within a donor-funded aid project system, that converts data to knowledge about project performance for the benefit of NGO personnel, but is constrained by compliance, skill, mechanism and incentive.

[94] Drawing on Section 3.4, the process of transforming data to knowledge ('T') can now be understood as involving the identification of *capta* and its subsequent analysis to render 'information'. Patterns or trends observable in sets of information may evolve into larger structures shared by organisational members called 'knowledge'.

The model also identified the dominant 'environmental constraints' (i.e. 'E' in CATWOE) found to affect the above sequence[95]:

- Compliance

- Skill

- Mechanism

- Incentive

Thus, the principle of practicability is concerned with ensuring that each stage in the sequence of M&E activities can actually be implemented. This implies deploying mechanisms and protocols to mitigate the impact of the environmental constraints. The practical challenges encountered in this process is the subject of Chapter 4.

Systems Thinking

The third governing principle, systems thinking[96], is grounded in an appreciation of open systems theory, which recognises that an enterprise is a system located within a wider system commonly described as its 'environment'. Dynamic relationships between the enterprise and its environment determine the enterprise's success (Shaw 2001). A substantial part of the environment involves the stakeholders of the enterprise who make judgements about its performance. The CSIRO framework proposes the following classes of stakeholder[97]:

- **Business:** typically owners and shareholders.

- **Customers:** typically segmented into a number of groups with differing and possibly conflicting interests.

- **People:** employees of the enterprise.

- **Strategic partners:** key contractors, suppliers or collaborators whose long-term support is critical to the viability of the enterprise.

---

[95] Specifically, capture, analysis, dissemination and utilisation respectively.
[96] 'System thinking' is referred to in some CSIRO literature as 'process thinking'.
[97] The first three stakeholders correspond with the SSM root definition (CATWOE) elements of 'Owner', 'Customers' and 'Actors' respectively.

- **Community:** professional, industry and local groups with whom the enterprise interacts or on which it is dependent.

From the perspective of a typical NGO, the above stakeholders are likely to be the donor, target community, implementation team, boundary partners and other projects/NGOs respectively. These constituencies, frequently with competing agendas (as discussed with reference to the NGO dilemma), determine the success of the enterprise (Chennell, Dransfield et al. 2000). According to Shaw (2001):

> The capacity of the enterprise to satisfy multiple value propositions to diverse stakeholders simultaneously is critical. The performance measurement system must provide a basis for relating the stakeholder's evaluation of performance (an external view) to the enterprise's management of performance (an internal view).

Thus, the CSIRO framework seeks to differentiate strategic success (as judged by the external world) from tactical and operational success (an internal view of capability and process). This thinking is in line with Smillie (1995) who, in discussing aid agency performance, acknowledges that different organisational stakeholders judge performance against different criteria.

In this subsection, I have recognised that while the notion of organisational performance measurement derives from 'hard' systems thinking within the functionalist paradigm of organisational theory, the concept is also fundamental to the iterations implied within the interpretive paradigm. I acknowledged that while some aspects of the pursuit of organisational effectiveness lend themselves to performance measurement methods grounded in the functionalist paradigm, there is merit in approaches deriving from the interpretist paradigm. I subsequently aligned with three governing principles for the development of an organisational performance measurement system proposed by CSIRO. These governing principles have been used to guide the MEIS framework proposed in this thesis and will be discussed in this context in Section 5.5.

In the following subsection, I will explore the second of the two-stage iterative process of organisational effectiveness: organisational learning.

3.5.2   Organisational Learning

In this subsection, I will explore the concept of 'organisational learning' with reference to its role in promoting organisational effectiveness. In particular, I will review commentary on organisational learning from an aid agency perspective and isolate a construct by which the mechanism of organisational learning can be understood.

Learning, as a field of inquiry, is large and growing, with numerous perspectives and theories about its role and mechanisms (Hill, Wilson et al. 2002; Mulholland, Domingue et al. 2000; Garratt 2000). Discussions in literature range across 'individual learning' (e.g. Schon 1983), 'organisational learning' (e.g. Senge 1990) and 'institutional learning'[98] (e.g. van Brabant 1997). Some authors draw precise distinctions, others ignore any apparent differences, still others attempt a systemic, holistic view[99]. The topic of 'organisational learning' has rapidly increased in prominence since the 1980s. Crossan and Guatto (1996 in Davies 1998) report that the incidence of social science journals mentioning 'organisational learning' increased from an average of around five per year in the 1980s to more than fifty per year by the mid 1990s.

The underlying assumption in much of the organisational learning literature is that in complex or unpredictable operating environments, the ability to learn is fundamental to adaptiveness and hence organisational survival (Garratt 2000; Glover 2001; Haeckel 1999). This thinking is reflected in Revans' (1983) widely cited formula that identifies that the rate of learning within an organisation must be greater than or equal to the rate of change in the operating environment.

Much of the literature on organisational learning derives from the for-profit sector, and makes an explicit link between organisational learning and

---

[98] According to van Brabant (1997), 'institutional learning' is learning that takes place between or across different organisations operating in a common area of concern.
[99] E.g. Hill, Wilson, et al. (2002) discuss the concept of an 'ecology of learning', which recognises the multiple interaction of factors that influence learning.

organisational performance[100]. There is an expectation that learning improves overall organisational performance by facilitating the development of organisational members through stages described by Garratt (2000) and others:

- **Unconscious incompetence:** where people are unaware that they do not have the necessary knowledge, attitude and skills to be competent.

- **Conscious incompetence:** where people are aware of their lack of knowledge, attitude and skills but choose to do nothing about them.

- **Unconscious competence:** where people do a good job but without consciousness of this or of the need to communicate the learning to others.

- **Conscious competence:** where people do a good job and are able to share their learning with others.

Organisational Learning in Aid Agencies

Despite the predominance of the for-profit focus within organisational learning, several authors report that the topic has resonated with the not-for-profit sector, and specifically the aid industry (Marsden, Oakley et al. 1994; Hulme and Edwards 1995; Smillie 1995; Edwards and Hulme 1996; Fowler 1997; van Brabant 1997; Britton 1998; Davies 1998; Kaplan 1999; Roche 1999; Cracknell 2000). The publication of a special issue on 'development and the learning organisation' in the journal 'Development in Practice' (DIP 2002) is indicative of the growing importance of the topic within aid agencies. According to Britton (1998, p 2):

> A strong case has been established for the importance of learning [in aid agencies] as a means of improving organisational effectiveness…against the background of considerable change and unpredictability.

Similar importance is placed on learning and 'knowledge management' within aid agencies by Roche (2001, p 4) who argues that it is:

---

[100] In this literature there is an attempt to explicitly link learning with improved organisational performance, normally measured in conventional terms such as profit or shareholder value (Garratt 2000; Senge 1990; Argyris 1992).

> …central to all we do, and therefore its discipline needs to be 'mainstreamed' within existing pieces of work and management practice, rather than something separate or additional.

Aid agencies have been criticised for being poor learners. For example, Fowler (1997, p 64) believes that an "almost universal weakness" of NGOs is their limited capacity to learn. In action research conducted by the Australian Council for Overseas Aid (ACFOA 2002), NGOs reported that while learning is increasingly recognised as important, the formal mechanisms to systematically capture lessons and adapt accordingly remain weak.

It is unclear if aid agencies are in fact worse at learning than organisations in other industries, or if commentators are hypersensitive to the ethical imperative (discussed in Subsection 3.2.2) that focuses the need for learning as a mechanism of grappling with the 'wicked' problem of global inequity. The latter seems to be the case, at least for Fowler (1997, p 64) who cautions that unless NGOs learn they "will atrophy as agents of social change".

Several authors identify constraints to learning encountered by aid agencies. For example, Britton (1998) distinguishes between external and internal barriers to NGO learning. External barriers he believes are those factors over which the NGO has little or no control. Examples of these include donor priorities that force a fragmented project framework, the pressure for unrealistically low overheads, and competition between agencies for scarce public funding. Van Brabant (1997) contends that job insecurity and high staff turnover, poor information management and demand by the public for quick and easy results[101] also erode learning.

Although there is wide agreement on the importance of organisational learning (both generally and specifically within the aid industry), there is no commonly agreed or dominant theory to explain the process or mechanism (Davies 1998). In much of what is written, there is diversity on views about the mechanisms of individual and collective learning; and about the merit of structured and emergent/evolutionary approaches to fostering learning.

---

[101] This situation, he believes, shifts the focus of information management away from learning to public relations.

Individual v Collective Learning

There appear to be different views about the relationship between individual and collective learning. Van Brabant (1997, p 6) contends that this is a "key question in the search for organisational learning". The diversity of perspectives suggests that it is a complex process, or at least a new topic for investigation.

On the one hand, it is said that organisations do not learn, only individuals can learn; hence organisational systems and structures may either enhance or hinder individual learning (Edwards 1996 in van Brabant 1997). On the other hand, Senge (1990, p 236) asserts that:

> Individual learning, at some level is irrelevant for organisational learning. Individuals learn all the time and yet there is not organisational learning.

This tension is also noted by Swieringa and Wierdsma (1992 in Britton 1998) who point out that an organisation can only learn because its individual members learn and yet an organisation has not automatically learned when individuals within it have learned. Thus, individual learning may be considered a necessary but not sufficient condition for organisational learning (van Brabant 1997; Britton 1998).

Recall from the discussion in Section 3.4, that Checkland and Holwell (1998) believe that the social or collective process of "meaning attribution" (p 89) is essentially the same as the individual process, but is mediated by (p 218):

> …the never-ending dialogue, discussion, debate and discourse in which we all try to affect each others perceptions, judgements, intentions and actions.

As noted earlier, it is through this process of debate that accommodations[102] are found between the different perspectives represented in the discourse (Glover 2001). In the Checkland-Holwell schema[103], 'shared meaning' among organisational members that endures and links coherently with other structures

---

[102] According to Piaget (1971 in Glover (2001) the endogenous or evolutionary process of learning through 'accommodations' is likely to be more effective than formal processes such as traditional teaching methods which are based on 'assimilation'.

[103] That is, data → *capta* → information → knowledge

of information, may become 'shared knowledge'. Although not argued explicitly by Checkland and Holwell (1998), this process may explain the largely endogenous or informal nature of 'organisational learning'.

Thus, organisational learning is manifested in the prevalent perspectives and 'ways of doing things' within an organisation. This situation is recognised by actor network theory (ANT), which describes a process in which modes of thought and action may become 'mainstreamed' through the interaction of human and non-human actors within a network (Bryce, Johnston et al. in press). According to Callon and Law (1982 in (Bryce, Johnston et al. in press)), this process involves four stages:

- **Problematisation:** when a problem is identified and explored by one or more people or groups.

- **Interresment:** when a solution for the problem is put forward and the proponents start to persuade others and build alliances.

- **Enrolment:** when actors are enrolled into the network and become part of developing the solution.

- **Mobilisation:** when the actor network has achieved a level of stability and the solution is 'black-boxed' in a way that makes it apparently irreversible.

This thinking is aligned with the concept of evolutionary organisational learning as promoted by Davies (1998) and others. Evolutionary organisational learning applies the evolutionary algorithm[104] such that the range of perspectives within organisations is subjected to selection pressures (judgements). Perspectives identified as beneficial by organisational members are then retained and contribute to larger knowledge structures within the organisation (at least until superseded). Thus, as argued by Mulholland, Domingue et al. (2000), organisational learning takes place within a 'community of practice'. This view is consistent with the interpretive paradigm of organisational theory discussed earlier.

---

[104] The process of iterated variation → selection → retention Davies (1998a).

The evolutionary process of learning highlights the significance of 'environmental' factors that promote or erode the likelihood that learning occurs. Internal barriers to individual learning include what Argyris and Schon (1996 in Britton 1998) refer to as 'defensive routines'. These are said to be the entrenched habits that we use to protect ourselves from the embarrassment and threat that comes from exposing our thinking to others. This points to the importance of an enabling working environment or 'organisational culture' for learning (Mulholland, Domingue et al. 2000; Brown and Duguid 2000; Garratt 2000; Haeckel 1999. Glover (2001, p 16) contends that:

> The challenge for leaders, therefore, is to create an organisational culture that 'knows what it knows' and 'knows what it doesn't know' so that adaptation can be rational, reasonable and systematic.

This emphasis on leadership and organisational culture and how it relates to learning and adaptation is supported in research by Kazama, Foster et al. (2002) who report a strong correlation between leaders who exhibit reflexivity and organisations that manifest innovation. Kelly (2002), Fowler (1997) and others argue that the senior management in an aid agency plays a critical role in modelling and leading organisational learning.

Structured v Unstructured Organisational Learning

The deliberate or formal inculcation of lessons within day-to-day practice by organisational members remains a challenge for aid agencies (Cracknell 2000). There are, arguably, many mechanisms by which to accrue organisational knowledge, ranging from structured methods such as evaluation feedback and staff training through to more unstructured discourse-based approaches[105].

As with much of the foregoing, a pragmatic stance that identifies merit in both perspectives is appropriate. Seemingly, some aspects of organisational performance can be promoted through structured and data-driven learning methods; other aspects are likely to be emergent, and hence will respond to more unstructured processes. Effective learning, therefore, requires the

---

[105] For example, Orr (in Mulholland, Domingue, et al. (2000) reports successful accounts of photocopier engineers sharing 'war stories' about faults in different kinds of machines and how they were resolved.

adoption of the appropriate methods for the particular situation[106]. Once again, the conceptual framework offered in Figure 22 may provide a useful construct through which to identify which approaches are appropriate. Structured methods for promoting learning are likely to be the most appropriate for organisational performance factors within the sphere of control of the implementation team. In contrast, unstructured methods are likely to be the most appropriate for performance factors within the sphere of concern (and to some extent the sphere of influence) of the implementation team. This thinking also matches with the notion of 'triple-loop learning' as summarised by den Heyer (2001, p 38):

- **Single-loop learning:** involves the reactive response of individuals/groups when a problem arises. Analysis is limited to issues within defined parameters and questions focus on defining what the problem is and how to 'fix' it.

- **Double-loop learning:** involves individuals/groups reflecting on the whole system within which a 'problem' is situated. The focus is on questions about why the problem has arisen, and critical inquiry into whether or not the wider structures need to be changed.

- **Triple-loop learning:** involves individuals/groups reflecting on the theories and philosophical assumptions that created the system within which the problem is identified. Critical questions focus on paradigm shifts and radical transition.

These three forms of learning underpin the MEIS proposed in this thesis, and will be discussed further in Subsection 5.5.2.

In this subsection, I have reviewed parts of the literature on organisational learning—in particular, organisational learning from the aid agency perspective. I have reasoned the role of organisational learning in promoting organisational effectiveness; particularly in dynamic or chaotic operating contexts. A theoretical construct has been adopted to generalise three different

---

[106] Dettermen et al (1993 in Mulholland, Domingue, et al. 2000) reports that 90% of curricula presented in formal professional training methods does not translate to modified practice.

forms of learning appropriate for different aspects of organisational effectiveness.

In the following section, I will review parts of the literature from the field of project management. As identified earlier, 'the project' is the dominant mechanism of aid delivery; that is, project management is the means by which 'purposeful action' is implemented by members of aid agencies in pursuit of effective social change.

3.6   Project Management

There are numerous definitions of 'project' in the literature. For example, Wideman's *Comparative Glossary of Project Management Terms* identifies eighteen definitions from a variety of respected sources (Wideman 2001). Most definitions, however, identify projects as being concerned with the pursuit of precise *objectives* within a specified *timeframe* and as being constrained by limited *resources.* The practice of 'project management' then involves the application of knowledge, skills, tools, and techniques to project activities to meet the project requirements (PMI 2000, p 6).

As identified in Subsection 3.2.1, 'the project' is the prevailing mechanism by which the international aid industry fosters change. That is, the vast majority of aid is delivered *via* projects (Fowler 1997; Broughton 1996; Crawford and Bryce 2003). Madeley (1991) estimates project-based aid to be between eighty-five and ninety per cent of global aid expenditure. Further, the aid industry ranks as a major player alongside other project-centric industries. Current estimates of annual, official aid project funding are in excess of US$54 billion (World-Bank 2002). In Australia, AusAID is the third largest purchaser of project management consultancy services after the defence force and Centrelink (Anderson 2002 pers.com.). Hence, the discipline of project management is central to the international aid industry.

Intriguingly, the predominance of project management within the aid industry has been less widely recognised in project management literature than might

otherwise be expected[107] (Themistoclous and Wearne 2000). It was not until the 2000 edition of the *Project Management Body of Knowledge* (PMBOK) that references to international aid first appeared as a recognised project management 'application area'. A call for papers for a special issue on 'Project Management in Developing and Emerging Economies' issued by the *International Journal of Project Management* (IJPM 2000) may also be indicative of relatively recent attention by academics within the discipline.

The separation of aid projects from the professional and academic discipline of project management has been reinforced by aid workers themselves (IFAD 2002). In my experience, aid project managers do not formally recognise the discipline of project management[108]. That is, they tend not to view themselves as professional 'project managers', but rather see themselves generically as professional 'aid workers' or specifically as technicians (e.g. agriculture, engineering, health, social work etc.). While this is consistent with the commonly cited belief that project management is an 'accidental profession', it seems to be particularly the case among aid project managers as reflected in the cartoon presented in Figure 29, found in the M&E guide produced by the International Fund for Agricultural Development (IFAD 2002, p 2 - 3).

---

[107] Publications in dedicated project management journals are dominated by application areas such as structural engineering, aerospace and information technology (Themistoclous and Wearne 2000).

[108] There is a low level of formal project management training and virtually no professional certification. This was most recently seen in Oxfam's Angolan operation where all four water and sanitation project managers were nurses who 'found themselves' in project management roles.

- Figure 29: A comical perspective on the seeming lack of appreciation for the discipline of project management by aid workers (Source: IFAD 2002)

Perhaps indicative of the separate evolution of aid project management from other project-centric industries is the seemingly low level of cross-pollination of project management tools and techniques between the aid industry and other project-centric industries (Smith 2001). For example, 'logical framework analysis'[109] (LFA) (or the 'logframe'), is the *defacto* standard tool in the aid industry, but remains largely unknown in other industries (den Heyer 2001;Coleman 1987; Gasper 1997; AusAID 2000; Bell 2000; Cracknell 2000; Lavergne 2002). Conversely, numerous project management methods and tools developed for risk management and control in other industries (Schuyler 1996) remain largely unheard of within aid project management praxis.

It is possible that the practical and theoretical separation of the aid industry from other project management application areas derives from the same epistemological tensions identified earlier. This is an area for further research.

Origins of the Discipline of Project Managment

The theoretical foundations for project management are the same as those for systems analysis and systems engineering (Yeo 1993) as discussed in Section

---

[109] Also known as the 'logical framework approach', or more commonly, the 'logframe'. See Appendix for an overview of the history and application of the logframe.

2.3.1. Sisk (2003) identifies the origins of the discipline as deriving from work in the early part of the 20th century by Frederick Taylor[110] who applied scientific reasoning to show that the results of labour could be analysed and improved by focusing on its elementary parts. Henry Gantt, Taylor's associate, extended his work through studying in detail the order of operations in Naval ship construction during WWI. Gantt developed a visual performance management aid, the 'Gantt Chart', which is arguably the most widely employed project management tool (Sisk 2003).

During the late 1950s and early 1960s, considerable work was done in the US to develop project planning and analysis techniques. The objective of much of this work was to give project managers greater control over complex projects such as military weapon systems development, in which a large variety of tasks involve numerous interactions at many points in time (Stretton 1994a). The label 'network planning and analysis techniques' is generally considered to embrace the three dominant methods that emerged (Sisk 2003): Critical Path Method (CPM), Project Evaluation Review Technique (PERT) and Precedence Diagramming Method (PDM). Since then, numerous project management tools and techniques have extended this work[111]. However, the overwhelming emphasis on deterministic methods such as probabilistic techniques, reinforces the scientific epistemology of project management. In essence, the whole project management approach may be considered a functionalist performance management system.

From the 1970s, the application of the project management approach in the private sector was refined and broadened (Stretton 1994b). In particular, the perception of project management as an appropriate methodology for responding to and initiating change became increasingly recognised (Stretton 1994c). Several authors report a 'projectisation' of general management (Gabriel 1990; Cleland 1991; Turner 1992)—that is, an increase in the popularity of project management techniques for dealing with a range of managerial, technical and social issues.

---

[110] The inscription on Taylor's tomb in Philadelphia reads: "the father of scientific management."

[111] See for example, Schuyler (1996) who provides a comprehensive description of the most common techniques.

This history highlights the functionalist epistemology that underpins project management, and arguably the basis for criticisms of the project approach to aid.

Critique of the Project Approach to Aid

In recent years, a polemical stance has emerged among certain NGO commentators regarding the project approach to aid. These arguments largely derive from the philosophical tensions that underpin the NGO dilemma discussed in Section 3.2. This commentary alludes to a sense that there has been an imposition of the project management discipline (along with other management techniques from the business community) onto aid agencies (Smillie 1995). Critique of the project approach to aid has ranged between pragmatic and vitriolic (Smillie 1995; Fowler 1996; Fowler 1997; Gasper 1997; Gasper 1999; Gasper 2000; Lavergne 2002; Chambers 1997; Kaplan 1999; Earl 2002; Kelly and Chapman 2003). Most of the issues reported to underpin the inappropriateness of project management methods for aid can be broadly categorised as deriving from concerns about:

- the assumptions of linearity that underpin the project approach;

- the assumptions regarding the nature of the problem of poverty;

- the donor-centric/accountability focus fostered.

Concerns About Linearity

As was presented in Subsection 3.3.2, assumptions of linearity are central to the functionalist paradigm. These assumptions are appropriate when dealing with problems within closed systems, such as those for which the project management discipline evolved. However, the use of project management methods within human activity systems tends to be problematic. This realisation has motivated disparaging descriptions of the project approach such as: the 'control-oriented' approach (Smillie 1995), the 'donor-driven' approach (Bossuyt 2001 in Lavergne 2002), the 'bureaucratised programming' approach (Earl 2002), and the 'blue print' approach (Fowler 1996).

The essence of the concerns about linearity have been expressed by Fowler (1996):

> …the project mode of development…assumes that it is possible to pre-determine a set of cause-and-effect relationships that will turn resources, knowledge or technology into desired and sustainable human change.

Fowler (1997, p 17) later expresses the belief that this fundamentally deterministic thinking "does not reflect how societies change". Earl (2002, p 7) holds similar concerns, and further suggests that the approach tends to foster the belief among aid project managers that they can warrant the delivery of the desired social impact; and furthermore, that managerialist methods "greatly increase the quality of development work". However, Smillie (1995, p 148) in reflecting on the rise and fall of various management techniques imported into aid agencies, believes that

> …none has proved very satisfactory, perhaps because development…is highly 'emergent', requiring flexibility and constant adjustment.

Concerns About the Nature of Problem Definition

Additional critique of the project approach to aid derives from assumptions about the fundamental nature of development problems. As discussed earlier, the problems of human development, poverty, sustainability etc., may be understood in terms of Rittel and Webber's (1973) 'wicked' problems. The project approach is appropriate for dealing with 'tame' problems in which goal definition is a one-time process, after which the goal is taken-as-given[112], with universal acceptance. The implication of the project approach to aid is that, as a time-dependent strategy, it ignores the ongoing iterative learning-focussed approach required to deal with 'wicked' problems.

Aid project planning has been criticised for ignoring the socio/cultural complexity and the diversity of *weltanschauungen* characteristically involved (Chambers 1983). According to Biggs and Neame (1994 in Gasper 1997, p 22):

---

[112] As with functionalist organisational theory critiqued by Vickers (1965) in Subsection 3.5.1.

> …the project mentality…ignores the complex historical, political, economic and
> cultural processes and power structures at work…Similarly, it fails to
> acknowledge the heterogeneity of the social and ideological commitments of
> individuals and interest groups.

Smillie (1995, p 148) argues that the inappropriateness of the project approach (and other managerialist methods) stems from the fact that "development works to a certain extent in a political economy, rather than a market economy".

Concerns about Donor-centricity

The third category of critique centres on the power asymmetry that is central to the donor-recipient nexus. Arguably, the main reason for the persistence of the project management approach is that it serves the donor need for accountability (Crawford and Bryce 2003). Fowler (1997, p 18) believes that despite the limitations of the project approach, it has remained as the standard mode of operation because it "cuts complexity into bite-size, manageable and fundable chunks".

One reported risk of the project approach is the tendency, in situations where there is disparity between the views of the donor and the beneficiary, for aid agencies to favour the donor (Fowler 1997).

Nevertheless, despite the compelling arguments within much of the critique of the project approach to aid, it has persisted as the dominant mechanism. Furthermore, even ardent critics of the approach tend to be resigned to the pragmatic reality that it is unlikely to change. For example, Fowler (1997, p 17–18) states that:

> …it is sufficient to make clear that incompatibilities between projects and people-
> centred development create difficult conditions which NGOs must organise for
> and manage, because the project mode is unlikely to be replaced by something
> more suitable… despite many calls for reform, and some limited experimentation,
> the project system still dominates because it suits the administrative need of
> financiers.

An alternative stance could take a more constructive approach to the concerns raised. Arguably, the extent to which 'the project' drives the donor agenda is to some extent a feature of the particular NGO culture. As argued in Subsection 3.2.4, an NGO can be more proactive about the nature of relationships with donors and beneficiaries than implied in some of the rhetoric, thereby mitigating the risk of becoming wholly donor-driven in the planning and implementation of aid projects.

Similarly, the extent to which aid project designs assume a level of 'tame-ness' is a function of the culture and systems within the NGO. That is, the dominance of the project approach is not mutually exclusive of participatory and consultative context analysis and planning methods.

The fundamental linearity of the project approach appears in conflict with the transformative objectives of aid, and the complex and unpredictable operating context. However, even this reality may be managed more proactively than implied in much of the critique of the project approach. Firstly, a widely acknowledged weakness in aid agency planning is the assumptions/risks analysis that is a feature of the logframe approach (Gasper 1997). By adopting a more rigorous approach to this aspect of project planning, and by ensuring that this detail features within the M&E system, the opportunity to at least capture non-linear outcomes of project designs is likely to improve. This theme will be operationalised in Subsection 5.4.4.

Secondly, as implied in Subsection 3.3.3, adopting a teleonomical perspective on the role of the MEIS may also assist with combating the challenges of linearity within aid projects. While any single project design may be founded on an expectation of linear social change, the over-arching problems associated with this perspective are likely to be reduced if the NGO adopts a stance in which 'the project' is conceived as a means rather than an end. This concept will be expanded further in Subsection 5.5.3. However, here it is sufficient to raise the possibility that by conceiving of 'the project' as merely one social experiment (Rondinelli 1993; Crawford, Perryman et al. 2004) within a wider context of strategic learning, the problems of linearity may be less acute than when an NGO implements projects in an *ad hoc* discrete manner.

In this section, I have reviewed parts of the literature from the field of project management. I briefly reported the history of the emergence of the discipline, and its significance within the aid industry. I recognised the fundamental grounding of the discipline within the functionalist paradigm, and reported critique of the thinking by aid industry commentators. I have acknowledged the arguments that challenge the appropriateness of the project approach to aid, while indicating that aid agencies are not wholly disempowered in their ability to mitigate several of these issues.

3.7   Conclusion

In this chapter, I have explored the aid agency operating context, and identified a dilemma deriving from the divergent epistemological and ontological assumptions of an aid agency's two dominant stakeholders: beneficiaries and donors. The need for 'the donor' of an aid agency to demonstrate accountability is grounded in linear/functionalist assumptions about the nature of human development. In contrast, the need of 'the beneficiary' of the aid agency to engage in learning is grounded in complex/interpretive assumptions. I concluded that the pragmatic reality is that an aid agency must excel at both in order to survive and to be effective in implementing its mission of fostering change in the world. The provision of relevant, accurate and timely information is essential for both accountability and learning. This fact underpins the notion of M&E.

With this background, I reviewed aid industry literature on M&E and identified three conceptual issues that, in my experience, have affected the practice of M&E. These issues concern (a) ambiguity in the definitions of monitoring and evaluation; (b) divergent philosophical views (deriving from the NGO dilemma) about how the change anticipated by aid projects may be both represented and judged, and (c) the various perspectives from which a MEIS may view the performance of 'the project' *vis-à-vis* the performance of 'the implementing agency'. I reasoned that the critical nature of the NGO dilemma, along with the diversity of perspectives within each of these conceptual issues, justifies research in this area.

Given these conceptual issues and the diversity of views within each, I then reviewed parts of the literature from three academic fields in order to articulate gaps in the academic basis for the notion of 'M&E' as understood and practised in the international aid industry. The three fields examined were information systems, organisational effectiveness and project management. I found each field to be dominated by the functionalist paradigm, although an emerging interpretive perspective was also identified. Given the pragmatic objective to resolve the NGO dilemma through operationalising a MEIS, I identified merit in both perspectives within each of the three fields reviewed. This stance is consistent with the underlying philosophy of transdisciplinarity.

IS literature was reviewed because M&E is fundamentally concerned with information—in particular the provision of information to support organisational endeavour. The dominant functionalist perspective in IS study was found to be appropriate for supporting some 'objective' aspects of management decision-making, however, there appeared to be merit in also embracing the interpretive perspective which acknowledged a 'richer' role for information in support of humans taking purposeful action.

Organisational effectiveness literature was reviewed because M&E is widely expected to contribute to the effectiveness of aid agencies—and therefore aid. The pursuit of organisational effectiveness, as a 'wicked' problem, was found to involve an iterative process. The role of information in these iterations is to enable processes of organisational performance measurement and organisational learning (i.e. contextualising the findings of the measurement process). As with the field of IS, the functionalist paradigm was found to dominate. This paradigm assumes that organisations are goal-seeking entities, and that management involves objective problem-solving. Further, there is an expectation that organisational performance can be measured unambiguously and that organisational learning can be engineered. In contrast, the interpretive paradigm assumes that organisations are purposeful, socio-cultural collections of humans, and that management is fundamentally a process of managing relationships. Within this paradigm, it is acknowledged that not all aspects of organisational performance can be 'measured' in the classical sense; rather

'appreciative judgements' are made by human actors from the perspective of their particular *weltanschauung*—and then debated to find accommodations. These accommodations lead to the formation of 'shared intent[113]' by organisational members that enables 'purposeful action'; the outcomes of which are subsequently debated to find new accommodations. Further, learning is acknowledged to be an individual process, but 'shared meaning' may evolve among members of a community of practice. This process can, in some instances, be facilitated through structured approaches, but in other cases is emergent, and hence can only be fostered through unstructured processes and within an enabling organisational culture. The triple-loop learning construct was adopted to distinguish the different forms of learning reflected in organisational processes.

Project management literature was reviewed since the mechanism of 'purposeful action' in the aid industry is overwhelmingly the project approach. The discipline of project management was found to be grounded in the same epistemology that dominates the fields discussed earlier—the functionalist paradigm. While there is growing criticism of the project approach to aid, it has persisted (and is likely to continue) because of the fundamental requirement for accountability that underpins the donor-recipient nexus. Criticism of the project approach to aid by various aid industry commentators was reviewed and found to be broadly concerned with a) assumptions of linearity; b) assumptions about the 'tame' nature of aid and c) a bias towards the needs of the donor at the expense of the beneficiary. Nevertheless, opportunity to implement a deliberative approach to programming (in line with the interpretive paradigm) was identified through adopting a teleonomical perspective on the role of M&E. That is, whereas the conventional approach to M&E in the aid industry is project-centric, by implementing an 'enterprise-wide' approach to M&E, the performance of each project can be coherent within a broader strategic framework of learning across the whole agency.

---

[113] Conklin (accessed 2002) adopts the term 'shared understanding'. He argues that this does not necessarily imply 'agreement' on the problem/solution. Rather, "shared understanding means that the stakeholders understand each other's positions well enough to have intelligent dialog about the different interpretations of the problem, and to exercise collective intelligence about how to solve it" (p11).

The implication from this literature review for MEIS development is that both interpretive and functionalist notions have merit in assisting aid agency members and stakeholders to make informed judgements about the extent and merit of social changes fostered. The constructs and interpretations of literature from the three fields reviewed in this chapter will be operationalised in Chapter 5. In the following chapter, I will report lessons learned from field experience to supplement the theoretical insights.

Chapter 4

Results

This chapter:

- Reviews field experience in the light of SSM conceptual models and literature

- Proposes the 'M&E data cycle' to describe the sequence of activities involved with M&E

- Identifies key constraints relevant at each stage of the M&E data cycle

Action Researcher, Paul

engaged in

fieldwork with international aid agencies

concerned with

the practice
of M&E

found to involve

a sequence of activities

must appreciate/mitigate

that are constrained by

human and organisational factors

Culture

Mechanism

Incentive

Skill

Compliance

Planning

Identify

Capture

Assess

Analyse

Utilise

Disseminate
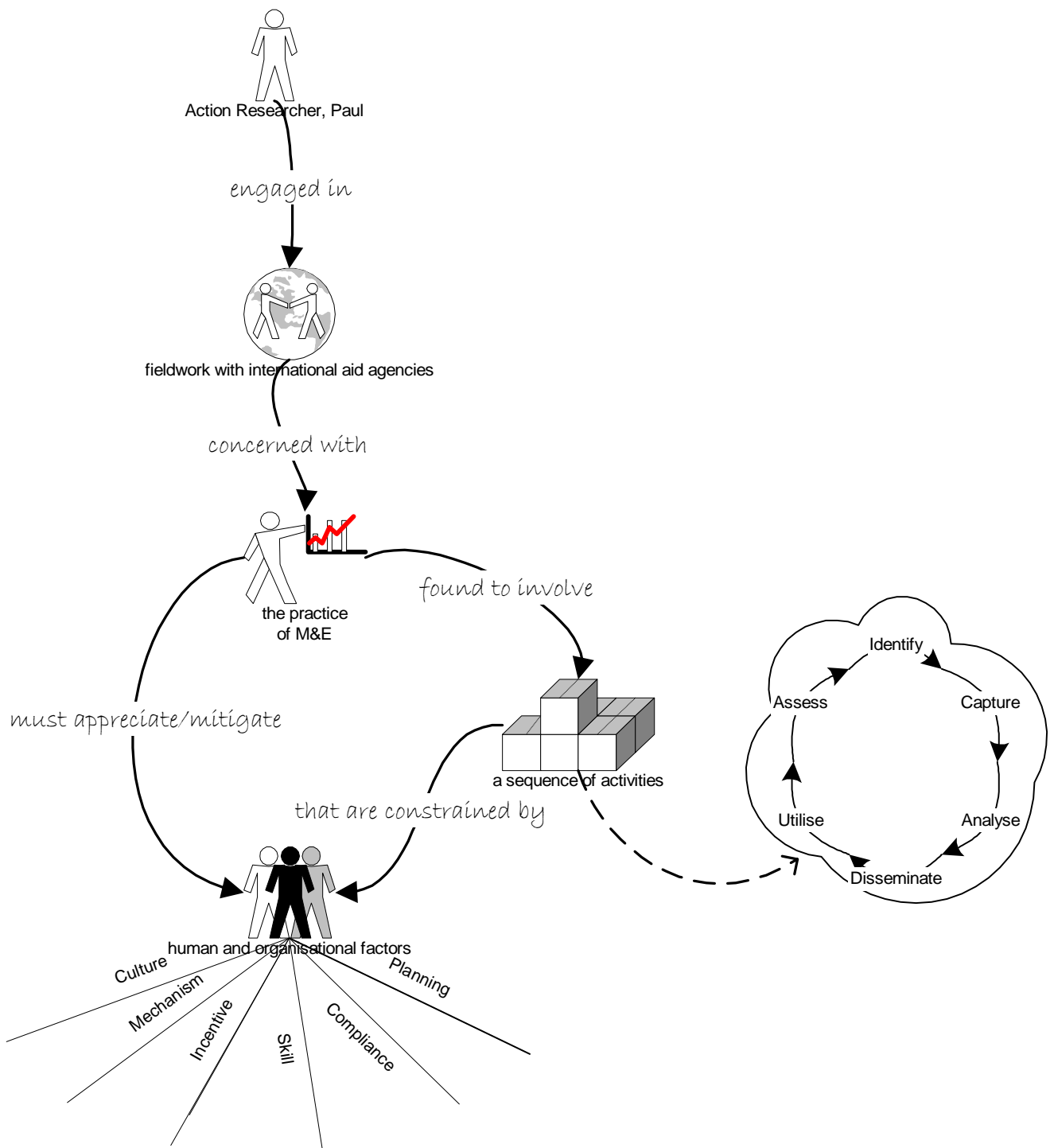
4　AN ACTION RESEARCHER IN AID

4.1　Introduction

This chapter traces experiential learning throughout this study, as distinct from the application of existing discipline-based literature discussed in the previous chapter, or theoretical models presented in Chapter 2. While most of the lessons reported derive from the Kenyan case study project, at times these are supplemented with lessons from other projects with which I have been involved during this candidature. In some cases, I discuss the insights gained from fieldwork in the light of relevant theory. Hence, this chapter is fundamentally concerned with monitoring and evaluation praxis; that is, the intersection of theory and practice (Bawden 1991). Its purpose is to isolate lessons learned during fieldwork that have wider application. The influence of these lessons will be reflected in the MEIS framework proposed in Chapter 5.

The practicalities that underpin M&E were expressed in the SSM root definition of a MEIS[114] in Section 2.4, and the associated conceptual model presented in Figure 16. That model defined a sequence of activities to 'transform' (i.e. 'T' in CATWOE) data to knowledge[115] about project and organisational performance:

- *Identify* data required.

- *Capture* data.

- *Analyse* data.

- *Disseminate* information.

- *Utilise* information.

---

[114] An information system, within a donor-funded aid project system, that converts data to knowledge about project performance for the benefit of NGO personnel, but is constrained by compliance, skill, mechanism and incentive.

[115] Following from Section 3.4, the process of transforming data to knowledge ('T') can now be understood as involving the identification of *capta* and its subsequent analysis to render 'information'. Features or trends observable in sets of information may then evolve into larger structures called 'knowledge' shared by organisational members.

▪ *Assess* the performance of the MEIS itself in contributing to organisational performance[116].

This sequence of activities may be presented in the more interpretable form of Figure 30, which conveys the iterative nature of the process—the 'M&E data cycle'.
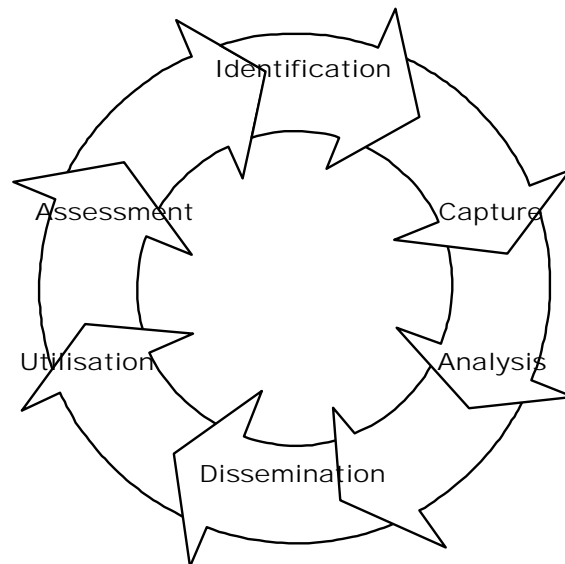
• Figure 30: M&E data cycle

The SSM conceptual model of a MEIS (Figure 16) also identified the dominant 'environmental constraints' (i.e. 'E' in CATWOE) found to affect the operational stages of the above cycle:

▪ Sufficient *compliance* by reporting staff with data capture protocols.

▪ Adequate *skill* to perform the required analysis.

▪ Appropriate *mechanisms* to ensure information dissemination to stakeholders.

▪ Apparent *incentives* to promote the utilisation of information by personnel.

---

[116] N.B this final stage embodies the 'monitoring and control sub-system' of the SSM conceptual model presented in Figure 16.

Although not explicit in the SSM conceptual model of a MEIS,[117] the following constraints to data *identification* (the initial stage of the M&E data cycle), and MEIS *assessment* (the final stage) may be added to the above list:

- Rigorous *planning* to ensure appropriate data identification.

- An enabling *organisational culture* that promotes critical assessment and learning.

Thus, the stages of the M&E data cycle and their respective constraints may be depicted as in Figure 31.
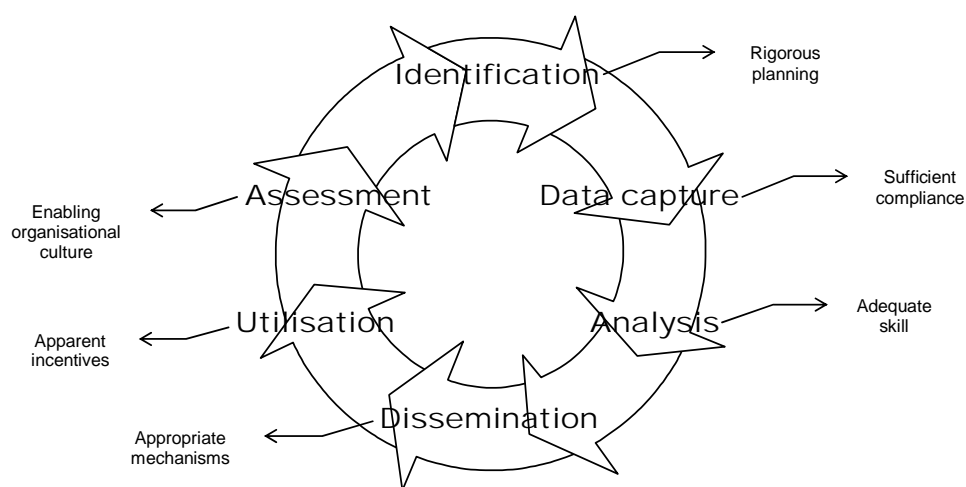
- Figure 31: The constraints encountered at each stage of the M&E data cycle

In this chapter I adopt the M&E data cycle depicted in Figure 31 as the framework to present salient lessons learned during this candidature. I discuss each stage of the M&E data cycle in turn, and present some of the practical experiences that led to identifying the above constraints to M&E. I begin with the first stage—and what I found to be the most problematic stage—'identification'.

---

[117] The SSM conceptual model of a MEIS (Figure 16) did not identify constraints to M&E data identification and MEIS assessment—the initial and ultimate stages of the M&E data cycle respectively. This should not suggest that these stages are unaffected by 'environmental constraints'. Rather, this situation arises because within conventional approaches to M&E (as discussed in Subsection 3.3.3), the system under study is 'the project' (i.e. a teleological perspective on project performance). Hence, constraints to identification and assessment precede and succeed the system studied—they are features of the wider system, 'the organisation', and as such tend to remain unexamined in the conventional sense.

4.2 Identification

In this section, I explore challenges encountered at the identification stage of the M&E data cycle. This stage concerns the process of identifying what data is considered relevant (i.e. *capta*) by the various roles located throughout the three zones of management (3ZOM) within aid agencies. This stage receives the most attention in this chapter, because throughout this research I found it to be the greatest concern among practitioners. Further, many of the constraints encountered at subsequent stages in the M&E data cycle seem to be compounded by poor identification.

As noted in Section 4.1, data identification is constrained by the wider process of planning. From an M&E perspective, planning involves definition of the criteria against which the performance of the project will be judged, and the practicalities of how this information will be obtained and utilised.[118] Observations throughout this candidature indicate that constraints to rigorous M&E planning arise from ambiguity in two areas:

- **Responsibility:** who should carry out the M&E planning process?

- **Detail:** what information is actually required?

In the following two sub-sections, I will discuss these constraints in turn.

4.2.1 Responsibility for M&E Planning

M&E planning is generally expected to be a feature of the design phase of the project cycle, hence the responsibility of the design team. The widespread use of the logframe as a planning tool with its requirement for objectively verifiable indicators (OVIs) to be assigned to each stage of the impact chain is a feature of this expectation. However, while this expectation seems reasonable, my experience suggests that M&E planning during the project design phase tends to be weak. An outcome of this reality is that responsibility for M&E planning tends to be transferred to the implementation team—who encounter their own set of constraints.

---

[118] That is, operationalisation of the subsequent stages of the M&E data cycle.

Design Team Constraints

The constraints to rigorous M&E planning encountered by design teams are likely a result of structural issues within the aid industry that demand a focus on 'the proposal' at the expense of more detailed project management information, such as M&E plans and protocols.

The proposal (essentially a 'sales pitch') is the document submitted to donor agencies to secure funding for aid projects. The reality that project implementation activities attract donor support, but that initial context analysis and design processes are self-funded,[119] requires that aid agencies find a tenuous balance between two competing demands in the quantity and quality of information provided. On one hand, the aid agency must provide sufficient detail in the proposal to demonstrate both an appreciation of the development 'problem', and the capacity of the agency to implement the proposed 'solution'. On the other hand, an investment of too much time and effort in context analysis and planning before receiving confirmation that the project will be funded risks 'wasting' scarce organisational resources[120]. Further, the provision of too much project management detail in the proposal is likely to negatively impact on the readability of the proposal, and hence erode its value as a 'sales' document.

This reality suggests that a two-stage planning process may be appropriate, in which detailed implementation planning (DIP) is conducted subsequent to confirmation of funding by the donor. However, my observations suggest that even this approach tends to break down in practice. In aid agencies where I have been employed in a dedicated planning role, my best intentions to return to the proposal once funded, have been overtaken by competing demands for new proposals. In situations where I have been engaged as a project design consultant, my terms of reference have mostly concluded with the submission of the proposal to the donor. In both scenarios, pressures within the industry

---

[119] Even 'self-funding' from civil society and private sources is problematic for 'non-implementation' parts of the project cycle. Taxation rules cement the popular myth that design and management of aid projects is cost-free.

[120] In my own experience in the field as a planner, I quickly learned that the provision of detail that is beyond some arbitrary 'break-even point' in time and effort before confirmation of funding is not economically rational.

prevent further elaboration, thereby necessitating the transfer of responsibility for DIP processes (including M&E planning) to the implementation team.

Implementation Team Constraints

The outcome of the constraints encountered by project design teams is that responsibility for M&E planning frequently falls to the implementation team during the start-up phase (or the early stages of the implementation phase) of the project cycle. However, two constraints commonly emerge:

Firstly, the start-up phase is typically a stressful and hectic period during which operations staff must be recruited, project assets procured, the terms of collaborative agreements finalised etc. The result is that, overwhelmed with competing demands, implementation teams tend not to prioritise the development of a MEIS until reports required by the donor or other powerful stakeholder become urgent[121]. In some cases, this may be after a year or more of implementation activities, at which point the recovery of important detail necessary for learning and accountability may be impossible.

Secondly, as discussed in Section 3.6, aid project managers tend to view themselves as technicians (or generically as 'aid workers'). This fosters an organisational culture that values action-oriented management styles that tend to view reporting and information management tasks as a distraction from the 'real work'. Further, as recognised by Dransfield, Fisher et al. (1999), even where the required motivation is present, managers rarely possess the skills of statisticians or information scientists necessary to operationalise a rigorous MEIS. Hence, a lack of implementation team motivation and/or skill tends to result in MEIS development and deployment being a low priority.

The consequence of the constraints encountered by design teams and implementation teams is that M&E planning tends to be poorly executed. That is, insufficient consideration is given to both the nature of information required by various stakeholders, and the practicalities of how this information will be made available (i.e. operationalisation of the subsequent stages of the M&E

---

[121] See Covey (1990) for a useful discussion of the difference between 'urgent' and 'important'.

data cycle). This situation in turn fosters a culture of extrinsically motivated M&E that seeks only to satisfy the minimum accountability requirements of powerful stakeholders (e.g. donors). This emphasis may be at the expense of M&E processes' ability to promote more developmental outcomes such as organisational learning. This issue will be discussed further in Section 4.6.

In this subsection I have reported insights gained from field experience that suggest that ambiguity concerning who is responsible for executing M&E planning negatively affects data identification. In the following subsection I explore the second factor identified—ambiguity concerning the detail required.

4.2.2 Definition of M&E Detail

In addition to the ambiguity about who is responsible for implementing M&E planning, a second constraint derives from ambiguity about the nature of the actual data required (i.e. *capta*). As identified in Subsection 3.3.2, the broad purpose of M&E is to enable aid agencies to make informed judgements about the extent and merit of changes they have sought to foster within beneficiary communities. Although there seems to be general acceptance that this information is required to enable organisational learning and to demonstrate accountability, there is less clarity about the precise nature of the data required to achieve this.

In the Kenyan case study project, the design team defined some indicators and provided the broad principles for a MEIS, but delegated responsibility for development of a detailed M&E plan to the implementation team. When we met early in the start-up phase of the project to plan the MEIS, we noted the substantial and detailed reporting requirements of the donor[122], and identified the need for a guiding framework to ensure coherent and comprehensive data identification. A review of M&E literature confirmed that the dominant approach to M&E planning utilised the logframe, or similar logic-based models. This aligned with the expectations of the implementation team, and so we adopted the logframe as the guiding framework.

---

[122] The project was funded under the USAID Title II Food-for-Peace grant programme, which many believe to require the most stringent M&E systems in the aid industry.

The logframe approach to M&E planning requires objectively verifiable indicators (OVIs) to be assigned to each stage of the impact chain. This is said to enable judgements about the performance of the project at each stage of the change process, thereby promoting learning and accountability. The logframe matrix also requires a means of verification (MOV) for each OVI to define how the data will be obtained (see Figure 32).

Project Description ('Impact Chain')	Objectively Verifiable Indicators (OVI)	Means of Verification (MOV)	Assumptions
Impact			N/A
Effects			
Outputs			
Activities			
Inputs			

● Figure 32: A logframe matrix variant used in the Kenyan case study project

Initially there was a strong commitment within the implementation team to identify and track indicators at each stage of the impact chain—i.e. to rigorously apply the framework. However, the process of actually applying the framework raised several practical concerns[123] that may be broadly grouped as:

- **Definition of human actors:** the explicit identification of the human actors involved at each stage of the change process;

- **Measurement and attribution of change:** the viability and appropriateness of utilising indicators to capture each stage of the change process.

I will discuss each of these concerns in turn.

Definition of Human Actors

As discussed in Subsection 3.3.2, the conventional approach to M&E planning is commonly grounded in linear/functionalist assumptions about social change. In practice, this leads to a disproportionate focus on the nature of the change anticipated, at the expense of the perspective of human actors involved with the change process (i.e. complex/interpretist assumptions about social change).

---

[123] These concerns, which will be discussed throughout this chapter, led to modifications to the conventional logframe matrix presented in Subsection 5.5.1.

Whereas the former approach is concerned with questions such as "what change is anticipated, and how will it be measured?" the latter approach is concerned with questions such as "who is expected to change, and what is their role in the change process?"

In the Kenyan case study project, initial attempts to prepare a logframe matrix as the basis for M&E planning resulted in considerable confusion. Many of the common mistakes made by practitioners who attempt to use the framework unassisted were evident (Gasper 1997; Davies 2002; Cracknell 2002). On reflection, much of the confusion derived from a dominant linear/functionalist perspective that, in the absence of a thorough grounding in logframe convention, led to misallocation of logic at each stage of the impact chain, and hence an ambiguous and yet ambitious M&E plan. A prime example involved confusion between what constituted an 'output' *vis-à-vis* an 'effect'. This ambiguity is what Cracknell (2000) believes to be the most commonly encountered mistake in the use of logframes. Cracknell (p 109) cites Dr Eggers (1992) of the European Commission:

> The logical framework has consistently failed to avoid confusing project outputs with project [effects]. It is a tragi-comical feature of the logical framework method that its protagonists and instructors have constantly warned against such confusion, while with the inexorability of fate succumbing themselves to this error over and over again.

In the Kenyan case study[124], this confusion involved the definition of outputs in terms of increases in farm productivity-enhancing knowledge and skill among 140 community-elected Extension Farmers. We later understood this to be a misallocation of logic in the impact chain. There is a subtle but profound difference between the *delivery* of capacity building training events, and the extent to which the training is *internalised* by the participants and manifests as increased knowledge and skill. Despite the fact that logframe literature universally defines outputs in terms of the tangible deliverables of the project, and effects as the desired changes in knowledge/attitude/practice (KAP) that

---

[124] See Appendix C for a summary of the project design.

are anticipated as a result of delivering the outputs, the distinction frequently becomes blurred.

Increased clarity came when we shifted from a predominantly functionalist perspective to an interpretist perspective. This involved moving away from a mechanistic view of the kinds of social changes anticipated at each stage in the logic, to an explicit recognition of the roles of the various human actors in the change process (as discussed in Subsection 3.3.2; Figure 22). The logic of the theory of change then became grounded in the actions/responses of three classes of human actor identified:[125]

- **Implementation team**: seven Extension Coordinators responsible for delivering capacity building training events.

- **Boundary partners:**[126] 140 community-elected Extension Farmers (i.e. 20 per Extension Coordinator) who benefit from capacity building training by the implementation team, and are in turn responsible for promoting innovations within their respective communities.

- **Wider target community:**[127] the people or groups expected to be influenced by the boundary partners. These are the ultimate beneficiaries among whom the project aims to foster sustainable changes in wellbeing. In the case study project, these were defined as the estimated 10,000 households within the administrative boundaries of Ikutha Division of Kitui District, Eastern Province, Kenya.

Thus, the three-stage theory of change embodied in the project design may be depicted as in Figure 33.

| 7 Extension Coordinators facilitate capacity building training events | 140 Extension Farmers adopt farm productivity enhancing innovations | The food security of households within Ikutha Division improves |

- Figure 33: The three-stage theory of change embodied in the Kenyan case study project defined in terms of the actions/responses of three classes of human actor

---

[125] In fact, most international development projects that I have been exposed to have involved three classes of human actors implicit within the theory of change.
[126] As defined by the International Development Research Centre (IDRC) and represented in Figure 21; also commonly known as 'primary beneficiaries' or within Diffusion of innovation (DoI) theory as 'early adopters'.
[127] Also commonly known as 'secondary beneficiaries' or within DoI theory as the 'early majority'.

Having made explicit the role of the human actors in the anticipated social change process[128], the outputs, effects and impact in the logframe were then defined in terms of their respective actions/responses. That is, outputs were defined as the domain of the *implementation team,* effects were defined as the domain of the *boundary partners* and impact was defined as the domain of the *wider target community.* This thinking follows from the discussion in Subsection 3.3.2 (in particular the model depicted in Figure 22), which acknowledged that outputs are within the 'sphere of control' of the implementation team, effects are within their 'sphere of influence'; and impact is within their 'sphere of concern'—i.e. two degrees of separation from the control of the implementation team.

Viewing the theory of change from this perspective clarified the M&E planning process since the subject and purpose of M&E methods became explicit. That is, in order to assess the extent and merit of changes fostered by the project, it was clear that M&E methods should examine each of the three stages of change by inquiring into the actions and/or responses of the implementation team, boundary partners and wider community respectively.

Measurement and Attribution of Change

The interpretist perspective discussed above helped to clarify the logic of the theory of change, and hence the key elements of the M&E system. However, when the implementation team came to define OVIs relevant to each stage in the impact chain, a range of additional concerns arose about how social change can be measured and attributed to the project. I will now discuss the salient points surrounding these concerns.

Grounding the logic of the project theory of change in the actions and responses of the three classes of human actor (i.e. defining a three-stage theory of change) aligned with the notion from SSM that the performance of any system may be judged against the three criteria of efficiency, efficacy and

---

[128] N.B. The three-stage theory of change highlights the critical role of the boundary partners in the change process; they are required to *participate* in project activities, *adopt* innovations promoted and *promote* these innovations within the wider community.

effectiveness (see page 58). That is, the performance of the project may be judged by assessing:

- The *efficiency* of implementation team.

- The *efficacy* of the intervention in fostering the anticipated changes in KAP among the boundary partners.

- The *effectiveness* of the broad approach adopted in contributing to improved wellbeing in the wider community.

This perspective (modelled in Figure 15) suggested that OVIs at the input, activity and output levels of the logframe should inquire into three outcomes. Firstly, the extent to which donor supplied inputs were converted to the planned outputs on time and within budget. Secondly, OVIs at the effects level should inquire into the extent to which the outputs delivered, actually fostered the anticipated changes in KAP in the lives of the boundary partners. Finally, OVIs at the impact level should inquire into the extent to which the changes fostered were sustainable. With this perspective, we then set about trying to define precisely these OVIs, but encountered several constraints. I will discuss the constraints concerning efficiency OVIs, efficacy OVIs and effectiveness OVIs in turn.

Firstly, with regard to efficiency OVIs

When we tried to define efficiency OVIs, the results seemed non - sensical, or at best, repetitive and hence unhelpful for M&E purposes. For example, an OVI assigned to the output "10 farm field days convened" was "number of farm field days convened". On reflection, it became clear that the notion of indicators is relevant for inquiry into amorphous or intangible situations, but when the situation under study is fundamentally tangible (as with the consumption of inputs, the implementation of activities or the delivery of outputs) their value is less obvious. That is, there is little value in *measuring* a factor believed to be indicative of something that is itself, inherently *measurable*.

This caused us to reconsider the purpose of efficiency OVIs, which we identified as being to provide accurate, relevant and timely information for the purpose of management decision-making. Specifically, there was a need to inform the implementation team about the current performance of the project at any time relative to the end of project targets. This suggested that performance *trends* were likely to be more meaningful than specific *instances* of certain indicators. Thus, we concluded that analysis of variance between *planned* performance and *actual* performance, both for a given reporting period (say, one month) and cumulative (project-to-date) was a more meaningful approach.

From this perspective, we re-examined the precise nature of the data required at the inputs, activities and outputs levels in the logframe:

At the inputs level, classical cashflow analysis was most relevant (i.e. planned vs actual expenditure for each month and cumulative project-to-date)[129].

At the activities level, rather than tracking indicators for each individual task, a more general viewpoint on implementation team task completion efficiency was taken. This involved tracking the percentage of all tasks completed as planned within a given month *vis-à-vis* the percentage of planned tasks carried forward (i.e. not completed as scheduled). We deemed this trend information to be more indicative of implementation team planning and follow-up efficiency, and hence was of more practical management value.

At the outputs level, we identified value in tracking output delivery trends relative to end of project targets. While the implementation team deemed this approach to offer greater benefit for management decision-making, it highlighted two commonly encountered shortcomings in output definition.

First, in an attempt to conform to the convention that outputs should be tangible and measureable, we had defined them in terms of the number of beneficiaries—for example, "140 Extension Farmers trained". However, in applying the analysis of variance approach discussed above, it became evident

---

[129] N.B. In the Kenyan case study, the monitoring of financial expenditure was the responsibility of the financial accounting function, not the program M&E function.

that this was non-sensical[130] since *multiple* training events of various kinds were scheduled for the benefit of the *same* 140 Extension Farmers throughout the life of the project (5 years). As defined, it meant that for M&E purposes we could theoretically achieve end of project output targets on the first day of the project by convening a 'mass training event' with all 140 Extension Farmers present. We corrected this shortcoming by more precisely defining the outputs in terms of the actual deliverables of the project—for example, "1,400 individual farm follow-up visits *for* 140 Extension Farmers"[131].

Second, having more precisely defined the project outputs in terms of the number of deliverables (instead of the number of beneficiaries), we then realised that in order for analysis of variance between planned and actual performance to be meaningful, realistic and precise scheduling of output delivery (i.e. the 'planned' trajectory) was required. Whereas we had previously applied simplistic linear planning to schedule project outputs,[132] we now recognised that this schedule should be 'shaped' in consideration of real-world constraints: seasonal/climatic factors, socio-cultural factors, managerial/logistical factors etc. For example, the project target area, located in a semi-arid part of Kenya, experiences brief bi-modal rains that are critical for agriculture. Our initial simplistic linear planning did not consider this seasonal reality and the consequent unwillingness of farmers to attend training sessions at times of peak labour demand such as planting, weeding and harvesting. The result was that analysis of progress variance was rendered meaningless during these periods of the year. This shortcoming was remedied through a consultative process with beneficiaries that better reflected the reality of field work.

---

[130] It was also considered to be conceptually flawed. That is, attempting to define the delivery of a project output in terms of a human that in fact pre-existed the project seemed ludicrous.

[131] N.B. In field assignments since this experience I have found value in defining the broad concept of 'outputs' in terms of four elements: **Output type**: the descriptive element of the project deliverable—what the implementation team will actually do (e.g. 'individual farm follow-up visits'); **Output target**: the planned number of *output types* to be delivered by the end of the project (e.g. '1,400 individual farm follow-up visits'); **Output beneficiary**: the number of individuals or groups that will interact directly with the implementation team as the recipients of each output type; that is, the boundary partners (e.g. '140 Extension Farmers' who will participate in the '1,400 individual farm follow-up visits'); **Output detail**: the particulars of the output type delivery that are important for the purposes of accountability and/or organisational learning (e.g. the topics presented in training sessions, gender distribution of participants, location of training sessions, method of training delivery, name/qualifications of trainer etc.).

[132] For example, given the budget for thirty-six formal training sessions per year, a straight-line graph of three training sessions per month was plotted.

Secondly, with regard to efficacy OVIs:

Although the application of classical OVIs was abandoned at the efficiency levels in the logframe, we found merit in their use to enable judgements about the extent to which the anticipated effects (changes in KAP) were realised in the lives of the boundary partners (i.e. efficacy). However, three concerns arose in trying to define these efficacy OVIs.

The first concern relates to the broad purpose of the OVIs selected. When the implementation team met to define the indicators (and the tool used to capture them) we encountered a diversity of expectations within the team about their purpose. On further examination we isolated a subtle but important distinction between indicators used to identify a situation or state (i.e. 'needs assessment'); and indicators to identify *changes* in that situation/state (i.e. 'M&E'). The former should be a feature of the design phase of the project cycle during which consultative and participatory methods are employed to ensure appropriate and relevant interventions. The latter is a feature of the implementation phase of the project cycle, and assumes that rigorous needs analysis has already taken place, and that the changes sought by the project are deemed appropriate by stakeholders. We aligned the efficacy OVIs with this latter purpose.

The second concern relates to the phrasing of indicators. It is common practice with logframe preparation to phrase indicators in the infinitive[133] (i.e. 'To do something'). Although a seemingly trivial matter, we found this practice to confuse the role of indicators with the role of objectives in the logframe, which are by definition aspirational—they define a preferred future state or change[134]. The wider literature on indicators (e.g. de Vries 2001) suggests that they should be value-less neutral measures of trend. In other words, they should be sensitive to change, but ambivalent about the direction of the change. To use a commonly cited example to highlight the difference: an *indicator* of national economic growth is Gross Domestic Product (GDP); the treasury department may set an *objective* to increase GDP by 1% within the next 18 months. In

---

[133] For example, AusGUIDE (AusAID 2000) promotes the phrasing of indicators in the form of objectives.
[134] Some commentators (e.g. Cracknell 2002, pers. comm.) hold the view that phrasing indicators in the infinitive and assigning a time-frame is necessary to give the logframe a time dimension.

reality, the indicator may increase, decrease or stay the same, irrespective of the objective set. In the Kenyan case study this realisation led to the re-definition of several of the indicators prescribed by the design team. For example, a food security indicator was changed from: "To increase by 20% the proportion of households within Ikutha Division who are self-reliant in annual food needs within five years"; to the more neutral: "percentage of randomly sampled households within Ikutha Division who report having sufficient food to meet their year-round requirements".

The third concern relates to the practicability of the OVIs selected[135]. My experience with the Kenyan case study, and with projects before and since, suggests a tendency for design/implementation teams to over-prescibe indicators. This may partly derive from the inherent ambiguity (i.e. amorphous nature) of social change, and hence the desire to employ a raft of indicators to capture evidence of change; but in some cases, it also derives from a seeming lack of appreciation for the difficulty and cost of collecting data.[136] In the Kenyan case study, we later regarded our initial list of planned effect indicators as being over zealous and reduced it to a bare minimum.

On reflection, there is value in emphasising the role of indicators in capturing *circumstantial* evidence that change is taking place; rather than expecting that a comprehensive array of indicators must be precisely aligned with every aspect of project implementation. It is the latter situation that leads de Vries (2001) of the United Nations Statistics Division to challenge the tendency of statisticians to apply scientific precision in the use of development indicators. He cites Bill McLennan (former Chief Statistician of the United Kingdom and Australia) as saying:

---

[135] To some extent this concern relates to the subsequent stages of the M&E data cycle (i.e. capture, analysis, dissemination and utilisation) that will be covered in the remaining sections of this chapter, however, experience suggests that problems encountered at these stages to some extent derive from the identification stage.

[136] Experience suggests that design/implementation teams sometimes overlook the reality that M&E is a cost centre since it consumes resources that may otherwise be employed in the substantive objectives of the project.

> As statisticians we spend too much time trying to find the precise answer to the wrong question rather than finding the approximate answer to the right question[137].

To assist with defining OVIs that are practicable, I have found value in utilising a guiding framework such as the SMART[138] mnemonic promoted by Broughton and Hampshire (1997) and others. Also, the six-step process recommended by Kelly (2002) helps to ensure practicable OVIs:

- Identify performance questions (i.e. the precise changes to be evaluated).

- Identify possible indicators.

- Clarify baseline information required.

- Select data collection methods.

- Identify the necessary practical support for gathering the data.

- Organise the processes for analysis and feedback.

In a similar vein, Roche (1999, p 51) offers a list of key lessons learned about development indicators to guide their appropriate identification:

- At the outset, determine the key areas of change with beneficiaries and local staff.

- Ensure that indicators are sought from different groups within the beneficiary constituency with differences noted.

- When circumstances change, update and reformulate existing indicators.

- Reduce the number of indicators to a manageable number based on key change areas.

---

[137] This is similar to the statistical concept of 'Type 3 Error', defined as the right answer, but to the wrong question.
[138] **Specific:** indicators should be aligned with the particular conditions that the project anticipates changing, and in fact be sensitive to these changes; **Measurable:** indicators should be precisely defined and provide interpretable and unambiguous information; **Attainable:** indicators should be readily and reliably obtainable and captured at a reasonable cost (money and effort); **Relevant:** indicators satisfy the information needs of the people who will use them; **Timely:** indicators should be collectable within a timeframe that permits their utilisation.

- Explore significant changes that occur as a result of the project, but which lie outside the initial indicators.

- Deliberately set out to capture negative changes and to seek out those who might report it.

Thirdly, with regard to effectiveness OVIs:

Arguably, the identification of effectiveness OVIs is the most problematic. As noted above, effectiveness OVIs are concerned with assessing the *impact* of strategies employed—i.e. the top end of the impact chain in logframe-based project designs.

Becker (1997) traces the origins of impact assessment to the eighteenth century when the search for 'least regret strategies' became a branch of applied research. In contemporary literature, impact assessment is often sub-categorised into environmental impact assessment, social impact assessment, economic impact assessment and technology assessment. In these contexts, impact assessment is defined as "the process of identifying the future consequences of a current or proposed action" (Becker 1997, p 2). A typical example of this application is where the environmental consequences of building a new industrial plant raises questions such as will it pollute ground water and air in the region?

However, within the international aid industry, the term 'impact assessment' has come to imply the retrospective evaluation of actions situated in the past more so than the prospective assessment of future actions[139] as implied above. Aid agencies, Oxfam and Novib, for example, define impact as (Roche 1999, p 21) "significant or lasting changes in people's lives, brought about by a given action or series of actions"; and impact *assessment* therefore, as:

> the systematic analysis of the lasting or significant changes—positive or negative, intended or not—in people's lives brought about by a given action or series of actions.

---

[139] More commonly referred to within the aid industry as 'project appraisal'.

In recent years, interest in impact and effectiveness has increased throughout the aid industry (Roche 1999; Earl 2002). An Australian Council For Overseas Aid (ACFOA) action research initiative and subsequent member conference in July 2002, dedicated to the issue of NGO effectiveness, is indicative of the interest in the issue within the Australian NGO sector alone (ACFOA 2002).

The increasing focus on impact and effectiveness has been driven by both the business imperative and the ethical imperative discussed in Section 3.2. While organisational learning through proactive engagement with beneficiaries is an ethical imperative for aid agencies, the pragmatics of the power asymmetries inherent in the donor-recipient nexus are such that continued funding of aid programmes is contingent on satisfying donor requirements for demonstrable results. In practice, this demands the *measurement* and *attribution* of social change to the work of a project implementation team.

The field of evaluation is large, and offers a range of theories and methods to deal with the complexity of assessing the impact of social change intiatives. Central to much of the debate within evaluation literature, are the various responses to the challenges of measurement and attribution of social changes within complex human activity systems. Patton (1997) provides a three-page menu listing possible types of evaluation frameworks[140]. Den Heyer (2001, p 55), after reviewing several evaluation taxonomies, concludes that:

> All one needs to do is add an adjective to describe a type of evaluation and a new methodology or framework emerges.

A review of the numerous evaluation frameworks and theories is beyond the scope of this work. It is sufficient to note that within the aid industry the dominant form of evaluation design is 'quasi-experimental' (Cracknell 2000; Cook and Campbell 1979); specifically, 'reflexive comparison' (Prennushi, Rubio et al. 2000). Reflexive comparison involves constructing the counterfactual on the basis of the situation of participants before the

---

[140] He admits that the list is not exhaustive.

intervention—that is, assessing temporal changes in factors that are believed to be indicative of beneficiary circumstances[141].

In the Kenya case study, reflexive comparison involved a structured interviewer-administered questionnaire, drafted through a consultative process with local community and government representatives and subsequently translated into the local language, *Kikamba*. This survey was implemented during the start-up phase of the project (the 'baseline survey') and subsequently at project mid-term and 'endline'[142]. The sampling method adopted was based on the 'thirty-cluster' two-stage random sampling method developed by WHO (Henderson and Sundaresan 1982) that selected a sample size of 300 households from 30 villages across Ikutha Division. Due to the complexity of issues that underpin household food insecurity, we felt that a large range of effectiveness OVIs was needed to adequately capture changes encountered by beneficiaries during the life-of-the-project. As a result, the tool comprised 100 closed and open-ended questions requiring both numerical and categorical responses to questions about farm productivity, natural resource management, community cooperation and problem solving, and household economy. The desired impact of the project was defined in the proposal as a 20% improvement in household food security in Ikutha Division within five years of project start-up[143].

Aside from lessons learned about the pragmatics of the time, cost, rigidity and intrusiveness of large structured surveys, I learned valuable lessons about the inability of effectiveness OVIs to capture the diversity of social change, as experienced by the human actors concerned.

The fact that aid projects are implemented within open systems means that a wide array of 'real world' factors impinges on the success/failure of social change processes. Impact (as defined in the logframe) is two degrees of

---

[141] The other main quasi-experimental method, 'matching comparison', consists of selecting non-participants that are comparable in essential characteristics to participants and using statistical techniques to identify changes. However, within the aid industry, this method is less commonly applied due to ethical concerns about withholding 'treatment' from the 'control' group, and the additional cost.

[142] This is comparable to the 'interrupted time series' evaluation design offered by Cook and Campbell (1979).

[143] The baseline study identified that 57.7% of households were food insecure; hence the desired 'impact' required that after five years, 37.7% of households would be identified as food insecure.

separation from factors within the control of the implementation team (as depicted in Figure 22). The implication of this is that the attribution of changes (both positive and negative) to project activities in an absolute sense is tenuous at best. Further, the measurement of change, particularly where this involves amorphous notions such as 'capacity' or 'empowerment' is inherently difficult. Even seemingly tangible impacts such as 'improved household food security' are, under scrutiny, complex and hence difficult to isolate using discrete indicators.

For example, in the Kenyan case study, the quantitative surveys indicated that between baseline and mid-term, there was a decline in household food security—indicating a failure of the project to achieve the desired impact. However, qualitative evidence derived from focus group discussions suggested that the project was well regarded by boundary partners, government and community leaders, and that capacity building efforts had been efficacious. The seeming contradiction was explained by the fact that widespread drought in the horn of Africa[144] combined with a range of socio-economic factors had effectively competed with project initiatives[145] (Crawford 2002; Crawford, Perryman et al. 2004).

This situation highlighted the limitations of a planned approach to impact assessment as embodied in the concept of effectiveness OVIs and reflexive comparison, since even the wide range of indicators in the surveys was not sufficient to cover the breadth of experience of subject households, nor the range of externalities that impacted on project performance. This supports the view that improving aid effectiveness is a 'wicked' problem. Further, it was acknowledged that although there was evidence that the intervention had been efficacious, assessment of the effectiveness of the strategy in improving wellbeing at the community-wide level was indeterminable in the short-term. That is, the diffusion of innovations through a social system is known to take considerable time to achieve critical mass—certainly longer than the period within which effectiveness OVIs were studied.

---

[144] The period under study had experienced the poorest rains on record since 1961.

[145] Some implementation team members argued that project activities had in fact mitigated against a further decline in household food security.

Thus, my experience aligns with comments by several aid industry authors (Fowler 1997; Davies 1998a; den Heyer 2001a; Earl 2002; Lavergne 2002) who have identified practical and philosophical challenges associated with endeavouring to measure and attribute social change at the impact level. The dominant approach (characterised by objective indicators) has been challenged by a school of thought that embraces for example 'emergent evaluation' (den Heyer 2001a), Scriven's (1991) 'goal-free evaluation' and Guba and Lincoln's (1989) 'naturalistic inquiry'. More recently, Davies (1998) has explored the concept of 'indicator-free' monitoring that seeks to avoid the weaknesses associated with the 'planning ethos' by adopting an 'evolutionary' approach to capturing planned and unplanned change. Earl (2002) abandons attempts to determine impact altogether and instead argues that mapping changes encountered by boundary partners ('upstream outcomes') is sufficient to demonstrate accountability.

The pragmatics of the NGO dilemma and the diversity of opinions within evaluation literature[146] suggest that a pluralist approach is appropriate. That is, the use of effectiveness OVIs, when appropriately identified, may supplement qualitative information derived from interpretist methods of inquiry; however, it is unlikely that any single method can supply definitive judgements about the effectiveness of a given strategy employed.

In this section, I have reported insights gained from field experience concerning the identification stage of the M&E data cycle. I noted that this stage is constrained by the rigour of planning processes employed. More specifically, challenges encountered derived from ambiguity concerning who is responsible for executing rigorous M&E planning and ambiguity concerning the nature of the detail required for M&E purposes. I concluded that *identifying* inadequate M&E data tends to affect the extent to which information can be *utilised* for improved organisational performance.

---

[146] Patton (1997) believes that "it is easier to select a method for madness than a single best method for evaluation, though attempting the latter is an excellent way of achieving the former"

In the following section, I examine the second stage of the M&E data cycle (i.e. data capture) and the role of the key constraint that has been recognised at that stage—compliance.

4.3 Data Capture

In the foregoing section I discussed lessons learned regarding the first stage (identification) of the M&E data cycle and the key constraint of rigorous planning found to affect that stage. Assuming that appropriate data identification has taken place, the capture stage is the first step in operationalising the MEIS. It is concerned with the practicalities of how reporting staff obtain and supply the identified data (i.e. *capta*) in an accurate and timely form.

As noted in the MEIS root definition (page 63) and associated SSM conceptual model (Figure 16), the predominant environmental constraint (i.e. 'E' in CATWOE) to data capture is 'compliance'. If reporting personnel are unwilling to comply with data capture protocols, the MEIS will fail to meet its objectives even if it is well defined.

During this candidature, I experienced poor compliance in Albania at the height of the NATO-Serbia war in Kosovo. The agency to which I was contracted almost lost a major World Food Program (WFP) refugee food distribution contract owing to inadequate project reporting. Through a critical inquiry process, we found that a major issue was weak compliance to the prescribed reporting protocols by inexperienced project personnel. Possible causes were found to include:

- A poor appreciation for the value or benefits of data capture.

- A lack of clarity about what information was required.

- Poorly defined capture protocols.

- Complex or difficult data capture methods/tools.

- Motivation.

I will discuss each of these causal factors in turn.

The first cause noted above is consistent with the concept of a 'value proposition' embodied within CSIRO's organisational performance measurement framework (discussed in Subsection 3.5.1). This issue will be explored in Section 4.6 with reference to the 'utilisation' stage of the M&E data cycle. However, for the purposes of this section it is sufficient to recognise the truism that people are more likely to comply with protocols if they receive some value or benefit from compliance[147].

The second causal factor in non-compliance relates to the issue of identification discussed in the foregoing section. That is, rigorous planning and the application of a coherent data identification framework should help to ensure clarity among reporting personnel about information requirements. Where no such coherence exists, the ambiguity associated with the information required is likely to cause de-motivation and ambivalence among reporting personnel.

The third causal factor in non-compliance within logframe-based M&E systems may be partly attributable to the inadequacy of the means of verification (MOV) column in the logframe matrix. The MOV column requires the provision of detail about the practicalities of how the data identified in the OVI column will be obtained. However, as discussed by Crawford and Bryce (2003), the seeming simplicity of this column masks the complexity that underpins a working Information System (IS). In practice, project planners give only scant attention to the MOV column (Gasper 1997) thereby leaving M&E processes vulnerable to poorly defined or impractical data capture requirements. This tends to be exposed only when the implementation team tries to comply with the reporting obligations. To address this issue, each item of data identified should:

- Define the method or tool by which the data can be obtained.

- Identify who will be responsible for data capture.

- Identify to whom the raw data will be reported.

---

[147] For compliant/professional personnel who understand the broad importance of reporting, the value proposition may be as simple as ensuring that data capture and reporting mechanisms/protocols are useable and serve an obvious purpose. As will be discussed in Section 6.3, there may be opportunities to exploit recent developments with information communication technology (ICT) to enhance useability and compliance.

▪ Define the schedule for capture and reporting.

The process of defining the above detail may help to ensure the required information is attainable both in terms of its complexity and cost.

The fourth causal factor in non-compliance is similar to the third since it concerns the practicality of data capture. Working as a project planner, I have had to learn that data capture is a cost centre[148]. That is, the processes that underpin the M&E data cycle all require the diversion of time and resources from the 'real work' embodied in the project strategy. Impractical or superfluous M&E requirements risk wasting project resources and frustrating reporting personnel. Further, where data capture involves conceptually or logistically challenging processes for reporting staff, this is likely to act as a disincentive for compliance.

The fifth cause of non-compliance noted above, motivation, recognises the reality of individual values and organisational behaviour. Traditionally, compliance within organisations has been ensured through power and control structures. Contemporary organisational behaviourists, however, recognise that fostering intrinsic motivations for compliance is a more sustainable approach. In part, this involves the first and second factors cited above that relate to developing a thorough appreciation for the rationale for reporting among staff, but it also involves the wider challenge of developing a constructive organisational culture. However, notwithstanding the ideal of intrinsically motivated compliance, reality sometimes warrants the use of extrinsic motivators. At a minimum, this involves clarifying roles and responsibilities and reinforcing organisational structures.

In the Albanian case mentioned above, the following mitigative actions were employed to improve compliance, with reasonable success:

▪ The nature of the information required by WFP and other stakeholders was clarified and communicated to project personnel.

---

[148] This reality is sometimes abstracted away from planners. For example in the Kenyan case study, the prescription by the design team for indicators of soil fertility may not have appreciated the ambiguity of the requirement: Which soil nutrients? Collected using which sampling methods? Analysed using which methods? With what frequency? To assess the efficacy of which project outputs?

- The purpose served by the information required was explained to all reporting personnel along with the implications of non-compliance.

- Precise data capture methods and reporting protocols were developed and installed.

- Position descriptions (the basis for performance appraisal) were revised to include explicit responsibilities for data capture and reporting.

In this section, I have reported non-compliance by reporting personnel as the major constraint encountered at the capture stage of the M&E data cycle, and reviewed causal factors within this constraint. In the following section, I discuss practical issues encountered with regard to the 'analysis' stage of the M&E data cycle.

4.4　Analysis

This section concerns the third stage of the M&E data cycle, 'analysis', through which data that has been captured is subjected to some form of treatment or contextualisation in order to derive meaning. Viewed from the perspective of the Checkland and Holwell (1998) schema (Figure 24), the analysis stage of the M&E data cycle can be understood as involving processes that convert *capta* to information, thereby enabling meaning attribution by human actors in the IS. The nature of the analysis carried out is determined by the purpose for which the information is required, and the nature of the data captured (i.e. the level in the impact chain). As highlighted in Subsection 3.3.2, functionalist methods are likely to be most appropriate to the analysis of quantitative data concerned with the efficiency and efficacy of the project. Interpretive methods are likely to be most appropriate where qualitative information concerned with efficacy and effectiveness is involved.

The major constraint identified in the SSM conceptual model (Figure 16) with respect to the analysis stage of the M&E data cycle was 'skill'. By this, I mean both the *technical* and the *reflexive* capability of personnel charged with carrying out the required data analysis. In nominating skill as the key constraint to analysis I align with Edwards (1997, p244) who concludes that:

The depth of analysis required to pull together the lessons of project experience and synthesise them into a usable form is significantly greater than most field staff possess, without considerable investments in further training and support.

Weak data analysis skill results in inadequate dissemination of relevant and timely information to stakeholders (the subject of Section 4.5), and an accumulation of 'raw' (i.e. unanalysed) data within the operational zone of the agency. A pertinent example of this phenomenon was recently observed during the mid-term evaluation of a project in Cambodia. Several weeks and considerable project resources had evidently been consumed to implement a large interviewer-administered survey to establish the counter-factual for the purposes of impact evaluation. However, at project mid-term (two years), no analysis of this data was available. This is a waste of resources consumed by data capture processes underachieving the objectives of the MEIS.

Field observations suggest that in many cases, the lack of analysis of captured data derives from not explicitly assigning responsibility for analysis to a particular role or individual, meaning it is simply overlooked[149]. A lack of staff skill in statistical analysis is a frequently heard reason.

Technical skill in data analysis tends to be a low priority area for professional development among aid workers. However, the level of analysis required for meaningful interpretation of performance trends is reasonably straightforward, even for people with little exposure to statistical concepts[150]. Further, given recent developments in computer hardware and software, much of the analysis of raw data can be automated, thereby alleviating some of the burden on personnel. Engaging technical specialists or consultants is sometimes appropriate when more sophisticated analysis is required but overlooked by agencies.

The foregoing suggests that the constraint to analysis derives from a lack of clarity about the nature of the information required (as discussed in Section 4.2), and by inference, a lack of reflexive capability.

---

[149] The idenfication of who within the project organisational structure should be the recipient of raw data captured by reporting staff should be clearly defined during the M&E planning process.
[150] Experience suggests that most people can grasp the statistical concepts of mean, median and mode.

The skill of reflexive and critical thinking is central to the concept of M&E as applied in this thesis. It involves the development of a culture of inquiry and emotional investment in successful project outcomes. In my experience, however, the pressures of achieving project management targets and satisfying the accountability requirements of powerful stakeholders tend to distract aid agency personnel from the higher purpose to which projects are expected to contribute. The result erodes the curiosity necessary for critical and reflective thinking about the success of the project strategies employed.

In this section, I have reviewed issues encountered at the analysis stage of the M&E data cycle, and explored the constraint of data analysis skill. I indicated that aside from directly building the statistical capacity of agency staff, a number of practical strategies are available to ensure that the data captured is analysed, and hence made available for utilisation. I identified a more profound issue involving the reflexive capability of staff that may be affected by the prevailing organisational culture, and external pressure to achieve short-term results.

I discuss the dissemination stage of the M&E data cycle in the following section.

4.5   Dissemination

In this section I discuss the fourth stage of the M&E data cycle—'dissemination'. Dissemination is concerned with dispersing analysed data to MEIS stakeholders to enable use of the information to improve organisational performance (the subject of Section 4.6).

Experience suggests that failure to explicitly clarify the *mechanisms* by which MEIS stakeholders obtain relevant information renders dissemination inadequate and causes organisational conflict. Hence, 'mechanism' is the key constraint identified at the dissemination stage of the M&E data cycle.

Information dissemination is complicated by the fact that MEIS stakeholders tend to be geographically and conceptually separated. Geographic separation

complicates the logistics of information dissemination, and typically reflects the 3ZOM (discussed in Subsection 3.5.1):

- **Operational zone:** the location of field activities defined by the project boundary—e.g. Ikutha Division.

- **Tactical zone:** the administrative office of the agency implementing the project, typically in the national capital of the recipient country—e.g. Nairobi.

- **Strategic zone:** the agency headquarters, typically located in the city of an OECD country—e.g. Washington DC.

Conceptual separation complicates the relevance and meaningfulness of disseminated information and is influenced by factors such as *weltanschauung,* culture, education and role definition within each of the 3ZOM.

Given the inherent challenges of geographic and conceptual separation, appropriate information dissemination mechanisms require clear definitions concerning:

- Who the MEIS stakeholders (or 'clients') are.

- The information (form and content) deemed relevant to their needs.

- The pathways or processes by which they will receive the information.

I will discuss each of these aspects of dissemination mechanisms in turn.

Firstly, roles located throughout the 3ZOM all require information. Thus, in planning a MEIS, it is necessary to identify the range of MEIS clients. Observations suggest that while there are clear incentives to provide information to roles related to powerful stakeholders such as the donor, other important information requirements tend to receive less attention. Failure to provide the required informational support to any role located in any of the 3ZOM may limit organisational performance.

In the Kenyan case study project, organisational conflict arose when the dissemination of information within the implementation team itself was

inadequate, despite the fact that reporting obligations to the donor had been met. Specifically, the line manager for extension staff (the 'Agricultural Coordinator') required information to enable informed management decision-making concerning extension activities, but had been by-passed. By the mid-term evaluation, this issue had become critical. Not only had the information vacuum led to shortfalls in output delivery targets, but the inappropriate dissemination mechanisms had destablised the internal politics of the implementation team—essentially illustrating the truism that 'information is power'.

Therefore, the identification of MEIS stakeholders is a vital first step in defining appropriate information dissemination mechanisms.

Secondly, the notion of dissemination mechanism implies segmenting the complete set of analysed data based on relevance to its intended audience. The dissemination of all information to all MEIS clients is, in addition to wasting resources, likely to cause information overload and hence under-utilisation.

I recently observed this situation during the review of a project MEIS in Cambodia where the implementation team were found to be reporting virtually all data captured to the tactical zone. Although this demonstrated a commitment to accountability, it wasted organisational resources since much of the information was irrelevant to roles in the tactical zone. A case in point was reports detailing the number of village pigs that were vaccinated each month. Although pig vaccinations were an important project activity, the detail concerning individual vaccinations was irrelevant to the needs of the tactical zone where aggregated trends relating to efficiency and efficacy were considered important.

When programme personnel in the tactical zone were asked how they utilised the vaccination information, they indicated that it was largely ignored. When implementing staff in the operational zone were asked why they reported this detail, they indicated that they had assumed that since this information was important in planning and decision-making within the operational zone, it must also be important to other zones.

The Cambodia case highlights the common situation where the *relevance* of information disseminated to MEIS clients is overlooked. There appears to be a tendency for busy reporting staff to assume that everyone has the same information needs that they do. An important step to ensure relevance of information disseminated involves precisely defining report form and content.

Thirdly, within the aid industry, the operational zone is the source of virtually all primary data. One implication of this reality is that the pathways or processes by which this primary data is packaged and made available to the various MEIS clients throughout the 3ZOM must be explicitly defined. That is if the MEIS clients have been identified and their respective information requirements clarified, but the means by which they receive this information has not been defined, dissemination will break down, thereby limiting its usage and risking its influence on learning and improved action.

In the case of a humanitarian operation in Angola, organisational conflict arose between the strategic zone of the agency (located in the United Kingdom) and the operational zone (located in four provinces of Angola). Although precise information requirements in the strategic zone relating to the impact of the programme had been clarified, this information was not being reliably disseminated. This was despite the required information being diligently captured by the implementation team. Redefinition of the dissemination pathway removed ambiguity and enabled appropriate dissemination to occur.

In practice, defining the dissemination pathway involves assigning responsibility and defining timeframes (i.e. deadlines) for the compilation and forwarding of the information required by various MEIS clients. In recent work done for an AusAID-funded programme in Southern Africa, the dissemination pathway was defined as a hierarchy of four reports, each with a specific deadline, content and audience. This was depicted using the diagram in Figure 34, which helped to convey to the implementation team the iterative nature of reporting obligations throughout the life of the programme.
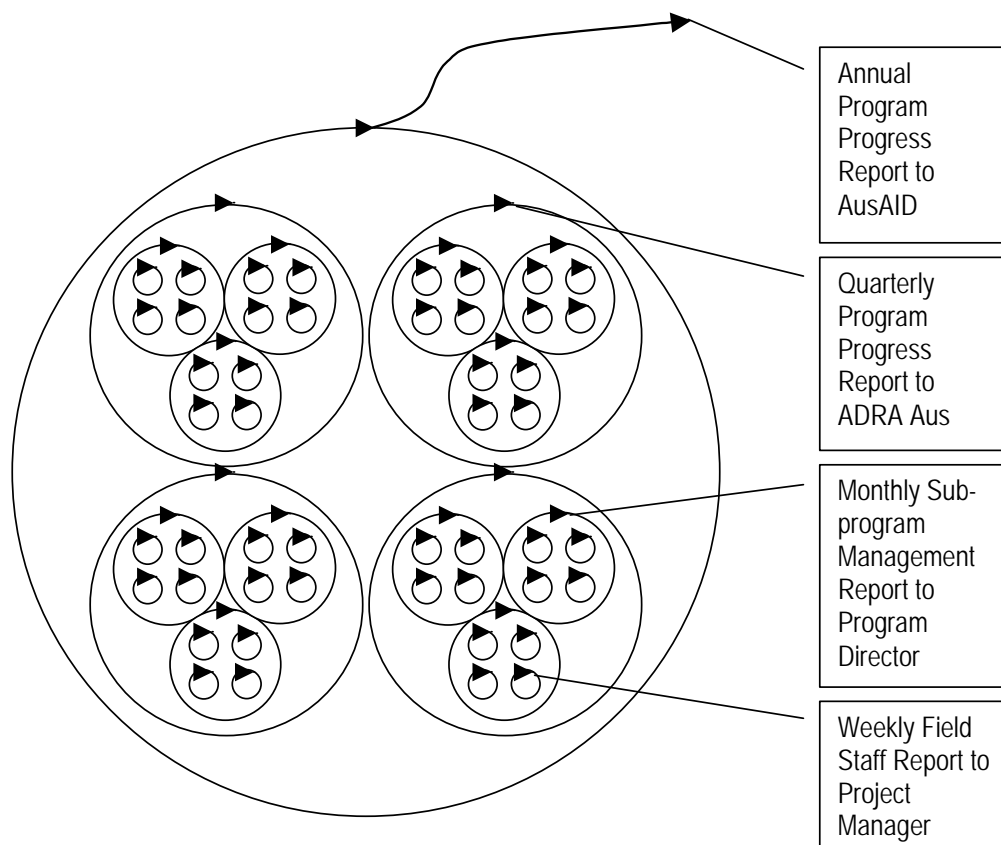
- Figure 34: The dissemination schedule for four reports defined for a programme in Southern Africa

My observations during this candidature suggest that 'feedback' is a frequently overlooked dissemination pathway.

As discussed in Section 3.5, the dominant paradigm of M&E appears to be grounded in functionalist organisational theory. In terms of information management, this paradigm has been described using a biological metaphor (Gharajedaghi 1999) in which information is captured by sensing parts of the 'body' and transmitted to the 'brain' where decisions are made and instructions are issued. In this paradigm, there is a *uni-directional* flow of information from 'reporting agents' to 'report recipients' with an emphasis on decision-making concentrated in a seat of power. The notion of feedback implies a paradigm shift from this model, given that information flows are *multi-directional*.

An alternative interpretive paradigm argues that the biological model ignores the collaborative effort (i.e. the interdependence of organisational roles with

various responsibilities and accountabilities) required to realise organisational success as expressed by the contemporary application of the 3ZOM construct (Chennell, Dransfield et al. 2000; Shaw 2001). This alternative perspective, as expressed in the 'POM model' of information systems (Figure 25), offers a richer understanding of the role that information plays within organisations. In particular, it recognises that formal decision-making is just one process for which informational support is required, and further, that all actors require informational support in some form, thus necessitating *multi-directional* dissemination of information. Hence, the notion that everyone both *serves* and is *served* by the MEIS.

Whereas the dominant paradigm of reporting relies on power asymmetries within organisations to ensure uni-directional information dissemination, this alternative 'democratic' information dissemination model relies on the motivation of the MEIS stakeholders. That is, personnel participating in MEIS processes need to recognise the interdependence of their respective roles and are motivated to provide information accessible from within their sphere of control, to whoever requires it. Because of the reliance on intrinsic motivation, useable feedback mechanisms are an important factor in compliance.

In recent work aimed at streamlining M&E processes between an Australian-based NGO and a Cambodian-based implementing partner, I explicitly defined a mechanism for 'feedback reports' between key roles throughout the 3ZOM. The reported positive impact of this initiative was profound. One project manager reported that in the past his reports "disappeared into a black hole" but now he received monthly feedback about the quality of the content and additional contextual information to supplement his own decision-making processes. This experience confirmed my experience in the field, in which uni-directional information flow has tended to lead to de-motivation and cynicism, which encourages non-compliance.

To summarise the key lessons learned during this candidature regarding information dissemination:

- All roles throughout the 3ZOM of an agency rely on information. The broad nature of information required by roles in each of the 3ZOM is fundamentally different. Disseminating relevant information is likely to reduce conflict and promote organisational performance.

- Imprecise dissemination of information to MEIS stakeholders is unproductive. Appreciating the precise information requirements of each MEIS client is likely to lead to greater relevance and hence increased utilisation of information.

- The mechanisms by which MEIS stakeholders will receive relevant and timely information must be precisely defined. Factors requiring definition include: responsibility, form and content, schedule.

- The interpretive paradigm of information systems resonates with the socio-political nature of organisations. Precisely defining multi-directional dissemination mechanisms (e.g. feedback) may positively impact MEIS stakeholder motivation and organisational performance.

Ultimately, appropriate information dissemination mechanisms ensure that information is used by MEIS clients for improved organisational performance. I discuss information utilisation in the following section.

4.6   Utilisation

In this section I discuss the penultimate stage in the M&E data cycle, 'utilisation'. Arguably, this stage is the *raison d'être* of M&E. That is, unless M&E information is *utilised*, the resources consumed by the preceding stages of the M&E data cycle are wasted. Conversely, *utilisation* is contingent on the extent to which data identification, capture, analysis and dissemination have been appropriately done[151].

As concluded in Subsection 3.2.4, the underlying rationale for the practice of M&E is to improve organisational performance, thereby ensuring organisational survival. In practical terms, this requires that international aid agencies balance competing demands in the so called 'NGO dilemma'—a

---

[151] In other words, the extent to which the environmental constraints at each of the preceding stages of the M&E data cycle have been mitigated.

process that involves using information to achieve the two critical success factors of *learning* and *accountability*. A detailed discussion of the link between M&E and organisational success is provided in Section 5.3 (i.e. the 'why' of M&E). However, for the purpose of this section, it is sufficient to note that utilisation involves roles throughout the 3ZOM of an aid agency applying M&E information to enable:

- Informed management decision-making.

- Critical inquiry and reflection.

- Transparency.

In this section I discuss the constraint identified at the utilisation stage of the M&E data cycle—'incentive'. The notion of incentive in this context derives from participant observations that indicate MEIS stakeholders are unlikely to use M&E information for any of the above purposes unless there is a clear benefit.

My experience aligns with perspectives from literature on organisational behaviour (Vecchio, et al. 1996) and evolutionary psychology (Wright 1994; Ridley 1996), suggesting that human motivation is at least partly mediated by an expectation of future benefit or value. This philosophy is evident within CSIRO's principle of 'practicability' (see Subsection 3.5.1) and the idea that organisational performance measurement systems tend to break down unless all actors perceive a 'value proposition'.

In several situations during this candidature I have encountered aid agency operations where project files contain a rich source of information that has not been utilised. These experiences suggest that beyond best practice in the preceding stages of the M&E data cycle, incentives must be apparent to MEIS stakeholders for M&E information to be used.

Disincentives for information utilisation may include:

- A lack of clarity among MEIS stakeholders about the nature of the benefits attainable from information utilisation (i.e. 'what's in it for me?').

- Ambiguously defined responsibilities for information utilisation (i.e. 'is it really my job?').

- Information disseminated that is not timely, or is in a form that is difficult to use (i.e. 'how do I derive meaning from this information?').

- A passive organisational culture that discourages a focus on quality and performance (i.e. 'why should I care?').

The first point above derives from the first stage of the M&E data cycle, identification. If rigorous M&E planning has been carried out there is clarity about the project theory of change, and hence the nature of the information required, the purpose of M&E information utilisation is likely to be transparent. Nevertheless, experience suggests that there is value in explicitly defining, for the implementation team, the intended purpose of each piece of information identified, and how this information is expected to contribute to successful outcomes.

The second point above captures the reality that unless responsibility for the utlisation of information is clearly defined it is unlikely to occur. This issue suggests value in explicitly aligning staff performance appraisal with information utilisation and organisational outcomes.

The third point derives from the concept of 'useability' within software development (Nielsen and Tahir 2002) and recognises that if information dissemination is not timely[152], or involves practically or conceptually difficult processes it is unlikely to take place. A key finding of the CSIRO research into organisational performance measurement systems (Chennell, Dransfield et al. 2000; Shaw 2001) was that an over-reliance on data and narrative based formats (as opposed to graphical and tabular formats) reduced the utilisation of performance information.

---

[152] Roche (2001) identifies a need for 'real time feedback' to enable informed decision-making.

The fourth point is elaborated in Section 4.7, but it is sufficient to note here that the phenomenon of organisational culture, and how this impacts on organisational performance, is well documented (Schein 1985; Cooke and Szumal 2000). In the Kenyan case study, enthusiasm for the project appeared high during the start-up phase and there was a strong commitment to best practice M&E and organisational learning. However, by the project mid-term, a range of organisational factors including changes in leadership, produced a passive organisational culture in which the focus of M&E information utilisation appeared to be on meeting the minimum accountability requirements of the donor (ADRA 2002).

4.7   Assessment

In this section I discuss the final stage of the M&E data cycle, 'assessment'. The iterations implied in the M&E data cycle (Figure 30) reflect both the general chronology of M&E activities (as discussed in the preceding sections), and the means by which the MEIS itself is progressively improved through reflexive practice. The assessment stage in the cycle embodies the function of the 'monitoring and control subsystem' in the SSM conceptual model of MEIS from Figure 16. Thus, this stage may be conceived as 'monitoring and evaluation of the MEIS'—or 'meta M&E'. If assessment is not carried out, the M&E data cycle ceases to be a cycle—it becomes linear.

As discussed in Section 2.4, SSM principles were used to indicate that the role of a MEIS was concerned with judgements about the performance of an aid project in terms of its efficiency, efficacy and effectiveness (Figure 15). The same principles were then applied to the assessment of the MEIS itself. Hence MEIS assessment involves judgements about the efficiency, efficacy and effectiveness (Figure 16) of the M&E processes:

The efficiency of M&E concerns the effort (time and cost) required to capture, analyse, disseminate and utilise the identified performance information—i.e. optimising resources consumed by these activities.

The efficacy of M&E concerns the extent to which the identified performance measures enabled judgements about the performance of the project—i.e.

whether or not the performance metrics were sensitive to the changes that occurred and provided the MEIS clients with the informational support they require to enact their various roles.

The effectiveness of M&E relates to the broad question of whether or not the notion of performance measurement systems, as conceived, actually increase the potential for organisational success—i.e. does the concept of M&E as applied contribute to achievement of the organisation mission?

In practice, these judgements are difficult to make, and require considerable discipline within the organisation. My experience suggests that good examples of the practice of 'meta M&E' are rare at best. To implement the ideals of M&E assessment in a rigorous or comprehensive way may in fact require the delineation of a 'meta-M&E data cycle'[153]. However, given the practical and conceptual complexity associated with the practice of M&E as presented in this study, the return on investment for meta M&E is likely to be low, and hence this approach is unlikely to be adopted. Nevertheless, exerting the discipline to periodically reflect on the '3Es' of MEIS performance in a subjective way is likely to be constructive.

On reflection prevailing organisational culture is a major constraint to MEIS assessment, and hence a reason for its rarity. The study of organisational culture is a large and growing field, and is beyond the scope of this thesis. However, participant observations and a preliminary review of the literature confirms that a 'constructive' organisational culture (Cooke and Szumal 2000) is more likely to invest in the idea of learning, and hence to readily engage in processes of critical inquiry. In contrast, a 'passive' culture is likely to be defeated by ambiguity and complexity, and is more likely to respond in a defensive way to queries about organisational performance. 'Aggressive' cultures may engage in critical inquiry if they perceive that a competitive edge may be gained by doing so, but the focus is likely to be more on benchmarking than intrinsic valuing of reflexive practice.

---

[153] That is, the cycle of identification → capture → analysis → dissemination → utilisation dedicated to enabling judgements about the performance of the MEIS.

There is wide acceptance of the notion that organisational culture is a function of leadership style and behaviour (Cooke and Szumal 2000; Kazama, Foster et al. 2002). This suggests that in order for reflexive practice to be established as a organisational norm, it must first be embraced and modelled by organisational leaders at every level.

MEIS assessment is also constrained by the absence of a wider context within which to situate the findings of meta M&E[154]. The findings, and hence importance, of meta M&E are likely to be obscure if there is no contextual framework within which to situate them. As discussed in Subsection 3.3.3, the orthodox approach to M&E is focussed at the project level—i.e. a teleological perspective on project performance. One implication of this perspective is that meta M&E findings are likely to be fragmented. That is, the assessment of MEIS performance on a project-by-project basis will promote 'islands of excellence' (Davies 2002).

Thus, a key proposition of this thesis is that there is merit in deploying an organisation-wide approach to M&E (i.e. a teleonomical perspective on organisational performance). The performance of individual projects is then situated within the wider context of organisational performance. This proposition is the subject of Section 5.2 and Subsection 5.5.3, but for the purposes of this section, I argue that this stance is likely to give greater significance to the practice of MEIS assessment.

4.8　Conclusion

In this chapter, I have reviewed relevant aspects of field experience in the context of the SSM conceptual model of a MEIS proposed in Section 2.4 (Figure 16). I reconceived this conceptual model as the 'M&E data cycle' comprising six stages: identification, capture, analysis, dissemination, utilisation and assessment. I discussed each of these stages in turn, in particular the key constraints that I found to affect each stage: rigorous planning, sufficient compliance, adequate skill, appropriate mechanisms,

---

[154] Arguably, this constraint also derives from an organisational culture that does not proactively engage in critical inquiry and reflection.

apparent incentives and enabling organisational culture. These constraints affect succeeding stages of the M&E data cycle.

I argued that the penultimate stage of the M&E data cycle (utilisation) defines the purpose of M&E. That is, unless M&E information is used, the resources consumed by the preceding stages of the M&E data cycle are wasted. This suggests that in developing a MEIS, consideration should be given to the key constraints at each stage, and where possible, strategies put in place to mitigate their impact.

I noted that the ultimate stage of the M&E data cycle, assessment, tends to be overlooked in practice. This stage involves 'meta M&E', and enables inquiry into the extent to which M&E information has been utilised and has contributed to improved organisational performance. I noted that the common practice of deploying a MEIS at the project level may limit the potential for organisation-wide learning. I suggested that a major challenge involves fostering an organisational culture of critical inquiry and reflection.

The following chapter proposes a framework for the operationalisation of a MEIS. As identified in Section 1.3, the operationalisation of a MEIS demands the resolution of four elements:

- The stakeholders of the MEIS (i.e. "*who* wants it?").

- The purpose of the MEIS (i.e. "*why* have it?").

- The data and information required of the MEIS (i.e. "*what* does it deliver?").

- The mechanics of the system (i.e. "*how* will it work?").

Chapter
5 Discussion

This chapter:

- Describes the MEIS framework developed in this work

- Disucsses each of the four elements of MEIS operationalisation (who, why, what and how)

- Defines the 'who' in terms of the 'three zones of management' construct, which is shown to be useful in mapping the various responsibilities and accountabilities within an organisation

- Defines the 'why' as enabling aid agencies to achieve two critical success factors, learning and accountability. This achievement requiring organisational competency in informed management decision-making, critical inquiry and reflection, and transparency

- Defines the 'what' as metrics concerned with efficiency, efficacy and effectiveness

- Identifies the 'how' as requiring a conceptual shift that views the entire aid process as a 'soft system', and proposes the use of information and communication technology to enable the processes of M&E

Aiding Aid

Aid agencies

required to satisfy

within the boundaries of

applies SSM to appreciate role of

Beneficiaries   Donors

within

need to operationalise

the concepts of 'M&E'

which implies definition of

??? Why?

Who?   What?   How?

based on CSIRO's

3 governing principles of OPM

defined as roles within

3 zones of management

to enable information flow between

to enhance

defined by

the logframe

enabled by modifications ('3D-Logframe') to

alignment

systems thinking

which allows differentiation of

performance

evaluation   monitoring

involves testing

involves recording

practicability

to enable

uses technologies & processes to meet the information needs of

3 hypotheses   contextual factors

5   A MEIS FRAMEWORK

5.1   Introduction

In this chapter, I synthesise lessons learned from fieldwork (Chapter 4), contributions from literature (Chapter 3) and insights derived from SSM (Chapter 2) to propose a framework for the operationalisation of an aid agency MEIS.

Earlier, I described how I applied SSM in this research—in particular, how it led to a focus on aid agency M&E systems and the development of a conceptual model to describe the underlying processes. I then described the tensions encountered by NGOs trying to align the expectations of their two dominant stakeholders, donors and beneficiaries, concerned with accountability and learning, respectively. I described this situation as the 'NGO dilemma' and concluded that the pragmatics of organisational survival required aid agencies to balance the competing demands of the dilemma. In practice, this involved gathering relevant, accurate and timely information—a function served by a MEIS. In other words, the MEIS is required to provide informational support for NGO staff obliged to demonstrate accountability to donor stakeholders and to offer informational support to NGO staff who engage with beneficiaries in transformational learning.

I then examined literature on M&E more closely and identified practical and conceptual issues. This led to a further examination of literature from three academic fields that underpin this area of concern. The three fields reviewed (information systems, organisational effectiveness and project management) were selected on the basis that M&E is fundamentally concerned with processing *information* to enhance the effectiveness of *organisations* that implement international aid *projects*.

Allthough each of these fields of inquiry offered useful insights, I recognised that the dominant paradigm in all three fields was grounded in functionalism, with an underlying epistemology of positivism (Burrell and Morgan 1994). I argued that, while this style of thinking has led to substantial progress in each

field, it alone is not rich enough to cope with the complex, 'wicked' nature of the NGO aid system, thus necessitating the addition of an interpretist perspective.

In Chapter 4, I reported the outcomes of practice and reflection. This predominantly involved the examination of a case study project in Kenya, but was also informed by other field assignments throughout the world. The lessons learned were described in the context of the SSM conceptual model proposed in Section 2.4, which was reconceived as the M&E data cycle. The dominant constraints at each stage in the cycle were identified, and it was acknowledged that successful operationalisation of a MEIS depends on awareness of these constraints, and on the employment of strategies to mitigate their impact.

This chapter will propose a framework to address the original research question posed: *how can aid agencies best operationalise the concept of 'monitoring and evaluation' to continually enhance their effectiveness?*

This MEIS framework is novel in terms of its scope, its purpose and its application. Further, in keeping with the philosophy of transdisciplinarity that underpins this thesis, I have incorporated elements of both the functionalist and interpretive perspectives that underpin M&E.

The verb 'operationalise' is derived from the Latin *opus*, to work, and implies defining the adverbs/pronouns:

- who

- why

- what

- how

In other words, to operationalise a MEIS, it is necessary to identify the functional groups of people that will serve and be served by the IS and hence interact with it as users (*who*); the various information needs of these stakeholders—hence the purpose served by the IS (*why*); the nature of the data

and information required by the IS to satisfy the purpose (*what*); and finally, the processes and thinking required for the MEIS to function (*how*).

In this chapter, I will address each of these four elements of operationalisation in turn, and thus progressively synthesise a MEIS framework.

5.2 Resolving the 'Who'

The definition of MEIS stakeholders[155] has far-reaching implications. The wider the scope of the IS, the greater the complexity of the system. Conversely, a narrow scope reduces the potential utility of the system.

Organisation-wide Deployment

The MEIS scope proposed in this thesis encompasses the entire International Non Government Organisation (INGO). As such, it is an *organisation-wide* information system, not just a *project* information system. This is a fundamental conceptual shift from the position taken in most 'grey' literature on M&E in the aid industry, which focuses the deployment of the MEIS at the individual project level (Roche 2001; van Brabant 1997). I have taken this position for three reasons:

Firstly, the MEIS scope proposed here is grounded in the SSM model presented in Figure 15. Checkland (1981) argues that for any 'operational subsystem' to be able to adapt and respond to a complex operating environment, it must be subject to a 'monitoring and control subsystem'[156]. The relationship between the two subsystems enables the *whole* system to be transformed into a 'learning system', rather than just an 'optimising system'[157]. However, given the fragmented and temporal nature of individual aid projects, the ideals of this 'learning system' are likely to be unrealised unless the 'monitoring and control subsystem' endures beyond any single project. That is, the 'operational subsystem' must be considered the whole organisation, rather than just a single project. Thus, my position is in line with the principles that underpin the SSM approach adopted.

---

[155] That is, the functional groups of people that will serve and be served by the MEIS.

[156] As discussed in Section 2.4, a MEIS is analogous to Checkland's 'monitoring and control subsystem'.

[157] An optimising system may be adequate provided operating conditions remain stable and predictable.

Secondly, in arguing for an organisation-wide MEIS, my underlying assumption is that such a system will provide a unifying framework that enables assessment of both individual project performance and organisational performance. Currently, project performance management tends to be abstracted away from organisational performance management. The role of projects as a fundamental building block[158] of organisational strategy tends not to be well articulated by many aid agencies (Fowler 1997; Davies 2002). That is, 'strategic planning' and 'project planning' tend to be seen as separate processes such that the need for alignment between project strategies and higher-level strategies is sometimes overlooked[159]. While recognising the open systems and complex nature of the operating context, I argue that there is at least some degree of causality between: effective projects → effective organisations → effective aid. Thus, my position anticipates that an organisation-wide MEIS may provide a unifying focus for different actors throughout an aid agency.

Thirdly, the richer reality expressed by the interpretive 'socio-cultural model' of organisations (as discussed in Section 3.5) necessitates a more systemic role for the IS than is implied in the conventional literature. Whereas orthodox approaches expect a predominantly unidirectional flow of information to senior management, an interpretive view anticipates more democratic information dissemination. That is, there is recognition that all organisational members involved in purposeful action require informational support and this 'support' is beyond that required for formal decision-making by senior management.

This stance implies that the scope of a MEIS must take in the whole organisation. As discussed in Subsection 3.5.1, the general structure of organisations may be conceived as bridging three zones of management (3ZOM). While the origins of this notion stem from orthodox organisational

---

[158] The predominance of the project management approach throughout the aid industry ensures that 'the project' remains the main vehicle of social change.

[159] I most recently observed this while acting in an advisory capacity to an INGO curriculum development taskforce. The agency concerned had identified the need for competency-based training of its global workforce in key functional areas. During the 'planning forum', I observed that although members lamented the fact that organisational strategic plans (typically deployed at the country office level) tend to stagnate as "just another spiral-bound document collecting dust on the shelf", they effectively reinforced this situation by developing separate curricula for 'project planning' and 'strategic planning'.

theory (Sarasohn and Protzman 1948), its application in this thesis is in line with its use by CSIRO (Chennell, Dransfield et al. 2000; Shaw 2001), who recognise that organisational members are required to act in roles that are predominantly operational, tactical or strategic—essentially a more interpretive view. In the context of an INGO, these zones may be understood to be (Crawford 2001):

- **Operational zone:** functionally concerned with the management of a single project; frequently located in a remote geographic location of the aid-recipient country.

- **Tactical zone:** functionally concerned with the planning and coordination of a portfolio of projects; normally located in the capital city of the aid-recipient country.

- **Strategic zone:** functionally concerned with deployment and administration of donor funds (government and private), and hence the strategies and policies which maximise their effectiveness; geographically located in cities of donor countries.

Responsibility and Accountability

An organisation-wide MEIS does not imply the dissemination of all information to all roles—surely a recipe for chaos. Rather, in the interests of economy and useability, the notion requires segmenting the complete set of *capta* to satisfy the salient information needs of roles located in each zone. In this thesis, this is achieved by recognising the distinction made between 'responsibility' and 'accountability' which was discussed in Subsection 3.5.1. It is the recognition of the responsibility and accountability of each zone to the other zones that proscribes the nature of the information required by the MEIS.

As was argued in Section 2.4, the performance of a system may be assessed by making judgements about its relative efficiency, efficacy and effectiveness (Checkland's '3Es'). The nature of the data relating to each of these three performance criteria will be discussed in Section 5.4, but it is worth noting here that there is an interdependence between the three zones with regard to each of

the '3Es'. That is, each zone is both responsible for, and accountable, for certain aspects of performance.

I offer the conceptual framework in Table 5 as a useful (albeit simplistic) generalisation of the differentiation of responsibilities and accountabilities across the three management zones with respect to the '3Es'.

Organisational Obligation

	Responsibility	Accountability
Operational Zone	Efficiency	Efficacy
Tactical Zone	Efficacy	Effectiveness
Strategic Zone	Effectiveness	Mission

● Table 5: The organisational obligations of the three zones of management

The conceptual framework in Table 5 raises two issues for discussion:

Firstly, the 'responsibility' column reflects the functional realities in each zone of an aid organisation. In the course of implementing projects, each zone holds core responsibility for certain aspects of the process:

- **Operational zone:** is delegated the day-to-day responsibility for the *efficient* implementation of the project plan.

- **Tactical zone:** is responsible for the *efficacy* of the project design. This implies not only core responsibility for project planning, but also oversight of implementation and subsequently, evaluation.

- **Strategic zone:** is responsible for the *effectiveness* of the development policies and strategies which guide decisions about how aid resources are deployed for maximum impact.

Secondly, the 'accountability' column acknowledges the overlapping, or interlocking of roles which takes place within organisations[160]. This reality is a reflection of the joined-up collaborative approach that is required to

---

[160] The clear role differentiation which is portrayed in most organisational structures belies the reality that given the diversity of skills, personalities and *weltanschauungen* within most organisations, substantial overlaps and gaps emerge between roles.

successfully fulfil an organisation's mission[161], especially in a complex human activity system such as the international aid industry. Hence, the notion of 'accountability' recognises that while each role is obliged to implement its core responsibility (above), it rarely acts in isolation. Rather, in most cases there is an expectation that effort contributes to a wider purpose. For example, while the operational zone is responsible for efficient implementation its wider purpose is to foster the conditions under which the efficacy of the project design can be subsequently judged. Similarly, while the tactical zone is ultimately responsible for efficacy its wider purpose is to foster the conditions under which the effectiveness of the development strategy employed can be judged. The strategic zone then, is responsible for effective strategy and is accountable for ensuring congruence with the organisation's mission, vision and values.

Hence, the responsibility–accountability differentiation has implications for an organisation-wide MEIS. It identifies the nature of the information required of, and for, roles located in each of the three zones of management. That is, for the purposes of M&E, each zone *requires* information relevant to its particular area of *responsibility*, and is *required* to provide information relating to its area of *accountability*. There is a sense that each zone both *serves* and is *served* by the MEIS.

Portfolios and the Need for Scalable Performance Assessment

An important realisation that emerges from Table 5 is that the tactical and strategic zones are, by definition, concerned with multiple projects—or 'portfolios' of projects. In other words, while a project manager in the operational zone is responsible for the efficiency of a single project, the tactical and strategic zones are likely to be responsible for multiple projects. Arguably, effectiveness is a function of the coherence of these portfolios.

---

[161] It also reflects the human element of motivation. That is, appreciation for the higher purpose to which an individual role contributes serves an important motivational function (Locke, 1996). For example, as my own experience as a project manager confirms, the efficient conversion of inputs to outputs is not the only motivating factor in the role. The expectation that *efficient* project management of an *efficacious* project design will *effectively* affect the lives of beneficiaries is also a motivator.

The requirement for portfolio management by the tactical zone and strategic zone has implications for the nature of the data captured and its subsequent analysis. While I will discuss this further in Section 5.4, for the purposes of this section, it is worth noting that IS stakeholders in the tactical and strategic zones require 'scalable' information (Davies 2002). Information must be portable across projects. That is, there is a need for metrics that can enable judgements about the performance of an individual project, but can also be aggregated with similar data from other projects to provide an overall assessment of portfolio performance and/or organisational performance. This reflects the reality that in the INGO context, 'the project' is a building block in organisational strategy. That is, organisational strategy is in a sense an aggregation of the strategies embodied in the suite of projects implemented throughout time and space.

Davies (2002, p 1) highlights the issues:

> How can large aid organisations operating in dozens of countries make global assessments of their performance? How can the necessary diversity of practice on the ground be reconciled with the need for a single coherent analysis within the global headquarters? Problems of scale are faced by all organisations, but they are especially acute in international aid organisations. Even the most basic common measures of performance like profitability in the private sector (disputed as their measurement might be) are not available to them.

In practice, this need for scalable information to support performance assessment of individual projects, portfolios of projects and organisational strategy may be impossible without a coherent organisation-wide MEIS framework.

Why the Persistence of Project-centric M&E?

Given the apparent benefits of adopting an organisation-wide MEIS, it is worth reflecting on why the project-centric approach has persisted. Applying evolutionary thinking (Davies 1998), its survival indicates that certain selection pressures have favoured it. I offer the following factors for consideration:

- The nature of the NGO aid system is such that donors fund discrete projects in the operational zone. Hence, donor requirements for accountability and performance are focussed at that level.

- Most NGOs have not been able to justify the resources required to develop, deploy and maintain an organisation-wide system.

- The role of information systems within organisational development strategy may not be fully appreciated—aid workers in the operational zone tend to see information management as a distraction from the 'real work' and hence there is a tendency to do the minimum required by the donor in terms of M&E.

- An organisation-wide MEIS implies a highly complex system based on scalable information (i.e. information that enables performance assessment of a single project or a global programme). Such a system is difficult to conceptualise and build. NGOs rarely posses the people, skills and resources to create such a system from scratch.

- Until recently, the technology required to support an organisation-wide system, especially given the challenges encountered in technology-poor operating environments, meant that the concept was idealistic; owing to both the capability of the technology and the cost. The alternative, a paper-based system, would be prohibitively cumbersome and hence compliance would break down.

- Organisational performance measurement is an emerging management field. Recognition of the merit of non-financial measures of performance began to gain traction in the commercial world in the early 1990s (Kaplan and Norton 1992), and perhaps more recently in the NGO world. Hence, many NGO personnel have not had exposure to the ideas embodied in 'Enterprise-wide Business Intelligence Systems' and 'Decision-support Systems'.

Hence, this thesis argues that the contextual environment that favoured the above factors is changing, so that they are less oppositional to the notion of an organisation-wide MEIS.

To adopt an organisation-wide MEIS scope raises at least two questions. These questions relate to theoretical perspectives on the function of M&E.

- The conventional perspective locates the M&E function as a centralised formal role within the organisation, frequently known as the 'M&E Officer'[162].

- The constructivist perspective delegates the function of M&E away from the aid agency, locating it partly within the sphere of responsibility of the 'beneficiaries'. This perspective is central to a body of work concerned with 'participatory' monitoring and evaluation (PM&E).

In this thesis, I have adopted what I believe to be a pragmatic stance located between and different from these two perspectives. In the following two subsections I will discuss issues associated with each of the two perspectives in turn, thereby defending the approach proposed in this thesis.

5.2.1 Questioning the Role of 'M&E Officer'

In this subsection, I will acknowledge the rationale for the emergence of a formal centralised M&E role, but I will question this rationale on organisational behavioural grounds, and argue that this perspective is counterproductive for the purposes of M&E as defined in this thesis.

In discussing the 'who' of MEIS operationalisation, this chapter has so far scoped the MEIS as an organisation-wide IS. The role of information in promoting organisational performance has been noted. The interpretive paradigm of organisational theory adopted here recognises the role of the IS in satisfying the unique information needs of staff in each of the three zones of management. A question that now arises relates to the role of M&E Officer. In particular, what is the role of the M&E Officer *vis-à-vis* the various management roles? Where in the structure (i.e. in which of the 3ZOM) should it be located?

---

[162] The role I filled in the Kenyan case study project was based on this perspective.

Centralised M&E

The emergence of the M&E role as separate to the management function is likely to have been motivated by several factors including:

- Aid project managers frequently come from technical backgrounds (e.g. agriculture, health, engineering) and hence do not necessarily possess the specialist skills required to design an IS or conduct meaningful statistical analysis (Dransfield, Fisher et al. 1999).

- Considerable time and resources are required in the collection, analysis, interpretation and dissemination of information (van Brabant 1997). This time demand is seen to compete with (rather than complement and assist) other demands placed on project managers.

- Much of the process of data collection, analysis and dissemination is administrative and perceived as mundane.

Consequently, the M&E role emerged as an internal service provider to the management function[163] in which specialist skills could be applied to support the need for relevant, accurate and timely information. While this seems sensible, as indicated in Section 4.5 organisational behavioural factors can erode the value of such a structure. Issues I have observed include:

- The transdisciplinary nature of the skills required of the M&E role mean that it is difficult to recruit for the position since the role requires not only strong statistical and research skills but a thorough appreciation for development and social transformation.

- When such skills can be recruited, they tend to be senior personnel and hence are unwilling to fill what is perceived as essentially an administrative assistant role to project management.

- Given the organisational truism that 'information is power', the M&E Officer role has the potential to destabilise the organisational

---

[163] In some cases, the role has been located beneath the project manager (i.e. as a service provider to the operational zone). In other cases, it has been located beneath senior management (i.e. as a service provider to the tactical or strategic zones). In this latter case, the M&E Officer role has tended to be viewed by project personnel with suspicion (i.e the perception of M&E Officer as 'cop' or 'auditor').

structure[164]. In situations where the role becomes politicised by internal power asymmetries, there is a risk that the IS may become skewed towards supplying the information needs of those with the most power.

- The role can become one of a 'cop' or auditor/inspector, and as such becomes viewed by project staff as one to be satisfied with data, without the emotional ownership of the data necessary for reflective practice.

In addition to the socio-political costs of separating M&E from the management function, the economic costs of staffing the M&E role tend to be high (Casley and Kumar 1986). In practice, this means that M&E, as a separate function, is out of the reach of agencies with scarce financial resources. Accordingly, it tends to be less rigorously implemented—limiting accountability and learning.

Decentralised M&E

Accordingly the position argued for in this thesis involves:

- Institutionalising the M&E processes throughout the organisation such that everyone serves and is served by the MEIS.

- Systemising much of the mundane aspects of information analysis and dissemination using recent developments in information communication technology (ICT). The goal of this strategy is to shift the focus of staff away from the 'doing' of M&E to the 'informed debate' about M&E findings, as discussed elsewhere in this thesis.

- Identifying processes and tools to enhance MEIS compliance and information utilisation; for example, the use of graphical and tabular formats to assist with the interpretation of data and trends (Shaw 2001) and the use of ICT (such as personal digital assistants (PDA)) to streamline data capture etc.

---

[164] As was the situation with the Kenyan case study project.

Abandoning the M&E Officer role as a discrete function is, however, not without risk. The major risk associated with the approach proposed above relates to critical assessment of the MEIS itself. In the M&E data cycle (Figure 30), the final stage of the cycle, 'assessment', is concerned with the monitoring and evaluation of the M&E processes—i.e. 'meta M&E'. There is a risk that if no formal role is delegated responsibility for carrying out critical inquiry into the efficiency, efficacy and effectiveness of the monitoring and evaluation system itself, this could lead to stagnation of the MEIS, and ultimately poor organisational performance. Thus, an NGO adopting an organisation-wide MEIS with distributed responsibilities may be wise to install appropriate governance mechanisms within the organisation to ensure that reflexivity is applied not only through the MEIS to the project, but to the MEIS itself.

The second question raised above (page 199) with respect to the development of an organisation-wide MEIS, was concerned with beneficiary participation in the IS. I will discuss this issue in the following subsection.

5.2.2   Questioning Participatory M&E

The organisation-wide MEIS scope proposed in this thesis has an explicit purpose of providing informational support to organisational members located in three zones of management. Given this internal focus, an important question arises concerning the role of the intended project beneficiaries in the M&E system. In this sub-section, I will now briefly review issues associated with the concept of participatory monitoring and evaluation (PM&E).

There is diversity in the M&E literature with regard to the issue of beneficiary participation in M&E. The orthodox view, seemingly aligned with functionalist organisational theory, argues for M&E processes in support of goal-seeking organisations. Much of this work (e.g. UNDP 1997) scarcely mentions the issue of beneficiary participation, or simply identifies it in passing as worthy of consideration (e.g. World Bank 2002). An alternative perspective (e.g. Chambers 1997) argues for M&E processes to focus on the empowerment of beneficiaries through their involvement in identifying performance criteria and self-assessment against these criteria, but also through

the development of critical analysis skills. According to Chambers (1997) PM&E is a major frontier that has turned traditional monitoring and evaluation on its head. Cracknell (2000, p 178) asserts that:

> …the trend towards the use of participatory methods in monitoring and evaluation is undoubtedly the most significant change currently taking place in the field of aid evaluation[165].

The origins of PM&E stem from work during the 1970s by several NGOs[166] and the Institute of Development Studies (IDS), University of Sussex, on rapid rural appraisal (RRA), participatory rural appraisal (PRA) and other generic participatory methods (Cracknell 2000; Estrella and Gaventa 1997). Another major contribution is the pivotal work of Guba and Lincoln (1989) who proposed a 'fourth generation' approach to evaluation that adopts a 'value-pluralism' stance and hence, attempts to adjust the inherent power asymmetries within conventional evaluation approaches, in favour of beneficiaries. Within fourth generation evaluation, the role of the evaluator is extended beyond conventional technician/describer/assessor roles to include the roles of negotiator/change agent. Hence, the approach shifts away from an objective, audit-style evaluation to an interpretive, constructivist style. The objective is not to say what happened or did not happen, but as far as possible, to form a consensus on the past, present and future of the project (Guba and Lincoln 1989; den Heyer 2001).

Much of what is written about PM&E resonates with the general NGO principles of participatory development (Bunch 1982; Chambers 1983). However, there may be some ambiguity regarding the role of a MEIS within this philosophy, and hence expectations about what the MEIS should deliver. The following explanation relates specifically to M&E processes, and the purposes they are expected to serve.

In this thesis, I argue a pragmatic position between the conventional view of M&E in support of formal decision-making in goal-seeking organisations (as

---

[165] Cracknell, however, goes on to raise several issues which in his opinion, remain problematic with the approach.
[166] The concepts have also entered the policy-making domain of larger donor agencies and development organisations including USAID and the World Bank (Howes 1992).

critiqued in Section 3.4) and the alternative, constructivist view in PM&E writing. That is, while recognising the inadequacy of the linear, cybernetic-style linkage between information and decision-making implicit in much conventional thinking, I resist the centrality of 'beneficiary empowerment' given to M&E processes in much of the constructivist PM&E literature.

In adopting this position, I do not wish to be misunderstood as having disregard for participatory development and all that the underlying philosophy supports. My own experience confirms the arguments in the literature that participation by beneficiary communities in planning and implementation is a critical factor in fostering sustainable development outcomes (Chambers 1997; Bunch 1982; Chambers 1983; Gonzalez 1991; Max-Neef 1991; Marsden, Oakley et al. 1994; Lelo, Ayieko et al. 1999; IFAD 2002). However, following Fowler (1997, p 16), my preferred outcome is:

> …participation which is 'authentic', a process of engagement which is not simply treated as a co-opted input, and means for making externally supported development happen more effectively.

A literature review by Estrella and Gaventa (1997) which was partly funded by UNDP, sought to explore the concepts of PM&E, but found that:

> …there is great variation in the way organisations, field practitioners, researchers etc. understand the meaning and practice of participatory monitoring and evaluation. The literature review found that there is no single, coherent definition of PM&E; rather, there is wide scope for interpretation.

There appear to be two broad issues that contribute to ambiguity in PM&E literature:

- Ambiguity over the mandate of 'the MEIS' *vis-à-vis* the mandate of 'the project'.

- Ambiguity between M&E processes that seek the *perspectives* of beneficiaries (i.e. 'participants as data source') and M&E processes that seek to *utilise* beneficiaries (i.e. 'participants as data gatherers').

I discuss each of these issues in turn.

M&E Mandate

With regard to the first ambiguity, a strong theme evident in much literature and rhetoric about PM&E is the notion that through encouraging participation in M&E processes, project beneficiaries will have opportunities for empowerment. In the Kenyan case study project in this research, the M&E section of the original grant proposal (ADRA 1998, p 25) states that:

> ADRA believes that the systematic monitoring and evaluation of program activities is not only essential to provide information for ongoing decision-making and reporting, but that it is an integral part of project implementation and can be used creatively to enhance the delivery of program activities and the participation and empowerment of beneficiaries. Indeed, the capacity to analyse one's environment, take action based on this analysis, evaluate the results of the action and take corrective measures as required, can be taken as the very definition of development.

PM&E literature cites examples of beneficiary empowerment to support the tenets of PM&E, for example, (Estrella and Gaventa 1997, p 5):

> Farmers in India, Brazil, Vietnam and Mexico are becoming more effective planners and decision-makers, choosing and learning from alternative production strategies.

However, aside from the ethnocentric view that appears to underpin the above statements, they may indicate a blurring of the mandate of 'the MEIS' and the mandate of 'the project'.

In situations where participatory needs assessments and planning processes[167] have identified that analysis and decision-making skills are limited in the beneficiary population, strategies to build capacity in these skills would normally be included among project objectives. That is, they would feature explicitly in the project design. My argument is that delegating beneficiary empowerment to the 'M&E function' risks masking its importance, and effectively defines a development project within 'the project'. This may lead

---

[167] Best practice planning is generally considered to embrace participatory context analysis methods (Fowler, 1997; Cracknell, 2000).

to 'innovation overload', which is recognised as a problem in development project designs. The promotion of too many concepts or technologies within a short period has been found to be counter-productive for development (Bunch 1982; Gonzalez 1991).

The Role of Participation

I will now discuss the second ambiguity concerning the role of beneficiaries within M&E processes.

Some commentators caution that seeking 'over-participation' can have deleterious effects for development. For example, Gonzalez (1991, p 31) reports that:

> …recent studies suggest that there are limits to participation. The participation of everyone in everything, especially in development work, appears to be a prescription for chaos.

There may a tendency for aid workers to forget that project participants have lives beyond the scope of work defined by the project (Bunch 1982). In some cases, community members may be participants in more than one project run by more than one agency (Davies 1998). The time demands placed on beneficiaries by projects has the potential to jeopardise livelihoods, particularly when planning has not been sensitive to cultural and environmental calendars. In the Kenyan case study project, farmer training scheduled to coincide with the onset of rains had to be rescheduled when the participants pointed out that 'planting time' is an extremely busy period for farmer households. Further, as planting is a critical element in household food security, by offering a distraction, the project was competing with its own objectives concerned with household food security.

This issue also stands consideration in planning PM&E activities. In the Kenyan case study project, for example, our zealous efforts to maximise the participation of the beneficiary community in all M&E activities were tempered by subsequent demands for remuneration. This highlighted the reality that those involved see project activities as a cost that draws their

attention away from livelihood-making. Hence, M&E is not owned as a beneficiary objective.

There is, however, a subtle but important difference in the ways that participants may be viewed in M&E processes; the view of participants as 'data gatherers', as implied above and the view of participants as an important 'data source'. The former perspective risks exploiting beneficiary goodwill with little reward, since participation may require collection of data that is not intrinsically valued by beneficiaries. The latter view is essentially the tenet of 'fourth generation evaluation' and actively seeks the opinions of beneficiaries as the chief protagonists of 'the project'. The MEIS framework proposed in this thesis concurs with the latter view.

The extensive survey and review of literature by Estrella and Gaventa (1997) leads them to conclude that there are five general functions of PM&E:

- Impact assessment.

- Project management and planning.

- Organisational strengthening or institutional learning.

- Understanding and negotiating stakeholder perspectives.

- Public accountability.

As will be shown in Section 5.3, these purposes are embodied in the MEIS framework proposed in this thesis. However, while I acknowledge the influence of fourth generation evaluation thinking, I refrain from defining the MEIS framework proposed in this thesis as 'participatory', since its *primary* role is 'organisational development' not 'beneficiary development'. This narrower scope assumes that other stages in the project cycle (e.g. needs assessment, planning, implementation) place a *primary* emphasis on 'beneficiary development'. In other words, I view the role of an NGO's MEIS as being one degree of separation from beneficiary empowerment. Simplistically: better M&E → better NGO → better aid.

As was recognised at the start of this section, the wider the scope of a MEIS, the greater the complexity. Limiting the scope to the information requirements of internal organisational members recognises the need to manage complexity and the pragmatics of human and economic resource limitations.

Thus, the 'who' as defined in this framework, are roles with various responsibilities and accountabilities located throughout the 3ZOM of aid agencies. As such, the MEIS proposed is an organisation-wide MEIS, but is differentiated both from conventional thinking that centralises M&E function and from radical thinking that devolves M&E wholly to the beneficiary.

The discussion about the 'who' of MEIS development leads to questions about the 'why'. That is, having scoped the IS stakeholders, the next step in operationalisation involves seeking clarity about the purpose of information expected by these stakeholders. The following section will discuss the various information needs of the 3ZOM, thereby defining the 'why' or purpose of a MEIS.

5.3 Resolving the 'Why'

In this section, I will explain the purpose of a MEIS as proposed in this thesis.

In Section 2.4 (page 63), the SSM root definition of a MEIS defined the 'customer' (i.e. the 'C' in CATWOE) as 'NGO personnel'. In Section 5.2, following the review of literature from the field of organisational effectiveness, I more precisely defined 'NGO personnel' as roles with responsibilities and accountabilities located in three zones of management: the operational, tactical and strategic zones. I concluded that organisational members in each zone, being cognisant of their various responsibilities and accountabilities, expect to 'benefit' from certain types of information to meet the demands of their particular roles. In this section, I now aim to clarify the meaning beneath the word 'benefit'. That is, I will generalise the purpose served by the MEIS in support of roles in each of the 3ZOM—the 'why'. The broad argument of this section is depicted in the conceptual framework in Figure 35.
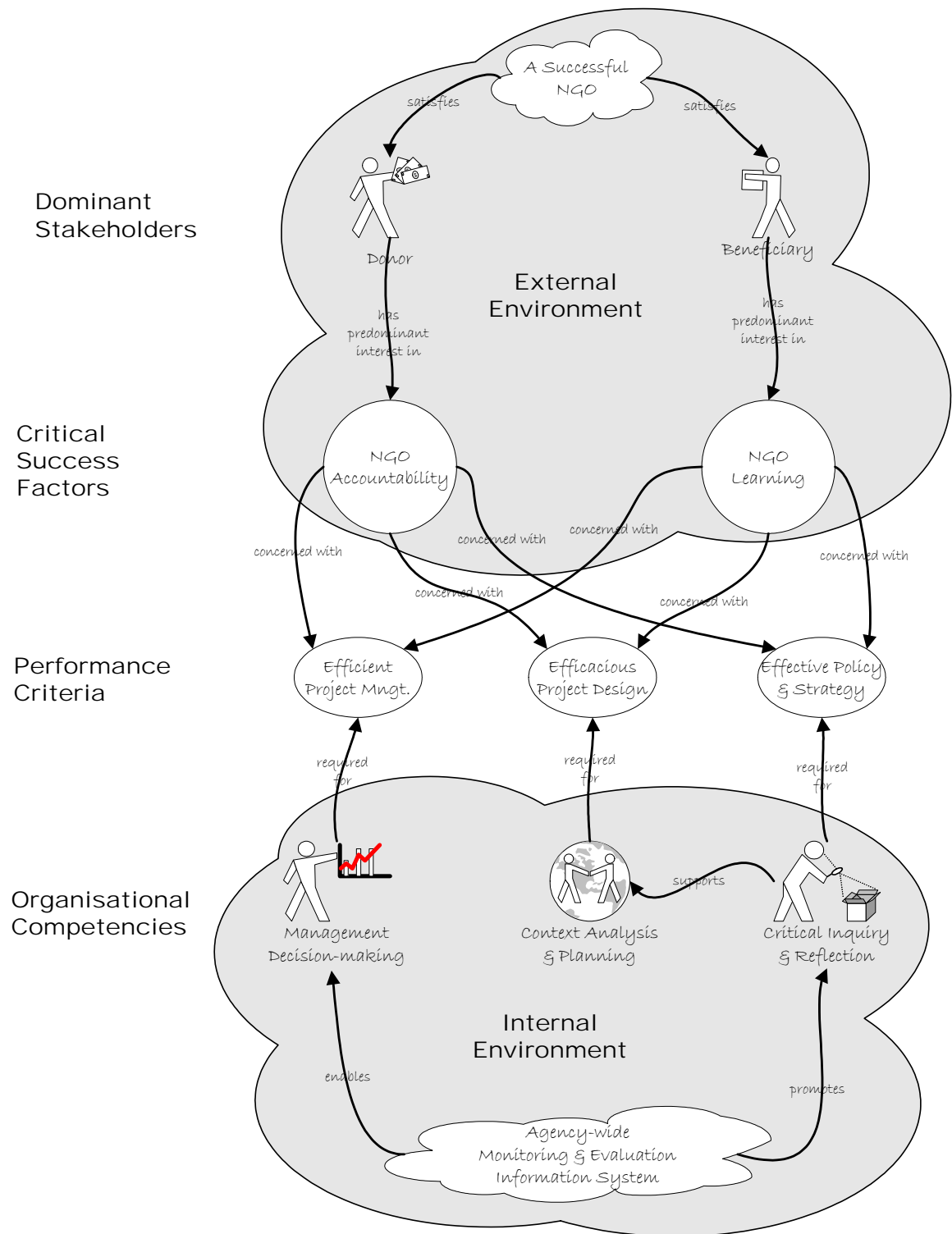
- Figure 35: A conceptual framework to identify the 'why' of a MEIS (after Crawford and Bryce 2003)

The following discussion traces the elements of the conceptual model presented in Figure 35.

Much of the IS and management literature has an implied link between information and organisational success (Buckmaster 1997; Dransfield, Fisher et al. 1999; Chennell, Dransfield et al. 2000; CSIRO 2001). While from a broad perspective this seems obvious, as highlighted in Chapter 3, defining the terms 'information' and 'organisation' prove surprisingly difficult. Similarly, 'success' is a contestable notion, with each stakeholder promoting definitions based on their particular *weltanschauung*.

Applying evolutionary thinking, I take success to be the survival of the organisation (Davies 1998) that is, 'organisational sustainability'. According to Shaw (2001, p 2), this requires the organisation to consistently "satisfy multiple value propositions to diverse stakeholders simultaneously". Those factors that stakeholders consider valuable or important have been called 'critical success factors' (CSFs) (Olve, Roy et al. 1999). These are the key objectives that the organisation must achieve in both the short and long term if it is to survive (Shaw 2001).

In the discussion in Section 3.2, the tensions evident within the NGO project system were broadly described as the 'NGO dilemma'. There, I argued that the two broad groups of external stakeholders that an NGO must satisfy are 'donors' and 'beneficiaries'. Further, the generalisation was made that donor agencies have a predominant interest in NGOs that are *accountable*; while beneficiaries have a predominant interest in NGOs that *learn*. As identified in Subsection 3.2.4, the pragmatic reality is that for an NGO to succeed, it must equally satisfy *both* stakeholder groups. I therefore submit that accountability and learning are the two CSFs of an NGO (Edwards and Hulme 1996). This is represented in Figure 35 in the top section of the model labelled 'External Environment'.

As discussed in Subsection 3.2.1, the predominant interest of 'the donor' in accountability is a feature of the well-documented phenomenon of 'reciprocal altruism' (Ridley 1996). The project management approach that dominates aid delivery is a mechanism for facilitating accountability. That is, the project management approach enables an NGO to be accountable to the donor for specified results (*efficacy*) within an agreed timeframe and budget (*efficiency*).

The donor also has some interest in the INGO's broader organisational relevance/appropriateness (*effectiveness*).

As discussed in Subsection 3.2.2, the predominant interest of 'the beneficiary' in learning derives from the complex ('wicked') and emergent nature of development. Beneficiaries who partner with NGOs expect them to embrace lessons learned to ensure successful and appropriate interventions (*efficacy*) that iteratively contribute to social transformation (*effectiveness*). Beneficiaries also share some interest in the NGO engaging in ongoing learning to improve its resource management capability (*efficiency*). These three forms of organisational learning will be discussed further in Subsection 5.5.2 of this chapter. However, for the purposes of this discussion it is worth noting that they correspond to the notion of 'triple-loop learning' presented in Subsection 3.5.2.

A central argument of this thesis (expressed in the conceptual framework in Figure 35) is that efficiency, efficacy and effectiveness (i.e. Checkland's '3Es') are the criteria by which the performance of an NGO is judged by both its dominant external stakeholders. The fact that the '3Es' appear to be the point of consensus between donors and beneficiaries suggests that focussing effort on these performance criteria may be a practical way for aid agencies to resolve the 'NGO dilemma'. As implied above, the relative interest in each of the '3Es' is different for the two dominant external stakeholders. This relative interest may be represented as in Figure 36.
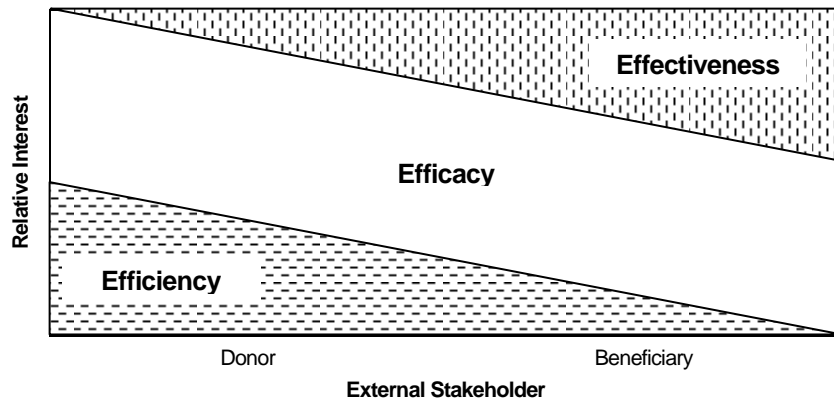
● Figure 36: The relative interest in agency performance of the dominant NGO external stakeholders

From the NGO's perspective (represented in Figure 35 by the label 'Internal Environment'), satisfying external stakeholders involves the coordinated effort of roles within each of the 3ZOM. While roles in all three zones may be broadly concerned with the '3Es', as discussed in Section 5.2, the nature of the core responsibilities in each zone dictates determining priorities. That is, the different zones of management have different relative interests in each of the three performance criteria. This reality was presented in the 'responsibility/accountability' matrix in Table 5, but may also be depicted as in Figure 37.
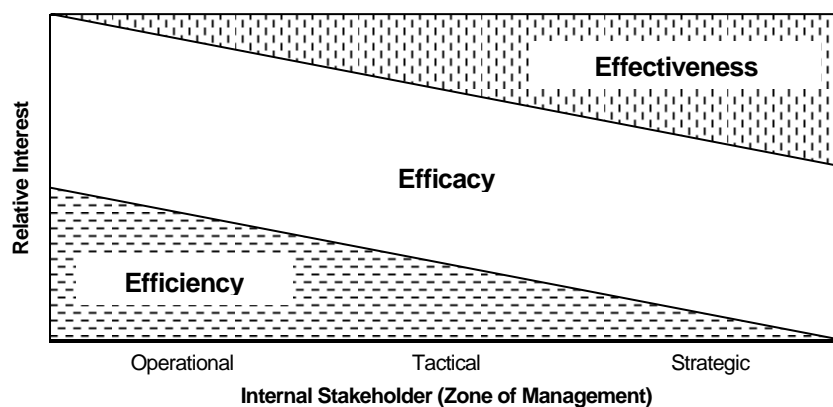
● Figure 37: The relative interest in agency performance of each management zone

So, what is the focus of these performance criteria?

As defined in Section 2.4 (page 58), efficiency is concerned with the controlled deployment of project resources such that project outputs are delivered on time and within budget. As the predominant concern of the operational zone, this

requires that INGOs excel at *project management.* Efficacy, as defined, is concerned with the success of the means selected to foster desired ends (specifically, the extent to which changes in beneficiary KAP can be plausibly attributed to the delivery of project outputs). As the predominant concern of the tactical zone, this requires that INGOs excel at *project design.* Effectiveness is concerned with broad alignment between the agency's actions and its higher purpose. This implies that INGOs must excel at the process of *policy and strategy* planning—predominantly a strategic zone function.

Given the argument that both donors and beneficiaries are concerned with efficient project management, efficacious project design and effective policy and strategy, then the remaining issue facing INGOs is what they need to be good at in order to achieve superior performance judged against these criteria. Or more specifically, what 'organisational competencies' should be supported by a MEIS such that roles distributed across the 3ZOM can manage *efficient* projects, design *efficacious* projects and refine *effective* policies and strategies?

Arguably, the competencies that underpin successful project management, project design, and policy and strategy are, respectively:

- **Management decision-making** about the deployment of project resources. This is a key element of many project management tools and methods (Schuyler 1996; PMI 2000; Cooke-Davies 2002).

- **Context analysis and planning** This is the basis for the development of appropriate project designs. It ensures they are grounded in a sound appreciation of beneficiary circumstances[168] (Lelo, Ayieko et al. 1999; Chambers 1983).

- **Critical inquiry and reflection** These processes are widely accepted as the means by which organisations can grapple with 'wicked' problems such as how best to achieve their mission (Zuber-Skerritt 1996; Fowler 1997; Kaplan 1999; Mellish 2000; Shaw 2001).

---

[168] Consultative and participatory methods such as participatory rural appraisal (PRA) make this possible.

The purpose of a MEIS is to promote these competencies. This is achieved through the supply of relevant, accurate and timely information to roles across the 3ZOM. More specifically, *capta* delivered by M&E processes directly supports *management decision-making* (predominantly in the operational zone), and *critical inquiry and reflection* (in the strategic zone). In addition, a key theme of this thesis is that the *context analysis and planning* that is necessary to achieve efficacious project design is also dependent on *critical inquiry and reflection* (predominantly by the tactical zone). Thus, there is a sense that the process of critical inquiry and reflection is relevant for two forms of learning: learning about efficacy and learning about effectiveness[169]. This is represented in Figure 35 by an indirect link between the MEIS and context analysis and planning via critical inquiry and reflection.

In addition to promoting the three organisational competencies noted above, an additional role of the MEIS that is implicit in the conceptual framework from Figure 35 is to promote accountability. In practice, accountability is achieved when an organisation proactively makes transparent[170] the processes and outcomes of its *management decision-making* and its *critical inquiry and reflection* (Raynard 2000; Lavergne 2002; van Brabant 1997). In other words, accountability is enabled by a management philosophy of (and commitment to) communicating performance information to interested stakeholders. The role of a MEIS in this process is to define strategies and protocols for the dissemination process.

Therefore, given the conceptual framework in Figure 35, it is possible to define the purpose of a MEIS to be a management tool to demonstrate *accountability* and promote *learning* by enabling[171]:

- Informed management decision-making

- Critical inquiry and reflection

- Transparency

---

[169] This is in fact a feature of 'triple-loop learning' that will be expanded on in Subsection 3.5.2.
[170] Transparency is a necessary but not sufficient condition for accountability.
[171] These purposes clarify the word 'benefit' that was used (page 63) in the SSM root definition for a MEIS.

This conceptual framework (Figure 35) makes explicit the implied link between 'information' and 'NGO success'. I do not mean to imply that a MEIS is the sole contributor to NGO success. Rather, I take a MEIS to be a management tool, which if appropriately applied, may assist the pursuit of success[172]. This is consistent with the *weltanschauungen* (i.e. 'W' in CATWOE) in the MEIS root definition proposed in Section 2.4: "information is an important ingredient for NGO success".

Having mapped the MEIS stakeholders (the 'who'), and defined their predominant information requirements (the 'why'), the following section will now explore the nature of the data and information required (the 'what').

5.4   Resolving the 'What'

In Section 5.3, I identified that the benefit to NGO personnel of a MEIS is the provision of informational support that enables the organisation to consistently satisfy the accountability and learning demands of its stakeholders. More precisely, a MEIS should enable:

- Informed management decision-making.

- Critical inquiry and reflection.

- Transparency.

I argued that these organisational competencies may contribute to the achievement of three 'performance criteria':

- Efficiency.

- Efficacy.

- Effectiveness.

These three performance criteria derive from SSM. In addition to these, transparency is achieved when information about the performance criteria (i.e

---

[172] i.e. in concert with an array of factors such as culture, staff competency, leadership style and 'market forces' etc.

the '3Es') is disseminated to relevant external stakeholders[173]. Thus, transparency implies accessible performance information.

Also recognised in Sections 5.2 and 5.3 was the reality that roles in each of the 3ZOM have different information needs:

- **Operational zone roles:** require information to support management decision-making about resource deployment to ensure the *efficient* delivery of project outputs.

- **Tactical zone roles:** require information relating to both decision-making and learning to ensure that projects planned and implemented are *efficacious*.

- **Strategic zone roles:** require information to support organisational learning about the *effectiveness* of strategies and policies employed in pursuit of the organisational mission.

Roles in all three zones are required to demonstrate *transparency* to their respective stakeholders.

The 3ZOM should not imply that *individuals* are uninterested in a holistic view of performance[174]; rather it is a reflection of the fact that the fulfilment of *roles* requires primary attention to certain types of information relevant to that role. This reality was implicit in the 'organisational obligations' matrix (Table 5), and is depicted in an alternative format in Figure 38.

---

[173] The MEIS is a necessary but not sufficient condition for transparency. Although it is difficult to implement the management philosophy of transparency if there is no MEIS, the mere existence of a MEIS does not of itself guarantee transparency. The MEIS is simply the mechanism by which relevant data and information is captured, analysed and disseminated to interested internal stakeholders in order to promote transparency and hence accountability.

[174] For example, operational personnel are not necessarily uninterested in effectiveness and strategic personnel are not necessarily uninterested in efficiency. The interests of individuals and the requirements of roles can be seen as overlapping but different issues.

The chart shows "Relative Interest" (High/Low) on the vertical axis and "Zone of Management" (Operational, Tactical, Strategic) on the horizontal axis. Labels include Efficiency Metrics, Efficacy Metrics, and Effectiveness Metrics.
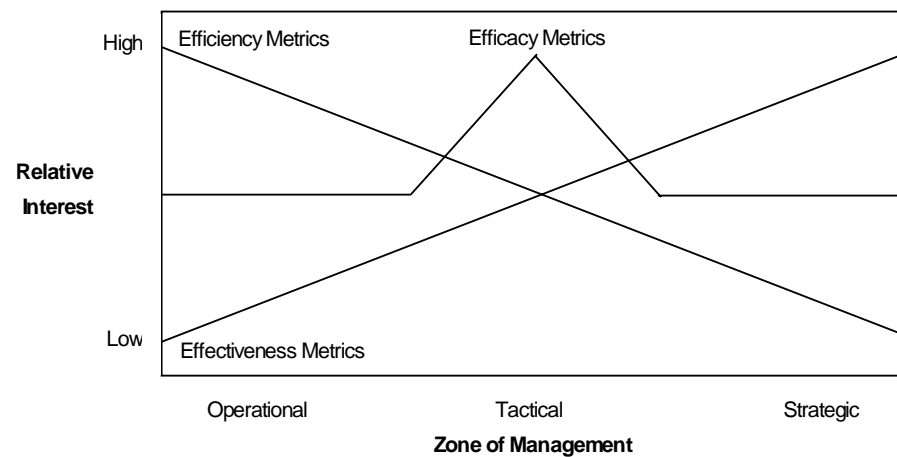
- Figure 38: The relative interest in performance criteria by each of the three zones of management

The broad themes represented in Figure 38 have been discussed by Cracknell (2000, p 184) who reports that:

> Operational staff will be very concerned about efficiency of implementation, and performance assessments…whereas senior management will look to evaluations as…guides to the effectiveness of policies and strategies.

The following sub-sections focus on the nature of the data relating to the three performance criteria ('3Es'). That is, I attempt to address the question of 'what' data is required to assess the efficiency, efficacy and effectiveness of aid interventions. This involves a proposal for categorising the required data, followed by a detailed examination of the nature of the data in each category. Firstly, the framework selected to guide the identification of MEIS data will be discussed.

5.4.1 The Data Identification Framework

As discussed in Section 4.2 a framework to guide the identification of M&E data is critical. In this thesis, the logframe has been selected as the data identification framework for several reasons:

- The logframe is the *defacto* aid industry standard planning framework, and as such is widely understood and used (Cracknell 2000); (Bell 2000; den Heyer 2001a).

- The logframe fundamentally upholds the governing principle of 'alignment' defined by CSIRO's organisational performance measurement framework (Shaw 2001).

- Much of the literature around the logframe promotes its use for M&E purposes (Broughton and Hampshire 1997).

- The use of SSM conceptual modelling confirmed that the vertical logic of the logframe provided a useful model for a MEIS (Figure 13).

- The broad performance criteria (Checkland's '3Es') can be identified within the structure of logframe-based project designs (Figure 15).

To address some of the limitations of the logframe, encountered when it is applied for the purposes of M&E, I have heavily modified the conventional logframe matrix. These modifications, embodied in the '3D-logframe' (Crawford and Bryce 2003), will be outlined in Subsection 5.5.1. However, the central tenet of the conventional logframe, the IF→AND→THEN logic, has been retained:

- **IF** inputs are provided, **AND** the input-activity assumptions hold, **THEN** the activities can be undertaken.

- **IF** the activities are undertaken, **AND** the activity-output assumptions hold, **THEN** the project outputs will be produced.

- **IF** the project outputs are produced, **AND** the output-effect assumptions hold, **THEN** the outcomes should be realised.

- **IF** the effects are realised, **AND** the effect-impact assumptions hold, **THEN** the goal is likely to be achieved.

This relationship is depicted in Figure 39.
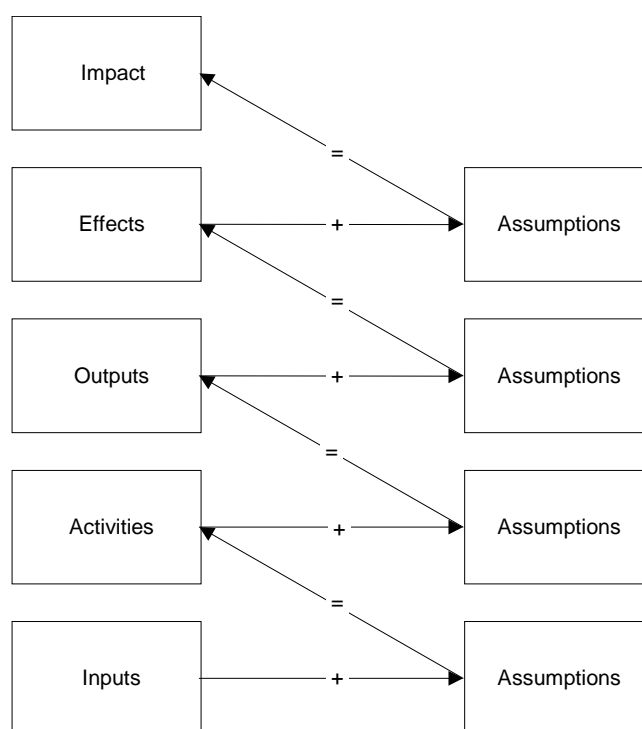
- Figure 39: The IF–AND--THEN relationships that underpin the vertical logic of the logframe (based on: AusAID, 2000)

Although frequently overlooked by many logframe practitioners (Gasper 1997), the rigorous application of IF→AND→THEN logic offers a richer model of change than the simple linear (IF→THEN) change model. The rigorous assumptions analysis (i.e. the 'AND' element) required by best-practice logical framework analysis provides for 'conditional causality'. Within this approach, the linear 'theory of change' implicit in the project logic is recognised as being contingent on a range of 'externalities'.

Thus, broadly two categories of data are required by the MEIS[175] proposed in this thesis. The left and right sides of Figure 39 represent these two categories:

- **'IF→THEN' data:** concerned with the linear theory of change (e.g. IF Inputs THEN Activities; IF Activities THEN Outputs etc.).

- **'AND' data:** concerned with the assumptions and risks that underpin the linear theory of change (i.e. the preconditions for success).

---

[175] The types of data required of a MEIS have also been expressed in the SSM conceptual models presented in Figure 13 and Figure 15.

The conventional logframe provides for objectively verifiable indicators (OVIs) to be assigned to each level of the left-hand column of the matrix. These OVIs (the second column in the conventional logframe matrix) are used to assess the performance of the project (i.e. the extent to which the planned linear change has occurred). Hence, in this thesis, I call this category of OVIs 'Performance OVIs'.

There has been considerable emphasis on the selection of performance OVIs in aid industry literature (Roche 1999; Davies 1998a). However, an over-reliance on performance indicators encourages a deterministic IF→THEN view of project design. That is, their use in isolation ignores the value of the 'AND', which has the potential to draw attention to assumptions implicit in the project logic and the role of externalities in project success. Also, as will be discussed in Section 5.4.4, 'AND' data provides a rich opportunity for organisational learning.

This study suggests that there is a strong case for OVIs to be assigned to each level in the hierarchy of assumptions listed in the right-hand column. These may be called 'assumption OVIs' to distinguish them from 'performance OVIs'.

5.4.2 'M', 'E' and 'M&E'

Identifying the two categories of data required of a MEIS may also resolve the ambiguity associated with the underlying processes: monitoring and evaluation.

As noted in Section 3.3, many commentators have identified 'monitoring' and 'evaluation' as separate but related processes. However, views differ on exactly *how* these processes are different in terms that allow operationalisation[176].

In this work, I take the process of 'evaluation' to mean the examination of performance OVIs and 'monitoring' to mean the examination of assumption

---

[176] Recall the discussion in Section 3.3 that identified common attempts to differentiate between 'M' and 'E' on the basis of timing, responsibility, purpose and scope. In each case, however, some confusion occurred owing to exceptions in each case.

OVIs. That is, evaluation is concerned with the 'IF→THEN data' in the logframe's vertical logic (i.e. the left-hand column) whereas monitoring is concerned with the 'AND data' in the vertical logic (i.e. the right-hand column).

This differentiation of 'M' from 'E' is both pragmatic and intuitively appealing:

It is pragmatic since it defines a clear mandate for both monitoring and evaluation, and thus clearly articulates the nature of the data required by each process. Further, the relationship between the two processes is fundamentally linked by the need to examine both data sets to fully appreciate what has taken place.

It is intuitively appealing since it applies the common language use of the terms 'monitoring' and 'evaluation'. 'Evaluation' is derived from the French *évaluer*—from *es* meaning 'out from' and *value* as it means in English. Thus to evaluate is to draw out (assess) the value of something; as a customer may evaluate a new product or service prior to purchase. The English word 'monitor' is derived from the Latin *monere*, 'to warn or remind', and is also the root of premonition and admonish. It has wide application as a noun (e.g. a computer screen, or a school pupil with disciplinary or other special duties), but is used as a verb to describe a process of observation, especially where recording and control are implied. Hence, a farmer may monitor precipitation rates before sowing.

Thus, in the context of project management the process of evaluation, regardless of academic debates about precise purpose and methodology, is fundamentally concerned with assessing the value of a particular course of action, or strategy; whereas monitoring may be argued to involve the scanning or observation of contextual factors. There is a sense that one evaluates that over which one has some control, but monitors factors that are unpredictable or external. Evaluation involves assessing the realisation of our plans. Monitoring then, involves recording how real-world factors impinge on our planned (linear) course of action.

A visible difference between this and other attempts at differentiating 'M' from 'E' within logic-based constructs, is the vertical separation of data in the logframe matrix, compared with the conventional approach (refer to Table 3) that involves a horizontal separation. This difference is depicted in Figure 40.

CONVENTIONAL VIEW

	Description	OVI	MOV	Assumptions
Evaluation {	Impact			
	Effects			
Monitoring {	Outputs			
	Activities			
	Inputs			

PROPOSED VIEW

| Evaluation | | | Monitoring |

	Description	OVI	MOV	Assumptions
Impact				
Effects				
Outputs				
Activities				
Inputs				
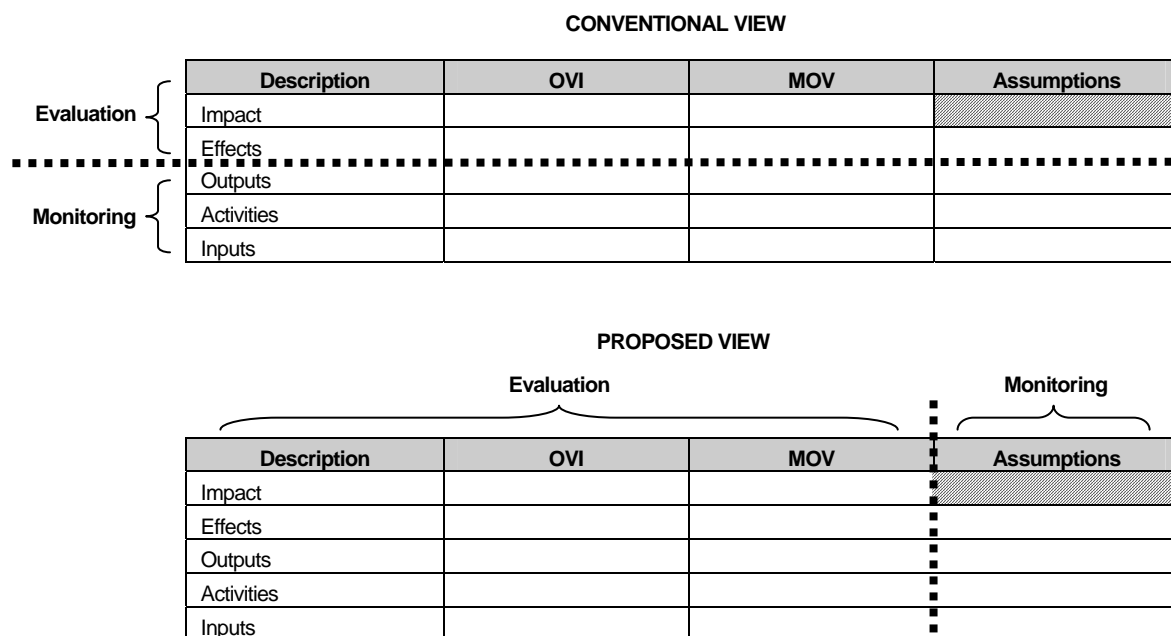
- Figure 40: The conventional view of logframe-defined M&E compared with the view proposed in this thesis.

An early attempt in this study[177] to modify the conventional logframe, to better convey this definition of M&E and to emphasise the IF→AND→THEN logic and the requirement for assumptions to be monitored is presented in Figure 41.

EVALUATION			MONITORING		
MOV	Performance OVI	Logic	Assumptions	Assumption OVI	MOV
		Impact	Development Assumptions		
		Effects	Intervention Assumptions		
		Outputs	Management Assumptions		
		Inputs			
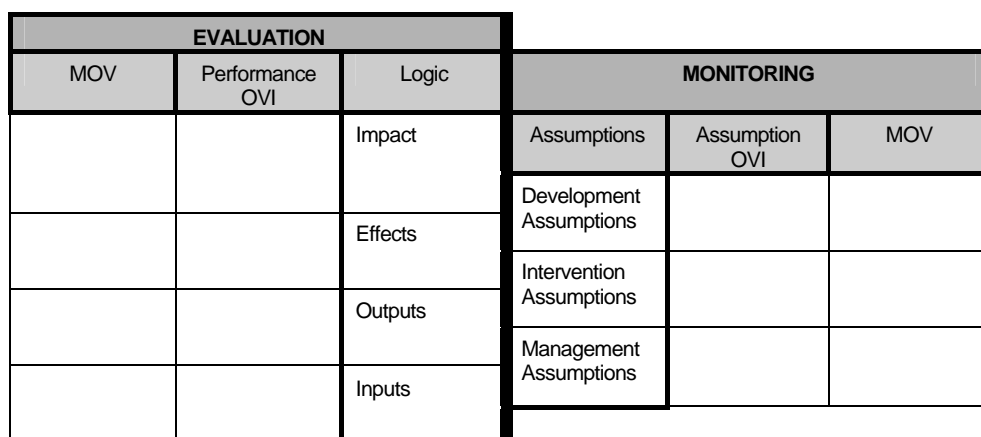
- Figure 41: A logframe modification proposed early in this candidature

---

[177] This two-dimensional modification was abandoned in favour of the three-dimensional modification presented in Subsection 5.5.1 which permits inclusion of the time dimension and additional IS detail.

An important contribution offered by the proposed definition of M&E is that it permits the inclusion of the '3Es' of performance. As noted in Section 3.3, the conventional view of M&E identifies evaluation as being concerned with the *effectiveness* of the project while monitoring is said to be concerned with the *efficiency* of the project. There is no explicit acknowledgement of the role of *efficacy*, which as has been argued, offers a useful third dimension to the notion of performance. Efficacy is embedded within the performance OVIs for effects, jointly analysed with the intervention assumption OVIs to enable meaningful contextualisation of M&E findings.

Other benefits of this definition of M&E relate to time and responsibility as identified in Section 3.3. Within the conventional view, monitoring is distinguished from evaluation as 'regular' as opposed to 'periodic', and 'internal' as opposed to 'external'. However, as noted, these definitions are relative, and hence prove difficult to operationalise in all contexts. The definition proposed in this thesis obviates the need for these issues to be defined, and instead recognises the reality that they are situation-determined[178]. Instead, the emphasis is placed on the nature of the information required.

In this subsection, I have broadly defined two categories of data to be supplied by the processes 'monitoring' and 'evaluation'. The following sub-sections examine in turn the nature of the data required for each category.

5.4.3 Evaluation Data

Aid projects may be conceived as social experiments (or 'quasi-experiments (Cook and Campbell 1979)) since they implicitly test hypotheses (Nichols 1999; Coleman 1987) within human activity systems (Checkland 1981). Crawford, Perryman et al. (2004) identify three hypotheses in any logframe-based project design:

- **Management hypothesis:** the resources or 'inputs' invested by the donor in the project will be efficiently converted to the planned 'outputs' by the project implementation team.

---

[178] Dependent on, among other things, the size of the budget, length of project, donor policies.

- **Intervention hypothesis:** the 'outputs' delivered will foster the desired 'effects' in the lives of identified beneficiaries ('boundary partners').

- **Development hypothesis:** the 'effects' realised will contribute to a desired development 'impact' in the wider community.

Thus, the three hypotheses are each fundamentally concerned with three main groups of actors in the operational zone (as discussed in Subsection 4.2.2). The management hypothesis is concerned with the *implementation team*, and the extent to which they implement the project as planned. The intervention hypothesis is concerned with the *boundary partners*, and the extent to which they embrace changes in KAP. The development hypothesis is concerned with the *wider community* of which the boundary partners are members, and the extent to which the changes in KAP diffuse beyond them.

By way of example from the Kenyan case study project:

- **Management hypothesis:** seven NGO Extension Officers (inputs) can *efficiently* deliver a specified number of training events (outputs) for 140 community-elected Extension Farmers.

- **Intervention hypothesis:** intensive training by the seven Extension Officers is an *efficacious* means to achieve improvements in the level of farm productivity, natural resource management and community cooperation and problem solving among 140 Extension Farmers (effects).

- **Development hypothesis:** 140 Extension Farmers with improved knowledge in farm productivity, natural resource management and community cooperation skills can *effectively* influence positive changes in the food security of approximately 10,000 households in Ikutha Division.

As written, each of the three hypotheses is concerned with Checkland's three performance criteria ('3Es') respectively. The testing of each hypothesis implies a separate evaluation focus or mandate, and perhaps a separate

methodology. The three evaluation mandates relevant to an aid project system are (Crawford, Perryman et al. 2004):

- **Management evaluation:** seeks to test the management hypothesis through assessment of the *efficiency* of the *implementation*—i.e. the extent to which planned outputs are produced with a given set of inputs.

- **Intervention evaluation:** seeks to test the intervention hypothesis through assessment of the *efficacy* of the project *design[179],* i.e. the extent to which the delivery of project outputs has resulted in the expected effects.

- **Development impact evaluation:** seeks to test the development hypothesis through assessment of the *effectiveness* of the development *strategy* or *policy,* i.e. evidence that the project effects contribute to sustainable development impact.

All three forms of evaluation are required to appreciate the performance of the whole 'aid project system'. The nature of the data required to evaluate each of the three hypotheses will now be discussed in turn.

Testing the Management Hypothesis

As noted in Section 3.6, a core focus of the academic field of project management has been to develop tools and methodologies to manage project efficiency. Project efficiency is concerned with the economy of resources used to deliver the planned outputs, and hence involves comparison of the actual implementation with the original project plan. An efficient project then, is one in which there is little deviation between 'planned' and 'actual'. Whether or not the original plan was efficient in an absolute sense is contestable (examined when testing the intervention hypothesis)[180].

---

[179] In project management literature, the distinction between acceptable management and intervention hypotheses is referred to as 'project management success' and 'project success' respectively. See de Wit, A. (1988) and Cooke-Davies, T. (2002).

[180] Assessment of absolute efficiency may be enabled by comparative analysis across projects. The ability to compare the performance of an individual project with other projects is the strongest argument for an organisation-wide MEIS.

The determination of project efficiency involves data concerned with three dimensions of project status (PMI 2000):

- Cost.

- Time.

- and progress[181].

In logframe terminology, this data corresponds to 'inputs', 'activities' and 'outputs' respectively (i.e. the bottom three rows of the conventional matrix)[182]. As identified in Table 5 and Figure 38, efficiency is within the sphere of responsibility of operational zone roles. That is, it is the predominant concern of the implementation team.

The functional precursor to project management is project design. Project design involves (in part) determining the trajectory to be followed by the project within the three dimensions stated above (Pillai and Rao 1996). Project management is fundamentally concerned with minimising undesirable deviations ('variance') from the planned trajectory of each dimension. Thus, during the course of managing a project, the manager is interested in the values of 'planned' and 'actual' across each of the three dimensions: cost, time and progress.

As noted in Section 3.6, a plethora of methods and tools have emerged to assist project managers[183] to determine the status of projects and thus take corrective action. However, in reviewing several[184] well-recognised methods, Pillai and Rao (1996) found that none[185] adequately integrate all three dimensions of project status and most do not permit an assessment of project performance at any point in the life of the project. Earned Value Analysis (EVA), the most popular method (Pillai, Joshi et al. 2002), was introduced by the US

---

[181] In this section, the term 'progress' is taken to mean the extent to which planned project outputs have been delivered.

[182] This data was identified in the SSM model in Figure 13 (activities 1, 3 and 5 of the operational subsystem).

[183] Although in my experience, aid project managers tend not to be steeped in these methods.

[184] Gantt chart, PERT/CPM & PERT-COST, RPD, GERT, VERT, Slip Chart, SSD Graph and Earned Value Analysis.

[185] Although VERT was found to use the three dimensional approach (time, cost, progress) its main focus is on planning with risk analysis.

Department of Defence in the late 1960s. However, although it attempts to measure progress variance, this dimension is expressed in terms of a fictitious cost.

EVA uses three elements:

- The budgeted cost of work scheduled (BCWS).

- The actual cost of work performed (ACWP).

- The budgeted cost of work performed (BCWP) or earned value.

The cost variance is given by the formula: BCWP–ACWP, which gives a true variance in cost. But the schedule variance is given by BCWS–BCWP, which is an interpretation of the schedule variance in terms of cost.

In response to this identified weakness with EVA, Pillai and Rao (1996) developed and successfully used an alternative method in several research and development (R&D) projects of national priority to the Indian Government. I believe theirs to be a useful method for testing the management hypothesis within aid projects at any point in the life of the project.

The new method, 'PACT'[186], is a four-quadrant graph:

- **Quadrant I:** cost vs. time graphs (planned and actual).

- **Quadrant II:** represents the flow of time through the project cycle.

- **Quadrant III:** progress vs. time graphs (planned and actual).

- **Quadrant IV:** cost vs. progress curves (planned and actual).

The four-quadrant graph (PACT) for a typical project is presented in

Figure 42.

---

[186] In the original paper by Pillai, A. S. and K. S. Rao (1996). "Performance Monitoring in R&D Projects." R&D Management **26**(1): 57-65., it is not made clear whether or not 'PACT' is a precise acronym. It is simply reported to be a (p 59) "graphic tool (PACT) for visualisation of progress, cost and time".
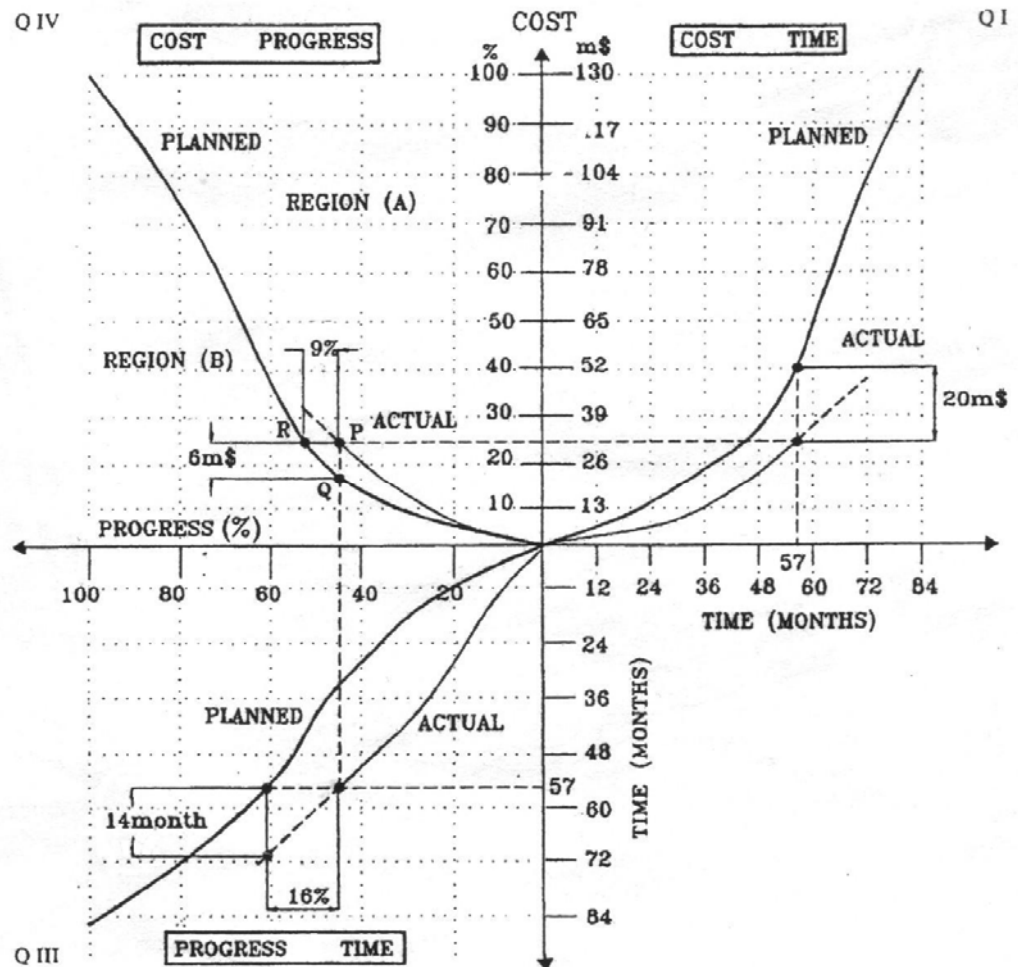
- Figure 42: 'PACT', the alternative method to Earned Value Analysis for measuring project progress:cost (i.e. efficiency) (Source: Pillai and Rao 1996)

The cost vs. progress curves in Quadrant IV of Figure 42 are derived by projecting the time intercepts of the progress (Quadrant III) and cost (Quadrant I) graphs. The cost and progress variance can then be directly measured from the graphs in Quadrant IV.

Pillai and Rao (1996) contend that the underlying principle of PACT is one order better[187] than EVA since it provides an integrated cost-progress-time analysis in a visual format. In Figure 42, point 'P' gives the ACWP and point 'Q' gives the BCWP. Hence, the cost variance computation using PACT is the same as with EVA. However, unlike EVA, PACT gives the progress variance directly in terms of '% of progress'. Point 'R' represents progress that should have been made for the actual cost, that is the work scheduled for actual cost

---

[187] That is, PACT provides an assessment of schedule variance that is more accurate than the interpretation based on cost offered by EVA.

(WSAC), while the X coordinate of point 'P' gives the actual progress for actual cost. The difference between the X coordinates of 'R' and 'P' will directly give the progress variance in terms of the '% of progress'. Furthermore, additional schedule/cost information can be derived directly from Quadrants I and III, and the progress-cost inter-relationship is more clearly understood with the graphical PACT format.

The following information can be derived from the graph in Figure 42:

- **Quadrant III:**
    - At the end of month 57, there is a progress deviation of –16% without considering resources consumed.
    - Based on the present trend, there is a 14 month delay in the schedule.

- **Quadrant I:** at the end of month 57 there is a cost variance of - $20 million without considering progress made.

- **Quadrant IV:**
    - The progress variance, given the resources consumed, is –9%.
    - The cost variance, considering progress made, is +$6 million.
    - Region (A) represents less progress at more cost and hence requires immediate action. Region (B) represents more progress at less cost. Since the status of the project is in the area of the graph labelled Region (A), corrective action is required.

The purpose of efficiency analysis such as that enabled by PACT is to foster informed and timely management decision-making about deploying resources and scheduling tasks to minimise variance against the project plan. This analysis is further enriched when it is paired with monitoring data (discussed in Subsection 5.4.4) to enable organisational learning about reasons for variance.

As identified in Section 5.2, to realise the potential afforded by an organisation-wide MEIS, requires scalable information. For the purposes of

this thesis, the progress variance calculated using the PACT approach is a useful and scalable measure of project efficiency, determinable at any point in a project lifecycle. PACT enables comparison of the efficiency of unrelated projects and aggregation to evaluate the efficiency of portfolios of projects.

Testing the Intervention Hypothesis

For many industries adopting a project management approach, the delivery of outputs is an end in itself (as discussed in Section 3.6) and hence there is an over-reliance on efficiency measures. However, within the aid industry, the delivery of project outputs (e.g. farmer training workshops) is a means to developmental ends (e.g. improved farm productivity).

As noted in Subsection 3.3.2 (see Figure 18), the implementation team experiences decreasing control along the impact chain. Hence, deterministic management and evaluation tools such as the PACT method (above) become decreasingly relevant. Whereas the management hypothesis is concerned with the actions of the implementation team, the intervention hypothesis is fundamentally concerned with the boundary partners, and their experience of changes in KAP as a result of the intervention.

For M&E purposes, the tactical zone is held responsible for efficacy. This is not to say that personnel in the tactical zone can control the realisation of effects. Rather, it is a reflection of the fact that the tactical zone, in taking the lead on project design, is responsible for the theory of change implicit in the strategy.

Thus, in order to test the intervention hypothesis, organisational members in the tactical zone require processes to be defined to enable meaningful assessment of efficacy. As discussed in Subsection 4.2.2, this is sufficiently challenging; however, given the argument proffered for an organisation-wide MEIS, there is also need to assess the efficacy of a single project relative to other projects within a portfolio—i.e. a scalable measure of efficacy.

Arguably, the strongest pressure for such concise scalable measures has come from donor stakeholders and their constituents whose predominant interest is

in accountability. However, from a learning perspective, there is value in identifying whether or not the changes anticipated within a given theory of change have been realised, and further, the comparative analysis of project efficacy.

As argued earlier, the '3Es' of performance are at least conceptually scalable. Any intervention will have an inherent level of efficiency, efficacy and effectiveness. These are relative, rather than absolute concepts.

While methods such as PACT offer a way to derive the relative efficiency of a project, deriving efficacy is problematic. One avenue explored during this candidature draws on arguments put forward by de Vries (2001) of the United Nations Statistics Division, who criticises the profession of statistics for the tendency to try to find 'a precise answer to the wrong question', particularly where notional or non-tangible issues such as human development are concerned. He argues that there may be a role for 'synthetic indices' to inform debate about these issues.

Synthetic indices are constructed from heterogenous elements[188] (a prominent example is the UNDP Human Development Index), and may be contrasted with 'composite indices', which are constructed from homogenous elements[189] (e.g. GDP). Indices in general are a blunt statistical instrument to assess broad changes, and are generally applied at a macro or national level, as implied by the two examples used above. During this candidature, I explored the use of synthetic indices to assess changes at the micro or community level—that is, the project level (Crawford, Perryman et al. 2004).

In the Kenyan case study project, synthetic indices were constructed from the range of efficacy OVIs collected at baseline. The purpose of the indices was to determine aggregated relative changes in beneficiary circumstances at key points in the life of the project: mid-term and endline. Recognising the inherent difficulty of capturing complex social changes within a planned

---

[188] That is, comprised of indicators concered with diverse issues—e.g. literacy, public health, economic growth.
[189] That is, comprised of indicators concerned with the same issues—e.g. economic growth.

indicator approach to evaluation as discussed in Subsection 3.2.2, the method proved useful on several counts:

- The synthetic indices provided a measure of overall or aggregated change relative to baseline values.

- The synthetic indices satisfied donor and other stakeholder expectations for a concise high-level summary of relative changes fostered by the project.

- The synthetic indices could be readily disaggregated to distil finer issues for discussion within the implementation team.

- The relative nature of changes captured by the synthetic indices suggested that the method could be used as a scalable measure of project efficacy.

The concept warrants further investigation, particularly if statistical methods can be applied to standardise 'synthetic effect indices' to enable a scalable measure of relative changes fostered by interventions. The benefit offered by this method would be in reporting the relative changes fostered, rather than in the specifics of changes. Methods such as that proposed by Davies (1998a), could supplement this to provide specific qualitative information about particular changes deemed significant within individual projects.

A further problem with most evaluation designs is their sporadic nature. That is, owing to the inherent complexity of social changes and the expense of implementing quasi-experimental evaluation designs, most aid agencies test the intervention hypotheses at only two points in the life of the project. After conducting a baseline assessment to determine pre-intervention values for the range of effect indicators, a mid-term ('formative') evaluation to determine preliminary changes, is implemented at approximately the project half-life. Followed up with a final ('summative') evaluation to establish the efficacy of the project design, at the conclusion of formal implementation. For multi-year multi-objective projects, the timeframe between these evaluative exercises can leave implementation teams uninformed about the efficacy of the theory of change for considerable periods. A method that may enable more frequent,

intermediate assessments of the intervention hypothesis will be proposed in 5.4.4.

Testing the Development Hypothesis

Most commentators agree that effectiveness, within the logframe conception of project design, is synonymous with 'impact' (Roche 1999; Fowler 1997; Smutylo 2001). Hence, testing the development hypothesis is expected to involve providing evidence that a particular strategy has brought about a sustainable improvement in the well-being of a large number of targeted beneficiaries (Earl 2002; Roche 1999; Smutylo 2001). Methodologically, this requires isolating the key factors that caused the desired results and attributing them to a particular agency or set of activities. For aid agencies, this means identifying and measuring the positive effects as they result, directly from the activities that those agencies support. According to Earl (2002) there are few good examples in the literature where this has been done.

As discussed in Subsection 4.2.2, there is substantial ambiguity around the nature or dimensions of impact. Further, this ambiguity is fuelled by vigorous academic debate over the methods and purpose of impact evaluation in what has been called 'the paradigm wars' (Cracknell 2000). On one hand, there is an expectation grounded in the positivist paradigm that impact should be measurable and attributable to an individual project or organisation. On the other hand, there is a 'post-positivist' pragmatic recognition that development is a complex non-linear process that takes place within open systems, thus making its measurement and the attribution of impact to a single intervention difficult at best (Gasper 2000; Smutylo 2001; Davies 2002).

The position taken throughout this thesis has been, where appropriate, to recognise the value of both sides of the polemic and to seek consilience. As noted above with reference to testing of the intervention hypothesis, 'emergent evaluation' methods are appropriate for appreciating the complex evolutionary nature of social changes fostered by aid projects (Scriven 1991; Guba and Lincoln 1989; Davies 1998). Hence, I find merit in approaches such as that

defined by Davies (1998a) who applies the evolutionary algorithm[190] through participatory iterative processes to determine what are perceived by project stakeholders to be the 'most significant changes' fostered by the project.

However, what remains problematic is the demand for an objective measure of impact by donors and other external stakeholders, and also, the need for a scalable measure of impact to benefit organisational learning about the effectiveness of the strategies employed across the agency. As noted, the ideals of an organisation-wide MEIS as proposed in this thesis are dependent on the ability to establish meaningful and scalable measures of organisational performance at all levels.

With respect to this latter issue, a breakthrough came with the recognition of the organisational structural realities captured in Table 5 (see also Figure 50). The interlocking and sharing of responsibilities and accountabilities and the one-to-many relationships of projects between the operational, tactical and strategic zones provides an opportunity to report on the effectiveness of a given strategy (or portfolio of projects) as the sum of the effects realised by each project in the portfolio. While it is increasingly recognised that measurement of impact is conceptually and practically difficult (if not impossible[191]), the measurement of effects, as discussed above with reference to the intervention hypothesis, is achievable using various quasi-experimental methods developed within the field of evaluation. Hence, the notion of impact for results-based management purposes may be considered in a practical sense as the aggregation of the effects of all projects in an assembled portfolio of projects. This may be more accurately expressed as the 'proxy impact' since it approximates the impact of a portfolio of interventions in the absence of more accurate and formal measures of impact. This 'aggregation' of effects could be possible using synthetic indices, discussed above as measures of relative effects.

Thus, the way that effectiveness is conceived in this thesis stems from a conceptual or philosophical shift in the way that 'the project' itself is

---

[190] Iterations of variation → selection → retention

[191] 'Impact' is two degrees of separation away from results that are measurable and attributable to 'the project' (i.e. 'outputs').

conceived. This will be discussed further in Section 5.5.3, but here it is sufficient to note that the difference lies in viewing an individual project not as an end in itself but as a means. This is in line with Smutylo (2001) who suggests that an individual project should not be held responsible for *achieving* specific development results, but rather for *managing-for* development results. This conception of the project aligns with Earl (2002, p 8) who recognises the "multiple endogenous contributions and conditions necessary for sustainable development".

In other words, this view recognises that sustainable development occurs when a variety of actors and factors converge. This conceptual shift treats an individual project as merely one social experiment within a wider programme of action learning (Rondinelli 1993).

Hence, the precise 'results' of an individual social experiment ('project') can be 'measured' and reported to interested stakeholders while simultaneously recognising the ongoing nature of the development discourse to which the individual project is but one contributor.

The core of this approach is similar to 'outcome mapping' proposed by the International Development Research Centre (IDRC), in which precedence is given to the tracking of changes in boundary partner behaviour "upstream" (Earl 2002, p 10) of impact. That is, IDRC argues that changes observed at the outcome/effect level of the impact chain are indicative of the fact that a given intervention is making a contribution at the impact level (Earl 2002; Smutylo 2001). In this sense, there is less interest in attribution and ownership *of* impact and more interest in contribution *to* impact.

The major difference between the notion of 'proxy impact' proposed in this work and the outcome mapping approach, is that although the IDRC method recognises the reality of "multiple endogenous contributions to impact" (Earl 2002, p 8) and the merit of adopting a 'joined-up' approach (Kelly 2002) between multiple actors, there does not seem to be formal recognition of the role of portfolios of interventions implemented throughout time and space by a given aid agency. Hence, the proxy impact concept presented here extends the

IDRC thinking on outcome mapping to offer additional value to organisations whose stakeholders demand some estimation of impact. I argue that an aid agency's impact is the aggregation of the effects realised in portfolios of projects implemented by the agency.

Thus, the notion of 'proxy impact' offers a possible way to satisfy the political demand for aid agencies to report, in a blunt quantitative form, the impact of their interventions. Whereas efficacy is concerned with the merit of the theory of change in a *single* project, effectiveness within the context of proxy impact is concerned with the merit of the strategy or policy embodied within a *portfolio* of projects. Since proxy impact involves an aggregation of the measurable effects realised in the lives of boundary partners, it is fundamentally attributable to an aid agency's efforts. When combined with emergent evaluation methods such as that proposed by Davies (1998a), the concept offers opportunities for both project-specific and organisation-wide learning.

In this subsection, I have reviewed the broad issues and approaches involved in aid project evaluation. Specifically, I have proposed methods to test the management, intervention and development hypotheses implicit in aid project designs. The following subsection will now examine the issues involved in monitoring.

5.4.4 Monitoring Data

As defined in this thesis, the role of monitoring data is to inform debate about performance evaluation findings. Whereas evaluations seek to answer the question 'what happened?', monitoring seeks to explore underlying causes by answering the question 'why did it happen?'.

As presented in Section 5.4.3, the evaluation of logframe-based project designs involves the testing of three hypotheses:

- Management hypothesis.

- Intervention hypothesis.

- Development hypothesis.

However, as has been argued earlier, the success of a project is conditional on more than its linear causality (Gasper 1997). Checkland (2001, p 70) believes that:

> …there are few human situations in which getting the logic right is enough to bring about action.

According to Earl (2002, p 9), "conditions will perpetually be affected by combinations of social and natural events".

An acceptable management hypothesis does not automatically ensure an acceptable intervention hypothesis. Similarly, an acceptable intervention hypothesis does not predetermine an acceptable development hypothesis. The real-world factors that impinge on project implementation can significantly affect the outcomes realised. This is particularly the case in complex operating environments such as those commonly encountered with aid project management. It is ambitiously deterministic to expect efficient project management and efficacious project design to result in effective development.

Although frequently overlooked, the reality of this situation is captured in the aid industry's logframe (Gasper 1997; Gasper 1999). The IF→AND→THEN logic (see Figure 39) which underpins the logframe has the potential to accommodate some of the complexity of externalities, and to provide a rich opportunity for learning. Within logframe terminology, these externalities are called 'assumptions' or sometimes 'preconditions' or 'risks'.

The rejection of a hypothesis therefore implies that enabling pre-conditions have not persisted so that the underlying assumptions have failed. The three classes of assumption that are preconditions for the three hypotheses are, respectively:

- Management assumptions.
- Intervention assumptions.
- Development assumptions.

The relationship between the three hypotheses that are evaluated, and the three assumption classes that are monitored, is depicted in Figure 43 (which is an extension of Figure 39).
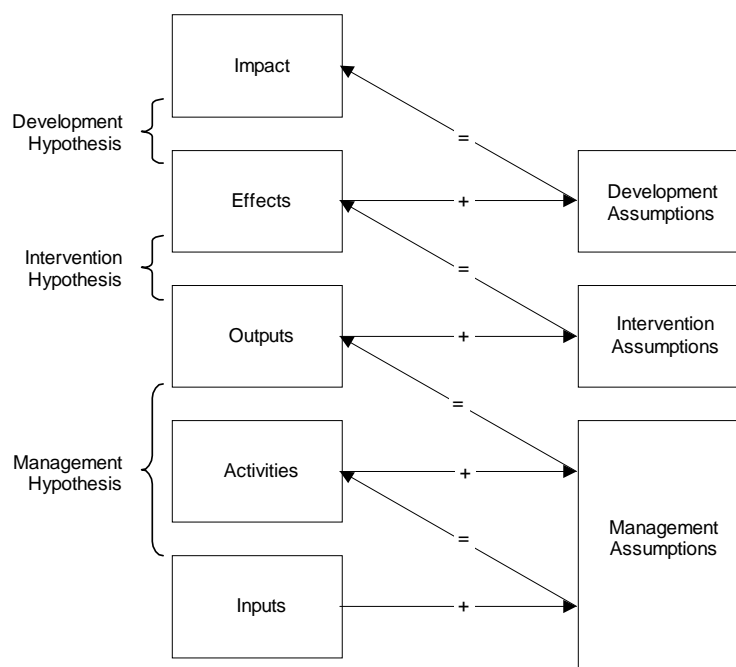
- Figure 43: The relationship between 'hypotheses' and the 'assumption classes' within the IF-AND-THEN logic of the logframe

Hence, a hypothesis that has proved acceptable implies two things:

- The hypotheses logically lower in the hierarchy are also acceptable[192].

- All preceding assumptions in the hierarchy are neutral or favourable.

For the purposes of M&E, factors that indicate the status of these logical assumptions need to be monitored. As noted in Section 5.4.1, the MEIS proposed in this thesis requires tracking 'assumption OVIs' for this purpose. The benefits of including assumption OVIs (in addition to performance OVIs) in the project design and M&E plan are that they:

- Draw the attention of planners to assumptions implicit in the project design.

---

[192] For example, an acceptable development hypothesis implies that the underlying management and intervention hypotheses are also acceptable.

- Highlight contextual factors and mitigate against deterministic IF-THEN thinking.

- Draw the attention of project managers to contextual factors and hence enhance risk management and adaptability.

- Provide information that contributes to informed debated and organisational learning.

Having argued for the merit of monitoring assumption OVIs, a suitable framework is required to guide their selection.

The assumptions column of the conventional logframe matrix has been vulnerable to what Gasper (1997, p 15) calls "box filling". Arguably, one of the main reasons for this marginalisation of assumptions is the absence of a framework to guide their selection. The 'STEEP' framework discussed by Grant (1999) has been used to categorise the drivers/inhibitors of change in a commercial setting, but may also be relevant to aid project assumption categorisation. The mnemonic stands for:

- **S**ocial

- **T**echnological

- **E**conomic

- **E**nvironmental

- **P**olitical

Each of the five 'domains' in the STEEP mnemonic has particular relevance to each class of assumption. The broad concerns of each domain follow:

- The 'social' domain is concerned with socio-cultural factors that affect project success/failure.

- The 'technological' domain refers in a very broad sense to the notion of resources (material, natural and human) required to realise a desired result. In particular, there is an emphasis on the quality (or aptness) of the resources required at each level of influence.

- The 'economic' domain captures the quantitative aspect of resource constraints.

- The 'environmental' domain is concerned with natural resource externalities that impact on the realisation of success at each level of influence.

- The 'political' domain is concerned with political and institutional externalities that impact on each level of influence.

To integrate the concept of the three classes of assumptions in the vertical logic of the logframe with the five STEEP domains, I propose the matrix presented in Table 6. The cells within Table 6 guide the definition of assumptions that would appear in the right-hand column of any logframe.

Assumption Domain / Assumption Class	S	T	E	E	P
Development assumptions affect the extent to which the *wider community* will…	accommodate the innovation(s) within social norms	control the quality of resources required to sustain the innovation(s)	command sufficient resources to sustain the innovation(s) adopted	adopt the innovation without destructive ecological impact	engender sufficient political support for the innovation(s) adopted
Intervention assumptions affect the likelihood that *boundary partners* will…	adopt the innovation(s) promoted by the programme	control the quality of resources required to adopt the innovation(s)	command sufficient resources to adopt the innovation(s) promoted	accommodate environmental factors that affect adoption	engender supportive community relationships
Management assumptions affect the ability of the *implementation team* to…	mobilise boundary partner participation in the programme	control the quality of project resources deployed	implement the planned activities with the resources budgeted	accommodate environmental factors that affect implementation	engender enabling internal & external relationships

• Table 6: The STEEP framework for the identification of risk factors

In practice, the information presented in Table 6 amplifies the data generally required in the assumptions column of the logframe matrix as depicted in Figure 44 (an extension of Figure 32).

Description	OVI	MOV	Assumptions				
Impact			S	T	E	E	P
Effects							
Outputs							
Activities							
Inputs							

- Figure 44: The incorporation of the 'STEEP' domains within the assumptions column of a conventional logframe matrix

As noted above, each of the three hypotheses (and hence each of the three assumption classes) relates to the circumstances encountered by each of three groups of actors in the operational zone: the implementation team, the boundary partners and the wider community. As discussed in Subsection 3.3.2, this thinking is implicitly aligned with the theory of diffusion of innovations (DoI) (Rogers 1962). Figure 45 (an extension of Figure 22) depicts DoI as a 'ripple effect' with respect to the three project hypotheses, the three assumption classes and the elements of the logframe impact chain.
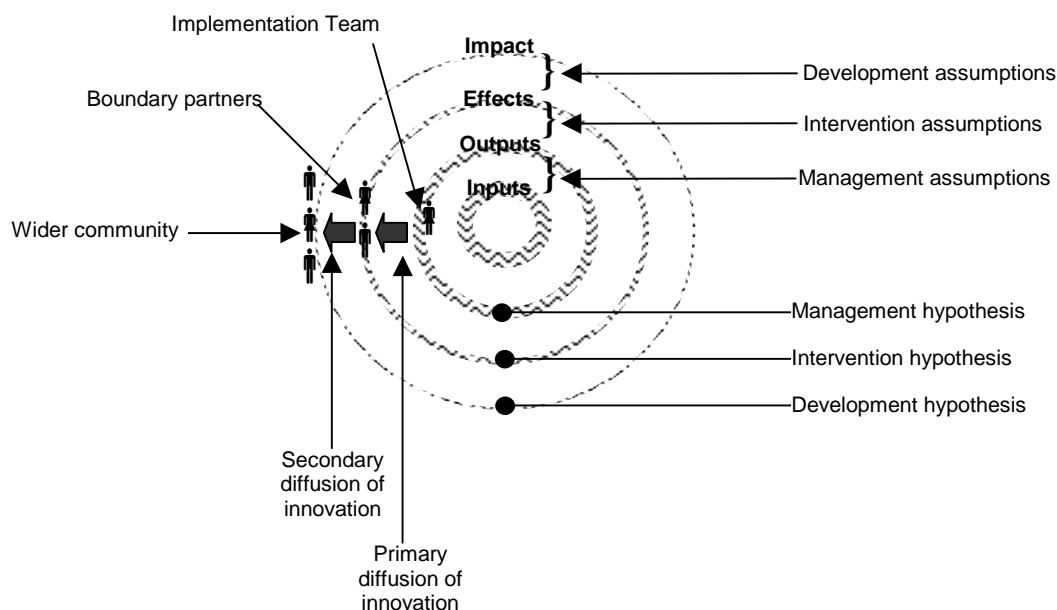
- Figure 45: The 'ripple effect' of development innovation diffusion (Crawford, Perryman et al. 2004)

Hence, the success of the strategy embodied in the vertical logic of the logframe is contingent on each of these three groups of actors encountering favourable or enabling conditions or externalities. The five domains (STEEP) in Table 6 provide a guiding framework to clarify the various dimensions of these 'externalities'. That is, each domain makes a unique contribution to the management, intervention and development hypotheses respectively.

In some cases, it may be appropriate to pre-plan assumption OVIs and to track changes in externalities in the conventional manner[193]. However, in other cases, assumptions are likely to be emergent, and hence the selection of OVIs at the outset could be problematic. Thus, although I have used the term 'assumption OVIs' to describe a mechanism for formally tracking externalities, the label 'Objectively Verifiable Indicator' may be too prescriptive. Instead, an emergent approach comparable with the 'most significant change' method developed by (Davies 1998a) could be appropriate. As briefly noted in Subsection 4.2.2 with reference to effectiveness OVIs, Davies' approach applies evolutionary thinking to enable project stakeholders at various levels in a hierarchical organisation to select and retain evidence of significant change. This approach could be slightly modified such that project stakeholders report 'most significant constraints'. The trends that emerge grouped under the STEEP domains are likely to be a source of learning.

The foregoing discussion of monitoring data has centred on its role in supplementing evaluation findings to promote learning. While this is the predominant purpose of monitoring as defined in this thesis, there is potential to use monitoring data in a predictive fashion.

As briefly indicated in Subsection 5.4.3 regarding testing of the intervention hypothesis, the sporadic nature of quasi-experimental techniques[194] is such that for much of the life of projects, implementation teams remain uninformed about the efficacy of their work. For example, in the Kenyan case study, surveys were scheduled annually to determine the effects realised (adoption of training curricula by Extension Farmers). While the data from these surveys was undoubtedly helpful, it was generally considered by the implementation team that more frequent information about the efficacy of the farmer training sessions would have enhanced detailed implementation planning and decision-making processes. However, the cost of implementing regular surveys of the 140 Extension Farmers was prohibitive. Thus, a more regular method to approximate efficacy would have been useful.

---

[193] For example, an assumption OVI attached to the intervention assumption environmental domain could be variance in mean annual rainfall in the target area.

[194] Such as reflexive comparison that dominates aid project evaluations.

This thinking is in line with what Dransfield, Fisher et al. (1999) call 'lead indicators'. Whereas 'lag indicators' (i.e. the conventional performance OVIs as discussed earlier) are concerned with current and past performance, lead indicators are said to be prognostic of future performance.

Although this concept has not been field tested, the rationale for utilising routinely collected assumption OVI data as a proxy measure of effects is defensible. Given the IF→AND→THEN logic that underpins the logframe, and given the regular and precise measurement of project efficiency made possible with methods such as the PACT approach (page 227), the combined impact of intervention assumptions may be considered to be a coefficient of efficiency such that:

- Proxy Effects = f(Efficiency, Intervention Assumptions)

Recognising the inherent constraints of probabilistic techniques in complex open systems such as the aid operating environment, there may be some value in the appropriate use of statistical methods based on the above formula to inform management decision-making between more rigorous evaluations.

In this chapter so far, the first three elements of MEIS operationalisation have been discussed. The 'who' has been defined in terms of the various responsibilities and accountabilities of roles located in three management zones (operational, tactical and strategic—hence, an organisation-wide MEIS). The 'why' has been identified as being concerned with promoting organisational performance (specifically, efficiency, efficacy and effectiveness) and accountability (through protocols that enable transparency). The 'what' has been defined as metrics that enable the testing of three hypotheses implicit in project designs, and the tracking of three classes of assumptions that affect project success; each of which was found to contain five domains of constraint.

It was recognised that while much attention has been paid to the selection of precise indicators at the project level, the need for scalable information to enable assessment of individual project performance, portfolio performance and organisational performance has remained problematic. The enabling

innovation in this work was SSM modelling, in which the '3Es' were identified as generic scalable performance criteria. That is, any aid project, regardless of sector, budget or other attribute, has an inherent level of efficiency, efficacy, and effectiveness.

Table 7 depicts an integration of the 'who', the 'why' and the 'what' of MEIS operationalisation as discussed above.

IS Process (the 'What')

		Evaluation	Monitoring	
	Effectiveness	Development Hypothesis	Development Assumptions	Strategic
	Efficacy	Intervention Hypothesis	Intervention Assumptions	Tactical
	Efficiency	Management Hypothesis	Management Assumptions	Operational

Performance Criteria (the 'Why') — Zone of Management (the 'Who')

- Table 7: An integration of the 'who', the 'why' and the 'what' of MEIS operationalisation.

The table shows that efficiency, efficacy and effectiveness are the domains of the operational, tactical and strategic zones respectively. This is a function of the core processes for which each zone is responsible and accountable in pursuit of organisational success. The table implies that in order to assess the holistic performance of INGOs, all three zones of management need to participate in both the processes of monitoring and evaluation in some form, through more rigorous application of the IF→AND→THEN logic that underpins the logframe.

The following section discusses the thinking and processes required to meet the information needs of the three zones of management such that aid agencies can achieve higher standards of performance and accountability. In other words, the following section seeks to answer the question: '*how* do the *who* use the *what* to do the *why*?'

5.5 Resolving the 'How'

In this section the final factor in MEIS operationalisation, the 'how', is discussed. This factor is concerned with the practicalities of MEIS operation. It draws on the governing principles of organisational performance measurement identified through research by CSIRO (discussed in Subsection 3.5.1):

- **Alignment:** the notion that measures of performance must serve to encourage people to align their efforts with the strategic intent of the organisation.

- **Practicability:** is concerned with the thinking and processes which enable relevant data to be captured, analysed, disseminated and utilised by roles in all zones of the organisation.

- **Systems thinking:** the notion that an organisation is a learning system located within a wider system (commonly called its environment).

I discuss the application of each of these governing principles in the following three subsections.

5.5.1 Alignment

In this subsection I present the tool adopted to ensure implementation of the 'alignment' principle within the MEIS proposed.

As discussed in Subsection 5.4.1, the logframe has been adopted to guide the identification of data required by the MEIS proposed in this thesis. A major strength of the logframe for the purposes of a MEIS is that it requires performance measures to be fundamentally aligned with the strategy adopted. Nevertheless, the conventional logframe exhibits several aspects that limit its value for M&E purposes. To address some of these, I propose a series of modifications. These modifications, embodied in the '3D-Logframe' (Crawford and Bryce 2003), address the following limitations:

- The absence of a time dimension.

- The inappropriateness of assigning efficiency-level OVIs.

- The inadequacy of the MOV column.

- The static nature of the logframe.

- The tendency for under-utilisation of the assumptions column.

Despite substantial modification, the central tenet of the conventional logframe has been retained; that being the IF→AND→THEN causality of the vertical

logic. The '3D-Logframe' may be visualised as a triangular prism as depicted in Figure 46 and Figure 47.
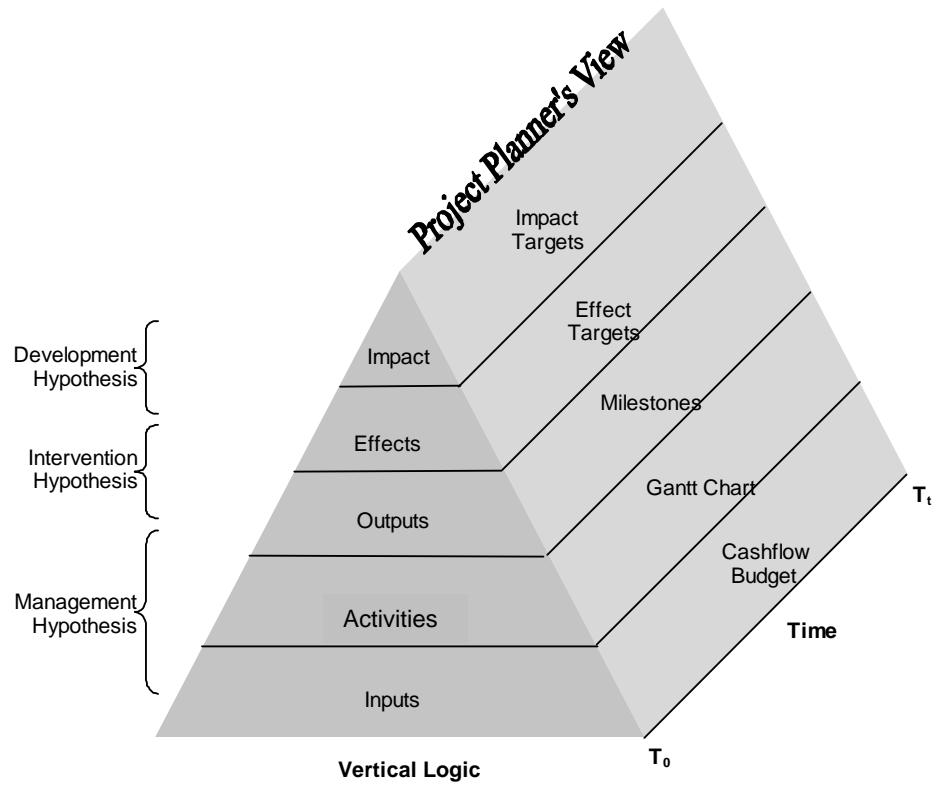
● Figure 46: The frontal perspective of the 3D-Logframe showing the 'Project Planner's View'.
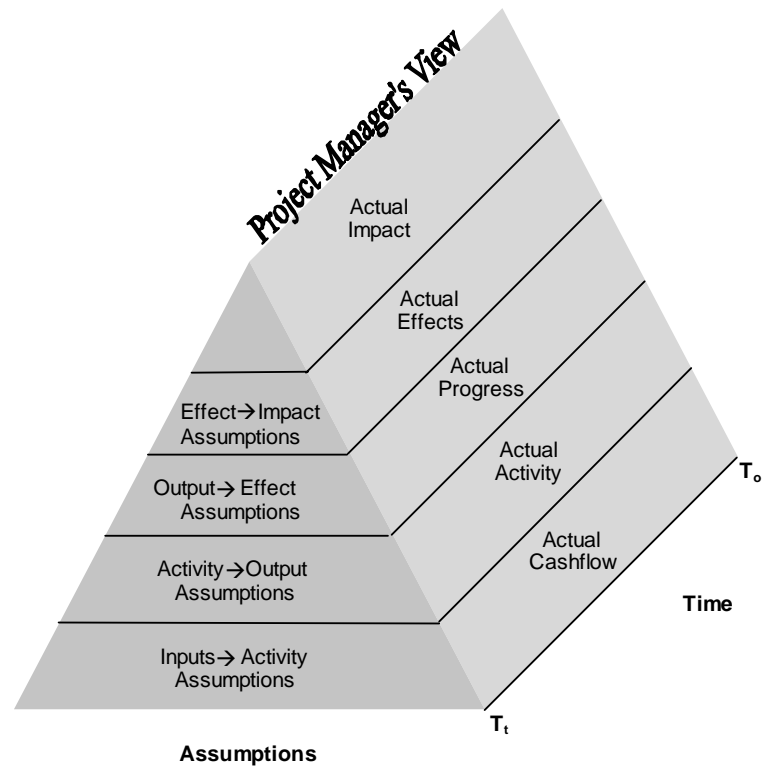
● Figure 47: The rear perspective (180°) of the 3D-Logframe showing the assumptions and the 'Project Manager's View'.

The front face of the 3D-Logframe (Figure 46) represents the left-hand column (Project Description/Impact Chain) of the conventional logframe. That is, it presents the 'IF→THEN' causality of the project design. The triangular shape adopted is indicative of the branching one-to-many relationships[195] between each level in the causality. This branching structure has been described by AusAID (2000) and is reproduced in Figure 48. In addition, the vectorial/arrow shape of the front face conveys the alignment of the project strategy with organisational strategy in an affective way.
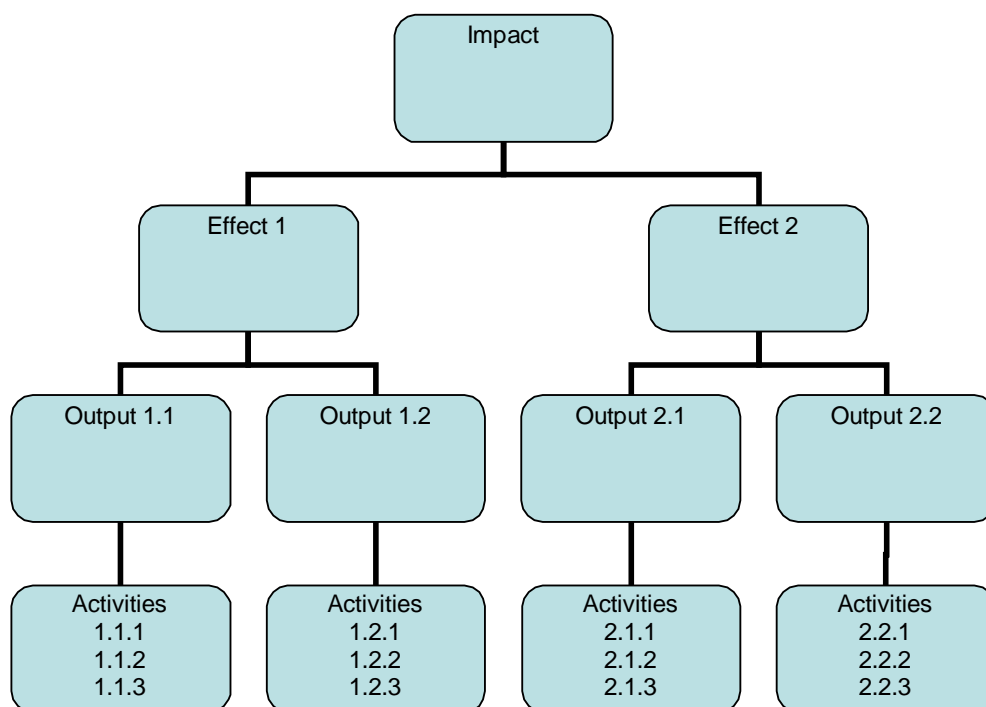
- Figure 48: One-to-many relationships in the vertical logic of the logframe (Source: adapted from AusAID 2000).

The rear face of the 3D-Logframe (Figure 47) represents the right-hand column (assumptions) of the conventional logframe. That is, it presents the 'AND' causality in the vertical logic. The mirroring of the two end-faces of the triangular prism is indicative of the need for more conscientious application of IF→AND→THEN logic. As noted by Gasper (2000), pairing the project logic elements (left-hand column) with the assumptions (right-hand column) in the conventional logframe matrix has frequently been overlooked in practice.

---

[195] For example, the achievement of a single project goal may require the pursuit of two or three outcomes. In turn, each outcome may require the delivery of several outputs. Each output is produced through the coordination of a range of activities. A given activity may require a pool of inputs.

The third dimension of the 3D-Logframe depicts the time dimension of the project (or 'project life'). This modification is a critical factor to enhance the value of the tool for M&E purposes. Given that most definitions of project management include reference to time (PMI 2000), the inclusion of a time dimension gives the framework more integrity as a project *management* tool rather just a static *planning* tool (Crawford and Bryce 2003). At the base levels, it allows established project management tools to be integral to the framework, rather than separate processes confined to a subset of personnel.

The face of the 3D-Logframe depicted in Figure 46 is the 'Project Planner's View'. It is clear that this tool demands more comprehensive information about how the project logic elements are expected to interact over the life of project than is permitted in the conventional logframe. While this is likely to require substantially more effort on the part of project planners than is required when using the conventional logframe, it provides a more meaningful foundation for M&E purposes[196]. Each level in the hierarchy of logic requires the planner to apply a different project planning tool[197]:

- At the input level, the anticipated consumption rate of project inputs based on planned activities is presented graphically as a cashflow budget.

- At the activity level, the distribution of required tasks over time is presented as a Gantt Chart.

- At the output level, the anticipated achievement of outputs during the life of project is presented graphically as milestones.

- The effect and impact levels allow the project planner to describe how the theory of change is anticipated to be realised in the lives of the 'boundary partners' and the 'wider community' respectively. In practice, this will normally involve tracking changes away from baseline values.

---

[196] The additional effort is defensible since the more rigorous planning process provides potential dividends in organisational learning.
[197] The bottom three rows of the 3D-Logframe are embodied within the PACT approach (Figure 42).

In attempting to anticipate the interaction of each level in the hierarchy of logic over time, the planner is required to appreciate the non-linear nature of implementation. In current practice, if the distribution of the project logic over time is anticipated at all, it tends to be represented as a straight line. For example, ten hand-dug shallow wells produced in ten months is typically represented as a straight line graph of one well per month. While this may be reasonable for such a simplistic scenario, frequently this does not represent reality in developing country contexts. As implied in the PACT model shown in Figure 42, the reality of implementation is normally better represented by curves that allow for social, technical, environmental, economic and political intrusions into the theoretical linear planning environment.

Having defined more precisely the anticipated interaction of the logic elements over time in the 'Project Planner's View', the 'Project Manager's View' (Figure 47) allows M&E processes to compare subsequently the 'actual' situation encountered with the 'planned' situation. This comparative analysis may be visualised as though the 'sides' of the triangular prism are translucent such that the 'actual' situation at a point in time is superimposed over the 'planned' situation. Any identified variance can then trigger informed decisions about corrective action (management decision-making), or at least can provide useful lessons for future interventions (organisational learning). Further, reporting variance and attributing reasons for this variance (unrealised assumptions) is the basis for demonstrating accountability to interested stakeholders.

In the conventional logframe, a rudimentary IS is defined in the middle two columns (OVI and MOV). However, as noted in Section 4.3, the simplicity and ambiguity of these two columns tends to mask the complexity that underpins a working IS. In my experience, the information provided in this column is grossly inadequate to define a functioning MEIS. Even when well prepared, the MOV column of the logframe rarely provides answers to such questions as:

- What method will be implemented to enable the reliable and accurate capture of the data identified?

- Who will be responsible for data capture?

- To whom will it be reported?

- To what analysis will it be subjected?

- To whom (and in what form) will the results of the analysis be disseminated?

- How will the analysis benefit its intended audience?

- What schedules for capture, analysis and dissemination will be employed?

To overcome this deficiency, in the proposed 3D-Logframe, comprehensive 'business rules tables'[198] are required for each level in the vertical logic. These may be visualised as horizontal slices through the triangular prism, as depicted in Figure 49.

Data Required	Method	Respon- sibility	Account- ability	Analysis	Dissem- ination	Utilisation	Schedule
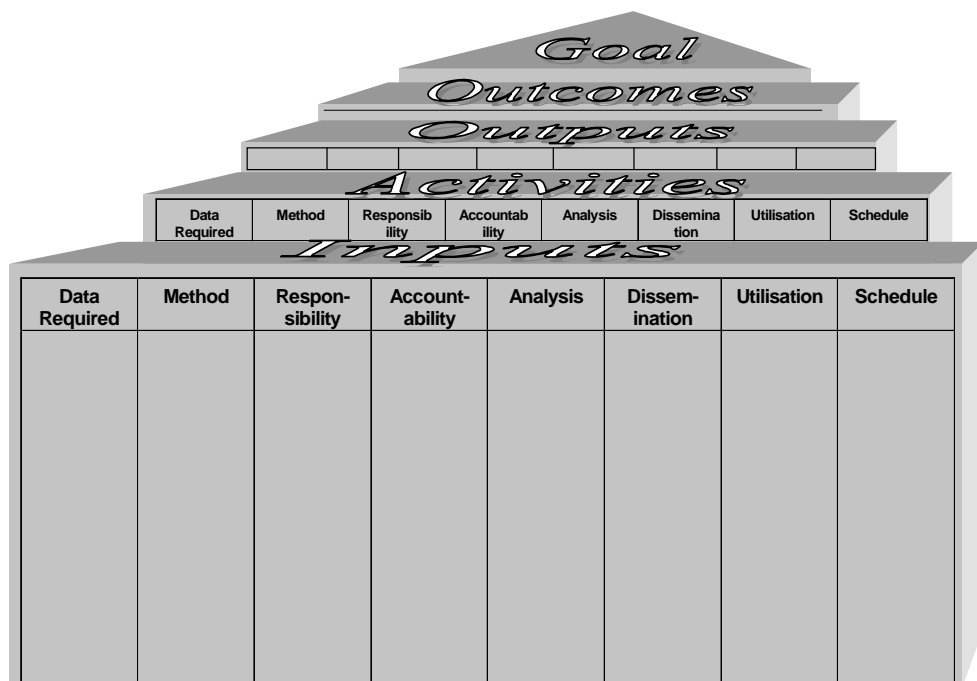
- Figure 49: The under-side of the 3D-Logframe showing the business rules tables defined for each layer in the vertical logic.

---

[198] 'Business rules tables' are commonly used by information system developers to define how the IS and users interact.

The content of each of the business rules table columns is explained below:

- **Data Required:** the precise nature of the data required by the IS.

- **Method:** how the data will actually be captured.

- **Responsibility[199]:** the organisation member who will be held responsible for capturing and reporting the data.

- **Accountability:** the organisation member to whom the data is supplied for analysis.

- **Analysis:** the nature of the analysis[200] to which the data is subjected[201].

- **Dissemination:** the IS stakeholders to whom the analysis is believed to be relevant, and the form in which it is to be supplied (e.g. report).

- **Utilisation:** how the information is expected to be used ultimately and to contribute to improved performance[202].

- **Schedule:** the timetable for the capture, reporting, analysis and dissemination of the data and information.

The content of each of the columns in the business rules tables is derived from the operational subsystem of the SSM model of a MEIS (presented in Figure 16) and loosely based on the M&E data cycle presented in Figure 30)[203]. Experience has shown that by requiring the project planner to consider all of these elements, the likelihood of imposing unrealistic reporting requirements on agency personnel is lessened. Examples of each of the business rules tables for each level in the causality follow.

---

[199] The terms 'responsibility' and 'accountability' are applied here as they were defined in 3.5.1.
[200] In cases where complicated analysis is required supplementary documentation may be required to support the broad definition offered in this column.
[201] That is, the transformation of data to information as defined in the SSM root definition on page 63.
[202] This step ensures clarity about why the data is required and hence is the basis for assessing the value of the MEIS
[203] N.B. the 'Identification' and 'Assessment' stages of the M&E data cycle are not reflected in the business rules tables since data identification is a pre-project activitiy, and MEIS assessment is a supra-project activity. The business rules tables presented here relate to project-specific information processes.

Inputs:

Data Required	Method	Respon-sibility	Account-ability	Analysis	Dissem-ination	Utilisation	Schedule
Expenditure	Financial accounting	Accountant	Project Manager	Variance against budget (project-to-date; this month)	Project Manager; Programme Director	Corrective action on spending patterns. Assess efficiency (PACT)	**Captured:** throughout month **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month

Activities:

Data Required	Method	Respon-sibility	Account-ability	Analysis	Dissem-ination	Utilisation	Schedule
Planned activities carried forward; completed; retired	Project staff keep personal daily work records	Project staff	Project Manager	% complete; % carried forward; % retired - (for this month & cumulative)	Project staff; Project Manager	ID of trends requiring management response (e.g. training, additional resources etc.)	**Captured:** throughout week **Reported:** by Monday of new week **Disseminated:** by Monday of new week
Activities carried forward	Aggregation of weekly project staff reports	Project Manager	Programme Director	% carried forward (for this month & cumulative)	Project Manager; Programme Director	ID of trends requiring management response; ID of lessons for future planning	**Captured:** at weekly team coordination meetings **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month

Outputs:

Data Required	Method	Respon-sibility	Account-ability	Analysis	Dissem-ination	Utilisation	Schedule
Outputs started; outputs completed	Project staff keep personal daily work records	Project staff	Project Manager	Variance against plan (weekly team Gantt)	Project Manager	Corrective action on activity planning and resource deployment	**Captured:** throughout week **Reported:** by Monday of new week **Disseminated:** by Monday of new week
Outputs completed	Aggregation of weekly project staff reports	Project Manager	Programme Director	Variance against plan (project-to-date; this month); PACT (efficiency analysis)	Project Manager; Programme Director; Donor	Corrective action on activity planning and resource deployment; assess efficiency; ID of lessons for future planning	**Captured:** at weekly team coordination meetings **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month
Efficiency Score	PACT	Project Manager	Programme Director	Calculate progress, time, cost variance (PACT)	Project Manager; Programme Director; Donor	Corrective action on activity planning and resource deployment; assess efficiency; ID of lessons for future planning	**Captured:** monthly **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month
Management Assumptions	Attribute output variance to selected Mngment Assmptions	Project Manager	Programme Director	Frequency of various assumption domains attributed to variance; % magnitude of variance	Project Manager; Programme Director; Donor	ID of trends requiring management response; ID of lessons for future planning	**Captured:** at weekly team coordination meetings **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month

Effects:

Data Required	Method	Respon-sibility	Account-ability	Analysis	Dissem-ination	Utilisation	Schedule
Effect indicators (synthetic indices)	Apply appropriate quantitative and/or qualitative methods to capture changes in boundary partner KAP	Programme Director	Desk Officer (strategic zone)	Means, medians, modes, sample t-tests; appropriate qualitative analysis (e.g. dialogic analysis)	Project Manager; Donor	Identify evidence of effects in boundary partners; assess efficacy of project design; ID lessons for future planning	**Captured:** baseline; mid-term; end of project **Reported:** within 1 week of data capture **Disseminated:** within 1 month of data capture
Proxy Effects Score	f(efficiency score, intervention assumptns)	Programme Director	Desk Officer (strategic zone)	Product of efficiency score and derived value for distribution of intervention assumption domains	Project Manager; Donor	Estimate effects in boundary partners; assess efficacy of project design; ID lessons for future planning	**Captured:** monthly **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month
Intervention Assumptions	Capture stories of significant constraint from boundary partners	Programme Director	Desk Officer (strategic zone)	% frequency of assumption domains reported	Project Manager; Donor	ID of trends requiring management response; ID of lessons for future planning	**Captured:** opportunistically throughout month **Reported:** by end 1st week of new month **Disseminated:** by end 2nd week of new month

Impact:

Data Required	Method	Respon-sibility	Account-ability	Analysis	Dissem-ination	Utilisation	Schedule
Subjective assessment of project impact	Capture stories of significant change from beneficiaries	Desk Officer (strategic zone)	Board, Beneficiary, Donor	Describe reason for selection of story of most significant change	Donor	Enable informed debate about strategy and policy	**Captured:** Quarterly **Reported:** by end 1st week of new quarter **Disseminated:** with midterm and end of project report
Proxy impact (portfolio impact)	Aggregated project effects for defined portfolio of projects	Desk Officer (strategic zone)	Board, Beneficiary, Donor	Aggregate changes captured in effect indicators for defined portfolio of projects	Donor	Enable informed debate about strategy and policy	**Captured:** Annually **Reported:** midterm; end of project **Disseminated:** with midterm and end of project report
Development Assumptions	Capture stories of significant constraint from beneficiaries	Programme Director	Board, Beneficiary, Donor	ID trends likely to impact agency effectivness	Programme Director; Donor	Enable informed debate about strategy and policy	**Captured:** Annually **Reported:** midterm; end of project **Disseminated:** with midterm and end of project report

• Table 8: An example of content in the business rules tables of the 3d-Logframe

The 3D-Logframe offers the following benefits (Crawford and Bryce 2003):

- Precise definition of the information required and how it will be processed.

- Enhanced project performance through the supply of relevant and timely data to relevant stakeholders.

- Accountability is ensured through a defined reporting system that leaves a history of management decisions taken and outcomes realised.

- Organisational learning is promoted through the capture of project histories and, in particular, the attribution of reasons (assumptions) to variance between planned and actual implementation.

- A common language for all actors is defined thereby smoothing transitions between the main phases of the project cycle. That is, the 3D-Logframe is a unifying framework.

As noted in the original paper that proposed the 3D-logframe (Crawford and Bryce 2003), there are several potential barriers to its adoption in the field context. Principally, the complexity of the proposed modifications is likely to cause problems for practitioners in the field who already struggle with the conventional two-dimensional framework. My intention in proposing the modifications is to provide a coherent *conceptual* framework to guide the development of M&E systems. On this basis, I contend that the 3D-Logframe can contribute to alignment between the MEIS and the strategic intent of aid agencies, and promote the integration of range of tools/approaches.

In the following subsection I discuss the practicalities of delivering the MEIS benefits to INGO personnel. Specifically, how the MEIS will enable organisational learning, informed management decision-making and transparency.

5.5.2 Practicability

In Chapter 4 of this thesis, I reported observations and lessons learned during various field assignments. Specifically the constraints encountered at each stage of the M&E data cycle (Figure 30) were discussed. Rigourous planning

was reported as a major constraint to M&E process. The 3D-Logframe presented in Subsection 5.5.1 contributes to the resolution of this and other issues. The constraints identified at other stages of the M&E data cycle were broadly summarised as:

- Compliance

- Skill

- Mechanism

- Incentive

- Culture

The cumulative impact of each of these constraints manifests in poor 'utilisation', and ultimately poor organisational performance information. In other words, the expected 'benefit' of the MEIS is not realised when these constraints are significant.

Recall that in Section 5.3, it was argued that a MEIS should 'benefit' NGO personnel in each of the 3ZOM by enabling them to demonstrate *transparency*, make informed *decisions* and *learn*.

The governing principle of 'practicability' is fundamentally concerned with utilisation; that is, in practical terms, how the MEIS enables learning, decision-making and transparency. In this subsection, the practicalities of delivering each of these three MEIS 'benefits' will be discussed in turn. Measures will be discussed that may help to mitigate the five constraints to utilisable M&E data listed above.

Learning

In Section 5.4.4 I argued that the role of monitoring data is to inform debate about evaluation data. By this, I mean that while evaluative processes essentially involve establishing facts relating to the status or performance of a project, monitoring as defined in this thesis is concerned with the identification of contextual or contributing factors. Simplistically, evaluation asks 'what happened?' Monitoring asks 'why did it happen?'

Arguably, it is the deeper reflection enabled by the monitoring system (assumptions) that promotes learning. As stated by Gharajedaghi (1999 p75):

> Learning results from being surprised: detecting a mismatch between what was expected to happen and what actually did happen. If one understands why the mismatch occurred (diagnosis) and is able to do things in a way that avoids a mismatch in the future (prescription), one has learned.

The process of 'detecting the mismatch' noted by Gharajedaghi is comparable to the project management process of identifying 'variance' (i.e. 'planned vs. actual') and involves what in this thesis is defined as 'evaluation'. The process of 'diagnosis' mentioned by Gharajedaghi involves data derived from 'monitoring'.

In practice, when evaluations identify variance between planned and actual, the zone responsible then actively scrutinises trends identified by monitoring processes to seek a plausible explanation. The reason for the variance is likely to be found in the preceding assumptions in the vertical logic of the project design (i.e. a function of the IF→AND→THEN causality). For example, in the Kenyan case study project, testing of the intervention hypothesis revealed that a small proportion of Extension Farmers had not adopted innovations promoted in training sessions[204]. Focus group discussions subsequently identified causal factors as being within the economic and environmental domains of the class of intervention assumptions. Specifically, reasons included insufficient farm labour and tools, and persistent drought in the target area.

As noted in Subsection 3.5.2, a review of the learning literature confirms that individual learning is a complex process with no consensus on models to explain the phenomenon. The complexity of 'organisational learning' is compounded by social dynamics between individuals. The organisational learning system proposed here is necessarily simplistic. The aim is to offer a simple mechanism to operationalise 'formal learning' within aid agencies to complement the rich 'informal learning' that is endogenous.

---

[204] N.B. it was established that the planned number of training sessions had been delivered (i.e. output delivery was efficient).

Based on Gharajedaghi's construct presented above, opportunities for learning occur at three levels in logframe-based project designs:

- The management hypothesis/assumption level.

- The intervention hypothesis/assumption level.

- The development hypothesis/assumption level.

The learning opportunities at each of these three levels matches the notion of single, double and triple loop learning respectively (as discussed in Subsection 3.5.2).

The process of 'single-loop learning'[205] is embodied within the notion of 'management decision-making' since its role is predominantly concerned with supporting control action to meet project targets. Lessons learned are likely to have relevance within the parameters of a single project. This form of learning will be discussed in more detail shortly.

The processes of 'double-loop'[206] and 'triple-loop'[207] learning are fundamentally different since they are applied beyond the sphere of a single project. That is, learning associated with the intervention and development hypotheses is to benefit future efforts. Hence, double-loop and triple-loop learning are predominantly the domain of the tactical and strategic zones respectively. When planning future interventions, the tactical zone can apply lessons learned from intervention hypothesis testing. The strategic zone, when debating the merit of development strategies and policies, can apply lessons learned from development hypothesis testing.

The extension of learning opportunities beyond the sphere of a single project is the strongest argument for an organisation-wide MEIS. Learning derived from such a system is unlikely to occur in a cybernetic, cause→effect way, but rather, in an evolutionary way. Through the process of 'informed debate' as

---

[205] Involves the reactive response of individuals/groups when a problem arises—focus is on what the problem is and how to fix it.

[206] Involves individuals/groups reflecting on the whole system within which a problem is situated—focus is on why the problem has arisen and how wider structures need to be changed.

[207] Involves individuals/groups reflecting on the theories and philosophical assumptions that created the system within which the problem is identified—focus is on paradigm shifts.

discussed, robust concepts and initiatives will survive and become part of the 'unconscious competence' of the organisation. While this 'endogenous learning' may take place in INGOs now, it is likely to be a more cumbersome *ad hoc* process because of the segregation of the various phases of the project cycle, and the various actors distributed throughout the 3ZOM. An organisation-wide MEIS may promote shared language and meaning for organisational learning. Such a framework may enable learning to be resilient to corporate memory volatilities, such as changes in personnel.

Management Decision-making

As noted above, management decision-making implies single-loop learning. I have chosen to distinguish this form of learning from that discussed above since lessons typically relate to the particular project under consideration.

The objective of single-loop learning in this context is to identify undesirable variance between planned and actual implementation, to enable control action to recover the variance, or at least minimise further variance.

The PACT method described in Subsection 5.4.3 offers a concise and readily interpretable means of communicating the status of the project at any point in the life cycle, using the three dimensions of project status: cost, time and progress. This information is represented in the 'Project Manager's View' in the 3D-Logframe (Figure 47).

Transparency

The third benefit afforded by a MEIS noted above is transparency. That is, a MEIS is expected to support the demand for transparency by an INGO's stakeholders.

In contrast to the issues of learning and management decision-making discussed above, the issue of transparency does not depend on a particular class of data or its manipulation. Rather, transparency is a philosophy of inclusion. A MEIS then, is an enabling mechanism, or vehicle, to support the enactment of the philosophy.

While transparency is possible without a structured MEIS, it is likely to be inconsistent if there is no framework to define the processes by which stakeholders' information needs are satisfied. Further, in the absence of a structured MEIS framework, the demands for transparency tend to take precedence over the need for information to support decision-making and learning. This situation was observed during this candidature in Angola where field staff responded to the minimum (urgent) reporting requirements to satisfy the donor, but in the absence of a clear MEIS framework, did not exploit the opportunity for informed decision-making and organisational learning that was possible with the raw data captured.

In practice, transparency involves communicating information about the decisions and processes implemented, and the outcomes realised (in terms of the '3Es') to interested external stakeholders.

The MEIS framework proposed in this thesis encourages the novel notion that meeting stakeholder demands for accountability can be a secondary benefit of sound information management. That is, the approach promoted here places an emphasis on informed management decision-making and constructive organisational learning rather than the dominant approach, in which the focus of the M&E processes implemented by NGOs is to satisfy stakeholder (principally donor) demands for accountability. I argue that accountability requirements can be satisfied as a by-product (i.e. utilising the same resources) of the process of capturing, analysing and disseminating information to support decision-making and learning. Transparency within the organisation is enhanced by the scalable, comprehensive framework apparent to each of the 3ZOM.

Further, relatively recent developments in information communication technology (ICT) may offer an opportunity to enable the seamless dissemination of predefined information to external stakeholders, thereby ensuring regular and consistent accountability and focussing greater attention on decision-making and learning.

Other Practical Considerations

I will now discuss other practical issues encountered with the concept of an organisation-wide MEIS—specifically, issues that stem from the structural characteristics of INGOs.

Part of the complexity encountered in considering an organisation-wide MEIS stems from the existence of a 'heterarchy' (Davies 1998) within many INGOs. That is, rather than a simple hierarchy as manifest in most organisational structures, one-to-many relationships exist within the structure of many INGOs.

A donor liaison office in the strategic zone of the NGO structure may have relationships with several partners in the tactical zone—normally defined by the sovereign borders of aid-recipient countries. Each partner in the tactical zone frequently oversees several projects in the operational zone. Within some INGOs[208], the foregoing is further complicated by the fact that an international network or federation of partners exists in the strategic zone (e.g. Oxfam GB/Australia/Hong Kong). Thus, a given partner in the tactical zone may oversee a portfolio of projects in the operational zone, each of which is funded through a different member of the strategic zone[209]. Figure 50 provides a representation of this situation.

---

[208] This was the case with the INGO implementing the Kenyan case study project in this research.

[209] In some cases, multiple donors may co-fund projects of mutual interest.
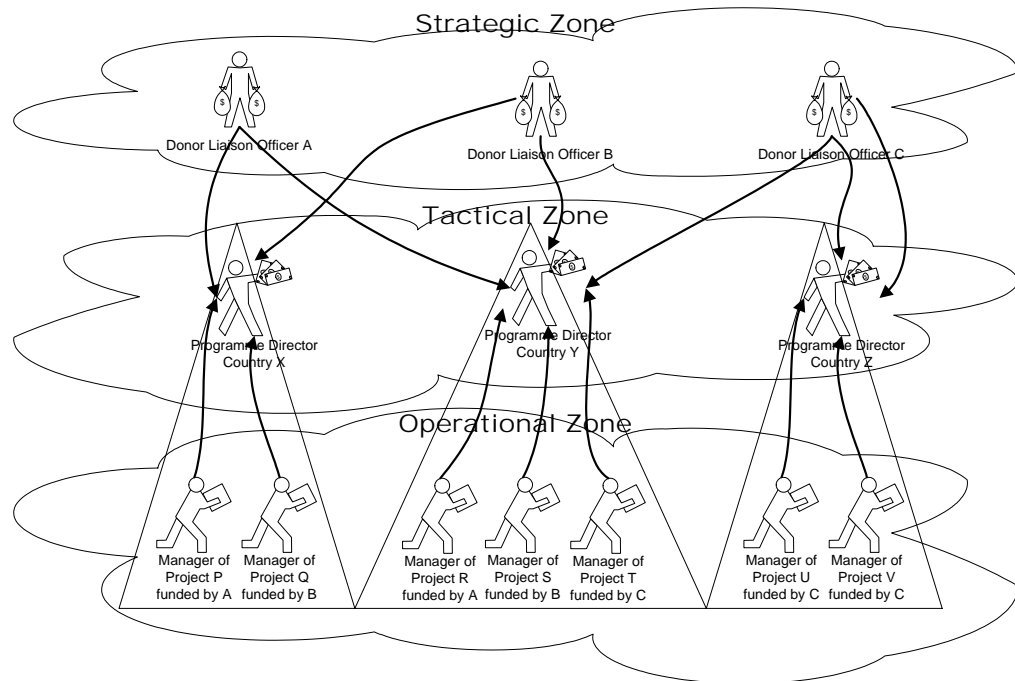
• Figure 50: One-to-many relationships within the structure of an INGO

The implication of the structure depicted in Figure 50 is that a formal system to enable double-loop and triple-loop learning is likely to be complex because implicit in the heterarchical structure is the need to compare and contrast sets of projects. That is, learning about efficacy and effectiveness implies a system that enables collections of projects to be assembled for comparative purposes.

Throughout this thesis, I have used the word 'portfolio' as the collective noun of 'project'. I have avoided the word 'programme' since its use in this context tends to imply a static or rigid entity. That is, 'programme' is widely used to describe a fixed collection of projects defined by a particular attribute, for example:

- Projects sharing a common goal.

- Projects within a common sector of intervention.

- Projects located within a defined geographic area.

- Projects funded from a particular source.

- Large projects.

- Management of the wider elements and processes surrounding the actual implementation of the project plan (Ainsworth 2003); e.g. stakeholder consultation.

The major difference between these uses of 'programme' and my intention with the word 'portfolio' is the absence of plurality in the former. That is, the word 'programme' tends to be used consistently by an individual to mean one of the above definitions, whereas, 'portfolio' as applied here, implies a flexible, dynamic entity that can include all of the above attributes and more.

A portfolio is an opportunistically grouped set of projects to meet the information needs of a particular IS user at a particular time. That is, it is user-defined and purpose-built. Portfolios are constructed and deconstructed to meet the particular learning needs of IS users in either the tactical or strategic zone. A given project may feature in more than one portfolio at a point in time, depending on the IS user and on the lessons being sought. The following hypothetical example is drawn from Figure 50:

- 'Donor Liaison Officer C' may find it meaningful to have a portfolio of projects in the 'food security sector' which comprises '**Project T**' in 'Country Y' and 'Project U' in 'Country Z'.

- Simultaneously, the 'Programme Director' in 'Country Y' may find it helpful to construct a portfolio of projects implemented in the 'Eastern Province' which comprises 'Project S' and '**Project T**'.

- 'Donor Liaison Officer C' may identify a need for a portfolio of projects implemented in 'Country Y'. At this point in time the portfolio contains one project, '**Project T**'.

Thus, 'Project T' features in three different portfolios for different reasons. A portfolio is a structure to sort and group projects using a variety of 'attributes', to meet the information needs of MEIS users in the tactical and strategic zones. These attributes may include:

- Programme sector (e.g. all projects identified as food security interventions).

- Geographic location (e.g. all projects implemented in the Eastern Province).

- Demographic of boundary partners (e.g. female-headed households).

- Budget (e.g. all projects less than $1 million).

- Timeframe (e.g. all projects with a life greater than three years).

- Donor (e.g. USAID).

- Country (e.g. Kenya).

- Region (e.g. East Africa).

- Project manager (e.g. Paul Crawford).

- Over-arching organisational strategic objective (e.g. empowerment of rural households) or industry objective (e.g. the 'Millennium Development Goals' (UNDP 2003)).

- Predecessor (i.e. the historical project out of which a given project strategy was derived, the development of an approach).

There is an additional high-level attribute, 'status', which is the basis for two macro portfolios:

- Current projects (i.e. all projects which are currently funded and being implemented).

- Past projects (i.e. all projects which have been concluded or closed).

Certainly, the ability for the MEIS to support the comparative analysis of current projects with past projects is an important factor in promoting organisational learning[210]. However, the ability to construct and deconstruct portfolios of projects to enable critical inquiry and comparative analysis is dependent on two major factors:

- the legitimisation of scalable measures of INGO performance;

- an IS architecture that embraces the complexity of INGO heterarchical structure.

---

[210] This dimension of portfolio analysis is not explicit in Figure 50.

Firstly, the issue of scalable measures of performance is problematic for reasons of 'construct validity' (Cook and Campbell 1979) and organisational cultural reasons. In this thesis, I argue that in the absence of a widely endorsed scalable measure of organisational performance such as 'profit' (the scalable performance measure with political legitimacy in the private sector), the system performance criteria defined by (Checkland 1981) i.e. the '3Es' of performance, may be appropriate. While I have proposed methods by which this thinking could be operationalised, the construct validity (i.e. the technical reliability and appropriateness of these measures when applied in the context of an organisation-wide MEIS) is yet to be tested. However, beyond the technical challenges of operationalising a system of scalable, organisational performance measurement appropriate for an aid agency, are the challenges associated with achieving cultural engagement and political legitimacy within aid organisations. As with the introduction of any innovation this is likely to be a complex and sensitive task.

Secondly, even if technical and political factors could be reasonably addressed, the sheer complexity of the IS architecture poses a challenge. Probably one reason why the ideals embodied in an organisation-wide MEIS have not been operationalised in the past, relates to the practicalities of data capture→analysis→dissemination. As discussed in Chapter 4, these issues are sufficiently challenging when encountered with the conventional project-centric MEIS approach, but are likely to be magnified with the deployment of an organisation-wide MEIS.

As discussed in Chapter 4, the constraints encountered in implementing the M&E data cycle (planning, compliance, skill, mechanism, incentive and culture) essentially stem from the pragmatics of human behaviour. For the constraints to MEIS operation to be overcome, there must be a perception by all IS users that 'life is better' with the system than without. As will be discussed in Section 6.3 and 6.4, I expect developments in ICT to address some of the practical constraints to operationalisation of the concepts proposed here. I do not offer this in a blind, 'technophilic' way, but rather in appreciation of observed human behaviour.

As found by CSIRO (Dransfield, Fisher et al. 1999; Chennell, Dransfield et al. 2000; Shaw 2001), an important characteristic of successful organisational performance measurement systems was that all IS users perceived a value proposition. This value proposition may be tangible (as in easily interpretable information), or intangible, as in the sense that they are members of a 'successful' organisation.

In this subsection, I have discussed the practicalities of how the MEIS might achieve its purpose. That is, I have theorised how learning, decision-making and transparency might be enabled by the MEIS. I then considered the structural implications of INGOs for the organisation-wide MEIS proposed. In the following subsection, I will discuss the third and final governing principle, systems thinking.

5.5.3   Systems Thinking

The third governing principle of organisational performance measurement is systems thinking. This principle is grounded in the reality that organisations are complex systems (human activity systems) located within wider complex systems (society). Implied is the idea that for an organisation to remain consistent with its purpose, there is a constant need to assess its performance in satisfying stakeholders in society. This requires a systemic learning approach.

Checkland and Holwell (1998) identify that an important element of SSM seemingly missed by many commentators on the methodology in secondary literature, is the notion of 'systemicity'. That is, the shift from assuming that the world contains systems to assuming that the process of inquiry into the world can, with care, be organised as a learning system. Checkland (2001) distinguishes clearly between System Engineering and SSM by identifying that systems engineering takes 'system' to be the name of something in the world which could be 'engineered', whereas SSM takes 'system' to be the name of an epistemological device which can be used to investigate some of the problems in the world. He states (p 88):

> The crucial distinction between the hard and soft systems approaches is that the former takes the world to consist of systems, whereas the latter shifts systemicity from the world to the process of enquiry into the world.

This thinking resonates with the realisations stated in Section 2.4 (page 55) that the processes of monitoring and evaluation can be understood as involving a form of Action Research (AR) into the performance of the project; and further, that the project itself can be considered to be a form of AR into some aspect of the problem of global inequity (Fowler 1997). Given the ethical and business imperatives for learning, aid agencies must do more than merely implement 'a learning system'. Instead, aid agencies must *become* a learning system (Glover 2001). That is, learning must fundamentally drive the structure and strategy of aid agencies.

Perhaps the basis for charges of ineffectiveness by critics of aid agencies is the seemingly *ad hoc* nature of project planning and implementation. The overwhelming business imperative faced by many aid agencies with scarce administrative resources is to seek out and obtain project funding to maintain cash flow and financial viability. Hence, although organisational strategic planning proliferates among NGOs, alignment between this strategic planning and the day-to-day business of project planning and implementation tends to be weak (Davies 2002). Further, there is a subtle but potent difference between conducting organisational strategic planning to ensure coherent project strategies and conducting organisational strategic planning to professionalise and hence attract more funding. In my own experience, the meta-language of strategic planning in NGOs is indicative of the latter. Ironically, the professionalisation and bureaucratisation of aid agencies to satisfy increasingly stringent project donor requirements has rendered many NGOs indistinguishable from professional project management contractors[211] (Smillie 1995; Fowler 1997).

Hence, it is a key proposition of this thesis that aid agencies must implement the conceptual shift from seeing individual projects as 'islands of excellence'

---

[211] A dominant issue discussed at the ACFOA NGO effectiveness conference in 2002 was how NGOs 'value-add' in the development industry (ACFOA 2002).

(Davies 2002; van Brabant 1997) to seeing them as simplistic models in which hypotheses are tested relating to the bigger, complex, 'wicked' problem of global inequity (Rondinelli 1993). Rather than striving for efficient and efficacious projects as a desirable end, efficiency and efficacy must be viewed as a means. That is, efficient project management and efficacious project design are methods for controlling 'threats to valid inference' (Cook and Campbell 1979) (i.e. minimising the influence of artefacts), to facilitate informed debate about the effectiveness of the strategies and policies of which individual projects are merely building blocks. The assumption here is that it is the vigorous debate to find accommodations between the variety of *weltanschauungen* that will incrementally lead to improved effectiveness. This thinking is aligned with the 'social learning paradigm' promoted by John Dewey (in den Heyer 2001).

As briefly discussed in Section 5.4.3 with regard to the issue of 'effectiveness', the reconception of 'the project' as a means rather than an end, offers a practical step towards re-engineering an aid agency as a learning system. This conception is succinctly captured by Checkland's (2001) depiction of SSM first presented in Figure 8 but reproduced again below for convenience.
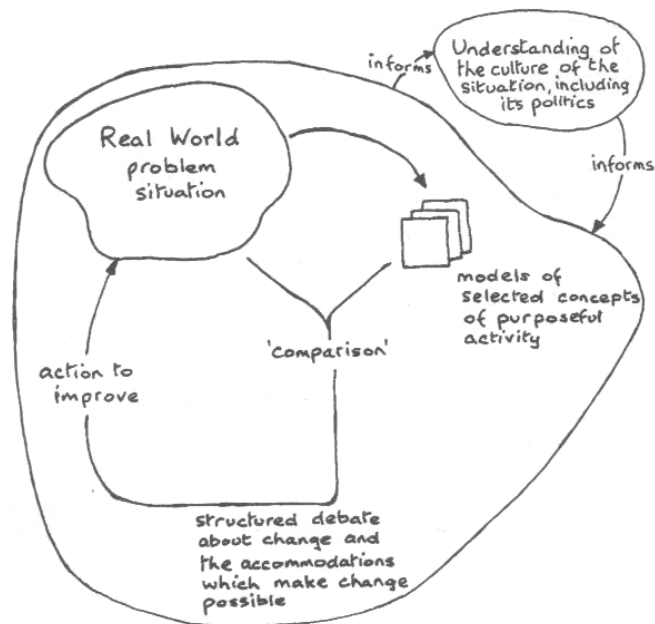
• Figure 51: A SSM conception of the aid process (from Figure 8)

While Figure 51 is a generic representation of a learning system, it has relevance with respect to the aid project system:

- The 'real world problem situation' is, broadly speaking, global inequity.

- The 'model of selected concepts of purposeful activity' is embodied in projects designed to address different aspects of the problem of global inequity.

- The process of comparison between the 'model' and the 'problem situation' embodies the processes of monitoring and evaluation outlined in this thesis.

- The 'structured debate' implies the utilisation of M&E findings to debate in an informed manner, the acceptability of the three hypotheses implicit in the project design and their contribution to understanding 'global inequity'.

- The 'action to improve' implies a process of organisational learning in which policy and strategy reflect new accommodations found between the variety of *weltanschauungen* as a result of the informed debate.

- With all of the foregoing taking place within a participatory environment in which the widest range of *weltanschauungen* are expressed to inform the whole process.

The SSM conception of the 'aid project system' is broadly similar to other alternatives to a simple project-centric approach. The most prominent is the European Union's PCM approach, which actively seeks to locate project plans within a wider 'programme'. The PCM cycle consists of six elements as shown in Figure 52.
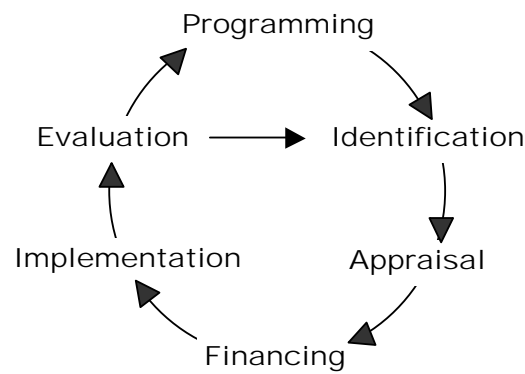
● Figure 52: The EU PCM cycle

The first phase of the PCM project cycle, the programming phase, is said to involve (EC 2001, p 7):

> …a review of socio-economic indicators, and of national and donor priorities. The purpose is to identify and agree on the main objectives and sectoral priorities for cooperation , and thus to provide a relevant and feasible programming framework within which projects can be identified and prepared.

Several other aid donors (e.g. DANIDA) have begun a shift towards what is called a 'programme approach'. However, in terms of organisational learning and aid effectiveness, a 'programme approach' may merely be a 'big project approach' since the underlying assumption is teleological (i.e. projects are defined from 'outside' the system). Hence, the risk is that while the goal of this approach is to improve aid effectiveness, in practice the opposite may occur.

The central theme of this thesis, which challenges the PCM approach and other 'programme' approaches, is that the MEIS must be located such that it can foster a teleonomic perspective; in essence, an integration of planning and M&E at all levels. This requires that the whole system be subjected to critical inquiry, not just 'the project'. That is, a MEIS must be deployed as an organisation-wide learning system.

The reconception of projects as social experiments within a wider programme of learning leads to a compelling argument for smaller, less ambitious

projects[212]. That is, aside from the business imperative that large multi-year, multi-objective projects help maintain the financial viability of aid agencies, small projects are likely to enable tighter learning cycles, and if based on simpler designs, enable more rigorous hypothesis testing. If portfolios of such learning-focussed projects are implemented within a coherent programme of learning, and assessed through an organisation-wide MEIS, there are likely to be positive outcomes for the overall effectiveness of aid.

Ironically, whereas most learning focussed literature on M&E and planning argues for a move away from the 'blue print approach' to a 'process-oriented approach' (IFAD 2002; Fowler 1996; Earl 2002), adopting a SSM view of the aid project system may imply alignment with the blue print approach. That is, in the interests of maximising learning opportunities, the implementation of small, discrete projects with clearly defined-in-advance hypotheses may have more in common with the blue print approach. The difference, however, lies in the teleonomic integration of learning and evaluation. In other words, the philosophy embodied in the so-called 'process approach' is implemented in the strategic zone rather than the operational zone.

One practical action that any NGO can implement towards adopting this approach is to plan so that all projects within a given tactical zone have the same 'goal statement' (or at least have very good reasons why different goals are defined). Further, these goal statements may persist for some time, such that a series of projects implemented within a tactical zone may all contribute to the same impact, albeit through the pursuit of different effects.

This SSM approach could potentially move towards resolving the 'NGO dilemma'. That is, it may be possible for an NGO to simultaneously satisfy the managerialist, accountability-focussed requirements of its donor stakeholders and the deliberative, transformational requirements of its beneficiary stakeholders. When viewed from the donor perspective, an NGO implementing the SSM approach described above would be seen to be accountable and efficient with the implementation of individual project cycles through the use of best-practice project management methods. When viewed

---

[212] In practice, the PCM approach tends to encourage larger more complex project designs.

from the beneficiary perspective, what would be evident is an emergent partnership in which mutual learning is the key theme. The beneficiary would be protected from the 'hard systems' machinations of the project management approach (they may even remain unaware of the notion of 'the project').

The opportunity for this approach to be specifically adapted within the logframe approach was noted by Bell (2000, p 30):

> …if the LFA is linked to other participative problem-solving approaches such as Soft Systems Methodology and applied….., I would argue that it can provide systemic as well as systematic capability to a stakeholder team.

Fostering organisational learning has been argued in this thesis to be an important role of a MEIS. The conceptual model presented in Figure 35 affirms the beliefs of Roche (1999), Davies (2002) and others that systems and processes that foster organisational learning within aid agencies are critical to the survival[213] of the organisations. Unless the aid industry, and in particular the NGO sector, is able to embrace self-criticism and adopt a learning stance, it is unlikely, given current trends, to survive long enough to realise its mission (Fowler 1997; Hulme and Edwards 1995).

While philosophically appealing, the learning focussed SSM approach to aid project administration outlined above is likely to encounter two major constraints to adoption:

- The practical challenges of implementing the conceptual shift, including the issues involved with operating an organisation-wide MEIS.

- The cultural shift required within NGOs.

As noted earlier, some of the practical challenges may be addressed through appropriate use of ICT and other approaches to ensure a value proposition to IS users.

---

[213] It is often repeated in NGO circles that the work of an aid agency is to 'work itself out of a job'. There is, however, an important difference between *working* one's self out of a job by being extremely effective (surely a long-term objective given the magnitude of global poverty), and being *worked* out of a job because of ineffectiveness and irrelevancy.

The cultural challenges are more amorphous. Although beyond the scope of this research, preliminary reading (Glover 2001; Haeckel 1999; Kazama, Foster et al. 2002) suggests that organisational cultural change is complex and influenced by leadership behaviours. This suggests that for the ideals of an organisation-wide MEIS and the associated systemic learning to be realised, the leadership of INGOs must demonstrate a commitment to those ideals.

5.6   Conclusion

This chapter has sought to address the research question posed in Section 1.3 of this thesis; that being concerned with the operationalisation of an aid agency MEIS. Operationalisation in this work has implied the definition of four elements:

- Who.

- Why.

- What.

- How.

The 'who' of the MEIS have been identified as internal stakeholders of the aid project implementing organisation. These internal stakeholders, holding various responsibilities and accountabilities, have been identified as being broadly located within three zones of management:

- Operational.

- Tactical.

- Strategic.

As such, the MEIS has been scoped as an organisation-wide system, rather than simply a project-centric system.

The 'why' of the MEIS has been broadly identified as being concerned with demonstrating accountability and promoting learning—the two critical success factors facing aid agencies. MEIS may contribute to achievement of these

critical success factors by enabling informed management decision-making, critical inquiry and reflection, and transparency.

The definition of the 'what' has been based on the widely used logframe. The processes of 'monitoring' and 'evaluation' have been differentiated and the nature of the data required of each process has been identified. Evaluation has been defined as the testing of three hypotheses implicit in the causality of project designs (the left-hand column in the conventional logframe). Monitoring has been defined as observing the role of assumptions in project performance (the right-hand column in the conventional logframe).

The process of evaluation has been argued to involve the capture, analysis, dissemination and utilisation of data relating to the efficiency of the implementation team, the efficacy of the project design and the effectiveness of the policy or strategy to which the project is expected to contribute.

The process of monitoring has been argued to involve the capture, analysis, dissemination and utilisation of data relating to unmet assumptions that may erode the efficiency, efficacy or effectiveness of the intervention.

The 'how' of the IS development has been based on the CSIRO governing principles for organisational performance measurement systems:

- Alignment.

- Practicability.

- Systems thinking.

The alignment principle has been implemented through the adoption of a modified logframe tool, the 3D-Logframe, which enables the provision of substantially greater project management detail during the planning phase of the project cycle. It is anticipated that the greater detail is likely to promote more rigorous M&E, which in turn will promote alignment with the broader purpose of the organisation.

The practicability principle has required that consideration be given to the practical constraints encountered with the deployment of an organisation-wide

MEIS. This has involved proposing methods by which the objectives of the MEIS will be achieved, and also consideration of practical issues deriving from the structural realities of many INGOs.

The systems thinking principle has promoted the recognition that the dominant project-centric approach within the aid industry may inhibit effectiveness, hence necessitating a systemic learning approach.

Aidworker Paul

with philosophical questions about aid embarks on a

PhD

in order to scope the

which requires

Assumptions to be made

to improve aid effectiveness through better

which involves appreciating the

enables professional and personal development of

such as

Human Activity Systems

which promotes learning about

M&E Information Systems

Action Research Paradigm

reflection on which enables substantive evolution of

which are informed by...

Literature on Project Management, Organisational Effectiveness & Information Systems

Field experience

which involves

6   CONCLUSION

6.1   Summary of Arguments

The impetus for this thesis was broad concerns about the effectiveness of aid. Through iterative cycles of action research (AR), I was able to narrow the research focus to the question: "*how can aid agencies best operationalise the concept of 'monitoring and evaluation' to continually enhance their effectiveness?*" This narrower research focus emerged for both pragmatic and philosophical reasons.

The central tenet of this thesis is that a monitoring and evaluation information system (MEIS) may improve the performance of aid agencies in contributing to sustainable development.

However, the above statement belies the complexity and non-linearity that underpins the questions in this thesis. The concept of 'sustainable development', a values-based construct concerned (in part) with global inequity, was found to resonate with Checkland's (1981) notion of a 'soft system'. In contrast to a 'hard system', a 'soft system' acknowledges that an important class of 'real world' problems cannot be formulated as a search for an efficient means to achieve objectives known to be desirable. Fundamental to soft systems is the notion of stakeholders with a myriad of *weltanschauungen*. This thinking also matches the concept of 'wicked' problems defined within Rittel and Webber's (1973) problem typology.

Soft Systems Methodology (SSM), a methodology developed by Checkland to grapple with 'soft', 'wicked', 'human-centred' problems, was employed in this research. Through the development of SSM conceptual models, I was able to gain insights into the complexity of the area of concern.

A review of 'grey' literature within the aid industry on monitoring and evaluation (M&E), and reflection on my own field experiences, brought me to the conclusion that three fields informed the research question, but were separate from it. These fields were: information systems, organisational effectiveness and project management. I argued that a MEIS is an *information*

system (IS) concerned with supporting purposeful activity within aid *organisations* that manage *projects* believed to foster sustainable development.

While a review of literature within each of the identified fields proved informative, it was evident that the dominant epistemological and ontological assumptions within each field failed to appreciate the 'soft', 'wicked' nature of this research. However, in keeping with a philosophy of consilience, I have attempted to draw on conventional thinking while recognising the emergence of an alternative, interpretive, 'soft' strand within each field.

The tension inherent in attempting theoretical consilience, however, has practical implications. International aid NGOs experience a tension that I described as the 'NGO dilemma'. This dilemma stems from the dialectic between the pragmatic needs of an NGO's two main stakeholders: the 'beneficiaries' and the 'donor'.

I argued that donors, operating predominantly from a Western managerialist paradigm and responding to a human evolutionary need for reciprocity, place a strong emphasis on accountability. This donor requirement reinforces deterministic 'hard' systems expectations such as measurable performance and attributable development impact.

In contrast, the so-called 'beneficiaries', as protagonists in their own development, anticipate enabling relationships with development assistance organisations. The deliberative, emergent, 'soft' nature of processes that foster appropriate and effective development assistance for beneficiaries, may be in opposition to donor requirements.

The 'NGO dilemma' requires successful NGOs to simultaneously exhibit professional, bureaucratic, managerialist systems and behaviours to satisfy donor requirements, while abstracting this reality away from 'beneficiaries' with whom they engage in participatory, context-driven, deliberative learning. At the cusp of the 'NGO dilemma' is the project management approach.

Project management, fundamentally an optimising methodology grounded in 'hard systems' thinking, dominates the aid industry. As a mechanism of

accountability, it is likely to persist. I argued that this is an artefact of the power asymmetries inherent in the donor-recipient nexus. On this basis, some commentators have rejected the project management approach to development. However, in keeping with consilience, I have suggested that 'the project', if conceived as a *means* rather than an *end,* may support the optimising/accountability requirements of 'the donor' *and* the learning/performance expectations of 'the beneficiary'. This approach demands that a single project be conceived as a 'social experiment' within a wider learning system. That is, rather than implementing projects in an *ad hoc,* opportunistic, donor-driven manner, effective NGOs may benefit from defining a coherent rationale or framework comprised of portfolios of individual projects implemented through time and space. This level of project coherence has some similarities with what some commentators describe as the 'programme approach'.

I argued that information is an essential ingredient for successfully deploying a soft systems learning approach to aid-programme management. That is, information is required to build a coherent programme of projects. This perspective fundamentally underpins the MEIS framework proposed in this thesis. As conceived here, the role of a MEIS is to enable learning about organisational effectiveness through 'informed debate'. This necessitates an organisation-wide MEIS that exports information beyond an individual project, to a wider system of learning between projects. Following Checkland and Holwell (1998), I align my work with the notion that human actors construct *knowledge* by identifying coherent patterns in *information.* This implies the attribution of meaning by human actors to *capta* that has been derived from the available *data.*

However, in recognising the contribution from the alternative, interpretive, 'soft' strand of thinking, I found merit in the notion that 'information' is a necessary but not sufficient condition for effectiveness. That is, information does not necessarily drive cybernetic-style decision-making. Rather, given the contestable, 'wicked', 'soft' nature of sustainable development, learning from within individual projects contributes to discourse and debate between

stakeholders about the relative effectiveness of strategies employed. I proposed a simplification in which an organisation-wide MEIS contributes to a cycle of: 'informed debate' → to find 'accommodations' between the *weltanschauungen* of organisational members → to reach a 'shared intent' → to act 'purposefully' → the outcomes of which are subsequently the basis for further 'informed debate'.

The fundamental problem encountered with seeking to install an organisation-wide MEIS was the need for scalable measures of performance. That is, a framework within which the performance of an individual project may be compared with the performance of other individual projects or portfolios of projects. The system adopted follows Checkland, who identifies that the performance of any system may be understood in terms of its relative efficiency, efficacy and effectiveness (the '3Es'). In this thesis, I take the role of the project management approach to be to ensure the *efficiency* of implementation (i.e. the minimisation of undesirable variance between planned and actual performance) such that the *efficacy* of a given 'theory of change' embodied in a project design may be tested. The *effectiveness* of a portfolio, or programme, of projects with a common 'theory of change' known to be efficacious may then be debated as described above. Conceptually, the '3Es' are a scalable measure of performance, since any project regardless of sector, size, scope, location or any other attribute, may be considered to have an inherent level of efficiency, efficacy and effectiveness.

Given the theoretical framework above, I then focussed on the mechanisms by which this thinking could be operationalised and embedded within the working culture of aid agencies.

Through the application of SSM conceptual modelling, I proposed a cycle of monitoring and evaluation processes: data identification → capture → analysis → dissemination → utilisation → assessment. This M&E data cycle unpacks the 'transformation' process (expressed as 'T' in CATWOE[214]) in the SSM root definition of a MEIS proposed in this thesis. That is, it is by passing

---

[214] CATWOE (Customer; Actor; Transformation; *Weltanschauungen*; Owner; Environmental Constraints) is the mnemonic proposed by Checkland to guide the formulation of SSM root definitions.

around this cycle that the transformation of data → *capta* → information → knowledge may occur.

Reflecting on field experience, I identified constraints at each stage of the 'M&E data cycle' that erode the value of M&E. Several of the constraints encountered stem from a lack of clarity with regard to the identification of data (i.e. what is considered *capta*). To address this issue I adopted the 'logframe' as a guiding framework. However, several limitations were found with applying this approach. These limitations subsequently stimulated modifications embodied in what I called the '3D-Logframe', since the most striking feature of the modifications is the inclusion of a third dimension to the matrix to express the project timeframe. Assumptions within the new framework became a focus for learning and allowed greater clarity for the separate roles of monitoring and evaluation.

Constraints identified at other stages in the M&E data cycle included 'compliance', 'skill', 'mechanism', 'incentives' and 'culture' respectively. Each of these constraints erodes the potential of a MEIS to support the measurement of efficiency, the assessment of efficacy and debate about effectiveness. Hence, practitioners involved in the development of a MEIS are required to be cognisant of the implications of these constraints and to employ strategies to mitigate their impact.

The MEIS framework proposed in this thesis draws on relevant parts of the literature in the three fields noted above and 'grey' literature from within the aid industry on the topic of 'M&E'. This literature was considered in the light of field experience and insights derived from the use of SSM conceptual models. The objectives of the framework are to clarify ambiguity in the nomenclature of M&E and to address the practical constraints to M&E processes noted above.

The following section will summarise the salient aspects of the contribution to knowledge made by this work.

6.2　The Key Contributions of this Work

In addition to the epistemological novelty of applying SSM to the issue of aid agency M&E[215], the MEIS proposed in this thesis is novel for three reasons:

- Scope.

- Purpose.

- Application.

The *scope* of the proposed MEIS takes in the entire aid organisation, going beyond the dominant, conventional approach, which is project-centric. This enables alignment of project strategies with organisational mission. Further, it aims to promote the institutionalisation of lessons learned within projects (conceived as 'social experiments') for organisational learning, thereby enabling informed debate about the effectiveness of the organisation in fostering sustainable development.

The *purpose* of a MEIS has been recognised as fundamentally concerned with promoting organisational success. In particular, it is concerned with satisfying the accountability needs of donor stakeholders, while ensuring more appropriate and transformational interactions with beneficiaries. Hence, the MEIS may play a role in resolving the 'NGO dilemma' through the use of tools and thinking which encourage responsive project management decision-making and mechanisms to enable informed debate and organisational learning.

The *application* of this MEIS framework involves a modified logframe, the '3D-Logframe', developed to address limitations found with the conventional two-dimensional logframe matrix employed for M&E purposes and to embrace lessons from field experience and academic literature.

Within each of the above three areas, I made several specific practical contributions. By way of summary, I:

---

[215] Thereby shifting the focus of M&E processes from optimisation to learning.

- Assimilated the work of Checkland and others in SSM into aid M&E through the application of SSM conceptual modelling techniques.

- Generalised the 'M&E data cycle' as a means to unpack the process of 'transformation' (i.e. 'T' in CATWOE) of 'data' to 'knowledge' as noted in the SSM root definition of a MEIS.

- Theorised the major constraints that impinge on each stage of the M&E data cycle and thereby erode the value of M&E processes for aid agencies (namely, compliance, skill, mechanism, incentives and culture).

- Applied the concept of the 3ZOM (Sarasohn and Protzman 1948) to aid agencies, and theorised the differentiation of responsibilities and accountabilities (Dransfield, Fisher et al. 1999) of each zone in terms of performance information obligations.

- Questioned the merit of discrete 'M&E Officer' roles within aid agencies on the basis of organisational behavioural issues and a philosophy of democratic information exchange between all personnel located in the 3ZOM.

- Critiqued the concept of 'participatory M&E' on the basis that the requirement for 'beneficiaries' to participate in gathering data to which they assign no inherent value, may compete with livelihood activities.

- Proposed a conceptual model to explicitly link the processes of monitoring and evaluation with organisational success, thereby defining the 'why' (purpose) of M&E and clarifying how to resolve the so called 'NGO dilemma'.

- Synthesised the SSM concept of the '3Es' to aid agency performance measurement, in particular finding the notion of efficacy to offer a valuable perspective on project evaluation.

- Recognised the requirement for scalable performance information as a fundamental element to enable meaningful, organisation-wide M&E and theorised the opportunity to utilise the '3Es' for this purpose.

- Reconceptualised the processes of monitoring and evaluation through a novel separation of data in the logframe matrix (i.e. vertical separation *versus* horizontal separation).

- Theorised three hypotheses of change implicit in any logframe-based project design, thereby isolating three mandates or forms of aid evaluation.

- Advocated a more rigorous application of IF→AND→THEN logic, thereby elevating the role of assumptions in the logframe.

- Isolated three classes of assumptions which are logical pre-conditions for each of the three hypotheses.

- Reconceptualised the 'STEEP' framework discussed by Grant (1999) as a means to define scalable domains of assumptions in the logframe.

- Adapted the 'evolutionary' approach developed by Davies (1998a) to enable monitoring of 'most significant *constraints*' encountered and categorised these within the STEEP framework to enable generalisations and learning.

- Located the three project hypotheses and the three classes of assumptions within innovation diffusion theory (Rogers 1962) and identified the three classes of assumptions as the mechanisms that promote or erode diffusion.

- Distinguished between three groups of actors in the operational zone that are fundamentally involved in the innovation diffusion process; namely, the implementation team, the boundary partners and the wider community.

- Assimilated the PACT approach developed by Pillai and Rao (1996) for earned value analysis and proposed it as the mechanism to determine aid project efficiency.

- Proposed synthetic indices (de Vries 2001; Crawford, Perryman et al. 2004) as a method to report relative changes fostered by aid projects (i.e. as a scalable assessment of efficacy).

- Recognised the heterarchical structure common in many INGOs and theorised a dynamic concept of 'portfolios' to supplement the rigid notion of 'programmes', thereby enabling a reconception of the notion of 'impact' as the 'aggregated effects' of an assembled portfolio of projects.

- Proposed the concept of 'proxy impact' as a method for summarising and quantifying *portfolio* impact.

- Adopted the 'most significant change' approach developed by Davies (1998a) for subjectively establishing *project* impact.

- Proposed substantial modifications (Crawford and Bryce 2003) to the conventional logframe matrix (labelled the '3D-Logframe').

  o incorporated a time dimension into the matrix to enable M&E processes to be reflected explicitly throughout the life of the project, thereby making the logframe a dynamic tool;

  o abandoned the requirement for efficiency-level objectively verifiable indicators in preference for an integration of project management tools (cash-flow budget, Gantt chart, milestone tracking), thereby maintaining a 'utilisation-focussed' approach;

  o amplified the conventional means of verification column to enable more rigorous IS definition;

- Synthesised work by other commentators on organisational learning and provided a simple algorithm to capture lessons learned.

- Reflected on the practical challenges associated with deploying an organisation-wide MEIS as proposed in this thesis and recommended an examination of the application of recent developments in information communication technology.

- Acknowledged challenges to the concept of 'the project' by several development commentators, but recognised the pragmatics of the power asymmetries within the donor-recipient nexus. I reconceived of 'the project' as a means rather than an end. That is, an individual

project may be considered a 'social experiment' within a wider learning system, which tests 'theories of change' as a mechanism of learning about effectiveness.

6.3   Implications for Policy & Practice

My interest at the start of this doctoral candidature was in making a practical contribution to address a felt need. While the work in this thesis attempts to address many practical issues, the operationalisation of the entire MEIS framework as proposed, presents M&E practitioners with several practical, conceptual and cultural challenges. I will now draw together what I believe to be the three dominant implications for policy and practice:

- The mechanics of deploying the framework.

- The increased exactitude required at the planning stage.

- The cultural shift required within some NGOs.

Firstly, while the notion of an organisation-wide MEIS has intuitive appeal, the mechanics of deploying such a system are extremely complex. As noted in this thesis, numerous organisational and technical issues are encountered in attempting to deploy a project-level MEIS. These issues are likely to be magnified with an organisation-wide MEIS, not least because of the 'heterarchical' structure common in the NGO sector (see Figure 50) and the wide geographic distribution of actors.

However, recent developments with Information and Communication Technologies (ICT) may offer opportunities to exploit the concepts proposed in this thesis that have previously been prohibitively cumbersome for conventional information systems[216]. Many of the issues that constrain the value of an organisation-wide MEIS stem from the requirement for human actors to perform tasks better suited to digital technology. In considering the

---

[216] In advocating an exploration of possible technical solutions, I do not wish to be misunderstood as being blindly technophilic. Rather, my interest is to identify appropriate tools to support human actors in purposeful activity. I have recently been involved with an initiative to develop ICT support for M&E processes. The pilot version was well received by practitioners, suggesting that the notion has merit.

M&E data cycle (see Figure 30), digital technology offers possible support of the 'data capture', 'analysis', 'dissemination' and 'utilisation' stages:

- **Data capture:** technology such as personal digital assistants (PDA) and web reporting may offer the opportunity to improve data capture and hence compliance by reporting personnel[217].

- **Analysis:** arguably, the ability to analyse large volumes of raw data and to extract important trends or features has been an important driving force behind the development of digital technology.

- **Dissemination:** relatively recent developments in network technology (including web services, wireless and asynchronous networking) offer opportunities to dramatically improve information dissemination. Efficiencies are especially possible where essentially the same data is required in different formats by large numbers of geographically distributed stakeholders[218]. This is likely to assist transparency and accountability.

- **Utilisation:** the rapid development of 'data mining' technology and the wide availability of graphical data presentation tools may improve the accessibility and useability of information.

Whereas digital technology may hold a comparative advantage over the human mind with the storage and analysis of large volumes of data, the human mind continues to monopolise 'reflective thinking'. If the mundane aspects of information management can be abstracted away from NGO personnel, greater human resources can be devoted to encouraging reflexive practice. Given the centrality of 'informed debate' and soft systems learning within this approach to M&E, the concept is likely to have a greater evolutionary chance of survival if the practical constraints to its operationalisation can be reduced or removed. This is in line with the Commonwealth Scientific and Industrial Research

---

[217] I am familiar with a food security project in Cambodia where the use of these technologies is being explored.

[218] There are several initiatives to extend web-based services to geographically and culturally resource-poor areas (see for example work by IDRC reported at www.idrc.ca and www.dotforce.org)

Organisations (CSIRO), Organisational Performance Measurement (OPM) governing principle of practicability.

Secondly, as indicated by the lengthy discussion in Section 4.2 on the identification of M&E data, the foundation of a MEIS is defined during the planning stage of the project cycle. However, an important observation during this research was the inadequacy of M&E planning, reinforced in part by the inadequacy of the MOV column in the conventional logframe. Hence, one of the implications of the MEIS proposed here, is an increase in the demand for detail provided by project planners. This detail includes:

- The specifics of what data is required.

- The method by which the data will be captured.

- The individuals (or teams) responsible for data capture.

- Who within the organisation is expected to benefit from the captured data.

- To what analysis the data will be subjected.

- To whom this analysis will be disseminated.

- The purpose served by the disseminated information and

- the schedule or timeframe within which all of the above is expected to take place.

This requirement for a more rigorous approach to M&E planning, along with the requirement for higher granularity of detail in tools such as PACT, is likely to place greater demands on planning personnel responsible for project design. This has ramifications for human resource capacity within NGOs, especially where resources and capacity are already stretched. One alternative is to 'reverse engineer' the MEIS by providing a coherent 'planning framework' to streamline work at this stage of the project cycle and ensure congruence with the requirements of a MEIS as defined in this thesis[219]. However, the reality is that most NGOs have scant pre-project resources available for activities such as best-practice planning.

---

[219] That is, to mitigate the 'Garbage-In Garbage-Out' (GIGO) phenomenon

On the other hand, a more coherent M&E framework may offer direct benefits to donor agencies, which in turn may offer greater support for planning activities. The current trend towards 'partnerships' and the 'programme approach' by several bilateral donor agencies (e.g. DANIDA, CIDA, AusAID) suggests that this is not an unreasonable expectation.

Thirdly, the MEIS proposed in this thesis requires a fundamental cultural shift for many NGOs. My observations suggest that the following key points are relevant:

- The SSM learning approach demands a move away from an *ad hoc* project management approach towards a systemic, iterative approach to grappling with 'soft', 'wicked' problems. This challenges the tendency of some NGOs to function as a project management contractor for the donor agency and may involve greater financial risk.

- The centrality of 'informed debate' which underpins the 'soft' strand of organisational theory and information systems study may require a cultural shift away from conflict-avoiding/consensus-seeking behaviours within some NGOs. That is, the perceived threat of 'informed debate' is that it may create *division* where it was intended to create *diversity*. In practice, the cultural shift may require the development of an appreciation for the time-dependent nature of 'accommodations' *versus* the time-independent nature of consensus[220]. This thinking is in line with the concept of a project as a 'social experiment' promoted in this thesis.

- The philosophy of consilience, which underpins this work, may pose practical challenges for NGOs. Specifically, this approach requires NGO personnel to balance demands for professionalism *and* demands for 'transformationalism'. In practice, however, this stance is difficult to implement. As noted by Smillie (1995), there is a tendency for NGOs to be either 'canoes' or 'super-tankers'. Arguably, the resolution of the 'NGO dilemma' discussed in this thesis requires

---

[220] There is a sense that 'consensus' implies the final resolution of an issue, whereas 'accommodation' suggests an opportunity to revisit an issue.

> successful NGOs to be *both* canoes and super-tankers, depending on who is watching.

6.4   Further Research Directions

There are many research directions emerging from this work. Given the transdisciplinary approach adopted in this thesis, it is useful to consider possible research directions in relation to each of the three fields examined: information systems (IS), organisational effectiveness and project management.

Firstly, within the field of IS, as indicated in Section 6.3, there appears to be merit in exploring opportunities afforded by ICT in support of an organisation-wide MEIS. According to Allende and Galbiati (1999, p 123):

> As we march into the age of digital information, the problem of data overload looms ominously ahead. The value of storing volumes of data depends on our ability to extract useful reports, spot interesting events and trends, support decisions and policy based on statistical analysis and inference, and exploit the data to achieve business goals and improve the organisation.

Hence, while recognising that many of the notions embodied in the MEIS framework proposed in this thesis are likely to be impractical without the support of ICT, there is more work required to ensure the appropriate application of these technologies to this area. This is especially the case given the technology-challenged contexts in much of the developing world. As implied by Allende and Galbiati (1999), unless the tools to manage the information are appropriate, the resources it consumes may be wasted.

At a deeper level, there is merit in seeking to verify the fundamental assumptions about the role of information within organisations, especially with regard to performance management. The dominant assumption has been succinctly expressed by Yeo (1993, p 111):

> The overall performance of a system, and sometimes its survival…are dependent on effective communication and certain controlling mechanisms based on timely and accurate feedback information.

While the role of information within cybernetic-style systems is clear, it is less evident whether these assumptions are legitimate when grappling with 'soft', 'wicked' problems such as sustainable development. By definition, in these situations, both the 'problem' under consideration and its 'solution' are contestable. Hence, even the information that is considered relevant to the problem/solution is likely to be contestable.

> The information needed to *understand* the problem depends upon one's idea for *solving* it…problem understanding and problem resolution are concomitant to each other (Rittel & Webber 1973, p 161).

Therefore, more research is needed to determine the extent to which concepts and processes such as M&E actually contribute to effective organisations.

Secondly, from the perspective of organisational effectiveness, the 'NGO dilemma' appears to pose a continuing challenge. While many NGOs attempt to mirror the functionalist structures of the corporate sector, as noted these modes may contradict the demands of the 'soft' 'wicked' nature of sustainable development assistance. There is merit in further exploring organisational structures and processes that acknowledge the dilemma, such as the socio-cultural model of organisations. However, while these 'alternative' organisational theories hold intuitive appeal, there seems to be scant literature on how these notions are operationalised, especially within large international organisations such as INGOs. This warrants further study.

Further, as noted in Section 6.3, many of the ideas embodied within this thesis require fundamental changes to the organisational culture of NGOs. Much remains unknown about organisational culture and its drivers. Hence, the philosophy of 'informed debate', if not introduced in a manner appropriate to the organisational culture, may have a destabilising effect, resulting in destructive conflict instead of constructive diversity (Lissack 1996).

Thirdly, with regard to the field of project management, as has been discussed, the 'hard systems' epistemology and the assumption of linearity within this field of enquiry, contradict the transformational non-linear changes which aid projects seek to foster. According to Goldspink (1999) (who studies

complexity theory in social science), linear systems are 'aggregative' or analytically decomposable, and hence reductive analytical approaches are legitimate and effective. However, non-linear systems are 'emergent' and hence reductive analysis is a logical impossibility. He argues that (p 47):

> …as non-linear system behaviour *always* has the potential for vastly more complex dynamics than a linear system, any such simplification could not be undertaken without dramatic compromise and without raising considerable questions as to the credibility of the result.

Thus, the iterative development of models of reality required within the 'soft systems learning' approach to aid programme management proposed in this thesis may be too reductive for an emergent non-linear system such as sustainable development. That is, given the complex, 'wicked', 'soft' nature of sustainable development, the rationale for reducing development 'problems' down to even a programme of related 'social experiments' may be flawed. At the very least, the expectation of 'replicating' successful change strategies (i.e. efficacious projects) to unrelated contexts could be unrealistic.

Hence, there is need for a deeper examination of chaotic and complex systems theory (Gleick 1998; Kuhn and Levick 2001), and its application within sustainable development. This may also require a deeper analysis into other problem typologies beyond Checkland's (1981) 'soft' and Rittel and Webber's (1973) 'wicked' problems. Drawing on this, a broader review is warranted of 'theories of change' beyond the linearity implicit within the project management approach and the innovation diffusion theory that pervades much aid project design.

Finally, the issue of whether or not an endogenous process such as 'sustainable development' can actually be fostered by actors external to the human activity system such as an INGO requires further examination.

I embarked on this research with burgeoning questions about the philosophical merit of the aid paradigm. I will likely never appreciate all aspects of this 'soft', 'wicked' problem. Abandoning the search for an optimising system in favour of a learning system may yield some insights. What remains, however,

is a global phenomenon of inequity. My vision is for efficient and efficacious aid interventions, implemented in an environment of learning driven by vigorous and informed debate about effectiveness.

7 REFERENCES

ACFOA (2002). ACFOA Report on Australian NGO Effectiveness. Canberra, Australian Council for Overseas Aid.

Ackoff, R. L. (1979). "The future of Operational Research is Past." *Journal of the Operational Research Society* **30**: 93-104.

Ackoff, R. L. and F. E. Emery (1972). *On purposeful systems*. Chicago, Aldine-Atherton.

ADRA (1998). Food Security for Smallholder Farmers in the Ikutha Division of Kitui District in Kenya's Eastern Province. Nairobi, ADRA Kenya.

Ainsworth, H. (2003). Demystifying program management. Sydney, Institute of Management Consultants.

Allende, H. and J. Galbiati (1999). "Discussion on the paper by S.B. Dransfield et al." *International Statistical Review* **67**(2): 122-125.

Anand, S. and A. Sen (2000). "The income component of the Human Development Index." *Journal of Human Development* **1**(1): 83-106.

Anderson, I. (2002 pers.com.). Assistant Director General - Contract Services Group. Sydney, Institute of Management Consultants Briefing.

Argyris, C. (1992). *On Organisational Learning*. New York, Blackwell.

Argyris, C., R. Putnam, et al. (1982). *Action Science: concepts methods and skills for research and intervention*. San Francisco, Jossey-Bass.

AusAID (2000). AusGUIDElines: The logical framework approach. Canberra, Australian Agency for International Development.

AusAID (2001). Improving Effectiveness in a Changing Environment. Canberra, Australian Agency for International Development.

AusAID (2002). Rapid Review of NGO Project Quality. Canberra, AusAID.

Axelrod, R. (1984). *The evolution of cooperation*. New York, Basic Books.

Banville, C. and M. Landry (1989). Can the IS field be disciplined? *Information systems research: issues, methodology and practical guidelines*. Galliers. Oxford, Blackwell.

Barnes, M., L. Coulton, et al. (1998). A new approach to performance measurement for small and medium enterprises. Sydney, CSIRO.

Barry, M. and C. Fourie (2001). *Wicked Problems, Soft Systems and Cadastral Systems in Periods of Uncertainty*. Proceedings of FIG International Conference on Spatial Information for Sustainable Development, Nairobi, Kenya, Department of Geomatics, University of Cape Town South Africa.

Bastable, A. (2001, pers.com.). Technical Advisor. Oxford, Oxfam GB.

Bawden, R. (1991). Towards Action Research Systems. *Action Research for Change and Development*. O. Zuber-Skerritt. Sydney, Avebury.

Bawden, R. (1998). "The community challenge: the learning response." *New Horizons* **99**: 40-59.

Becker, H. (1997). *Social Impact Assessment*. London, UCL Press.

Bell, S. (2000). "Logical Frameworks, Aristotle and Soft Systems: a note on the origins, values and uses of Logical Frameworks, in reply to Gasper." *Public Administration and Development*(20): 29-31.

Blackerby, P. (1994). "History of Strategic Planning." *Armed Forces Controller Magazine* **39**(1): 23-24.

Boland, R. J. and R. A. Hirschheim (1985). *Introduction to series on Information Systems*, Wiley & Sons.

Britton, B. (1998). *The learning NGO*. UK, INTRAC.

Broughton, B. (1996). Project Planning, Monitoring & Evaluation Training Course: Session Guides & Notes. *ACFOA Training Course*. Canberra.

Broughton, B. and J. Hampshire (1997). *Bridging the Gap: a guid to monitoring and evaluating development projects*. Canberra, ACFOA.

Brown, J. S. and P. Duguid (2000). *The Social Life of Information*. Boston MA, Harvard Business School Press.

Buckingham Shum, S. (1997). *Representing Hard-to-formalise, Contextualised, Multidisciplinary, Organisational Knowledge*. AAAI Spring Symposium on Artificial Intelligence in Knowledge Management, Standford University, AAAI Press.

Buckmaster, N. (1997). Contemporary versus Conventional Measures of Performance. *Business*. Sydney, University of Technology Sydney.

Bunch, R. (1982). *Two ears of corn*. Oklahoma, World Neighbours.

Burrell, G. and G. Morgan (1994). *Sociological Paradigms and Organisational Analysis*. London, Virago.

Capra, F. (2003). *The hidden connections*. London, Flamingo.

Casley, D. and K. Kumar (1986). Project monitoring and evaluation in agriculture. Washington DC, World Bank.

Casley, D. and D. Lury (1981). *Monitoring and evaluation of agriculture and rural development projects*. Baltimore, Johns Hopkins Press.

Cassen, R. (1986). *Does Aid Work? Report to an Intergovernmental Task Force*. Oxford, Clarendon Press.

Chambers, R. (1983). *Rural Development: Putting the Last First*. UK, Longman Scientific & Technical.

Chambers, R. (1997). *Whose reality counts? Putting the last first*. London, Intermediate Technology Publications.

Checkland, P. (2001). Soft Systems Methodology. *Rational Analysis for a Problematic World Revisited*. J. Rosenhead and J. Mingers. Brisbane, John Wiley & Sons Ltd.

Checkland, P. and S. Holwell (1998). *Information, Systems and Information Systems - making sense of the field*. Chichester, John Wiley & Sons.

Checkland, P. B. (1981). *Systems Thinking, Systems Practice*. Chichester, John Wiley & Sons.

Chennell, A. F., S. B. Dransfield, et al. (2000). *OPM: a system for organisatoinal performance measurement*. Performance Measurement - Past, Present and Future, Cambridge, UK, University of Cambridge.

CIDA (1997). The Logical Framework: Making it results-oriented. Ottowa, Canadian International Development Agency (CIDA).

Cleland, D. (1991). "What will replace Project Management?" *PMNETwork* **V**(8): 5-6.

Coleman, G. (1987). "Logical framework approach to the monitoring and evaluation of agricultural and rural development projects." *Project Appraisal* **2**(4): 251-259.

Conklin, J. (accessed 2002). *Dialog Mapping: making sense of project fragmentation*, CogNexus Institute, available at http://www.cognexus.org/wpf/wpf.htm.

Cook, J. R. (1998). *Monitoring and evaluation capacity building study*. Sydney, AusAID.

Cook, T. D. and D. T. Campbell (1979). *Quasi-Experimentation: Design & Analysis Issues for Field Settings*. Chicago, Rand McNally College Publishing Company.

Cooke-Davies, T. (2002). "The "real" success factors on projects." *International Journal of Project Management*(20): 185-190.

Cooper, R. B. (1988). "Review of management information systems research: a management support emphasis." *Information Processing and Management* **24**(1): 73-102.

Covey, S. (1990). *The seven habits of highly effective people*. New York, Simon and Schuster.

Cracknell, B. E. (2000). *Evaluating Development Aid: Issues, problems and solutions*. London, Sage Publications.

Cracknell, B. E. (2002). Comments on the 3D-Logframe. London.

Crawford, J. (2002). *Triple Bottom Line Performance: finding the balance*. Australasian Evaluation Society International Conference, Wollongong Australia.

Crawford, L. and K. Costello (1999). Towards a transferable methodology for managing strategic change by projects. Sydney, Project Management Program, University of Technology, Sydney.

Crawford, P. (2001). Guidelines for the monitoring & evaluation of relief & development projects implemented by ADRA Rwanda. Kigali, ADRA Rwanda (unpublished).

Crawford, P. (2001). M&E Handbook: Guidelines for the monitoring and evaluation of humanitarian projects implemented by Oxfam Angola. Luanda, Angola, Oxfam GB (unpublished).

Crawford, P. (2002). *The aid project cycle: an effective vehicle towards ESD?* Conference of Australian and New Zealand Society for Ecological Economists, University of Technology Sydney.

Crawford, P. and P. Bryce (2003). "Project monitoring and evaluation: a method for enhancing the efficiency and effectiveness of aid project implementation." *International Journal of Project Management* **21**(5): 363-373.

Crawford, P., J. Perryman, et al. (2004). "Synthetic indices: a method for evaluating aid project effectiveness." *Evaluation*. **10**(2):

Cryer, J. D. and R. B. Miller (1994). *Statistics for Business*. Belmont CA, Duxbury Press.

CSIRO (2001). Evaluating a Performance Measurement System, Mathematical and Information Sciences Division. **2001**.

Culnan, M. J. and E. B. Swanson (1986). "Research in management information systems." *MIS Quarterly* **10**(3): 289-302.

Daly, H. (1996). *Beyond Growth*. Boston, Beacon Press.

Davies, R. (1998). Order and Diversity: Representing and assisting organisational learning in Non Government Organisations. *Centre for Develoment Studies*. Swansea, University of Wales.

Davies, R. (1998a). "An evolutionary approach to facilitating organisational learning: an experiment by the Christian Commission for Development in Bangladesh." *Impact Assessment and Project Appraisal* **16**(3): 243-250.

Davies, R. (2002). *Improved representations of change processes: improved theories of change*. Biennial Conference of the European Evaluation Society, Seville.

Davis, G. B. (1980). *The knowledge and skill requirements for the doctorate in MIS*. Proceedings, First International Conference on Information Systems, Philadelphia.

de Vries, W. F. M. (2001). "Meaningful Measures: indicators on progress, progress on indicators." *International Statistical Review* **2**(69): 313-331.

de Wit, A. (1988). "Measurement of project success." *Project Management Journal* **3**(6): 164-170.

Deming, W. E. (1986). *Out of the Crisis*. New York, Wiley.

den Heyer, M. (2001). The development of a Temporal Logic Model. *Faculty of Graduate Studies*, University of Guelph.

den Heyer, M. (2001a). The Temporal Logic Model. Ottowa, Canada, International Development Research Institute.

Diamond, J. (1997). *Guns, germs and steel: the fates of human societies*. London, Jonathan Cape.

Dick, B. (1993). You want to do an action research thesis? Brisbane, University of Queensland - Department of Psychology.

Diesendorf, M. (2000). Sustainability and sustainable develoment. *Sustainability: the corporate challenge of the 21st Centuary*. D. Dunphy, J. Benveniste, A. Griffiths and P. Sutton. Sydney, Allen & Unwin**:** 19-37.

DIP (2002). "Special issue on 'Development and the Learning Organisation'." *Development in Practice* **12**(3 & 4).

Dransfield, S. B., N. I. Fisher, et al. (1999). "Using statistics and statistical thinking to improve organisational performance." *International Statistical Review* **67**: 99-150.

Earl, S., Carden, F. & Smutylo, T. (2002). *Outcome Mapping: building learning and reflection into development programs*. Ottowa, IDRC.

EC (2001). Project Cycle Management Training Courses Handbook. Freiburg Germany, European Commision Evaluation.

Edwards, M. (1997). "Organisational Learning in Non-Governmental Organisations: What have we learned?" *Public Administration and Development* **17**: 235-50.

Edwards, M. and D. Hulme, Eds. (1996). *Beyond the magic bullet: NGO performance and accountability in the post-cold war world*. London, Kumarian Press.

Edwards, M. and D. e. Hulme, Eds. (1992). *Making a difference*. London, Earthscan.

Elliot, J. (1988). "Educational research and outsider-insider relations." *Qualitative Studies in Education* **1**(2): 155-166.

Estrella, M. and J. Gaventa (1997). *Who counts reality? Participatory monitoring and evaluation: A literature review*. International Workshop on Participatory Monitoring and Evaluation, Philippines, International Institute for Rural Reconstruction (IIRR).

Farbey, B., F. Land, et al. (1999). Reflections on an Imperical Study. London, Department of Information Systems, London School of Economics.

Forbes, P. and P. Checkland (1987). Monitoring and control in systems models. *Discussion Paper*. University of Lancaster, Department of Systems.

Fowler, A. (1996). Assessing NGO Performance: Difficulties, Dilemmas and a Way Ahead. *Beyond the Magic Bullet: NGO performance and accountability in the post-cold war world*. M. Edwards and D. Hulme. West Harford, Kumarian Press Inc.

Fowler, A. (1997). *Striking a balance*. London, INTRAC.

Fowler, A. (2002). *Measuring non-tangible outcomes*. Measuring non-tangible outcomes, Australian National University, The Foundation for Development Cooperation.

Gabriel, E. (1990). *The Future of Project Management - The new model*. 10th INTERNET World Congress on Project Management, Vienna, INTERNET.

Garratt, B. (2000). *The Learning Organization: developing democracy at work*. Glasgow, Harper Collins.

Gasper, D. (1997). 'Logical Frameworks': A critical assessment managerial theory, pluralistic practice. The Hague, Institute of Social Studies.

Gasper, D. (1999). Evaluating the "Logical Framework Approach" - Towards Learning-Oriented Development Evaluation. The Hague, Institute of Social Studies.

Gasper, D. (2000). "Evaluating the 'Logical Framework Approach' towards learning-oriented development evaluation." *Public Administration and Development*(20): 17-28.

Gharajedaghi, J. (1999). *Systems Thinking: managing chaos and complexity*. Oxford, Butterworth-Heinemann.

Gleick, J. (1998). *Chaos*. London, Vintage.

Glover, J. (2001). *Adaptive Leadership: When change is not enough*. Asia-Pacific Regional Conference of the Institute of Management Consultants, Melbourne, IMC.

Goldspink, C. (1999). Social Attractors: an examination of the applicability of complexity theory to social and organisational analysis. *Social Ecology*. Richmond, University of Western Sydney.

Gomanee, K. and O. Morrissey (2002). *Evaluating Aid Effectiveness Against a Poverty Reduction Criterion*. DESC Conference, Nottingham, University of Nottingham.

Gonzalez, H. (1991). *Some myths of communication and development*. Manilla, International Institute of Rural Reconstruction.

Grant, D. (1999). Foresight and Innovation, The General Electric Company.

Gray, R., D. Owen, et al. (1996). *Accounting and Accountability: Changes and Challenges in Corporate Social and Environmental Reporting*. London, Prentice Hall.

Grundy, S. and S. Kemmis (1982). Educational action research in Australia: the state of the art (an overview). *The Action Research Reader*. S. Kemmis and R. McTaggart. Geelong, Deakin University Press**:** 83-97.

Guba, E. G. and Y. S. Lincoln (1989). *Fourth Generation Evaluation*. London, Sage Publications.

Haeckel, S. (1999). *The adaptive enterprise*. Boston, Harvard Business School Press.

Hall, A. D. (1962). *A Methodology for SYstems Engineering*. NJ, Van Nostrand, Princeton.

Haslett, T. (1998). Implications of systems thinking for research and practice in management. Melbourne, Faculty of Business & Economics, Monash University.

Hill, S., S. Wilson, et al. (2002). Learning Ecology - A New Approach to Learning and Transforming Ecological Consciousness: Experiences from Social Ecology in Australia. Richmond, University of Western Sydney.

Howes, M. (1992). "Linking paradigms and practice: key issues in the appraisal, monitoring and evaluation of British NGO projects." *Journal of International Development* **4**(4): 375-396.

Hulme, D. and M. Edwards, Eds. (1995). *Non Governmental Organisations - Performance and Accountability*. London, Earthscan.

IFAD (2002). *A Guide for M&E: managing for impact in rural development*. Rome, International Fund for Agricultural Development (IFAD).

IJPM (2000). "Call for Papers: Project management in developing and emerging economies." *International Journal of Project Management* **18**: iii-iv.

ISEA (1999). AA1000: A Foundation Standard in Social and Ethical Accounting, auditing and reporting. London, Institute of Social and Ethical AccountAbility.

ISF (2002). About us.

Jackson, B. (2001). Designing projects and project evaluations using the logical framework approach, IUCN.

Jacobs, M. (1991). *The Green Economy*. London, Pluto Press.

Kaplan, A. (1999). The developing of capacity, Community Development Resource Association**:** 1-32.

Kaplan, R. S. and R. P. Davies (1993). "Putting the Balanced Scorecard to Work." *Harvard Business Review*(September - October): 134-143.

Kaplan, R. S. and D. P. Norton (1992). "The Balanced Scorecard - measures that drive performance." *Harvard Business Review*: 71 - 79.

Kaplan, R. S. and D. P. Norton (1996). "Using the Balanced Scorecard as a Strategic Management System." *Harvard Business Review*(January-February): 75-85.

Kaplan, S. and J. T. Mackey (1992). "An examination of the association between organisational design factors and the use of accounting information for managerial performance evaluation." *Journal of Management Accounting Research* **4**: 116-130.

Karpin (1995). Enterprising Nation. Canberra, AGPS (Karpin Committee).

Kasabov (1996). *Foundations of Neural Networks, Fuzzy Systems and Knowledge Engineering*. Cambridge MA, MIT Press.

Kauffman, D. L. (1980). *Systems one: An introduction to systems thinking*. Minneapolis, MN, Future Systems.

Kazama, S., J. Foster, et al. (2002). *Impacting Climate for Innovation: Can CEOs make a difference?* 17th Conference of the Society for Industrial and Organizational Psychology, Toronto, Canada, Rice University; University of Aston.

Kelly, L. (1996). The project cycle and the delivery of the aid program. *Australia's Aid Program: mixed messages and conflicting agendas*. P. Kilby. Melbourne, Monash Asia Institute & CAA.

Kelly, L. (2002). *International Advocacy: Measuring perromance and effectiveness*. Australiasian Evaluation Society International Conference, Woolongong, Australasian Evaluation Society.

Kelly, L. (2002a). *Monitoring and Evaluation: Course workbook and materials*, Sydney, International Development Support Services.

Kelly, L. (2002). *Research and advocacy for policy change: measuring progress*. Measuring Non-tangible Outcomes, Australian National University, The Foundation for Development Cooperation.

Kelly, L. and R. Chapman (2003). "A process to define and enahance non-government organisation effectiveness." *Australian Project Manager* **23**(2): 29-31.

Kelly, L. and R. Chapman (2003). A Process to Define and Enhance NGO Effectiveness. Canberra, Australian Council for Overseas Aid (ACFOA).

Kitcher, K. (1983). "Cognition, Meta-cognition, and Epistemic Cognition: a three level model of cognitive processing." *Human Development* **26**: 222-232.

Kitcher, P. (1993). "The evolution of human altruism." *Journal of Philosophy* **90**: 497-516.

Kuhn, L. and D. Levick (2001). *Fractal Geometry, Organisational Management and Creative Change*. Book of Readings for Complexity, Chaos and Creativity Practicum, University of Western Sydney, School of Social Ecology.

Land, F. (1985). "Is an information theory enough?" *Computer Journal* **28**(3): 211-215.

Lavergne, R. (2002). Results-based mangaement and accountability for enhanced aid effectiveness. Ottowa, CIDA.

Lelo, F. K., J. O. Ayieko, et al. (1999). *Egerton PRA Field Handbook*. Njoro, Kenya, Egerton University.

Levett, R. (1998). "Sustainability indicators - integrating quality of life and environmental protection." *Journal of the Royal Statistical Society* **161**: 291-302.

Lewin, K. (1952). Field Theory in Social Science. *Selected Theoretical Papers*. D. Cartwright. London, Travistock.

Libenau, J. and J. Backhouse (1990). *Understanding Information*. London, Macmillan.

Limerick, D., B. Cunnington, et al. (1998). *Managing the new organisation*. Sydney, Business & Professional Publishing.

Lissack, M. R. (1996). *Chaos and Complexity: What does that have to do with management*. Course Reader: Chaos & Complexity SS201A, University of Western Sydney, Faculty of Social Inquiry.

Locke, E. (1996). "Motivation through conscious goal setting." *Applied & Preventative Psychology* **5**: 117-124.

Lofland, J. and L. H. Lofland (1984). *Analysing social settings: a guide to qualitative observation and analysis*. Belmont CA, Wadsworth.

Madeley, J. (1991). *When Aid is No Help: How projects fail, and how they could succeed*. London, Intermediate Technology Publications.

Marsden, D., P. Oakley, et al. (1994). *Measuring the Process: guidelines for evaluating social development*. Oxford, INTRAC.

Max-Neef, M. A. (1991). *Human Scale Development: conception, application and further reflections*. London, The Apex Press.

McLaughlin, J. and B. Gretchen (1999). "Logic models: a tool for telling your program's performance story." *Evaluation and Program Planning* **22**: 65-72.

McMichael, P. (1996). *Development and Social Change: a global perspective*. London, Sage Publications.

McTaggart, R., D. Caulley, et al. (1991). "Evaluation Traditions in Australia: Distillation of the old, wellspring of the new." *Evaluation and Program Planning* **14**: 123-130.

Mellish, E. E. (2000). Appreciative Inquiry at Work. *Education*. Brisbane, Queensland University of Technology.

Mills, I. (1994). When our lips speak together: an introduction to the research and thesis process. Faculty of Health, Humanities and Social Ecology, UWS.

Mugo, G. (1998). Food for Peace Officer. Nairobi, USAID.

Mulholland, P., J. Domingue, et al. (2000). Supporting organisational learning: an overview of the ENRICH approach. Milton Keynes, UK, Knowledge Media Institute, The Open University.

NEF (1998). Social Auditing Course Handbook. London, New Economics Foundation.

Nichols, P. (1999). *An Introduction to the Logframe Approach: Course Workbook & Materials*, Melbourne, IDSS.

Nicolescu, B. (1997). *The Transdisciplinary Revolution of the University, Condition for Sustainable Development*. International Congress, Bangkok, International Association of Universities.

Nowak, M. A., R. M. May, et al. (1995). "The arithmetics of mutual help." *Scientific American* **270**: 50-55.

Olve, N., J. Roy, et al. (1999). *Performance Drivers: a practical guide to using the balanced scorecard*. Brisbane, John Wiley & Sons.

O'Shaughnessy, T. (2002). Quality Improvement Advisor. Melbourne, World Vision Australia.

Patton, M. (1997). *Utilization-focused evaluation*. London, Sage.

PCI (1979). Project Management Systems (PMS): An integrated Systems Approach to Managing the Project Cycle. Washington DC, Practical Concepts Incorporated.

Pillai, A. S., A. Joshi, et al. (2002). "Performance measurement of R&D projects in a multi-project, concurrent engineering environment." *International Journal of Project Management* **20**: 165-177.

Pillai, A. S. and K. S. Rao (1996). "Performance Monitoring in R&D Projects." *R&D Management* **26**(1): 57-65.

Pirsig, R. M. (1974). *Zen and the art of motorcycle maintenance: an enquiry into values*. London, Bodley Head.

PMI (2000). *A Guide to the Project Management Body of Knowledge (PMBOK Guide)*. Newtown Square, Pennsylvania, Project Management Institute (PMI).

Prennushi, G., R. Rubio, et al. (2000). Monitoring and Evaluation. *Sourcebook for poverty reduction strategies*. Washington DC, World Bank.

Rahim, S. (1968). Diffusion of Innovations in a development system: A study of colelctive adoption of innovations by village cooperatives in Pakistan. *Social Pschology*. Ann Arbor, Michigan State University.

Raynard, P. (2000). Mapping Accountability in Humanitarian Assistance. London, Active Learning Network for Accountability and Performance (ALNAP) in Humanitarian Aid.

Rees, S. and G. Rodley, Eds. (1995). *The human costs of managerialism*. Sydney, Pluto Press Australia Ltd.

Reinharz, S. (1992). *Feminist Methods in Social Research*. Oxford, Oxford University Press.

Revans, R. (1983). *The ABC of Action Learning*, International Foundation of Action Learning.

Ridley, M. (1996). *The Origins of Virtue*. London, Penguin.

Riely, F., N. Mock, et al. (1999). Food security indicators and framework for use in the monitoring and evaluation of food aid programs. Washington D.C., Food & Nutrition Technical Assistance (FANTA) / USAID.

Rittel, H. W. J. and M. M. Webber (1973). "Dilemmas in a General Theory of Planning." *Policy Sciences* **4**: 155-169.

Roche, C. (1999). *Impact Assessment for Development Agencies: Learning to value change*. Oxford, Oxfam GB.

Roche, C. (2001). *Partnering for Development Results: an NGO perspective*. Enhancing Development Effectiveness: the contribution of results based management, Oxford, DFID/UNDP.

Rogers, E. (1962). *Diffusion of Innovations*. New York, The Free Press.

Rogers, E. (1995). *Diffusion of Innovations*. New York, The Free Press (4th Ed.).

Rondinelli, D. (1993). *Development Projects as Policy Experiments*. London, Routledge.

Sarantakos, S. (1998). *Social Research*. Melbourne, Macmillan.

Sarasohn, H. M. and C. B. Protzman (1948). *The fundamentals of industrial management*.

Sardar, Z. (2000). *Thomas Kuhn and the Paradigm Wars*. Cambridge, Icon Books.

Schon, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York, Basic Books.

Schuyler, J. R. (1996). *Decision analysis in projects*. Upper Darby, Pennsylvania, Project Management Institute.

Scriven, M. (1991). *Evaluation Thesaurus*. Thousand Islands, California, Sage Publication.

Senge, P. (1990). *The Fifth Discipline: The art and practice of the learning organisation*. New York, Doubleday.

Shaw, D. E. (2001). *Measuring organisational performance*. Asia-Pacific Regional Conference of the Institute of Management Consultants, Melbourne.

Shaw, D. E. (2002). Statistical Consultant. Sydney, Mathematical and Information Sciences Division, CSIRO.

Simon, H. (1960). *The New Science of Management Decision*. New York, Harper and Row.

Sisk, T. (2003). History of Project Management, Berkely University.

Smillie, I. (1995). *The Alms Bazaar: Altruism under fire - non-profit organizations and international development*. London, IT Publications.

Smith, K. F. (2001). Logframe: a project scoping & performance management tool and its use in international development projects, PMI.

Smutylo, T. (2001). *Crouching impact, hidden attribution: overcoming threats to learning in development programs*. Workshop on Across Portfolio Learning, Block Island, Evaluation Unit, International Development Research Centre, Ottawa Canada.

Streeton, P. (2000). "Looking ahead: areas of future research in human development." *Journal of Human Development* **1**(1): 25-48.

Stretton, A. (1994a). "A short history of modern project management part one: The 1950s and 60s." *The Australian Project Manager* **14**(1): 36-37.

Stretton, A. (1994b). "A short history of modern project managment part two: the 1970s." *The Australian Project Manager* **14**(2): 48.

Stretton, A. (1994c). "A short history of modern project managment part three: the 1980s." *The Australian Project Manager* **14**(3): 65-68.

Teng, J. T. C. and D. F. Galletta (1990). "MIS research directions: a survey of researchers's views." *Data Base* **Fall**: 1-10.

Themistoclous, G. and S. H. Wearne (2000). "Project management topic coverage in journals." *International Journal of Project Management* **18**: 7-11.

Thornton, G. (2001). ODA Monitoring & Evaluation: Government of Vietnam/Donor Harmonisation Study. Canberra, AusAID.

Thuan, E., P. McBride, et al. (1988). Identifying the task of an information system: towards a general model for information processing in organisations. Melbourne, Graduate School of Management, University of Melbourne.

Tilt, C. A. (1994). "The Influence of External Pressure Groups on Corporate Social Disclosure." *Accounting, Auditing & Accountability Journal* **7**(4): 47-72.

Tricker, R. I. (1982). *Effective Information Management*. Oxford, Beaumont Executive Press.

Trivers, R. L. (1971). "The evolution of reciprocal altruism." *Quarterly Review of Biology*(46): 35-57.

Turner, J. R. (1992). *The Handbook of Project Based Management: Improving Processes for Achieving Your Strategic Objectives*. London, McGraw Hill

UNDP (1997). Results-oriented monitoring and evaluation. New York, UNDP.

UNDP (2002). *Handbook on Monitoring and Evaluating for Results*. New York, Evaluation Office.

UNDP (2003). United Nations Development Programme Millennium Development Goals.

UNICEF (1990). A UNICEF Guide for Monitoring and Evaluation: Making a difference? New York, UNICEF.

USAID (1973). The logical framework: modifications based on experience. Washington DC, USAID - Program Methods & Evaluation Division.

van Brabant, K. (1997). Organisational and Institutional Learning in the Humanitarian Sector: Opening the dialogue. London, Active Learning Network on Acountability and Performance in Humanitarian Assistance.

Vickers, G. (1965). *The Art of Judgement*. London, Chapman and Hall.

Walsch, A. (2000). Introduction to LFA. Berlin, Global Environment Facility Council.

WCED (1987). Our common future. Oxford, Oxford University Press.

Whitely, R. (1984). *The intellectual and social organisation of the sciences*. Oxford, Oxford University Press.

Wideman, M. (2001). Wideman Comparative Glossary of Project Management Terms, PMForum.

Wiggins, S. and D. Shields (1995). "Clarifying the Logical Framework." *Project Appraisal* **10**(1): 2-12.

Wilson, E. (1998). *Consilience: The unity of knowledge*. London, Abacus.

Winter, M., D. Brown, et al. (1995). "A role for soft systems methodology in information systems development." *European Journal of Information Systems* **4**: 130-142.

Winter, R. (1987). *Action Research and the Nature of Social Inquiry: professional innovation and educational work*. Avebury, Gower Pub.

Wolfenden, A. (1999). A Transdisciplinary Approach to Integrated Resource Management. *Centre for Water Policy Research*. Armidale, University of New England.

World-Bank (2002). Monitoring & Evaluation: Some tools, methods & approaches. Washington D.C., World Bank Operations Evaluation Department.

World-Bank (2002). The Role and Effectiveness of Development Assistance. Washington DC, The World Bank.

Wright, R. (1994). *The Moral Animal: why we are the way we are*. London, Abacus.

Yeo, K. (1993). "Systems thinking and project management - time to reunite." *International Journal of Project Management* **11**(2): 111-117.

Yeo, K. (2002). "Critical failure factors in information system projects." *International Journal of Project Management* **20**: 241-246.

Zaki, E. (2000). Analysis of IFAD experience on the evaluation of the monitoring and evaluation systems. Rome, IFAD.

Zuber-Skerritt, O. (1991). Introduction. *Action Research for Change and Development*. O. Zuber-Skerritt. Sydney, Avebury.

Zuber-Skerritt, O. (1993). Models for Action Research in Postgraduate Education. Brisbane, Griffith University.

Zuber-Skerritt, O., Ed. (1996). *New Directions in Action Research*. London, Falmer Press.

Zuber-Skerritt, O. and C. Perry (2002). "Action Research within organisations and university thesis writing." Lismore, Southern Cross University

8 APPENDIX A

List of Acronyms & Abbreviations

ACFOA	Australian Council for Overseas Aid
ACWP	Actual Cost of Work Performed
ALNAP	Active Learning Network for Accountability & Performance in Aid
ANT	Actor Network Theory
AR	Action Research
AUD	Australian Dollars
AusAID	Australian Agency for International Development
BCWP	Budgeted Cost of Work Performed
BCWS	Budgeted Cost of Work Scheduled
CATWOE	Customer, Actors, Transformation, *Weltanschauungen*, Owner, Environmental Constraints
CIDA	Canadian International Development Agency
CPM	Critical Path Method
CSF	Critical Success Factors
CSIRO	Commonwealth Scientific Industrial Research Organisation
DANIDA	Danish International Development Agency
DFID	Department for International Development
DIP	Detailed Implementation Plan

DoI	Diffusion of Innovations
DRC	Democratic Republic of Congo
EU	European Union
EVA	Earned Value Analysis
FAO	Food & Agriculture Organisation
GB	Great Britain
GDP	Gross Domestic Product
ICT	Information Communication Technology
IDRC	International Development Research Centre
IFAD	International Fund for Agricultural Development
INGO	International Non Government Organisation
IS	Information System
ISF	Institute for Sustainable Futures
IT	Information Technology
KAP	Knowledge, Attitude, Practice
LFA	Logical Framework Approach/Analysis
Logframe	Logical Framework Analysis Matrix
M&E	Monitoring and Evaluation
MEIS	M and E Information System
MIS	Management Information System

MOV	Means of Verification
NATO	North Atlantic Treaty Organisation
NGO	Non-government Organisation
ODA	Official Development Assistance
OECD	Organisationa for Economic Cooperation & Development
OFDA	Office of Foreign Disaster Assistance
OPM	Organisational Performance Measurement
OVI	Objectively Verifiable Indicators
PCM	Project Cycle Management
PDA	Personal Digital Assistant
PDM	Precedence Diagramming Method
PERT	Project Evaluation Review Technique
PMBOK	Project Management Body of Knowledge
PM&E	Participatory Monitoring & Evaluation
PMI	Project Management Institute
POM	Processes of Organisational Meanings
PRA	Participatory Rural Appraisal
R&D	Research & Development
RRA	Rapid Rural Appraisal
SMART	Specific, Measureable, Attainable, Relevant, Timely
SSM	Soft Systems Methodologies

STEEP	Social, Technological, Economic, Ecological, Political
UN	United Nations
UNDP	UN Development Programme
UNHCR	UN High Commissioner for Refugees
UNICEF	UN International Childrens Fund
US	United States
USAID	United States Agency for International Development
UTS	University of Technology, Sydney
WFP	World Food Programme
WHO	World Health Organisation
WSAC	Work Scheduled for Actual Cost

9 APPENDIX B

Case-study Overview

The case-study project was funded by the United States Agency for International Development (USAID) and implemented by an international Non-governmental Organisation (NGO). The target area is located in a semi-arid area of the Kitui District of Eastern Kenya and is defined by the administrative boundary of the Ikutha Division, which is in turn subdivided into seven Locations – the smallest administrative unit in the Government of Kenya (GOK) bureaucracy. The total population of Ikutha Division is estimated to be approximately 75,000 persons (approximately 10,000 households) and is essentially ethnically[221] and economically homogenous. Ikutha is classified by the GOK as 'low potential'[222] (Were 1986). Needs assessments conducted by the implementing NGO identified the area as being particularly vulnerable to famine[223] and largely unserved either by aid agencies or government services (ADRA 1996). Causal factors were understood to include low farm productivity, poor natural resource management and weak community problem solving capacity.

The desired 'impact' of the case-study project as agreed between the NGO, the beneficiary community, GOK and USAID was to improve household food security (for a useful discussion on food security see Sen (1986)). This was to be achieved through training of farmers and the provision of minimal material support (planting materials and tools) in order to realise three project 'effects' (deemed to be the critical limiting factors in food security):

- Increased farm productivity

- Improved natural resource management

- Enhanced community cooperation and problem solving

The project strategy involved the posting of one Kenyan Agricultural Extension Officer in each of the seven Locations within Ikutha Division. Each extension officer was to work closely with 20 community-elected 'Extension

---

[221] The area is dominated by the Wakamba people – a tribe noted for its strong social networks, creative dance and artwork (Were 1986).

[222] The term "low potential" is generally used to refer to the agricultural productivity, and therefore economic viability of the land.

[223] Needs assessments conducted by the implementing agency found that 57.7% of households were food insecure – i.e. could not feed the family for the entire year.

Farmers' (i.e. 140 EFs) to address the three major limiting factors in household food security. Each EF was in turn required to train neighbouring farmers over the five-year life of the project. The EF training was to involve technical skills upgrading in the areas of the three project 'effects' (i.e. farm productivity, natural resource management and community cooperative problem solving).

The theory of change implicit in the project design is grounded in the theory of 'innovation diffusion' (Rogers 1962). That is, there is an expectation that by strategically identifying and building the capacity of key 'change agents' (EFs), developmental initiatives will diffuse throughout a beneficiary community until a critical mass of change ultimately results in an elevated development status (improved food security).