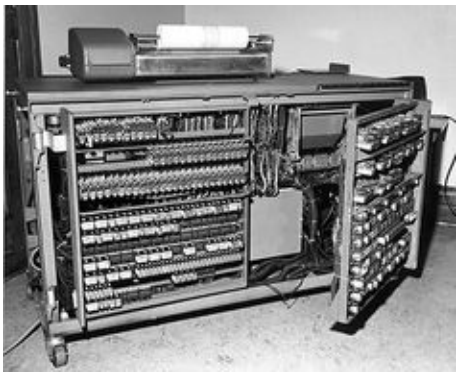
IIDE Proceedings 2014 – Dealing With Complexity: Some Critical Reflections Upon Verkerk's 'Triple I Model'



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The article provides critical reflections upon Dr. M. Verkerk's 'Triple I Model' which aims to guide engineers in their work designing complex systems. The model suggests including stakeholders in the design process, in order to search for inherent values of the designed situation, and to design in an ideal-seeking mode. I do applaud the effort made as such as I do the mentioned three features of the model. However, I have also identified a set of challenges and needs for further development of the model and suggest some avenues for seeking support from the domain of systems thinking.

1. *Introduction*

The *International Institute for Developmental Ethics* (IIDE) hosts an *Annual Working Conference*, where a number of younger and more senior scholars meet to debate issues at the intersection of science, technology ethics and religion as sources for normativity, all related to societal challenges and changes. In past years, H. Dooyeweerd's philosophical work has played a central role in inspiring and giving rise to many contributions and debates, yet by no means all. A recurring theme for dialogues and research cooperation has been the conceptions of systems thinking, in particular the use of systems methodologies in management.

At the 2014 Annual Working Conference (AWC) of IIDE, a special workshop entitled *Dooyeweerdian Thinking meets Systems Thinking* was organized, with the purpose of triggering new debate and opening up new avenues for future research. In view of this purpose Dr. Maarten Verkerk was invited to contribute. Dr Verkerk's profile well matches the theme, as he is affiliated with the Dooyeweerdian school of thought in the Netherlands and is well acquainted with the domain of technology and management. At the workshop he presented the "*Triple I Model*" (hereafter referred to as 3IM), which aims to offer generic guidance for the design of complex systems. As a follow-up of the discussions at the workshop, I was asked by the chairperson of IIDE to write down my critical reflections upon Verkerk's 3IM, which will be presented here.

The next section summarizes my understanding of the 3IM and my reflections will follow in section three. In brief, I sympathize with Dr. Verkerk's efforts, while at the same time noticing some challenges; I suggest some steps towards solving these. The paper ends with some key conclusions to that end. Before moving to my assessment, however, I shall provide an account of my intellectual profile in order to make the reader aware of the kind of spectacles that shaped my assessment of Verkerk's 3IM.

1.1 *My Profile – the reference point of assessment*

In several senses my profile is well suited to act as a base for an assessment of 3IM, as I perceive it. Given that the latter aims to guide designers of complex systems, where technology and the social aspects coexist, my broad intellectual and practical profile may offer a relevant reference point, yet not the only one; there is of course a need for several assessments that utilize different reference points.

I have been educated in a number of disciplines, ranging from mathematics, statistics and computer science, through economics, business administration and industrial organization, as well as psychology and sociology, and ending with philosophy, all in a varying range and depth. I have studied postmodern philosophy in France, analytical philosophy in Sweden and have been a keen reader, yet by no means exhaustively, of Dooyeweerd's thought. I have also been a devoted student of systems science and its derivate systems thinking. I earned a doctorate in industrial organization and I have spent nearly fifteen years in managerial positions, ranging from those of operations analyst and management consultant to line manager and strategic development manager positions at a major international corporation. In all these contexts I have attempted to use my

learnings, particularly systems thinking understood as guide to intervention into human, social, public, business and other affairs. As with Verkerk's 3MI, I have also made some minor attempts to operationalize parts of Dooyeweerd's thinking in terms of systems-oriented methodology for managerial practice, yet not very successfully.

When some years ago I was given an opportunity to return to the academic world as a full time scholar, I regarded it as a possibility to further extend my thinking but also to capitalize upon my experiences of management. Today I lead a small and young research group that focuses on an interdisciplinary exploration of digital businesses, understood as the use of information and communication technologies for the conduct of business activities.

2. *The Triple I Model*

A brief account of Verkerk's Triple I Model, hereafter 3IM, will be provided here. To obtain a more comprehensive understanding of the 3IM, the reader is referred to Verkerk's paper in the present conference proceedings, where it is summarized together with two illustrations of the model's working. We will recall here only some of the key messages that 3IM attempts to put forward, with the aim of preparing the reader for the forthcoming discussion of the model's key characteristics.

In the introduction to this paper, the reader is faced directly with the following challenge:

"*Nowadays, engineers work in multidisciplinary teams and have to communicate with many stakeholders. They often lose the overview and do not understand anymore the 'complexity' of the functionalities of the integrated design. In practice, engineers work with simplified models resulting at best in inadequate solutions and at worst in big disasters. It is therefore of utmost importance that design tools are developed that do justice to the intricate relation between 'man, technology, and society*'."

Shortly after that, Verkerk refers to a dialogue with an engineering colleague, who has expressed the challenge in the following manner:

"*It is impossible for an engineer to take the 'full complexity' of these systems into account. I only have reduced models resulting in reduced designs that for their part result in sub-solutions and even wrong designs.*"

Verkerk's mission seems thus to be to provide engineers with guidance for nothing less than understanding the complexity of our perceptions and conceptions, particularly those complexities where various contemporary technologies meet man, organizations and society. More specifically Verkerk articulates this aspiration in the following way:
"*to guide engineers in dealing with and unraveling the complexity of technological designs, identifying normative moments in designing new products, and understanding how values guide their creative design processes*."

While the presentation of the 3IM is very brief, and does not allow us space to detail the process for developing and testing that model, Verkerk still mentions some key traits of the development process. One central part of that process is that the philosophical work of H. Dooyeweerd is assumed as an intellectual foundation, from which normative guidelines were derived for directing design processes for technologies and their use. In all this, Verkerk's central methodological assumption is that "*philosophy would offer theories that could cope with 'the complexity of these systems' and that also could guarantee (a certain degree of) completeness*." In the conclusions, Verkerk says that 3IM: "*guides engineers through the complexity of design processes by distinguishing three different perspectives: Identity, Interests, and Ideals*."

The 3IM offers a set of what is called *tools for design of complex systems*, where the central stipulation is that any such design process ought to investigate so-called 'user practices', i.e. the use of a specific technology, from three different perspectives:
* seeking the system's *Identity* understood as its intrinsic value,
* seeking the system's stakeholders and their *Inclusion* in the design process,
* seeking the system's (hidden) *Ideals* that co-shape it.

In the discussion below, the focus is on the three I's, as they dominate the presentation of 3IM offered by Verkerk.

3. *Reflections*
In this section I shall offer my critical reflections upon the proposed 3IM, as I have understood it. The reflections start with the actual challenge and aspirations assumed, then continue with an inspection of each of the three 'I's, respectively, and end with some minor methodological reflections.

3.1. *The Aspiration*

Clearly, the 3IM has assumed bold ambitions: to provide conceptual tools to enable the engineer to master complexity: human reality! A perusal of the brief exposé of 3IM provided brought to mind the early modernist thinkers who held similar ambitions by assuming that modern science constitutes the supreme tool to understand and control our reality. However, in the early 20th Century, K. Gödel (e.g. Gödel, 1992) showed that no formal statement, however simple or advanced, may ever be complete, rather it has to rest upon some basic beliefs, while Z. Freud (e.g. Mannoni, 1971) showed that man, by his very function, can never and will never be able to understand himself due to subconscious psyche operations (e.g. Ackoff, 1981). Paradoxically, advances made by science, that aspired to be man's supreme tool in his conquest and control of reality, showed that science as such cannot even understand itself and cannot help us to understand completely the complexities we face.

Now, 3IM assumes a similar position to the early modernist thinkers, while replacing their *scientific method* as the supreme tool with *philosophical conceptions*, here Dooyeweerdian philosophy, as such a tool. Continental post-modern and post-structuralist thinkers, typically French (e.g. J. Derrida, M. Foucault, J.L Lyotard) made it their duty and honor to surface the many, often banal and bizarre, assumptions that the modernist mastering-reality program rests upon. This is not the place to review those attacks and identify their relevance to the 3IM position. Rather, we will briefly summarize that debate with its underlying questions: is it possible to master human reality? And if so, is that desirable? Clearly, the first question is empirical while the second is normative.

Addressing the first question only, our experiences of both natural catastrophes (e.g. the thunderstorms, tsunamis, earthquakes, and volcanic eruptions) and technological disasters (e.g. airplane and train crashes or malfunctioning medical equipment and drugs) show clearly that we cannot master reality, even though we have more technology than ever before to help us do that. While these are surface observations, a central message made by Dooyeweerd (1997, Vol. I.), with regard to the notion of religious ground motives, shows that the aspiration for mastering human reality is impossible, and results in the modernist nature-freedom ground motive. More specifically, this aspiration is based upon an unresolved secular antinomy, most visible in Kant's heroic yet unsuccessful attempts, in his third critique, to bridge the abyss between theoretical and practical reasons. On the one hand it is assumed that our world is governed by natural laws, with

underlying deterministic mechanisms, that give rise to regularities that scientific method can discover and that enable us to control reality (Kant's first critique). On the other hand it is assumed that man is free to do what he wants, which makes him a responsible being, as it is stated that without freedom there is no meaning in responsibility (Kant's second critique). However, what neither Kant's third critique, nor any other attempts, is able to answer is this: how is it possible to be a free man in a fully deterministic world? Clearly, Dooyeweerd's answer is that only God can control reality as *He is Reality*, which makes the Biblical ground-motive supreme, where God's Law governs all reality.

In this sense, I think that the bold ambitions allocated to 3IM are neither possible nor compatible with its theoretical underpinnings in Dooyeweerdian philosophy. I would rather suggest here an adjustment to 3IM's aspiration. Indeed, secular thinkers have also realized the impossibility of the master-reality aspiration. Two of the most prominent systems thinkers – C.W. Churchman and H.A. Simon – starting from very different meta-theoretical positions, respectively, and disagreeing on most issues (Ulrich, 1980) both arrive at the same position: that optimal solutions are not possible. Churchman (1968, 1971, 1979) displaces the optimal or comprehensive with the process of continuous and inclusive unfolding while Simon (e.g. 1956) goes from optimal to satisfying solutions; also a key message from the more recent so-called *complexity science* (e.g. Holland, 1988) is that complexity cannot be fully comprehended or mastered, at best the behavior of a complex system may be intelligible, not explainable. In a vein of thinking similar to that of Churchman and Simon, and also based upon Dooyeweerdian thinking as Verkerk's 3MI, S. Strijbos (2006) has suggested the *process of disclosure* as a means for making our experiences intelligible, yet recognizing that we can never fully understand complexities nor control them. In this sense I interpret a Dooyeweerdian notion of disclosure as being part of reality, rather than its master, interacting with our contexts, learning and responding to their conditions rather than conquering them; in a modernist language it may be paralleled with 'experimental learning'. Dooyeweerdian disclosure implies, as Strijbos articulates it, that we unconditionally start with a normative position, we cannot escape that, and we cannot be neutral. These assumed norms necessarily guide us in whatever design we undertake: this applies also to Verkerk. Therefore it is crucial to be critically self-reflective upon our own presuppositions. In this manner, I suggest that 3IM be further developed in line with Strijbos' proposed approach, and the following reflections will further motivate this suggestion.

3.2. *Inclusion*

Now I move these reflections to the three main precepts of 3IM, starting with 'Inclusion'. Verkerk tells us that it refers "*to an approach in which the interests of the different stakeholders are identified and included in the design process*". This draws upon the contemporary notion of stakeholder management (ref), which assumes that by identifying all key actors that hold a stake, or an interest, in a given situation or system, we may address these stakes or interests and thereby reach a proper solution to the challenge at hand, as the aspiration is to make the identified stakeholders' stakes satisfied in some not predefined sense. In this, Verkerk assumes that stakeholders may hold justified interests that ought to be met.

To start with, the very notion of inclusion as such is very welcome, as I see it, yet probably more challenging than ever before. Verkerk seems to draw heavily upon on Freeman's (Freeman, 1983, 1984; Evans & Freeman, 1987; Freeman et al 2004; Freeman et al 2010) stakeholder management approach, which in turn attempts to further operationalize the works of I.I. Mitroff and R. Mason (1982) and I.I. Mitroff (1983), all these based upon C.W. Churchman's (1968, 1979) ground breaking work in his notion of the 'systems approach'. Grounded in American pragmatism philosophy, particularly its epistemology, Churchman propagated for an inclusive process of seemingly never ending unfolding. He struggled particularly with the challenge of setting a system's boundaries, i.e. what and who should be included or not in the conception of a faced situation. In this, Churchman was careful to notice all the actors that are *affected by a system*. Unfortunately, the various operationalizations of Churchman's thinking, such as those within contemporary stakeholder management approaches, missed a central challenge, and committed the so-called *open system fallacy* (e.g. Ulrich, 1983: 299). The open systems fallacy refers to the mistake of regarding a social entity, such as a family or an organization, as a biological organism that has a system's border open for interactions with its environment. This means that the focus is set only on how a social system is influenced or affected by external conditions such as actors; this is so because biological systems do so. However all those actors not in a position to influence the situation of concern yet influenced by it, the so-called victims, are ignored in the contemporary stakeholder management approaches; this is so because an open biological system – such as a flower –also ignores those that it affects yet do not affect it. While the conventional stakeholder management approaches of the 1990's (Donaldson, 1995; Agle, et al, 1999) typically committed the open system fallacy (which well

manifests their utilitarian moral) the more recent trend of the so-called *Corporate Social Responsibility* (CSR) programs makes an attempt to cover the gap of the *affected not affecting* (e.g. Freeman & Velamuri, 2006) – of course the critics are quick to remark that the whole business of CSR is just a more sophisticated marketing tool aimed at influencing those that affect (e.g. customers) by creating an image that the organization cares about the victims (e.g. Siegel 2009).

When including the victims, however, stakeholder management offers a promise. Another student of Churchman, later his close colleague, R.L. Ackoff (e.g. 1981), articulated the need for inclusion very clearly in two terms: epistemological and moral. Epistemologically, stakeholders must be included as they have knowledge of the situation addressed, as it is assumed that knowledge is necessary, yet not sufficient, to plan for a proper dealing with a complex situation. Morally, stakeholder inclusion is a must in contemporary democratic and liberal societies to secure approval and commitment by those that the plans affects those that are planned for – we should thus avoid planning for others in sensitive matters, and ask the affected to plan for themselves (ibid.). In addition, Checkland's (Checkland & Scholes, 1990) unique systems approach, much influenced by Churchman's work, the Soft Systems Methodology proclaims, yet loosely, an inclusive process. However, it is without doubt one of Churchman's last students, W. Ulrich who was most successful in making a breakthrough in terms of methodological support guiding a process of inclusion, with his '*Critical Systems Heuristics*' (Ulrich, 1983, 1987; Ulrich & Reynolds, 2010). In this he provides guidance for the kind of actors to be included in the planning process, and also the kinds of questions that each actor is to address. As far as we know, this is the state of the art of stakeholder management, and we recommend that Verkerk further inform his 3MI.

However, stakeholder inclusion is only one side of the underlying challenge for all planning or design; the other is about how we decide what is right or wrong, whether a proposed plan or design, in Verkerk's terms, is right. Even if we succeed in a situation where all stakeholders are included on even terms, and they succeed in reaching a consensus or at least an accommodation with regard to the content of a design: how do we know that that is right? To be sure, Ulrich's Critical Systems Heuristics, heavily based on Habermas' notion of ideal speech situation, submits the question of right and wrong, to the outcome of a communication process of the affected, which is declared as a democratic solution. This quest for inter-subjectivity is probably the position that holds the

strongest explicit social contract in the western democracies, yet is by no means the only way of dealing with the moral question of right and wrong, as history shows – beside the fact that in challenging situations we often do not reach an accommodation, as shown by the Israel-Palestine conflict for example. Verkerk's probably most interesting contribution, in the context of 3IM, lies in how he suggests dealing with this question. He addressed it in terms of the '*Identity*' component in his model; it is thus now timely to move our attention to it.

3.3. *The Identity*

Verkerk states briefly that Identity of a system, or a situation where it is to be used, is about "*the specific character of the primary process of the user practice*". Clearly, this position does not submit itself to the now-popular inter-subjectivity or democratic notion where what-is-right-or-wrong equals the outcome of an ideal speech situation of those affected. Rather, 3MI holds that reality as such has some intrinsic norms that are beyond such a process of open communication of stakeholders, even though that process may be instrumental in identifying those inherent standards. Verkerk explains further that every entity has a qualifying function that expresses its inherent and dominating norms, which he bases upon Dooyeweerd's (1977, vol. III) notion of individuality structures, their aspects and the unique aspectual qualifying function of the entity. Verkerk illustrates this with the case of a smart grid for power supply, where he concludes that when designing such a system for supplying power to households it has to be qualified by social norms (i.e. social intercourse) as a household is qualified socially while when the smart grid is designed to supply companies with power it has to be qualified economically as a firm is qualified in such terms.

This proposal to assume the Dooyeweerdian notion of qualifying function as a guide for normativity of entities is clearly not without strong appeal, yet it has exposed several challenges. One is the fact that Dooyeweerdian philosophy is not necessarily accepted, even within philosophical contexts, being sometimes disregarded as obscure continental 'magic' (e.g. Chaplin, 2011; Friessen, 2009; Strauss, 2009; Wolterstorff, 1983); of course, this does not imply that Dooyeweerd's message is without relevance, rather that its message may be complicated or unacceptable. Secondly, the various debates about the clarity of the idea of aspects, what it is and is not, and the related ideas such as founding, leading and qualifying functions (e.g. Basden, 2007.) suggest that this proposal is either not well worked out conceptually or that it may address only part of the complexities of our reality. Several previous attempts at employing this kind of

thinking have shown conceptual challenges, for instance what if an artefact is designed for one kind of use and then is used successfully in a totally different manner (e.g. Bergvall-Kåreborn & Grahn, 1996).
While sympathizing with the issues mentioned above, and accepting this proposal of qualifying function as a representative for inherent norms, one may ask a number of challenging questions (e.g. Bergvall-Kåreborn & Grahn, 1996; Eriksson, 2001) such as: what is the nature of a planning or design process that can identify the qualifying function of an entity and its context? How can we be sure that we have identified the right function? Is the process of qualifying function identification not dependent upon the actors involved in the design? Does that mean that we always have to include all actor categories? And then, if we have succeeded in identifying a candidate for the right qualifying function, what does that mean for the design outcome, i.e. how should the designed entity be influenced by its qualifying function, if so, how and why? For instance, what is the qualifying function of a mobile phone? Is it communicative, social, analytical, or even historic?

Finally, the analytical philosopher would probably remark: if a home is defined in terms of a specific function, say a social function, there is no logical implication to makes us conclude that its smart grid should also follow these norms, as Verkerk proposes:
"*Consequently, the design of smart grids for households have to be disclosed by the values mutual support and living as a community, and the design of smart grids for industrial enterprises by an enterprise by values like customer satisfaction, profit and sustainability. "*

I regard the notion of inherent norms as the most interesting yet challenging part of Verkerk's proposal. It potentially offers a third way in the dualism between the postmodern relativism (or constructivist) position and the modernist metaphysical contract imposed by those in power, typically aiming to preserve their power-positions. The challenge here is to manifest the practical feasibility of this approach.

3.4. *Ideals*

We have now arrived at the third and final component of the 3I-model, the stipulation that the design process with its participating stakeholders ought to idealize the designed system or situation, which is assumed to be a direct implication of the value sets held by the designing stakeholders.

As with the proposed inclusion of stakeholders, the stipulation to idealize is by no means new. It is well known within systems thinking and emerged there when C.W. Churchman operationalized his teacher's philosophy; i.e. Singer's (1959) so-called *Teleological Experimentalism*, a dialect of American pragmatisms. This strongly epistemologically oriented argument observes that knowledge by necessity is an imperative assentation, e.g. 'this table is white', however this also is necessarily an ideal statement, Singer observes, as we may never know for sure, which means that we inherently operate with ideals when we assert or stipulate knowledge. Churchman developed this observation philosophically; however it was up to his two students, R.L. Ackoff and W. Ulrich to operationalize it, in the context of their respective systems methodology that offers a guide for the ideal-seeking design process. While both Ackoff and Ulrich succeeded well in utilizing the ideal-seeking mechanism it is probably Ackoff who offers the most elaborate characterization of the ideal-seeking design process, (something that is beyond the scope of this discussion).

Interestingly, Verkerk's proposal for ideal-seeking design is not at all based upon an epistemological argument but derived from Dooyeweerd's notion of religious ground motives, which detailed that all human beings are unconditionally creedal or religious beings, meaning that we all operate from some very fundamental beliefs and convictions. In this, Verkerk says that our value set guides what we believe is desired, which in turn may be further developed into ideals. In this sense we regard the two arguments – epistemological and religious – as complementary and supporting each other in promoting an ideal-seeking design process. Therefore, I am very positive to the idea of ideal-seeking designs that are not only motivated by epistemological challenges but also by humans' basic convictions. In this I believe that Verkerk may benefit from both Ackoff and Ulrich with regard to further operationalization of the specification for ideal-seeking design process. Secondly, and unlike the epistemologically grounded idealization, Verkerk would also need to suggest how to deal with situations when stakeholders are included with strongly contrasting ground motives – e.g. the biblical versus the humanist positions or more concretely, Israel versus Palestine. I wish to anticipate here that the *identity* of a situation, with its inherent norms, could potentially operate as a common denominator.

3.5 *Methodological Reflections*

Finally, I should like to make a brief reflection upon the actual procedure for the way in which 3IM appears to have been formulated or developed. We are

prevented from providing more comprehensive reflections as Verkerk's presentation of 3IM is very brief.

I am pleased to observe that Verkerk starts with real life concerns, rather than a purely theoretical focus, as the former may constitute a compass needle for the further development of his approach as well as a point of reference for investigating the feasibility of the proposed approach. I am also very pleased that 3IM seems to have been developed in a kind of action research setting, where concrete situations of engineering and development constitute the laboratory or workbench for the development of various 3IM-related proposals. In this sense, to be taken more seriously, 3MI would need to show its practical feasibility more openly, i.e. what concrete difference does it make to follow 3IM stipulations when designing complex systems? Currently we do not know whether there are any concrete benefits or if 3IM is a purely conceptual exercise. For this, I wish to recommend P. Checkland's (Checkland 1981; Checkland & Holwell 1998) now somewhat classical approach for the development of a methodology aimed to guide real life intervention. This is the so-called *Framework of Ideals*, to be tested on an *Area of Interest* by means of a *Methodology* (FMA-framework). Checkland was educated in the natural science methodology, and observed that we may not seek repeatability in the social context of action research; rather that we should provide a recoverable account that is transparent in terms of its process of formulation and test for its aimed feasibility (ibid.)

Finally, I wish to reflect upon the intellectual foundation assumed by 3MI. I sympathize with Verkerk's choice of Dooyeweerd's contribution as such a foundation. However, Verkerk needs to clearly justify his choice, particularly as various quarters hold that no successful operationalization of Dooyeweerd's contribution has succeeded so far. Secondly, it is clear that Verkerk assumes that the most general of all disciplines, philosophy, is capable of providing practical guidance for how to intervene in social affairs. Many would say that the various sciences are much more capable of providing us with such a detailed guidance, thus Verkerk needs to justify this position as well.

4. *Conclusions*

I am sympathetic toward Dr. M. Verkerk and his colleagues' overall attempt at formulating some conceptual guidelines for the design of complex situations, where contemporary technology is to be allocated into a social context. Such guidelines are much needed coexistence where we may harvest the benefits of technological advancement without exposure to their potential harms.

In my assessment of the proposed 3I-model, I have pointed out some of its challenges but also its promises, as I understand. One is its ambition to provide control of reality; this seems neither possible nor is it compatible with the theoretical underpinnings assumed by the model, an alternative is to seek a process of 'disclosure' as suggested by Strijbos (2006). Secondly, I am fully aligned with the promotion for an inclusion of stakeholders, yet I warn for the common open systems fallacy. Thirdly, I also wish to support the idea of idealization; particularly as it is founded in Verkerk's notion on creedal commitments rather than in epistemological elaborations. Next, the most interesting characteristic of the 3I-model, in my opinion, is its quest for the inherent normativity of entities and their contexts. I find this fully aligned with the Dooyeweerdian foundations assumed, and also with S. Strijbos' proposed disclosure that is also based upon Dooyeweerdian reading. This may potentially provide an alternative to the contemporary ideal communication and the modernist metaphysical commitments.

In all these opportunities I see that the proposed 3MI is in great need of explicit operationalization to do what is proposed in a design situation – this is indeed a core element of any methodology aimed to guide design (e.g. Checkland & Holwell, 1998). In this, I have suggested repeatedly that 3MI may benefit from the developments and learnings made over several decades by systems thinkers, within such themes as stakeholder inclusion (e.g. Ulrich, 1987) , idealization (e.g. Ackoff, 1981), and also the handling of pluralism (Checkland, 1981). Finally, the whole process of formulation and testing of the 3MI requires transparency of its recoverability and feasibility, instead of its current 'black magic' approach.

Again, I wish to both congratulate Verkerk and his team on their undertaking so far and also to urge them to strive to further develop their approach, which is probably still in its infancy…

NOTE

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IIDE Proceedings 2011- Re-Integrating Technology And Economy In Human Life And Society ~ Volume I ~ Contents & Preface

Information about the International Institute for Development and Ethics
Information about the Annual Working Conferences

Preface

Since 2009 a group of authors from South Africa and the Netherlands have been cooperating in a project on issues of (small) entrepreneurship and development. What follows is a selection of nine research papers that have been presented and discussed in local seminars organized by the International Institute for Development and Ethics(IIDE) at the University of the Free State, Bloemfontein, and/or at the 16th and 17th Annual Working Conferences of the IIDE. The first six papers, mainly authored by (South) African scholars contain an interesting variety of empirical studies, while the following three papers from Dutch researchers have a theoretical focus and a reflective character. This categorization of the papers in empirical studies and theoretical reflections is useful to introduce each of them briefly:

Empirical studies

Lindile L. Ndabeni, a Research Fellow at the Institute for Economic Research on Innovation (IERI) and an academic at Tshwane University of Technology (TUT), discusses in the first paper the potential of low- and medium-tech SME economy to stimulate endogenous growth through innovation. He argues that innovation policy is central to the success of the LMT economy as this will increase the innovation capacities of LMT enterprises. After introducing the national system of innovation as the conceptual framework of the chapter and a general description of low- and medium-tech SMEs, the paper focuses on forest-products as low-tech SMEs.

Sibonginkosi Mazibuko, a graduate student at the University of the Free State, provides a critical analysis of the economic opportunities and barriers found around the conservation area of the Royal Natal National Park in the northern Drakensberg. He argues that the park and the tourism industry present avenues for viable opportunities for the poor to engage in entrepreneurial practices at levels commensurate with their capital assets in order to reduce poverty and unemployment. The parks are a factor largely because they represent economic anchors in many tourism areas, as is the case with the Royal Natal National Park and the larger tourism industry.

Daan F. Toerien, a consultant in local economic development (LED) and research

associate of the Centre for Environmental Management of the University of the Free State, South Africa, seeks a satisfying explanation to the question 'why is it that unemployment remains so high in post-apartheid South Africa?' He demonstrates that ignorance and/or disregard of the importance of strategic positioning and the nature of the technology applied could result in a systemic inability to overcome the unemployment problems. A broad solution is offered for consideration in South Africa and elsewhere.

Lucius Botes, of the University of the Free State, looks at the intended and unintended consequences of the way small business development support (SBDS) is occurring in the Free State, one of South Africa's nine provinces. For that purpose he uses the sustainable livelihoods approach as an analytic tool. He argues that current frameworks focus too narrowly on the financial, physical and human capital of entrepreneurial livelihoods, neglecting the natural and social capitals. This may cause the establishment of businesses which are non-responsive (or at least not responsive enough) to the social and environmental challenges of our time.

Lochner Marais, Motshedisi Lephasha, Molefi Lenka, and Johan van Zyl, all affiliated with the University of the Free State, consider in their article five attempts towards business development during the post-apartheid era. Although these five cases are largely an arbitrary choice, what they have in common is that they probably belong to the currently most prominent business support programmes. The article examines the changes in these five specific business support programmes and attempts to determine what the crucial ethical questions in this respect are.

Aad van Tilburg, of Wageningen University in the Netherlands, and *Emma Kambewa*, of World Fish Center in Malawi, analyse how an improved interaction between value chain partners, notably at the extreme ends of international value chains, will benefit from a common understanding of ethical chain values. Their paper demonstrates that there are good reasons to assume that a common understanding and interpretation of chain values by actors in the value chain are essential for the welfare of all chain participants and notably the small-scale primary producers at the bottom of the pyramid.

Theoretical reflections

G*erben Nooteboom and Mario Rutte* of the University of Amsterdam examine

three leading figures at the turn of the millennium who proclaimed the end of poverty through the application of business principles: Hernando de Soto, Muhammad Yunus, and Jeffrey Sachs. They aim to unravel the implicit ideologies that underlie the optimistic, economistic and rather simplistic solutions that are claimed. For their purpose they use the concept of magic bullet that proclaim single solutions to complex problems.

Henk Jochemsen of Wageningen University in the Netherlands, in a reflection on the debate about the need for increased food production, aims to think through his critical stance in that debate. An extensive review of the literature about this debate is beyond the scope of his paper. The author focuses on the elaboration of a normative view on agricultural practice on the basis of arguments used in that debate and draws of philosophical insights that he has developed elsewhere. In order to indicate his position in the mentioned debate, Jochemsen investigates the implications of the developed normative model for different approaches in agrarian production.

Sytse Strijbos in conversation with *Darek Haftor* provides a broad outline of the research agenda of the IIDE that is focused on the role of 'technology' and 'economy' as the two major drivers of today's global world. Regarding the virtually autonomous development of 'technology' and 'economy' the main problem is how to reintegrate both into human life and society. After drawing a picture of the research of the past up to the present, the paper aims to think through a programmatic approach for the future. The latter is positioned against the backdrop of three contemporary streams of thought that all seek a way out of the problems of our age, especially the persistent problem of poverty.

As noted above, this volume has been produced in a North-South cooperation aiming to study issues of entrepreneurship and development. Given the broad exploratory nature of the project we are very proud of this preliminary result.

The editors
December 2011

IIDE Proceedings 2011 ~ Vol.I ~ Innovation Technology And The Challenges Of Low- And Medium-Tech SMEs: The Case Of Forest Products SMEs

Photo: impacttrust.org.za

Introduction
Low- and medium-tech (LMT) small and medium enterprises (SMEs) can be described as low research and development (R & D) performers. In this sector, innovation tends to occur but not on the basis of R & D results. By contrast, innovation in the sector is driven mainly by incremental product change rather than by the application or commercialisation of R & D. Nonetheless, technological upgrading in low- and medium-tech SMEs remains important as such firms can become competitive in the long run and therefore become a potential basis for further economic development. More significant are the large proportions of employment opportunities that are derived from the sector. Typically, the LMT sector deserves particular attention from both researchers and policy makers.

Indeed, the low- and medium-tech SME economy has the potential to stimulate endogenous growth through innovation. Policy attention should therefore focus on supporting and fostering innovation in the sector in order to ensure the greater probability of the survival of the enterprises, with employment opportunities as a positive consequence. More specifically, innovation policy remains central to the success of the LMT economy as this will increase the innovation capacities of LMT enterprises. The objective in this chapter is to explore the development

challenges of low- and medium-tech SMEs. The chapter as a whole is structured into four sections of material. The first section introduces the national system of innovation and provides the conceptual framework of the chapter. The second section describes the low- and medium-tech SMEs. The third strand of material focuses on forest-products and is aimed at enhancing our analysis of the LMT sector. The fourth section focuses on the technological challenges of experienced by the low- and medium-tech SME sector.

The National System of Innovation

This particular section introduces the national system of innovation as a conceptual framework in this chapter. The main reason for focusing on the national system of innovation has to do with the fact that most public policies influencing innovation processes or the economy as a whole are still designed and implemented at the national level. The importance of the national system of innovation has partly to do with the fact that such a focus captures the importance of the policy aspects of innovation. It also enables us to identify the boundaries of the system of innovation spatially, sectorally, and in terms of activities (Edquist, 2005). Typically, a sectoral innovation system has to do with a group of firms active in developing and making the sector's products and generating and utilising the sector's technologies. A stronger focus on activities increases our knowledge and capacity for explaining the processes of innovation. This may be through asking certain relevant questions, which include which activities of which organisations are important for the development, diffusion or use of specific innovations (Edquist, 2005). The section draws heavily on the works of Fagerberg, Mowery and Nelson (2005).

According to Edquist (2005), a "national system of innovation" refers to the network of institutions in the public and private sectors whose activities and interactions initiate, import and diffuse new technologies. The structure of production and the institutional set-up jointly define the system of innovation. The national innovation systems approach emphasises the importance of strong linkages among these various institutions in improving national innovative and competitive performance (Mowery and Sampat, 2005). Increased inter-institutional collaboration is a characteristic of modern innovation systems. It is implicit in this definition that firms seldom innovate in isolation. Interaction with customers, suppliers, competitors and various other private and public organisations is very important, and a systems perspective is useful in

understanding and analysing such interactions (Edquist, 2005).

The main components of systems of innovation are organisations and institutions. These organisations and institutions form the components of systems which are critical in the creation and commercialisation of knowledge (Edquist, 2005). Organisations are important in promoting the creation and dissemination of knowledge as the main sources of innovation (Edquist, 2005). However, and more importantly, the behaviour of organisations is further shaped by institutions such as laws, rules, norms, and routines that constitute incentives to and obstacles against innovation.

The systems of innovation approach places innovation and learning at the focal point. The emphasis on learning acknowledges that innovation is a matter of producing new knowledge or combining existing elements of knowledge in new ways (Edquist, 2005). In particular, the emphasis is on interactive learning. Interactive learning may influence product innovation which relates to new or better material goods and intangible services, while process innovations may be influenced with regards to new ways of producing goods and services. That is to say, the systems of innovation approach can encompass both product and process innovations and emphasises the role of institutions, since institutions influence innovation processes. Typically, the system has a function that has to do with performing to achieve something, such as the supply of resources. It must be possible, therefore, to identify the boundaries of the system, especially when the focus is on the activities in the system, activities being related to the creation, diffusion and exploitation of technological innovation within the system (Edquist, 2005).

For an innovation system to support economic growth, a number of functions have to be served, such as the supply of resources, competence building (which is the provision of education and training), the creation of human capital, the production and reproduction of skills, and individual learning. Learning that occurs in schools and universities and in firms leading to the creation of human capital and linkages between firms and universities are important in the performance of national systems of innovation (Edquist, 2005). More specifically, universities provide new knowledge and educate people. A well educated workforce is necessary for R&D, innovation processes, and competence building, as well as enhancing entrepreneurship sometimes through the use of knowledge to create new firms and intrapreneurship which leads to the diversification of existing firms.

Universities play an important role as sources of fundamental knowledge and occasionally of industrially-relevant technology in modern knowledge economies (Mowery and Sampat, 2005). This often happens where there exists a close link between universities and industrial innovation. Many of these initiatives seek to spur local economic development based on university research. This has often led to the reconceptualisation of universities as important institutional actors in national and regional systems of innovation (Mowery and Sampat, 2005). Typically, governments often seek to use universities as instruments of knowledge-based economic development and change. Further, governments have sought to increase the rate of the transfer of academic research advances to industry and to facilitate the application of these research advances by domestic firms as part of broader efforts to improve national economic performance (Mowery and Sampat, 2005). This implies that national systems of higher education can be a strategic asset if the links with industry are strengthened and the transfer of technology is enhanced and accelerated. The curriculum can also be strengthened through links between the academic research agenda and a better understanding of the needs of society. At the same time a better understanding of the influence of university research on industrial innovation may provide additional insight into the role of universities within the national innovation system. Such an understanding may also enhance research which is guided towards fruitful departures, thereby placing universities in the position of critical actors in national systems of innovation. Efforts to increase the national economic returns from public investments in universities' research have attempted to stimulate the creation of innovative firms (Mowery and Sampat, 2005). Indeed, in a competitive era in which success depends increasingly upon the ability to produce new or improved products and processes, knowledge constitutes the most important basis for innovation-based value creation (Asheim and Gertler, 2005). When everyone has access to knowledge, the creation of unique capabilities and products depends on the production and use of knowledge.

However, more attention needs to be given to the transformations occurring at universities, as there is a tendency to overstate the extent to which these activities are occurring throughout universities rather than in a few fields of academic research (Mowery and Sampat, 2005). An equally important point to note is that SMEs do not constitute a homogenous group. For example, while SMEs are frequently seen as a cause of hope in high-tech sectors, they are often

seen as a matter of despair in low-tech sectors (Tunzelmann and Acha, 2005). The case that recent technological developments have been slow to diffuse in SME sector has less to do with technological limits in SMEs than with organisational issues (Tunzelmann and Acha, 2005). This challenge points to the importance of innovation and technology for economic growth and the positive role that can be played by government policy for science and technology (Verspagen, 2005). More specifically, it points to what governments could do to promote the production, diffusion and use of scientific and technical knowledge in order to realise national objectives (Lundvall and Borras, 2005). This is often through the use of innovation policy to upgrade business activities in terms of the products and productivity, including the ability of firms to absorb and use advanced technologies. This emphasises the critical role of science policy in contributing to national economic growth. Indeed, the major objectives for innovation policy are economic growth and international competitiveness (Lundvall and Borras, 2005). Thus, the main focus is on the creation of economic wealth. Typically, a common concern in the era of innovation policy is how to coordinate policies affecting innovation (Lundvall and Borras, 2005). A further concern relates to how to design science policy in such a way that it is integrated with economic policy and makes a real impact on economic growth (Lundvall and Borras, 2005).

Apart from a limited number of contributions, the topics of innovation and the technological challenges facing entrepreneurs in low- and medium-tech economy remain research lacunae that warrant detailed examination. Indeed, very little has been written on the developmental and technological challenges facing entrepreneurs in the LMT sector of the forestry products economy. Our knowledge of the operating characteristics and technological development challenges of forest-based SMEs in developing countries including South Africa is best described as patchy. Accordingly, the objective in the following section is to provide a descriptive analysis of the LMT economy, which will be followed by a discussion of the forest products SME sector as part of the LMT economy.

A Description of Low- and Medium-Tech SMEs

The categorisation of SMEs into low-tech, medium-tech and high-tech is important both for researchers and for policy-makers. The categorisation is particularly important when relevant technology policies are designed. As Table 1 shows, SMEs can be categorised into high-tech firms, medium-tech firms and low-tech firms.

Technology Intensity	Industry
High-tech	Aerospace, Computers, Office machinery, Electronics-communications, Pharmaceuticals
Medium-high-tech	Scientific instruments, Motor vehicles, Electrical machinery, Chemicals,
Medium-low-tech	Rubber and plastic products, Shipbuilding, Fabricated metal products, Petroleum refining, Ferrous metals
Low-tech	Paper, Printing, Textile and clothing, Food, Beverages and tobacco, Wood products

Table 1: Classification of Industries by Technology Intensity
Source: Hatzichronoglou, 1997 in Commonwealth of Australia, 2008

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Source: Hatzichronoglou, 1997 in Commonwealth of Australia, 2008

The idea of classifying industries on the basis of technological intensity has a long and complex intellectual history. It draws on the ideas concerning such disparate issues as the history of industrialisation, the scientific-war effort of the Second World War, modern business organisation, and the scientific and technological conflicts of the Cold War (Commonwealth of Australia, 2008). In its most recent form, it rests on the statistical taxonomy of manufacturing industries developed in the mid-1980s at the Organisation for Economic Cooperation and Development (the OECD). The OECD discussed a range of ways in which the technology industries might be quantified including Research and Development (R & D) spend, patenting frequency, and the employment of highly skilled people (engineers and scientists). These indicators are strongly correlated with one another. Thus, a distinction is often made between industries in terms of R & D intensities only. Those such as information and communication technologies (ICT) or pharmaceuticals spending more than 4 percent of turnover on R & D are classified as high-technology, those spending between 1 percent and 4 percent of their turnover, such as vehicles or chemicals, are classified as medium-tech, and those spending less than 1 percent, such as textiles and food, are classified as low-tech industries (Commonwealth of Australia, 2008). This classification has been accepted among both academics and policy makers and has been used to distinguish between high-tech and low-tech industries and as a way of identifying knowledge-intensive industries. A firm would thus be considered as high-tech if one of its primary assets was the possession of advanced technological knowledge used to develop new products or processes (Cordes et al, 1999). Firms have been considered high-tech on the basis of the extent of the technology embodied in their products and production processes; the determination that certain types of firms produce disproportionately more innovative outputs than others; and their relative expenditure on innovative inputs such as scientific and technical workers

and R & D expenditures especially A good case can be made that firms which make regular use of new technologies to produce their goods or deliver their services should also be considered as part of the high-tech sector economy, in addition to firms that develop such technologies (Cordes et al, 1999). These firms are considered to be drivers of economic growth, key sites of innovation, and key bearers of the knowledge economy.

Low- and medium-tech industries relate inter alia to manufacturing, property, social and community services, fuels, food and beverages. All of these are low R & D sectors (Commonwealth of Australia, 2008). With the exception of the higher education sector, none of the major activities that make up the services sector are significant R & D performers. Further, all of them consistently innovate but normally do not do so on the basis of R & D results. In these sectors innovation is mainly driven by incremental product change rather than by the application or commercialisation of R & D. Technological upgrading is an important issue in these firms and requires attention to be paid to the linkages between industry and the knowledge infrastructure. This is due to the belief that such firms can be competitive in the long run and can become a potential basis for continued growth. As a large proportion of employment is derived from the LMT sector, this sector cannot be neglected in terms of research and policy attention. Further, even in industries that have relatively low levels of R & D or even no R & D at all, innovation can and does take place. In particular, the forest-products SME sector is an example of a low-tech economy that significantly contributes to poverty alleviation and employment creation.

Forest-Products as Low-Tech SMEs

Plantations have come to be an important part of South Africa's forestry policy, although they were not established on a large scale until the 1970s. The key types of forests are commercial pine plantations serving the pulp and paper industries; patches of indigenous forests; and large areas of woodlands (Ashley and Ntshona, 2002). Since 1994 there has been a number of national government initiatives to restructure the forest industry. Such initiatives include the privatisation of plantations, the development of certification for sustainable forest management, the community management of woodlots, and the promotion of small enterprises (Ashley and Ntshona,2002).

Indeed, there has been an increasing interest in the contribution that forest-products SMEs make to economic development. In particular, this interest has

arisen owing to the increased contribution of forest-products SMEs to rural employment and income generation, and their relative accessibility to the disadvantaged members of society, viz, poor households, women, and the landless (Beck and Nesmith, 2001). For example, more than 90 percent of the forest-products enterprises operate in rural areas, and more than half of the owners in the forest-products industry are women (Liedholm and Mead, 1999). Likewise, it is believed that the development and promotion of forest-based SMEs will lead to the greater participation of rural producers in economic development. Indeed, the need to promote small-scale forest-products enterprises utilising the indigenous raw materials is now on the development agenda of many developing countries including South Africa (FAO, 1987).

However, the structure of the forestry sub-sector has favoured the development of large plantations and as a result much of the timber trade is controlled by a few large enterprises (Ludidi, 2000). This situation has excluded many small-scale forest entrepreneurs from participating in and benefiting from the forestry sector. For example, in the Republic of South Africa 77 percent of plantations are owned by large companies (South Africa, 1996; 1997). These companies own both the forests and the processing plants, sometimes including the distribution systems and retailing outlets (South Africa, 1996).

Essentially, forest products are recognised for the value of the timber, building, poles, fuel-wood, medicines, and food (Ludidi, 2000). Accordingly, policies are increasingly being developed to promote viable enterprises which will contribute towards improving the well-being of those engaged in them (Theophile, 1996). That is to say, as a result of their belated discovery by policy makers, forest products SMEs are increasingly recognized as a key element in rural SME development policy. It has been observed that they feature prominently in people's lives in terms of social and economic benefits. In particular, forestry management policies aimed at meeting the local needs of rural inhabitants are increasingly viewed as a key element in increasing local involvement in forest-products development (Ludidi, 2000).

One of the more interesting regions for forestry development in South Africa is the Wild Coast region. The research undertaken by Clarke and Dickson (1996) shows that the former Transkei, which constitutes the largest part of the Wild Coast region, is one of the areas in the country with the potential to expand timber production. More specifically, the Wild Coast region has a history of forest utilisation, and the collection and use of forest resources continue to be a central

feature of everyday life. Small patches of indigenous forests of varying quality and composition are a key element of the rural landscape, as they have socio-economic and ecological resources. Together with the main forests, they have been supplying the resident communities with construction and fuel resources (Palmer et al, 2002). That is to say, local people make use of a variety of natural resources, albeit often in competition with the efforts by the formal economy to control the forests. The forests have played an important ecological role in providing a refuge for various animal and plant species and as the site of various soil and water conservation endeavours. Furthermore, forest products make a crucial contribution to the household economy and have profound cultural significance (Palmer et al, 2002). Wood is a key resource underpinning the local economy. Its uses are numerous, particularly in the construction of houses, kraals and fences, maize storage bins, plough handles, and sledge baskets. In addition, wood provides raw materials to a small community of crafters who manufacture smoking pipes and walking sticks, as well as being the main source of energy for domestic cooking requirements (Palmer et al, 2002). Besides wood, the forests also contain many plants that are of local medicinal value.

Forestry covers three percent of the surface area of the Wild Coast region, providing a valuable source of timber and medicinal plants. There are potentially 186 000 hectares of high-yield land, very little of which is being utilised and 100 000 hectares of which are owned by the government (Moonieya et al, 1997). The region's climate is suited for further afforestation with pines or eucalyptus. The scope exists also for the involvement of the local communities in its development, although most of these opportunities could easily be missed if the local communities were not helped to see and act upon such opportunities. It is worth noting that the changes in the forestry sector are expected to occur at the following levels: 1) the management of commercial forestry will shift from the state to the private sector, recognising that the private sector is better suited to the role of managing commercial forests; 2) new investment will be attracted through offering privatisation opportunities; 3) the fiscal burden of running loss-making operations will be reduced; 4) state efforts will focus on regulation and withdraw from production which could conflict with the regulatory role; 5) efficiency and effective competition in forestry will increase; 6) wider and more representative patterns of ownership will be enabled; 7) forestry resources in the former homelands and in the Republic of South Africa will be consolidated; 8) partnerships between the private sector and local people will be allowed, and; 9)

the land rights and land-use-rights of local communities will be recognised (Ashley and Ntshona, 2002).

These are changes from the previous situation, where the residents of the adjoining communities were kept out of the forests. In the National Forestry Act of 1997 the government introduced the sustainable management of forests through co-management agreements and sustained local access to forests. When privatisation has taken place in state plantations, there is an understanding that the adjoining communities will continue accessing firewood and their graves, and that lease-holders will adhere to these arrangements between government and the communities. Furthermore, the government will encourage private companies to enter into partnerships with local communities and with government as a facilitator in the process. In particular, the government is encouraging bidders to allocate 10 percent or more of their equity to communities adjoining the forest land. It is important to note that the ownership of the land does not pass to successful bidders but that land is leased on an indefinite lease with a 35-year minimum period and a 35-year notice period (Ashley and Ntshona, 2002). Downstream value-adding activities are expected to be of great significance in the forestry sub-sector. Forestry projects have been packaged and all of the activities in this regard are managed and driven by the Department of Environment and Water Affairs.

The land lease has emerged as a key instrument for reconciling different objectives. By leasing secure land-use rights rather than selling property rights, the Department of Environment and Water Affairs was able to proceed with the commercialisation of forestry resources despite the restriction on the government's selling off land that could compromise underlying rights or the future resolution of land claims. The land-lease option leaves the government with some regulatory powers, which it would not have over forestry on private land. Through making use of this option the government is able to protect the interests of the local communities, and if they decide to terminate the lease, the government is responsible for compensating the leaser. The rights of local residents to forest access and subsistence harvesting are maintained, as the lease must operate within the current legal and regulatory framework. The generation of socio-economic benefits is encouraged through the competitive process of allocating leases. The criteria for evaluating leases include socio-economic factors with the emphasis on commitments to outsourcing and training. In addition, the

leases give the commercial investor a secure, long-term stake. The emphasis is on giving the investor incentives for long-term management on the assumption that national and commercial interests can overlap, rather than on imposing layers of regulation and constraint. Thus Ashley and Ntshona (2002) argue that local people's rights are protected mainly because of their land rights and the constitutional restrictions on sale of land. The resulting system benefits residents if they win their land claims or the formal recognition of land rights, if forestry is the appropriate land-use in their eyes, and if the lease fee is worth the opportunity-cost of the land (Ashley and Ntshona, 2002).

There are a number of forestry initiatives under way in the Wild Coast region. These initiatives are led by the private sector (particularly SAPPI Forest Company and MONDI Forests), and are aimed at promoting greater community involvement in the forestry sector. For example, SAPPI's Project Grow is aimed at putting in place entrepreneurial opportunities for small-scale land owners and, in so doing, to create employment and wealth (SASDI, no date). Secondary objectives include providing the growers with firewood, fencing timber and hut poles, as well as preventing soil erosion. The development concept is one in which SAPPI assists farmers to establish woodlots on available land. Currently, there are 7000 farmers on the scheme, and the number continues to increase (SASDI, no date). Farmers receive free seedlings, technical advice and interest-free funding for the establishment and maintenance of their operations. The farmers are responsible for ensuring that the timber goes to SAPPI (SASDI, no date). SAPPI then pays the farmers market-related prices for their timber, out of which revenue loans and advance payments are repaid.

SAPPI's Community Forestry Scheme has been developed to assist rural communities to become involved in the commercial forestry industry. The concept envisages the private sector's assisting rural communities to transform unproductive lands into viable timber farms, which they will own (SASDI, no date). Through the scheme SAPPI undertakes to arrange funding, service the interest charges annually, provide the necessary training and extension services, share research expertise, and guarantee to purchase the timber at market-related prices, whilst the community in turn will undertake to make a specific portion of land available for the planting of trees and to conduct forestry activities thereon in an appropriate manner (SASDI, no date). The community will ensure that SAPPI acquires the produced timber. The potential benefit flows to the

community are free seedlings, employment and wages, interest-free funding for the establishment and operations of woodlots, annual cash advances, and the generation of profits after 8 years.

By contrast, the MONDI Community Forestry Joint Venture is based on the principle of the private-sector forestry industry's entering into a joint venture partnership with a local community (which owns a suitable portion of land with forestry potential) in order to grow timber (SASDI, no date). The input made by the community is the value of the land. Through the North East Cape Forestry Company (NECF) MONDI provides the funding for establishing and maintaining woodlots throughout the period until harvesting. About 70 percent of the funding is for the actual work done on the project, and a strong principle in this project is to ensure that people from the local community are employed (SASDI, no date). Potential benefit flows to the community include free seedlings, employment and wages, and profit sharing (based on equity input) after 16 years because of the longer time period required for the harvesting of pine plantations. The key responsibilities of the local community are to provide land and to safeguard the forests for the period prior to harvesting. The private sector is responsible for providing the management, technical expertise and capital.

There are similarities and differences between these two initiatives or models of forestry development. The key similarity is that both models concern themselves with community participation in the growing of the forests only, as opposed to considering opportunities to get community participation and particularly equity sharing across the wood cluster, i.e, in the processing industries (SASDI, no date). This being the case, it can be imagined that there is greater potential for profit-taking in the production process. A strategy in which the returns to the community partners can be improved so that the communities find it worthwhile to get into the forest industry and to safeguard forests for lengthy growth periods is to move away from the idea that communities should become "small timber growers" to acknowledging that certain communities have control of sizeable tracts of high-potential forestry land, and that they would like to participate across the spectrum in the wood cluster (SASDI, no date). The key differences between the SAPPI and MONDI models are the time period for profit taking (SAPPI is based on an 8-year cycle, and MONDI on a 16-year cycle), and that SAPPI makes interim cash advances on the crop, thus providing an improved interim cash flow to poorer communities. Both models could be improved,

however, by introducing a mix of short-, medium- and long-term cash flows back to the communities. The MONDI model is particularly weak in this respect. Its emphasis is placed on providing employment to relatively few members of the community for the bulk of the tree-growing period, and then providing a big share of the profit pay-out when the timber is harvested after 16 years. The SAPPI model is an improvement, in that the harvesting period is an 8-year cycle.

It is argued that the concept of community empowerment in the forestry industry is going to make limited progress if the forestry industry does not make a determined attempt to allow community access to the broader wood cluster as a whole (SASDI, no date). It is important, therefore, to enable communities to gain access to an equity stake across the wood cluster or by way of supporting SME activities or on the basis of community-private partnerships. Communities with control over suitable land for forestry development should be encouraged to consider developing such partnerships (SASDI, no date). As part of the bidding process, the private sector could be requested to include the previously disadvantaged communities in the wood sub-sector as a whole and could be further requested to put forward proposals determining the nature and extent of the local community's participation in the developments in terms of factors such as employment, SME development, and capacity building programmes.

The major weakness within the structures of the previously disadvantage communities is their dependence on outsiders for access to information, communication and managerial skills. Renewable resources such as forests and marine intertidal ecosystems are complex ecological entities and require careful and informed management to ensure that harvesting remains within sustainable limits and that biodiversity is not lost. Furthermore, infrastructural constraints have limited the commercial exploitation of forest products to those areas that exhibit good infrastructure. More particularly, in the Dwesa/ Cwebe area the cost of transport has deterred private enterprises from tapping into the large supplies of Boxwood and Sneezewood for which a market already exists. That is to say, the timber in the area is of great value if the means can be found to bring it to the market. Finally, a lack of entrepreneurial experience (amongst blacks) in this sector is a large obstacle to maximising the potential for locally-based growth (Ashley and Ntshona, 2002).

It is argued that more attention has been paid to community 'benefits' than to the community's 'voice', particularly that of women (Palmer et al, 2002). There is a

prevalence of unemployed males in the committees, in part because few women can find the time to take on leadership positions. Firewood collection is a gender-specific activity, with women and girls spending a significant amount of time collecting firewood. Men, particularly at Dwesa/ Cwebe area, rarely participate in firewood collection because there is little scope for its commercialisation (Palmer et al, 2002). By contrast, the collection of wood is a male-dominated activity. Building wood collection occurs during the winter months after the staple crop has been harvested. The months of August and September are generally devoted to the repair and extension of garden fences and are, therefore, associated with high levels of collection activity. Firewood collection is a regular chore that women have to incorporate with many other activities. Though gender conflicts have so far not arisen in the various policy processes under way, there is a need to ensure that women's representation increases in order to prevent possible conflict or neglect in the future (Palmer et al, 2002).

Policy Learning: Gender, Technology and SMME Development

The issue of the marginalisation of women is a topical issue in South Africa for both political and socio-economic reasons. It is believed that by overcoming the problem of women's marginalisation in the economy, the country could achieve the objectives of broadening participation in the mainstream economy. Further, it is believed that the establishment of women's enterprises would have the ability to reduce inequalities both in terms of gender and race. Consequently, women's economic empowerment is an integral part of the broader economic agenda of the government. For historical reasons relating to the disempowerment of women and their traditional roles in society, they tend to dominate the micro enterprises of the SMME economy. This is partly because they lack the access to resources which would enable them to start more profitable enterprises. The majority of them tend to operate out of the home and are concentrated in a relatively narrow range of activities such as beer brewing, knitting, dressmaking, crocheting, and retail trading. These enterprises generate the lowest returns because they operate on the fringes of the major economic sectors. That is to say, the marginalisation of women's enterprises in the general economy tends to mirror the marginalisation of women in society. Again, they tend to serve purely local and often very small markets (Ndabeni, 2005). The overall situation of women tends to be a result of women's unequal access to education, resources, training, information on markets and technologies, and access to sources of business finance.

Women in South Africa constitute the majority of the population. Typically, SMME growth and development strategy should therefore position them as core contributors and participants in the SMME economy. However, traditional gender bias largely excludes them. For example, they are largely excluded from recruitment and enterprise opportunities in the mining sector. Their participation could, however, be enhanced through expanding opportunities in the mining industry and thus developing women's entrepreneurial skills. In particular, competence building as well as knowledge and technology transfer could lead to improvements in women's enterprises and transformation of the sector.

Women's enterprises should be among those that contribute to the growth of the South African economy. However, their challenges relate to the need for their active engagement in the process of searching for and identifying suitable technologies for their enterprises. Women need technological solutions that can enable them to become creative and innovative when developing their business products. Science and technology, as well as innovation policy, are believed to be major mechanisms for increasing the competitiveness and economic value of women enterprises. In the light of this situation the government established a programme directed to that goal, namely Technology for Women in Business (TWIB). It is a national initiative of the Department of Trade and Industry (DTI) that started in 1998. It is managed by the DTI's Gender and Women Empowerment Unit and is implemented in partnership with the Council for Scientific and Industrial Research (CSIR) as its main technology partner. TWIB operates in partnership with the Department of Arts and Culture, the Department of Science and Technology, the Department of Minerals and Energy, the Department of Communications, and the DTI's Small Enterprise Development Agency (SEDA). Non-government organisations (NGOs), donors, and SMME advisory centres also participate in the initiative. However, apart from the DTI, only the Department of Minerals and Energy has been active in TWIB. Its contribution has been in the facilitation of the activities of TWIB in mining, oil and gas; in electricity and energy; and in jewellery.

In particular, TWIB promotes women's understanding and use of technology in industrial settings. The programme is aimed at contributing to the general improvement of the quality of women enterprises. However, one of the constraints relates to the large geographic spread and the great number of the sectors of women enterprises, as well as their different developmental stages. The

implementation of the programme from the top has its weaknesses, as it misses the regional and local variations. Thus the use of regional systems of innovation in the analysis of the programme could provide useful insights which could improve the whole innovation policy. Nevertheless, the programme is designed to help women entrepreneurs move from the sidelines of the economy to the mainstream economy and the focus is on all levels of business, from micro enterprises to medium enterprises. The main technology policy objectives of the initiative are to create awareness of the need for women in business to access technology and should be made aware of the benefits that technology can bring to assist them to grow their businesses. The programme's activities include identifying the technological needs of women entrepreneurs, developing linkages between women's enterprises and technology service providers, and exposing women to international trends in science and technology. The programme also gives annual awards to those women who manage to enhance their businesses by using more advanced technologies. That is to say, the awards are aimed at acknowledging, rewarding, and encouraging women to strive for even greater achievements. The winners of the awards become role models and a source of inspiration to young women entrepreneurs.

TWIB seeks to complement innovation policy by unlocking the constraints to enterprise innovation, growth and competitiveness in the local and global markets. Further, it accelerates the empowerment of women through promoting their access to technology and giving them the competences that would enable them to embrace innovative technologies. The overall mandate of TWIB is to accelerate women empowerment and women-owned enterprise development through the facilitation of access to applied science and technology information for business applications and systems, technical support, and access to technologies that provide relevant solutions towards unlocking the constraints in the way of enterprise innovation, growth, and local and global market competitiveness.

Indeed, TWIB's core objectives relate inter alia to identifying and profiling women-owned enterprises for possible access to technology, training and market opportunities; facilitating access to relevant technologies that could be exploited to increase effectiveness and eliminating inefficiencies in current operations; facilitating access to technology finance programmes; and facilitating access to competence-building and support in technology-related areas. TWIB's mandate

also extends to programmes that encourage and mainstream girls into engineering, science, entrepreneurship and technology by enhancing and facilitating knowledge flows relating to relevant and educational information, career opportunities, academic and extramural learning programmes. The focus areas emphasise the importance of education and knowledge transfer. They also imply the importance of developing the skills and expertise needed by women entrepreneurs in order that they may successfully participate in the innovation system, further diversify their products, and sustain their businesses.

TWIB's priority sectors are agriculture and agro-processing; construction; clothing and textiles; arts, crafts and tourism; mining, minerals and energy; and information and communication technology. Consequently, TWIB's activities include the identification, recognition and celebration of successful women-owned enterprises and giving their companies market exposure through exhibitions. Large companies that contribute to SMME technology support are also recognised. TWIB also aims to bridge the gap between procurement company requirements and SMME supplier efficiencies. TWIB is also expected to promote innovation, bridge the knowledge divide, and encourage the application of technological solutions by women in business (TWIB, undated).

In the case of the forestry sub-sector as a whole, the development of technology is a concern that has been noted particularly in the context of innovation and the improved quality of forest products. Some of the problems experienced by SME entrepreneurs relate to the lack of the availability of the tools and equipment appropriate to their production requirements. This situation exists partly due to the lack of the finance necessary for the acquisition of the necessary equipment, or the lack of sources from which the entrepreneurs could obtain the required equipment. These constraints account for the inferior tools and machines that are used by many forest-based SME entrepreneurs. Whereas commercial foresters have access to the latest scientific journals and trade magazines to help them keep up with the best technology, the often less literate rural SME entrepreneurs are forced to rely on informal methods of learning about new technology (Mavimbela, 1997). Opportunities for technological improvements exist in the process of subcontracting, whereby the large enterprises can mentor the emerging SMEs to become internationally competitive in the forest sub-sector. For example, subcontracted small-scale saw operators can be trained by large industrial timber companies in safety and felling techniques in order to improve

the quality of the logs (Mead and Grierson, 1998).

The FAO (1987) suggests a number of ways through which the technological capacity of forest-based small business entrepreneurs can be improved. First is the introduction of regional technology cooperation centres organised and coordinated by a regional organisation. Second, vocational training systems may include an attachment or an internship component in their programmes. The third is the adoption of a continuous consultancy approach to the problem of technological development. The fourth is the expansion of the industrial estates programmes in a modified form, in order to promote focal points for technological improvement (FAO, 1987). The fifth relates to improving the technology transfer process by enhancing cooperative linkages. Finally, appropriate import policies could enable the flow of technology from developed to the developing countries. The importing of machinery is an area, therefore, in which government policies may have a significant impact on the development of the sub-sector (Townson, 1995).

At a micro level, technological improvements can be made at two levels: 1) through collective action; and, 2) through improved individual performance (FAO, 1987). Collective action requires close collaboration among the forest-based SME entrepreneurs, for example through the creation of cooperatives or village associations of manufacturers or SME clusters. Their main activity could be cooperation in terms of machinery and equipment acquisition and the utilisation and exchange of technical advice or seeking to complement one another's production processes. In addition, the provision of mobile technical support units which would visit the clusters to assist with specific technical problems could be an important intervention. Further, cluster industry common facilities could be established whereby specific production equipment could be made accessible to the cluster as a whole. Overall, in accord with regional and local systems of innovation, the decentralisation of support services and facilities to SMEs could be a significant element of innovation and technology development. At the same time, creating the scope for the utilisation of small power-driven tools and equipment could improve product quality and reduce costs, though this might require simultaneous improvement in the access to electricity, which is normally available in SME clusters. That is to say, innovation and technological improvements could lead to the greater competitiveness of the sector as a whole.

Conclusion

The LMT sector continues to attract attention from both researchers and policy makers. This is due mainly to the importance of the sector, as a large number of employment opportunities is increasingly derived from the sector. Indeed, through innovation the low- and medium-tech SME economy has the potential to stimulate endogenous growth. However, innovation and technological upgrading in low- and medium-tech SMEs remains important, as such firms can become competitive in the long run and therefore become a potential basis for further economic development. Policy attention should, therefore, focus on supporting and fostering innovation in order to ensure a greater probability of survival, with an increment in employment becoming a positive consequence. Innovation and technology thus remain central to the success of the LMT economy.

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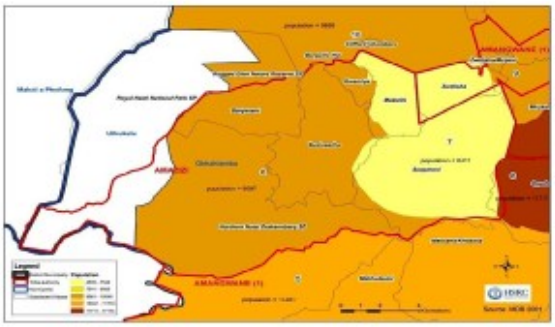

Figure 1: Map of AmaZizi - Source: Okhahlamba Local Municipality (OLM), Bergville

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Introduction and background to nature conservation in South Africa

This chapter provides a critical analysis of the economic opportunities and barriers found around the conservation area of the Royal Natal National Park in the northern Drakensberg. The chapter argues that the park and the tourism industry present avenues for viable opportunities for the poor to engage in entrepreneurial practices at levels commensurate with their capital assets in order to reduce poverty and unemployment. However, the extent to which the poor access certain assets depends on a number of factors such as their own knowledge and attitudes, as well as the role of the institutions that govern the daily conduct of people's lives.

Under the eras of colonialism and apartheid in South Africa, protected areas were largely proclaimed at the expense of the African populations that were forced to make way for them — sometimes with promises of economic benefits. This became the era of fences and fines against those forced out. The protected areas became the preserve of the privileged white minority to the exclusion of the black majority (Child 2004; White Paper 1994; Nkosi and Abbot 2002).

The history of conservation in South Africa is therefore characterised, among other things, by dispossession, exclusion, suppression, deprivation and marginalisation. Because of the racial character of past (conservation) policies, a foundation was laid for contestation, instead of beneficiation, between the parks and local communities, as well as for a sense of loss and poverty within those communities. Conservation areas became a "white man's space", as evidenced by the Kruger National Park (Honey 1999:340-344), despite the issuing of promises of economic benefits to the local communities, as the people were forcefully

removed from some of these areas (Ramutsindela 2004:108; Bell 1997:95). To this day in South Africa, communities adjacent to conservation areas are largely characterised by mass poverty, unemployment and dependence on natural resources. Besides the low-skills jobs available to them, the selling of handicrafts in the informal sector represents the main form of entrepreneurial participation in tourism – as is the case among the AmaZizi of the northern Drakensberg in KwaZulu-Natal, on whom this article is based.

In the democratic dispensation, the South African government (in the White Paper on the Development and Promotion of Tourism 1996) promotes tourism as one of the routes to job creation and sustainable development. The White Paper states that tourism in South Africa has the potential to generate R40 billion per year and create no less than two million jobs. Nature conservation authorities such as the KZN Ezemvelo Wildlife have also responded to the challenges through the introduction of a community levy where part of the income from the conservation areas is made available to the adjacent communities. Though the concept of the community levy is laudable, it may create unhealthy dependency on the conservation areas by the local communities. It is in this regard that alternatives such as entrepreneurship development are considered. But again, is it possible to identify specific sectors and means by which tourism benefits can be maximised in order to contribute to poverty reduction and unemployment, especially among the AmaZizi in the northern Drakensberg?
The constitutional requirement for South African municipalities to adopt a developmental character and the requirement to implement policies of local economic development, for example, create the necessary institutional framework to provide the poor with opportunities to engage in entrepreneurial activities without necessarily competing with established business.

Conservation areas have begun allowing local people opportunities for self-employment. Within the areas under the control of KZN Ezemvelo Wildlife, new developments have taken place lately. At the Didima Camp and Royal Natal National Park local people are allowed to operate a camp site and to provide security services, respectively. These efforts represent the positive impact that tourism can have on the lives of the people adjacent to conservation areas. In many other conservation areas, as a result of land restitution in particular, conservation areas have entered into partnerships with the formerly excluded black communities. Examples are found of partnerships between the Kruger

National Park and the Makuleke community, the Manyaleti Game Reserve and several adjacent communities, as well as the Madikwe Game Reserve and the local people. The partnerships include land leases and the sharing of revenue from activities such as hunting. The Spier Leisure resort in Stellenbosch has gone a step further to procure goods and services from the local people (Ashley and Hayom 2008:134).

Background to the area under study

Geographically, the area of AmaZizi is situated approximately 46 km from the rural town of Bergville in KwaZulu-Natal, South Africa.**[1]** The town, surrounded by white-owned commercial farms producing mostly maize, is situated on the banks of the Uthukela (Tugela) River, with its source inside the Royal Natal National Park (RNNP). AmaZizi lies at 28.44°S and 29.32°E adjacent to the beautiful Royal Natal National Park, southwest of Bergville and at the foot of the Drakensberg. The area falls under the Uthukela District and the Okhahlamba Local Municipality. The provincial map (Figure 1) shows the municipalities. The area of AmaZizi (AmaZizi Tribal Authority) falls under wards 6 and 7, as indicated in Figure 1. The area varies between 1 402m and 2 743m above sea level.

Ecologically – soil type, climate, altitude, terrain and vegetation – the study area shows great homogeneity. It is this kind of uniformity that enables one to speak of the northern Drakensberg. Generally speaking, the northern Drakensberg is characterised by a moderately restricted growing season as a result of its low temperatures and severe frost in winter. However, it has the potential for good yields over a range of adapted crops, despite the short growing period. Only 43.85% of the soil is suitable for commercial farming, as the soils are shallow and drainage is poor. In addition, 40.3% of the even and gently sloping areas are too rocky and 19.5% are too steep for farming. This leaves less than 5.2% as arable land. Crops that have a good potential to grow in this area are maize, potatoes, soya beans, cabbages and carrots. The vegetation consists primarily of grassland and very isolated areas of forests. It is a summer rainfall region, with an annual mean of 1 198mm rainfall and 13.7 ºC temperature.

Historically, the people of AmaZizi are an integral part of the broader South African society. As a people and also as a geographic area the AmaZizi have experienced both the good life and the harsh realities that all South Africans, especially Africans, have faced through the ages. The story of the AmaZizi is told by Pearse (1989:26-39) in his book entitled *Barrier of the spears: drama of the*

Drakensberg. These people once lived a life of peace and harmony among themselves and with their neighbours and nature. Their children were raised to value the virtues of personal cleanliness and respect, among other things. They led a very relaxed life, a fact which, as Pearse states, led to their own demise.

Since their settlement at the feet of the magnificent Ukhahlamba (Drakensberg) Mountains in the early 1200s (Pearse 1989:26), they have been the victims of various regimes. During the period of what is usually referred to as the *imfecane* in South African history, the people of AmaZizi suffered greatly as they fought and lost against other Nguni tribes (Pearse 1989:33). At one stage they were forced to live in caves, as their "enemies" destroyed their crops and livestock while trying to force them to surrender. This made it possible for them to live with the San people, who occupied the greater part of the Ukhahlamba mountains. They learnt to hunt and gather food just as the San people did, and intermarriages took place between the two tribes (Pearse 1989:27). When their enemies retreated, the AmaZizi returned to rebuild their shattered lives.

For a long time the AmaZizi lived under the Ukhahlamba Mountains, growing crops and grazing livestock without limits, except for the fact that they avoided encroaching on the land of their neighbours of AmaNgwane until the arrival of white people in the area. Once again, the newcomers were bent on occupying the land that the AmaZizi considered to be theirs. This came to symbolise what turned into decades of the political and economic subjugation of indigenous peoples, not only in the AmaZizi, but in South Africa in general.

It was in 1884 that the whole area of the northern Drakensberg was finally surveyed. Farms, state land and the so-called native reserves were demarcated. The Royal Natal National Park itself was proclaimed on 19 September 1916, covering, among other areas, the magnificent amphitheatre, Mount-Aux-Sources and The Glen. Today the Park covers an area of 7 400 ha. The name includes the word "royal" as the British royal family stayed there for a short time in 1947 (Pearse 1989:134,141).

Empowerment through participation in tourism

This article is not necessarily about setting up the poor in the business of providing tourism services as such. Instead it mainly considers other opportunities that may be regarded as externalities as well as auxiliary (referring to the indirect and induced employment opportunities discussed below) to the core functions of the tourism industry. This stance is adopted primarily because the argument here is that the poor should be able to participate in the economy as

entrepreneurs, using their own limited capital assets. In this case,

Type of participation	Characteristics	Example
Plantation	Paternalistic, exploitive, payment in kind	Material gain for the owners, racial and cultural exclusion
Manipulative and passive	Top-down decision making	Neo-colonial attitudes, expatriates, locals used for manual labour
Consultative	Outside control and decision making, locals consulted	Transnational Companies
Material incentive	Local resources, no stakeholding by locals	Employ locally, including some management posts
Functional	External major decisions, locals used to achieve goals	Small local hotels, technology, capital. Elites in the forefront
Interactive	Control and decisions by locals	Local ownership – hotels, taxis, maintenance
Self-mobilisation	Independent initiatives	Local strengths, local capital

Table 1 (adapted): The taxonomy of participation in tourism

Timothy (2004:151-152) explains that participation in tourism could range from the level of exploitive practices to a level of self-mobilisation. This article attempts to place the rural poor at the functional level through to the level of self-mobilisation as shown in Table 1.

Once a community takes an active, meaningful role in the local economy, it could gain strength and be empowered in many ways. Timothy (2004:152) shows that such empowerment comes in the forms of (1) economic benefits which accrue to the local communities, (2) psychological benefits as locals gain status, self-esteem and confidence through economic empowerment, (3) social cohesion attained as communities collaborate in their efforts to improve their condition, and (4) improved political participation as local people realise that they have a stake in the manner in which decisions are made and begin to lobby for policy changes. It is under such conditions that development can be said to be happening. In Sen's (1992) language, this could represent a situation where people begin to claim their freedoms.

Types of employment opportunities resulting from tourism
Cukier (2004:167) identifies various forms of employment opportunities that are usually generated by tourism:
– *Direct employment*. This refers to employment opportunities that are a direct result of tourism establishments such as working in hotels, restaurants and tour companies.
– *Indirect employment*. This kind of employment refers to economic activities that

are dependent on the existence of tourism such as construction, and various professions (e.g. doctors serving tourists).
– *Induced employment*. The existence of tourism can induce the emergence of other economic activities that would otherwise not have emerged. These activities would stem from spin-offs from tourism.

Direct employment is the most common benefit of tourism that accrues to local people as they obtain employment opportunities – permanent, temporary, seasonal and so on. This kind of employment tends to be very limited in terms of local people making decisions and participating as owners of local resources on which tourism depends. It can be identified as "plantation" in terms of Table 1. Tourism does not stand alone as an economic activity. It also depends on many other economic activities. It is by participating in those other economic activities that the poor can make an impact through small enterprise development – induced employment.

Why small and medium enterprises (SMEs)?
Small and medium enterprises can make significant contributions to the reduction of poverty and unemployment in the northern Drakensberg. According to Timothy (2004:157), small enterprises have improved benefits for the local populace. These benefits include increased control over local resources including land, reduced economic leakages, and reduced dependency on outsiders. In terms of Table 1, local people would participate interactively. Although tourism has always provided local communities with individual employment opportunities, these have been unsustainable and lacking in long-term benefits. There are specific advantages to establishing small enterprises which could be explained in the following manner (Hardwick, Khan and Langmead 1990:144-147; Hall and Jenkins 1995:47-60):

(a) Economies of scale
Enterprises have specific advantages over individuals trading in the informal sector along the roads for example. A firm is more likely to produce at higher levels than an individual. Because a firm's production activities are repetitive in many cases, labour gets to specialise and therefore to improve in terms of technical skills. Better skills translate into a better product/ service in the industry. The growth of small enterprises presents opportunities for employment opportunities and therefore could greatly strengthen South Africa's attempts at the reduction of poverty and unemployment. According to the Centre for

Development and Enterprise (CDE), no less than 45% of South Africa's workforce is employed in small businesses, and at the international level this figure rises to 60% (CDE 2004: 17).

(b) Access to capital

Unlike individuals in the informal sector, firms tend to have better chances of raising financial capital. In a situation such as rural South Africa, where ordinary people either have little or no wages, collateral becomes an issue when loans are to be made, as banks insist on collateral. It is therefore hoped that small businesses may be able to raise funding for their operations.

(c) Spreading market risks

A small enterprise stands a chance of diversifying its activities in various market segments within the tourism industry. There is nothing stopping a small business from engaging in agri-business and at the same time being involved in waste collection, for example. In that manner the risk of doing business is spread over different activities while the opportunities presented by both indirect and induced employment in the tourism industry are exploited.

(d) The power of organised business

Small enterprises stand a good chance of even influencing local policy-making if they are themselves organised into an interest group. For example, local governments in South Africa are struggling to make their local economic development plans functional in rural areas because the poor have very little to contribute. This factor contributes in turn to slow or prevent development in many rural areas. With reference to Table 1, local people stand a chance to achieve interactive participation or even to achieve self-mobilisation.

(e) Improved communications

Many rural areas are characterised by poor communication channels or a complete lack of communication channels such as road infrastructure and transport. The development of small business could lead to improving such conditions. Without proper communications – roads, transport – it is difficult to access markets. Improved communications would therefore play a vital role in adding economic value to the less developed areas in rural South Africa.

(f) Levelling the playing field

Mayoux (2003:4,7,8) points out that small enterprises help the rural poor in

particular to cope with the harsh economic environments which are the outcome of globalisation, structural adjustments and liberalisation, for instance. Because they are labour-intensive, SMEs increase the levels of employment and provide skills and experience that would otherwise be unavailable. Small enterprises could also help to reduce class and gender inequalities as marginalised groups are afforded monetary incomes.

The role of institutions in the fight against poverty

In explaining the attempts to reduce poverty and unemployment, institutions are identified as a determining factor. Institutions determine what assets are available to the people and how people access those capital assets. Such institutions are defined as the rules, norms and strategies which shape individual and organisational behaviour (High, Pelling and Nemes 2008:3); as rules or sets of rules that structure social interaction by shaping and constraining actors' behaviour (Helmke and Levitsky 2004:30); as the humanly devised constraints that shape human interaction (Boesen 2006:2); as laws, legislation and policies (DFID 2007); as systems of established and prevalent social rules that structure social interaction (Hodgson 2006:2); and as complexes of norms and behaviours that persist over time by serving some socially valued purposes (Narayan 2000:8). Bradstock (2005: 12) notes that 'while assets are a necessary condition for poverty reduction, they are not sufficient alone. A favourable institutional environment that allows households to use their assets to the greatest potential is also necessary.'

To this effect, organisations (structures) play a critical role in determining how and with what assets people pursue their livelihoods through the application of various forms of policies (institutions). Such institutions either have a facilitative role or become barriers to the realisation of goals by individuals and groups. In Sen's (1999) terminology, institutions and organisations could either represent "*unfreedoms*" that prohibit people from enhancing their capabilities and realising the lives that they value, or they could represent progress. Magubane (2007:21) observes that institutions and structures can also be used to "insure that those described as inferior and dispensable have less access to the resources of their countries …" The argument is that if institutions and structures can be successfully used to denigrate and impoverish a people, as happened in colonial and apartheid South Africa, it should not be difficult to use institutions to raise the people from the ashes and pit holes of poverty.

Today, South Africa is caught between two paradigms: that of neo-liberalism at the national level, and an interventionist paradigm at the local level. The country's macroeconomic strategy of GEAR, for example, suffered from relying on the trickle-down syndrome; it had very little effect if any poverty reduction. It espoused policies that favoured big business and was more concerned with export economies. At the municipal level, interventionist developmental policies were promoted irrespective of the fact that the majority of the municipalities are poor. On the other hand, the land policies in rural and urban areas vary greatly, to the disadvantage of rural people. These are fundamentals that the country must face if it wishes to address poverty and unemployment in a more meaningful manner. The two-paradigm approach makes it difficult to pursue any single policy holistically.

To this end, McGrath and Akoojee (2007:422-427) indicate that the shortcomings in GEAR were addressed by the introduction of the policies of Accelerated and Shared Growth Initiatives for South Africa and the Joint Initiative for Priority Skills Acquisition in 2005. These policies were aimed at halving unemployment and poverty, accelerating employment equity and improving the skills base as well as the performance of black economic empowerment policies. The GEAR policy itself had come about as a result of the shift from the Reconstruction and Development Programme (the RDP), which was more directed to grassroots development. It must be pointed out here that there is no formal statement of that paradigm shift. However, it is not difficult to realise that the RDP was not going to be pursued while at the same time the country had committed itself to neo-liberal policies which advocate reduced state spending. The RDP as a grassroots programme required very active state involvement in the economy. To this end, GEAR and the RDP represented two varying development paradigms that were not compatible with the developmental needs of a country like South Africa, which is still characterised by massive structural socioeconomic inequalities.

Although the South African economy shows signs of growth, unemployment and poverty levels continue to rise. Once again, the government has introduced a new macroeconomic policy called The New Growth Path (NGP) (Zuma 2011, State of the Nation Address). The policy is targeted at creating what the President referred to as decent jobs and improving the skills base of the country's population. Specific sectors that the NGP will focus on are the infrastructure, agriculture, mining, the green economy, manufacturing and tourism. In all of

these cases the objective will include taking advantage of the value chains involved. The extent to which the NGP will succeed remains to be seen.

With the national Constitution designating local municipalities as developmental local governments in South Africa, pro-poor tourism (PPT) stands a chance of greatly benefiting from proposed policies such as the Local Economic Development policy, Integrated Development Plans, expanded public works programmes, small, medium and micro enterprises, land policies, and broad-based black economic empowerment (Abrahams 2003; Bond and Khosa 1999:31-47). All of these policies are aimed at ensuring that the poor and the previously disadvantaged and marginalised groups in South Africa are at least afforded the opportunities to participate meaningfully in the country's economy. The policies are also intended to assist emerging businesses to grow to a competitive level. Having said this, we need to guard against assuming that a community (individually or as households) will automatically be able to engage in business simply because the policies are supportive. The capital assets that a community possesses will in the final analysis determine what outcomes the policies have. In this regard, state intervention becomes even more crucial, particularly at local level. Abrahams (2003:187-188) defines local economic development as 'the process of creating wealth through the organised mobilisation of human, physical, financial, capital and natural resources in locality … to produce higher standards of living, improve the quality of life, alleviate poverty, create more and better jobs, advance skills and build capacity for sustained development in the future.'

In the South African context, local governments are constitutionally entrusted with the task of ensuring that economic development happens in their areas. The Municipal Systems Act of 2000 requires that all municipalities in South Africa undertake an Integrated Development Plan (an IDP). The IDPs have legal status and supersede all other plans that guide development at local government level. Chapter Seven of the Constitution (Act 108 of 1996) stipulates the functions of the developmental local government. To this effect, the South African government adopted the policy of Local Economic Development (LED) as one of the key performance areas for municipalities and developed a framework for its implementation – the National Framework for LED in South Africa.

The Integrated Development Plan is conceptualised as a tool to assist municipalities to achieve their development mandates (DPLG 2000). In South

Africa, Integrated Development Planning is defined as 'a participatory approach to integrate economic, sectoral, spatial, social, institutional, environmental and fiscal strategies in order to support the optimal allocation of scarce resources between sectors and geographical areas and across the population in a manner that provides sustainable growth, equity and the empowerment of the poor and the marginalised.' (DPLG 2000:15)

The South African type of public works programme (EPWP) was introduced in 2004 after the Presidential State of the Nation Address by the former State President Thabo Mbeki in 2003. Public works programmes usually entail spending on infrastructure development. The South African experience is that this spending was designed in such a way that some government departments are required to make plans and implement them to help fight poverty and unemployment rather than having the Department of Public Works do this alone. The programme was expanded to cover at least four economic sectors, namely the infrastructure sector, the environment and culture sector, the social sector and the economic sector. The EPWP aims to contribute to redressing the legacy of apartheid by reducing inequalities, unemployment and the racially skewed skills system. It will do this by providing poor, unemployed women and youth in particular with short-term jobs (lasting no more than four months) where they will be trained in a variety of skills categories as well as in the formation of Small, Micro and Medium Enterprises , and also to further the aims and objectives of the Broad-Based Black Economic Empowerment (BBBEE) (Altman and Hemson 2007:8,10; McGrath and Akoojee 2007:422; McCord 2005:566,567).

In the BBBEE and EPWP South Africa has tools not only to address the structural problems of income poverty and the skills shortage but also to pursue small enterprise development by concentrating on expanding into small, medium and micro enterprises. The emphasis needs to shift from the provision of short-term jobs through the poverty relief projects within conservation areas to the establishment of small enterprises by local people. This is not to claim that the EPWP does not consider small enterprises. It does. But to many of the poor, the EPWP is simply a mechanism to provide the poor with short-term jobs.

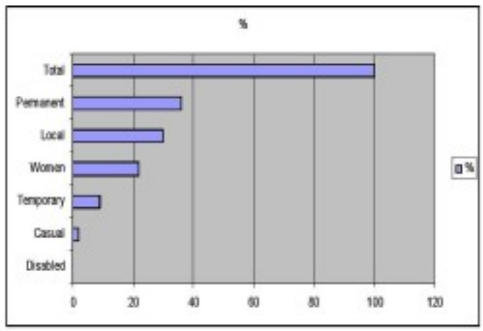

Figure 2: Employment status in the study area, northern Drakensberg (survey by the researcher)

Figure 2: Employment status in the study area, northern Drakensberg (survey by the researcher)

Economic potential in the northern Drakensberg

Figure 2 that represents people employed in all categories – permanent, women, temporary, casual and disabled – shows the employment status in the northern Drakensberg. Of the total number of employed people, 36% were employed on a permanent basis, only 30% were locals, 22% women, 9% were employed on temporary basis, 2% as casual workers, and none of the surveyed businesses employed disabled people.

As can be seen in Figure 2, the local tourism industry employed very few of the local people. This, as well as the fact that so few of them participated as entrepreneurs in tourism, explains the existence of mass poverty and unemployment in the area.

A survey conducted by the author in the northern Drakensberg pointed to positive attitudes towards the involvement of local people in tourism. As already stated above, the idea is not to get local people into the exercise of providing accommodation, for example. Their assets may not be adequate for such an exercise. Sanitation, for example, is extremely poor. Instead, the survey looked at those areas that local people could participate in using their existing capital assets. The survey therefore tells what and how the local people may meaningfully take part in tourism, using the assets at their disposal.

To begin with, the tourism industry in the northern Drakensberg indicated opportunities for the involvement of the adjacent community. 75% of the surveyed businesses indicated that they were in fact willing to outsource and or buy goods and services from the local people. At the same time 62.5% of the business respondents indicated that they had some of their activities outsourced though

not to local people. 12.5% thought that the local people lacked the necessary skills to do business. Business indicated that the services that could be outsourced (or purchased from) to local people were laundry services, some food supplies, tour guiding, construction, cleaning and transportation.

Local procurement: Opportunities for the local people in the tourism industry
Based on the results of the survey and the author's observations of the area, it emerged that the area of AmaZizi as well as the tourism industry possessed great potential for the local people to benefit as entrepreneurs. On the other hand, the four focus group interviews that were conducted with the people of AmaZizi never revealed their understanding of the fact that the tourism industry could present business opportunities for them besides wage employment. This point will become clearer when, below, we address barriers to successful entrepreneurship by members of the local community. Here, the idea is to entrepreneurially exploit the spin-offs of the tourism industry.

Waste collection
Waste, or rubbish, is not always a bad thing. Particularly in urban areas, many people derive their livelihoods from "scavenging" from dump sites and related areas. Municipalities have as a result developed policies to ensure that such people do this kind of work in some ordered and legal way by encouraging the establishment of SMMEs, and in some cases residents' cooperatives in solid waste disposal (Grierson and Brown 2000:297-300 and Snel 2000:305-308). In this regard, waste constitutes an externality that the tourism industry may have no use for. But for the purposes of pro-poor tourism, waste from the hospitality industry may provide sustainable sources of income for some of the rural poor. In the northern Drakensberg young children are a common sight at a dump site, where they scavenge for leftovers of whatever kind.

Waste from this industry can be used in different ways. Some of the ways include the recycling of items such as tins, bottles and paper. Local people could benefit from collecting these items and selling them to recycling companies or could start their own recycling businesses. Some of this waste could be useful in the making of handicrafts as well. Items such as spoilt foodstuffs and leftovers could be biodegraded into garden compost which could be used as fertiliser in the production of agricultural supplies that local people could produce. This is not participation in tourism in the sense of providing labour or a tourism service; rather it is meaningful participation by providing an auxiliary service to those who

provide core tourism services. In other words, it is exploitation of the tourism spin-offs based on one's own capital assets.

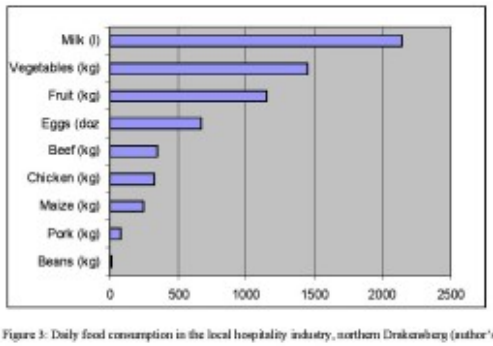

Figure 3: Daily food consumption in the local hospitality industry, northern Drakensberg (author's survey)

Figure 3: Daily food consumption in the local hospitality industry, northern Drakensberg (author's survey)

Agricultural supplies to the tourism industry

Figure 3 indicates the amounts of food consumed in the local hospitality industry on a daily basis. The figure serves to show only the size of the market that the local people could capture if they ventured into supplying the industry with agricultural produce. The items of produce shown were chosen particularly on the basis that the local people do already produce these in large quantities, mainly for own household consumption; but they also sell the surplus among themselves, although that is not the primary purpose of production. In the northern Drakensberg the tourism businesses buy the same supplies from Pietermaritzburg and Ladysmith, thus creating sizeable economic leakages from the area. In this case the people of AmaZizi could be using their land – a critical asset – to create profitable employment for themselves and substantially alleviate their poverty.

The data captured in Figure 3 were obtained from 53.8% of the hospitality houses in the northern Drakensberg. As can be seen from the above figure, milk, vegetables, fruit, eggs, beef and chicken have high levels of consumption and the local people have the potential to produce these foodstuffs and supply the industry. It was found during the research period that the local community could easily produce vegetables and eggs for the industry. Generally the northern Drakensberg is characterised by a moderately restricted growing season as a result of its low temperatures and severe frost in winter. Nevertheless, it has the

potential to produce good yields over a range of adapted crops – especially if techniques such as covered growing are considered. Crops that have a good potential to grow in this summer rainfall region, with an annual mean of 1 198 mm and 13.7 ºC of rainfall and temperature, are maize, potatoes, soybeans, cabbage and carrots (Cedara 2008). The local community is therefore at some advantage here. They can successfully participate in the tourism industry as suppliers of agricultural products.

Products such as eggs, bread, milk, handicrafts, entertainment, maize and vegetables could be easily obtainable from the local communities. However, 12.5% of business respondents pointed to the land tenure system as not lending itself to the productive use of resources – especially of the land which is communally owned and remains uncultivated at certain times of the year, mainly in winter. They therefore doubted that local communities could sustainably supply the tourism industry with agricultural products throughout the year. They also pointed out that there were specific conditions under which they could be willing to do business with these communities. The conditions were
– a good price
– a good quality
– a regular supply
– acceptable hygienic standards
– no involvement of labour unions
– no involvement of tribal authorities

While the conditions with regard to the quality of the goods and services supplied are related to good business practice, the last two conditions pose problems. Businesses in this region were very conservative. Some of their ideas reflected the thinking espoused by the apartheid regime such as the “communist threat”, which the hoteliers mentioned at every turn of the discussion in spite of the evidence that South Africa has a democratic Constitution that is very specific on issues. Trade unions were seen as being unreasonable when it came to wage negotiations. The hoteliers saw trade unions as being bad for business.

With regard to the tribal leadership, some hoteliers saw them as “a bunch of useless people that lived at the expense of others”. The poverty among local people was largely blamed on the tribal system, which failed to inculcate modern economic values. These respondents felt that local people could not do anything without first seeking approval from the local chief. They therefore felt that it

could be very difficult to do business in a situation where the other party could not make independent decisions. Here, Philp's (2009:19) observation that the South African government had failed to see traditional leaders as having blocked development in their areas through their control over land becomes clearer.

While agricultural production requires sizeable pieces of land, the production of chickens and eggs can take place on relatively limited space, including in the homesteads. Again, many local people kept fowls for their own consumption and only a few were involved in raising them for sale. Still, none were selling the product to the local tourism industry. Such efforts needed only to be expanded and markets created in order for the local people to realise their potential in the first economy.

Transport

Locally owned taxis are the only form of public transport available to the people of AmaZizi. The business community was of the view that the local people who owned the taxis could take an active role in transporting the tourists around the area – especially since local people are likely to know the places better than outsiders. Local people trained in tour guiding could for example give tourists the kind of information that may not in fact be written down anywhere. A taxi owner or driver could serve not only as a transporter but also as a tour guide. Some basic form of training in tour guiding may therefore be a great advantage to those interested in participating as entrepreneurs in the tourism industry.

One area of concern was the tendency of the black taxi industry to be involved in violent conflict. One respondent hotelier expressed very grave concern about that situation. He pointed out that although the taxi industry stood to benefit greatly from tourism, it was at the same time likely to impact negatively on the tourism industry, which could be severely affected by violence, thus forcing tourists to go to other places.

However, it is important to take into consideration the South African government's efforts to introduce measures aimed at stabilising the black taxi industry. Some of the measures include taxi recapitalisation whereby the industry is required to use better, roadworthy taxis to cater for people with different physical needs. The other measure is to get taxi drivers into some form of training to educate them on how to work with their customers. Having said this, it cannot be disputed that the South African taxi industry will need a lot of planning and organising before it can be a reliable partner in the tourism industry.

Laundry and cleaning

One accusation generally levelled against tourism is that local people are employed in low-paying menial jobs, and that women in particular tend to be given domestic work with few prospects of advancement. This kind of work is done by local people employed at a fixed wage. Cleaning, washing and ironing are some of the jobs that local women do as ways of earning their livelihood. The point here is that such tasks could easily be outsourced to these very women. Laundry and ironing could easily be undertaken by local residents, especially since the area of AmaZizi has electricity.

Construction and plumbing

In the northern Drakensberg, the tourism industry makes use of local labour in the construction of houses. This is one skill that is freely available among the local people. The problem is the manner in which that skill is utilised. The workers are generally employed by the establishments who own the construction development. The idea is that these builders should instead be independent contractors who provide a service to the industry. They should be able to sign contracts and employ their own labour. In that way, the economic scales would be more balanced.

Childminding

Many visitors to the tourism areas bring young children with them. Since children cannot always accompany their parents on tourist outings or activities, there may be an opportunity for local people to earn a livelihood as childminders while the parents enjoy themselves in the mountains, for example. Such a service could also lead to an increased number of visitors to the area as the visitors would find that bringing young children along would not limit their freedom to explore the area. Such a service could be easily included in the advertising brochures.

Value chain

It is not possible to specify all of the possible enterprises that could be formed in and around tourism in a particular locality. However, there is no doubt that all economic activities have a value chain consisting of the supply, production and distribution of goods or services. Each stage or level has other enterprises – technical support, technology, money – that operate in it and create its own value chain, in turn waiting to be exploited. That value chain alone could present important opportunities for the local people of AmaZizi.

Barriers to participation in the formal tourism economy

According to business principles, whoever wishes to engage in business should meet four basic requirements: financial capital (money), human capital (skill/knowledge/training), natural capital (land) and physical capital (machinery). So the question should be: do the people adjacent to conservation areas possess these requirements and or do they have access to the means to acquire such? The only way in which we can answer these questions is to inquire into their livelihoods by understanding their stocks of capital assets. However, as indicated earlier, the communities adjacent to conservation areas tend to be very poor. Among the AmaZizi, financial incomes consist largely of remittances and state social grants followed by earnings from natural resources (handicrafts and raw materials), levels of education are discouragingly low, and land is communally owned and therefore not responsive to individual needs. Many others possessed the land but lacked the financial muscle to make it productive. In these conditions, poverty can only be perpetual, leading to what Harrison (1987) calls the "sins of the fathers": because if parents have nothing today, their children cannot be expected to have anything tomorrow. The following are some of the key barriers that act against the rural poor as potential participants and entrepreneurs in the local tourism industry:

a. The land

The land tenure system in rural South Africa and in KwaZulu-Natal in particular represents a condition of development interest as it regulates access to the people's one fundamental capital asset, which is land. It is argued here that without secure land rights, the poor struggle to access other capital assets such as finance and suitable human resources in order to engage in enterprises for themselves.

The land tenure reform legislation most appropriate here comprises the Communal Land Rights Act (CLaRA) 11 of 2004 and the KwaZulu-Natal Ingonyama Trust Act (3 KZ) of 1994.**[2]** CLaRA governs all rural communally held lands under the traditional leaders and therefore part of the Ingonyama Trust Land. Significantly, land tenure reform in rural KwaZulu-Natal is approached differently from that in the rest of rural South Africa. "Rural KwaZulu-Natal" refers here to all of the areas that were part of the apartheid KwaZulu bantustan prior to 1994.

Chapter Nine of CLaRA makes special provisions for the KwaZulu-Natal rural areas. All such areas in KwaZulu-Natal are governed by the Ingonyama Trust*,

and they are therefore referred to as Ingonyama Trust Land. The study area of AmaZizi, as part of rural KwaZulu-Natal, is governed under the system of traditional leadership and falls under the same Ingonyama Trust Land. All of the Ingonyama land is administered through the KwaZulu-Natal Ingonyama Trust Act (3 KZ) of 1994. This law places all of the powers and authority of land administration in the hands of the Ingonyama. Individuals cannot sell the land since they have no title deeds to it. In fact, they cannot have title deeds to that land. Title deeds for the land are vested in the Ingonyama. This practice is entirely contradictory to the view expressed in the Rural Development Framework Act (1997:71), which states: 'Property rights are important for obtaining capital for investment in entrepreneurial activity – either through selling the asset or getting finance on the strength of it. For many decades, the African population was deprived of this economic opportunity as a result of discriminatory laws which prevented them from owning or leasing land or marketing produce. Among other things, this has stifled business related opportunities.'

Against a brief historical background to land administration in South Africa, the fact that the African populations were assigned the most marginal land areas puts the question of whether the rural people can really regard their land as an asset. The land is not only marginal in productivity but is also currently overpopulated. For example, taking the total area of 38 026 hectares of the AmaZizi land (Department of Agriculture and Environmental Affairs,KwaZulu-Natal 2008) and dividing this by the total population translates to 2.3 hectares of land per person.**[3]** Therefore no farming is feasible beyond the less than subsistence farming that currently characterises the area. The policy legacies of colonialism and apartheid left indelible marks on what could serve as a source for sustainable livelihoods. In terms of the sustainable livelihoods framework, the policies prevent the land from being viewed as an asset, leaving the people in a situation of permanent vulnerability as far as land as a form of capital is concerned.

It is illuminating to note here that many (42%) of the people spoken to indicated that there were specific barriers to their using the land productively. Chief among their reasons was that cultivating the land had become very expensive for them. Since many did not have oxen of their own, they had to hire and or buy everything to make the land productive – hire a tractor or oxen, buy fertilisers, and in many instances pay for labour, as many household members were away working as migrants in distant towns. As a result, many fields that could have been cultivated

lay fallow, and instead people ploughed only the homestead for green mealies, which last for only a very short period of time, after which the people have to start to buy food again.
Therefore, while recognising that large areas of rural land are marginal, there does exist some land among the AmaZizi that could be put to productive use for sustainable living. That land could be used to provide food and at the same time could provide employment if the people sold the produce to the local tourism industry. The fact that the land is communally owned and open to all after the crops are harvested from the fields is a serious barrier to productive agricultural practice among rural communities. South Africa needs to seriously review its land policies, particularly as these relate to ownership in rural areas. It is not acceptable that people starve while they have a resource at their disposal, but cannot use it because of some institution that has probably long outlived its usefulness. At the same time white people like the neighbours of the AmaZizi have title deeds to the land they occupy. They are able to secure loans and exploit the benefits of capitalism.

In such a situation, De Soto (2001:6) refers to capitalism as a "private club open only to a privileged few …". Even the municipalities can not deliver quality services to their people, because they have no revenue. Such revenue as there is comes from the taxes that local people pay (Elhiraika 2007:9) and property tax or rates as they are called in South Africa. But people in rural areas such as AmaZizi do not pay property taxes because they own no property. The land they occupy is managed through the system of neo-feudalism under chiefs. Neo-feudalism is hereby defined as a system of communal land ownership vested in traditional leadership (*amakhosi)* in a democratic non-feudal society (Mazibuko 2007:157). In such a society, ordinary individual members have no right to privately own the land; they cannot, by law, have title deeds or sell the land they live on. Embracing the concept of a developmental local government is a sign of good intentions on the part of the South African government. However, good intentions alone are not going to reduce poverty. Poverty reduction needs resources, and local governments in former apartheid bantustans lack the resources to deliver even basic services such as water and sanitation to their people because of the small size of the tax revenue base.

While all development is political, land reform is even more political than otherwise. It is not easy to say which solutions will work because there simply are

too many contestants as the stakes are high. Land represents, without exaggeration, the only fundamental capital asset that anybody can ever possess in whatever form. Consequently, in South Africa in particular, landlessness is the major characteristic of both mass poverty and inequality. Reforming the former bantustan land policies in favour of the poor will have very positive effects not only among the AmaZizi, but for all South Africa.

b. Finance

Rural South Africa is severely disadvantaged in terms of access to finance. The people finance their economic lives largely through social grants from the state, remittances and stockvels, which are social capital and insurance against hard times. Financial institutions are generally reluctant to invest in rural South Africa, and they are not likely to do so unless there are state policies in place that force them to do so while at the same time protecting their business interests. De Klerk (2008:14-20) and Zeller and Sharma (1998:15,16) cite some reasons why financial institutions are not willing to do business with rural people:

– Banks ask for collateral to guarantee loan repayments, but rural people do not own the land or have salaries to offer as collateral.

– In agriculture, profit margins are so low that farmers cannot afford the high interest rates charged by banks.

– The levels of agricultural productivity are very low.

– The communication infrastructure is poor, making it difficult to keep contact with clients.

– The rural clientele is vulnerable to high co-variant risk such as drought, storms, diseases and market failures.

Making rural financing part of development has many advantages beyond mere relief from poverty. Referring to the effects of rural financing in Bangladesh, Ghana and Peru, Zeller and Sharma (1998:17) found that '[L]oans from well-managed and innovative rural financial institutions, far from being one-shot income transfers, have helped poor families make permanent positive changes in the quality of their lives … [with] significant positive effects on school enrolment, asset holdings of households, and food consumption … [H]ousehold participation in credit markets has smoothed fluctuations in the weights of pre-school children. … Credit access contributes to increased expenditure on education. Credit access had a positive impact on women's empowerment and contraceptive use … [T]he combination of credit with education services in women's groups resulted in

higher off-farm income from micro enterprises, improved household food security, and improved the nutritional status of children.'

And in explaining poverty in the developing countries, De Soto (2001:1-2) noticed that '[T]he poor … hold their resources in defective forms … [W]hy can't they turn their assets into liquid capital that generates new wealth[?] …[M]oney presupposes property … [Y]ou need a property right before you can make money … [It] does not mean that people are not entrepreneurial but rather that they do not or cannot operate within the legal system … The challenge these countries face is not whether they should produce or receive more money but whether they can understand the legal institutions and summon the political will necessary to build a property system that is accessible to the poor.'

South African rural conditions are such that granting formal loans could mean throwing the poor into a "pool of debts" they may not be able ever to get out of. Hence the need for alternative forms of financing for small enterprises. The Netherlands Rural Finance Group of MicroNed (2008) identifies specific instruments (forms) of finance (including loans). The following instruments may be well suited to pro-poor tourism in South African rural conditions:
(i) *Grants*. Grants can be provided directly to small entrepreneurs or through their mentors, such as NGOs. The recipients of grants are not required to repay them. This form of financing is particularly suited to conditions of severe deprivation as in rural South Africa. The South African Department of Agriculture already gives out free food packages and seeds to rural communities. While contributing to poverty alleviation, that strategy is not sustainable and it encourages dependency on the part of the recipients. On the other hand, grants are not given forever. They are only to help people get started on something.
(ii) *Seed capital packages*. These packages come in the form of either grants or free loans to established small enterprises to help them get their footing in the market. Depending on the circumstances involved, the enterprise could be required to pay back the initial loan capital, or the money could be given as a grant, particularly to enterprises that are performing well, to serve as incentive. There should, however, be set applicable standards for performance that should be "rewarded" or "penalised".
(iii) *Guarantees*. Guarantees are provided by the funders of projects to enable small enterprise participants to access local funding. These funders act as guarantors on behalf of the small enterprise borrower who would otherwise not

qualify for a loan. The guarantees are used largely to help small enterprises gain an economic track record before they are "thrown into the deep [end]".
(iv) *Equity participation.* Under this scheme, the donors become co-owners of the business and are therefore provided with the much-needed financial muscle. The scheme also allows for the transfer of technology and skills to local entrepreneurs. The disadvantage of such a scheme could be that donors may have their own agenda(s) that may not necessarily be those of the supposed beneficiaries. Care is required to ensure that the local people do not get used to achieving motives other than their own. Through the application and monitoring of the performance of the pro-poor policies, the government should be able to ensure that its policies are adhered to.

Having pointed out the financial constraints and possibilities, President Zuma's reference, in his State of the Nation Address (2011), to the Post Office Bank as playing a significant role in rural financing should be noted. At the time of writing, details of how this will happen were not yet available. However, it may be a sign of better things to come for the rural populations of South Africa.

Are there other forms of financing which would not plunge the poor into debt? Looking at what has been sketched so far, other forms should be possible – without the accompanying debt. For example, the agricultural extension services of the local government in the Okhahlamba Municipality of which AmaZizi is a part could be made available to carry out soil testing towards improving productivity. The government could then provide seeds to get people started, as they already do in their efforts to ensure food security among poor communities. Having identified the crops that are likely to grow better, arrangements could then be made for the produce to be purchased by a willing local tourism industry. Agreements for upfront payments of certain minimum percentages of the agreed amounts with the industry participants could also be arranged. In this way, the poor would be enabled to enter into business without the burden of loans.

(c) Lack of knowledge
The South African White Paper on Tourism and Development points out that one of the factors hindering the poor from active meaningful participation in tourism is the lack of necessary knowledge. Timothy (2004:161) also points out that local residents do not know enough about tourism and that local officials fail to provide relevant information to local people. This study conducted among the AmaZizi found the same issues. People were willing to participate in tourism but they did

not know where to start. While other material issues prevent participation, they can be overcome if there is enough knowledge of what requires to be done and how. Poverty of information should therefore be seen as another major barrier to development initiatives.
In this case, the IDP and LED structures should play active roles. This article has shown that institutions are crucial to reducing poverty. Institutions determine the extent to which people can and or cannot use the capital assets at their disposal. It is therefore mandatory for these institutions to make information available to the poor as accessibly as possible so that they can then put that information to good use.

Conclusion
Small and medium enterprise development holds increased prospects for both poverty reduction and the tourism industry. People living adjacent to conservation areas have had very limited opportunities to venture into any major tourism activity. Therefore, with their limited assets, the poor should be able to successfully participate in that economy in indirect ways. Pro-poor tourism provides opportunities for participation and beneficiation among the poor. However, the poor need to be assisted in order for them to realise their potential. In this regard, care needs to be taken that relevant pro-poor policies are in place and that the barriers to their success are removed. The promotion of income generation activities such as small enterprises could go a long way to ensuring the creation of local opportunities such as sustainable employment, better incomes, food security, decreased economic leakages and improved attitudes towards conservation.

This article has shown that the parks are not the only area that the poor should focus on. The parks alone cannot satisfy the economic needs of all living in the adjacent areas. Many opportunities exist outside the parks. It is also important to point out that the parks are a factor largely because they represent economic anchors in many tourism areas, as is the case with the Royal Natal National Park and the larger tourism industry. Efforts to service that industry can be extended. Here local people like the AmaZizi will have expanded opportunities to engage meaningfully as entrepreneurs.

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NOTES:

[1] Amazizi refers to both the name of the area and its people

[2] *Ingonyama* means king/monarch, and in this particular instance the land belongs to the Zulu monarch, not to the individual citizens living on the land, who have only user rights.

[3] This is the total area that AmaZizi shares with other tribal areas of AmaNgwane, AmaHlubi, AmaNgwe, Mhlungwini and Embo.

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IIDE Proceedings 2011 ~ Vol.I ~ Ignorance And Disregard: The Banes Of Sustainable Job Creation In South Africa

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Introduction

One of the legacies of the apartheid years in South Africa is a persistently high unemployment rate. Since the 1970s South Africa's performance in dealing with persistent unemployment has been dismal (Du Toit and Koekemoer 2003: 49). This is so despite the fact that the ANC, South Africa's premier political party, committed itself in 2009 to five priorities – education, health, rural development, the fight against crime, and creating decent work (ANC Today 2009: 1).

Why does unemployment remain so high? Du Plessis and Smit (2007: 1) suggest South Africa experienced 'jobless' growth in the 1990s but Bhorat and Cassim (2004: 15) reject this contention. They state: 'The initial data here make it plain that the economy did not experience an absolute decline in employment. Put differently, applying the notion of "jobless growth" to characterise post-1995 employment trends is simply wrong. However, it is important to note that while we did not have jobless growth in this period, we have clearly had "poor employment growth". Whatever the precise cause, it is clear that employment did not increase in step with expectations, a huge problem given the high expectations in a *new* democratic South Africa.'

Many reasons have been cited for poor or jobless growth in South Africa (Du Plessis and Smit 2007: 13-5). These include labour market inflexibility and new labour legislation enacted after 1994 (Barker, 2003: 226-7; Burger and Woolard 2005: 3), a mismatch between the required skills levels, the labour force, and employment opportunities (Burger and Woolard 2005; 21-2; Pauw Oosthuizen and Van der Westhuizen 2008: 45-57), concerns over a perceived increase in the capital intensity of production (Bhorat and Oosthuizen 2006; 239-40; Pauw Oosthuizen and Van der Westhuizen 2008: 45-57), increased concentration in the manufacturing sector (Fedderke and Szalontai 2003: 1), sectoral changes in demand (Bhorat and Oosthuizen 2006: 246; Banerjee et al. 2006: 1-26) and the

impacts of the high prevalence of HIV/AIDS in South Africa (Arndt and Lewis 2000: 11; Ford, Lewis and Bates 2002: 10-17).
No one of these explanations relates to the dominant strategic position of South African enterprises or the overall nature of the technology used in the country. It is the contention of this chapter that these two issues are ignored (or perhaps even willfully disregarded) in South Africa, thereby contributing to an inability to understand the essential nature of the persistent unemployment problem. The aim of the chapter is, therefore, to demonstrate that ignorance and/or disregard of the importance of strategic positioning and the nature of the technology applied could result in a systemic inability to overcome the unemployment problems.

To develop the line of reasoning, two fundamental choices of entrepreneurs about strategic positioning and the nature of technology are firstly linked to some seminal thinking. Then a metaphor, namely the playing field, is used to further elucidate these issues. The South African economy is positioned in terms of the playing field and is followed by an analysis of what happens to commodity-producers and workers during globalisation. The South African agricultural industry is used to sketch the dynamics of this process. Reference is made to the 'Château Margaux paradox' before the South African wine industry is used as an example of a sustainable low-tech industry. The implications and consequences of the ignorance and disregard of strategic positioning and the nature of technology are then discussed in detail, including the conundrum of balancing the production of commodities, earning foreign exchange, and job creation/destruction. Finally a broad solution is offered for consideration in South Africa and elsewhere.

The fundamental choices of entrepreneurs
Two of the first fundamental choices faced by entrepreneurs wherever they may be and whatever they plan to do are what type(s) of products/services will be produced/delivered and how will competitiveness be achieved? Porter (1980: 35) identified three generic competitive strategies, namely cost leadership, differentiation and focus. Cost leadership is necessary to provide sustainable competitiveness when enterprises compete with commodity products or services. Differentiation is necessary when enterprises use the uniqueness of products and/or services to achieve competitiveness. Focus is a strategy that utilises a blend of cost leadership and differentiation to achieve competitiveness, i.e. it uses a combination of cost control and product/service uniqueness to serve specific niche markets.

Another fundamental choice of entrepreneurs is the nature of the technology that will be used to produce/deliver its products/services. Rifkin (1996: 59-197) examined the relentless march of technology and its negative impact on jobs. He presented the two faces of technology: one that benefits man by continuously broadening his abilities to perform tasks, and hence, to expand his business opportunities (and his ability to create new types of jobs), and the other, which through the use of smart machines and technologies in industry after industry results in the 'machines in, humans out' phenomenon, thus harming some people by making their jobs redundant.

Technologies range from those available to all to those available to only a few. The terms low technology (or low-tech, indicating wide availability) and high technology (or high-tech, indicating selective availability) are widely used to illustrate the two broad technology domains of the technology continuum. The kind of technology used in an enterprise, at least in its broad forms as explained above, is therefore also of strategic importance.

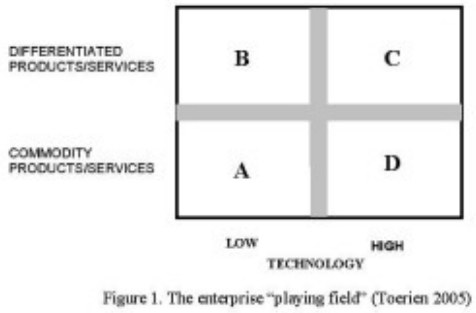

Figure 1. The enterprise "playing field" (Toerien 2005)

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The playing field metaphor

Athletes, administrators and sports lovers will immediately recognise a schematic outline of the playing field on which their favourite sport, be it soccer, rugby, golf, cricket, baseball, tennis, etc., is played. Each playing field creates an area within which a specific sport can be played; outside the boundaries no formal game is possible. The fans and players have knowledge of the rules of the game in relation to the playing field. There is an appreciation of strategies and tactics that could lead to success (a win) and ample scope for the creative development of new strategies.

Toerien (2005) argued that the nature of technology used and strategic positioning are the two important elements that define another playing field, namely the enterprise or competitive 'playing field' where new enterprises and all existing enterprises 'play'. It is bounded by two continuums relating on the one hand to technology and on the other to strategic (competitive) positioning. Lines on a soccer or rugby field help to define the positions of competitors and help in the choice of applicable strategies and tactics.
Similarly Toerien's division of the continuums of the enterprise playing field as shown in Figure 1 helps entrepreneurs and others to understand their strategic positioning and helps to identify applicable tactics (Toerien 2005).

In domain A entrepreneurs use low technology to compete with commodity products and/or services (Toerien 2005: 65-87). Cost leadership or at least cost parity is needed if the product is to be competitive. Competition in this domain can be fierce, often ending in 'a race to the bottom'. Entrepreneurs in this domain will in the face of fierce competition often resort to the use of higher technology (i.e. a shift to domain D) to remain competitive and profitable.

In domain B entrepreneurs use low technology to compete with differentiated products and/or services. Some enterprises in this domain are centuries old and yet are still very competitive; they have not succumbed to the 'race to the bottom'. This presents a paradox that needs to be resolved (see later). Competitiveness in this domain is primarily based on human talent and/or know-how and/or attractions (Toerien, 2005: 88-99). Additional success factors include brand building, quality and logistics management, marketing and product innovation (Toerien 2005: 88-99).

In domain C entrepreneurs use high-tech means to produce differentiated products and/or services. Product or service uniqueness confers competitiveness, and cutting-edge science and technology and the availability of risk capital are prime success factors (Toerien 2005: 100-8).

In domain D entrepreneurs use high-tech means to compete with commodity products and/or services. Cost leadership is needed to confer competitiveness on the domain's commodity products and/or services, and process automation and computerisation are strategies that are often used by entrepreneurs in this domain to achieve it (Toerien 2005: 109-116). Kennedy (1993: 93) remarked about automation: 'If that was already possible in the mid-1980s, what degree of

manufacturing efficiency might the robotics revolution achieve by 2020?' He foresaw the increased use of smart machines and the continuation of the 'machines in, humans out' phenomenon. The enterprise playing field differs from sport playing fields in one significant way; its borders are not totally fixed. New scientific discoveries and technological developments are continuously expanding the border of the high-tech end of the technology continuum. At the same time more and more technologies also become ubiquitous, thus expanding the low-tech end of the technology continuum. These dynamics must be taken into account.

	2009	2008	2007	2006	2005
Commodities	268.6	338.2	243.5	201.2	162.0
Non-agricultural commodities	252.9	323.3	234.4	192.2	153.2
Agricultural commodities	15.7	14.9	9.1	9.1	8.7
Differentiated goods	69.4	94.4	65.7	53.0	41.8
Coins	5.5	1.2	0.1	0.1	0.1
Motor vehicles and parts	38.9	58.3	35.8	31.6	26.5
Centrifuges	13.8	25.6	22.4	16.3	10.4
Wine	6.0	6.2	4.7	3.6	3.8
Furniture	5.1	3.0	2.6	1.5	1.0
Total	338.0	432.6	309.2	254.3	203.7

Table 1. Composition of the top 25 South African exports (R billion) in 2009 and their performance in the period 2005 to 2009 - *Source: Department of Trade and Industry (2010a)*

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Vehicles (and their parts), mining equipment, wine, manufactured coins and household furniture (the latter may also reflect items exported by emigrants from the country) were the only major export sectors with differentiated goods and their contribution to the top 25 exports ranged from 20 to 21 percent in the period 2005 to 2009.

South Africa's economy is focused mainly on commodities the export of which is its major source of foreign currency, and it clearly suffers from the 'resource curse' (Table 1). The country's economy is, therefore, predominantly positioned in domain A. There is a lesser presence in domains D and B whilst domain C remains weak (Toerien 2005: 124-131). The implications of this strategic positioning must be understood especially in terms of one of the dominant driving forces in the world, namely globalisation (Stiglitz 2003: ix-x).

The competitive playing field and globalisation

Joseph Stiglitz, winner of the Nobel Prize in economics, asked: 'Why has globalisation, a force that has brought so much good, become so controversial?' (Stiglitz 2003: 4). He added that a growing divide between haves and have-nots has left increasing numbers in the Third World in dire poverty. Clearly globalisation has not succeeded in reducing poverty and ensuring stability in developing countries. South Africa's persistent high unemployment rate is probably a further manifestation of the kind of problems addressed by Stiglitz (2003).

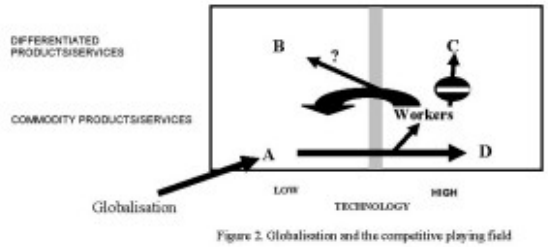

Figure 2. Globalisation and the competitive playing field

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The competitive playing field helps us to visualise these problems in a systemic manner (Figure 2). Globalisation forces competition onto domain A enterprises. To survive or maintain profitability they are forced to increase their productivity and turn to the use of higher technology, i.e. they move towards higher technology (domain D) as shown by Rifkin (1996), and shed workers in the process. There is little knowledge of and experience about how to migrate redundant workers to domain B and because of their lack of education and skills a move to domain C is not possible. Redundant workers are therefore usually (and only if jobs are available) again accommodated in domain A enterprises, thereby subjecting them once more to the same pressures.

Proof of the postulated dynamics

Commercial agriculture in South Africa is used to provide proof of the postulated dynamics of Figure 2. This industry is a major source of employment in the country, particularly in rural areas. Basic farming technologies have traditionally been available to most commercial farmers and they have operated mostly in domain A. Useful agricultural statistics since the1960s are available that allow one to test the hypothesis of a technology shift and a 'machines in and humans out' phenomenon

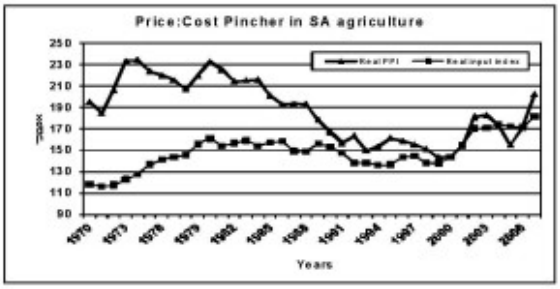

Figure 3. Price:cost pincher in South African agriculture (PPI = Producer Price Index)
Source: Dr Dirk Troskie, Western Cape Department of Agriculture

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in this industry. South African commercial agriculture has been caught in a price-cost pincher for decades (Troskie 2010) (Figure 3). The producer price index (the PPI) steadily declined until the end of the previous century and then increased somewhat. The real input index increased from 1971, then remained reasonably constant for two decades but has recently again accelerated. Continuous price pressures are exerted on commercial farmers. Their profits have been steadily eroded, creating a situation where one bad year could wipe out a farmer.

How have commercial farmers responded to these pressures? Two major strategies are evident: (i) seeking economies of scale, and, (ii) resorting to the increased use of technology. The Census of Commercial Agricultural of 2002 (Statistics South Africa, 2004) indicated that the number of commercial farming operations decreased from 57 980 in 1993 to 45 818 in 2002. This is a clear indication that many commercial farmers sought increased economies of scale in their operations; larger farmers bought out smaller farmers.

Figure 4. Food production efficiency in South Africa
Source: Dr Dirk Troskie, Western Cape Department of Agriculture and Tourism

The increased food productivity in South Africa (Troskie 2010) (Figure 4) suggests that farmers also resorted to higher technologies (more complex agricultural equipment, improved plant varieties, etc.) to increase yields and reduce their risks. Did these strategies lead to fewer workers in agriculture? Long-term statistics of the Department of Agriculture (2008) help to answer this question, especially when the data for three racial groups (Africans, whites and coloureds) are normalised to allow relative comparisons between the different groups (Figure 5). The number of Africans (the least educated and trained group) nearly halved (from about 1.4 million workers to about 700 000) between 1971 and 1996. The numbers of coloureds decreased by about 10% whilst the numbers of whites (the best educated group) increased by about 40 per cent. These results support a hypothesis that the introduction of sophisticated technologies (including smart machines) in agriculture did not only decrease the requirements for ordinary workers (mainly poorly-schooled African workers) but increased the need for knowledge workers (at the moment mainly white workers) required to operate and maintain more sophisticated equipment.

What happened to the workers made redundant in agriculture? Atkinson (2007) examined the plight of farm workers in arid South Africa. She suggested (Atkinson 2007: 111-31) that they moved to places with perceived economic prospects, e.g. to towns. Analyses done for the Hessequa Municipality (2005) using data from the 1996 and 2001 censuses in South Africa (there was unfortunately no census in 2006) also suggested that in this rural area, redundant

workers moved to the nearest towns, where there were mostly few, if any, employment opportunities. Farm worker migrations or evictions have also been observed in other rural areas in South Africa (e.g. Aliber, Greenberg, Kleinbooi, Lahiff and Tom 2006: 5).

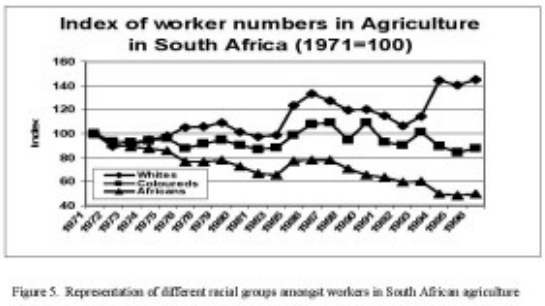

Figure 5. Representation of different racial groups amongst workers in South African agriculture

In addition to other factors described fully by Atkinson (2007), competitive pressures clearly forced commercial farmers to seek technological remedies and economies of scale to help maintain their profitability. In the process their operations shed workers. These redundant workers became a burden on the rest of society who now had to help carry their needs for housing and welfare. Increased socio-economic problems in urban centres were often also encountered.

The Château Margaux paradox and South Africa

The above dynamics have to be considered against a paradox, which I call the Château Margaux paradox. Thomas Jefferson, involved in drafting the American Constitution and later the President of the USA, loved drinking the wines of Château Margaux in the late 18th century (Gabler 1995: 117). More than two hundred years later Château Margaux is still one of France's premier wineries. General economic theories fail to explain the paradox of why wineries such as Château Margaux (and enterprises of some other low-tech industries) are able to escape the forces that lead to the commoditisation of products and services (the 'race to the bottom'). This prompts consideration of the South African wine industry.

Figure 6. Wine exports of South Africa – *Source: SAWIS (2010)*

Figure 6. Wine exports of South Africa – Source: SAWIS (2010)

Soon after the release of Nelson Mandela and the founding of the new democratic South Africa in 1994 this industry managed to improve its position drastically (Figure 6) (SAWIS, 2003: 1-6; Ponte and Ewert 2007: 17). By 2003, the industry provided more than 200 000 jobs throughout the economy, 103 800 of which were directly linked to the wine industry. Tourism in the wine industry was directly and indirectly responsible for more than 48 000 job opportunities. This was during the same time that the rest of the agricultural sector was facing extreme price pressures (Figure 2) and shedding jobs (Figure 5).

Why could the South African wine industry manage to do so well whilst the rest of the agricultural sector was under enormous price pressures? Does the wine industry have smarter farmers and entrepreneurs? Obviously not. Toerien (2005: 129-30) suggested that the answer must be sought in the nature of the industry, i.e. its ability to produce products based on talent and know-how and which can be clearly differentiated from those of competitors elsewhere. The talents of the industry's viticulturists and winemakers provide the essential human abilities to produce great wines from high-quality grapes. Like Château Margaux, South African wineries such as Nederburg (Brooke Simons 1992) have produced great wines for centuries and will probably continue to do so for centuries to come.

The prime lesson from the wine industry is clear. It is possible in the right circumstances to build low-tech sustainable enterprises and industries that provide significant and sustainable employment opportunities in countries such as South Africa. The challenge is to create these enterprises and industries.

Mobility on the enterprise playing field

Having examined the four broad competitive domains one needs to remember

that athletes move around their playing fields whilst competing and within the bounds of the rules of their game. On the playing field and within the 'rules of the game' they have the freedom to employ all kinds of strategies and tactics to achieve their goals. What is the situation as far as enterprises are concerned?

Enterprises can also change position as a result of changes in strategy or tactics. Porter (1980, 1985, 1990) provided numerous examples of strategies adopted by winning enterprises and countries, many of which required pursuing different competitive positions. Businesses move (or have to move) from one strategic position to another and this has all kinds of implications that should be considered in business or economic development strategies and policies (Toerien 2005: 157-179).

Ignorance and disregard in South Africa

If the 'players' (enterprises), 'administrators' (bureaucrats), 'referees' (politicians) and other 'interested and affected parties' (e.g. the labour unions) do not understand the competitive playing field and its concomitant 'rules of the game', chaos could follow and counter-productive decisions and strategies could be chosen and implemented. The realities, dangers and implications of such a situation are now discussed using South African agriculture as a proxy for all the commodity sectors of the country's economy. In this process some important questions are raised and significant issues opened up for debate.

The realities of commercial commodity agriculture

South African commercial agriculture produces mostly commodities that are in fierce competition globally with the products of commodity producers in other countries. This is true for large as well as small farming operations. These agricultural commodity producers have for decades, and will in the foreseeable future, be subject to a severe price/cost pincher, which forces them to seek the control and reduction of costs in order to remain viable. They will continue to seek economies of scale, use more sophisticated (and smart) equipment and exploit better plant varieties and stock breeds.

These practices will continue to make more low-level agricultural workers redundant. The workers will migrate to (mostly rural) urban centres where limited employment prospects abound, adding to the country's socio-economic problems. The use of smart machines in agriculture will require additional technically skilled operators.

Farmers will continue to pursue strategies designed to protect their profitability

without much concern for the secondary problems that their survival strategies create in nearby urban communities, e.g. the increased need for housing and the higher incidence of socio-economic problems.

There is not yet a mutually agreed social contract between farmers, farm workers, the government and close-by urban communities. Such a contract should ideally include: (i) clear government policies to ensure food security in South Africa, (ii) the extent to which commercial farmers will be helped by the government to remain competitive, (iii) the extent to which commercial farmers will train their workers not only in skills important to commercial farming but also in life skills and technical and other skills that would prepare them for non-agricultural careers should such a need arise, and (iv) the extent to which urban communities should become responsible for the secondary problems that stem from the survival strategies of local commercial farmers.

Some implications

Many ethical issues and implications of the above have not yet been examined in a coherent fashion. For instance, how should the balance between the maintenance of the competitiveness of industries such as mining and agriculture that earn much-needed foreign currency for the country be balanced with the need to maintain jobs for low-level workers? What social contracts are consciously or by implication operative in South Africa, and are these ethically justifiable?

The land redistribution (South African Government 2010) and Black Economic Empowerment (South African Government Information 2010) programmes of the South African government require the transfer of land from (largely experienced) white commercial farmers to (largely inexperienced) black farmers. Newly established small farmers who are positioned to produce (and compete with) commodity products will be subject to the same harsh competition faced by large-scale commercial farmers but will not have the means, i.e. the agricultural knowledge, the ability to acquire and use advanced technologies or to increase the scale of their operations that would enable them to adopt the survival strategies available to large commercial farmers. Will these farmers be doomed to failure?

Labour unions face a particularly tough challenge. The unions, particularly those operating under the banner of the Congress of South African Trade Unions (Cosatu), vehemently oppose any reduction of the number of general worker. How

will these unions accommodate holistic solutions whereby commercial farmers, the government, workers and communities could benefit simultaneously? The challenges for the government (politicians as well as bureaucrats) to deal with in this context are significant. Will the government be able to rise to the challenge?

Learning from the wine industry

The history of the South African wine industry (Figure 6) serves to illustrate that low-tech South African producers or providers of differentiated products and/or services can be globally competitive. Since 1994 the wine industry has been able to compete successfully in world markets at a time when large parts of the agricultural sector were subject to extreme competition. The wine industry even managed to export successfully during the serious worldwide economic problems of 2008 to 2010.

This industry is the prime example of a successful and sustainable low-tech industry in South Africa. Much can, therefore, be learnt from the successes of this industry, particularly that the talents of a few can provide sustainable livelihoods for many, e.g. in the Western Cape (Troskie 2010). An important part of the success of this industry is directly attributable to the fact that its products can be differentiated from those of its competitors and that it meets the success criteria of Toerien (2005: 157-169), which allow price premiums to be achieved in many cases. The question is how the lessons from this industry can be internalised in South Africa if there is little appreciation of the basic reasons for its successes?

Further critical lessons have been learnt in this industry. For instance, there are a number of examples of successful small farmer involvement in this industry. Can the learning from these successes be maximised, what policies would enhance the success rate, and what are the ethical implications of such policies?

The handling of South Africa's biggest conundrum

South Africa's biggest conundrum has the following dimensions. The country needs foreign exchange to fund the import of products and services that the country cannot supply by itself. Its exports to earn foreign exchange consist mostly of commodities (Table 1). Globalisation is forcing the commodity-based South African exporters to become more technology-intensive in order to remain price competitive. As a result, commodity-focused industries replace low-level workers with machines to achieve higher productivity. The redundant workers are mostly poorly skilled and schooled and have not been prepared for alternative careers.

Politicians and government officials seem to have little understanding of the role of technology and the need for strategic positioning to build successful competitive low-tech enterprises; hence their economic development strategies rarely include strategic technological and competitive considerations. A case in point is the Second Industrial Policy Action Plan (the so-called IPAP 2) released in 2010 (Department of Trade and Industry 2010b: 36-56). This report does not reflect on the need to have globally competitive and sustainable low-tech enterprises in South Africa but rather pre-selects a number of industries for special attention without real deliberation on how these industries will become globally competitive. The lack in the report of consideration of the nature of technologies and strategic positioning is disconcerting.

Simultaneously workers and their unions use political pressures to try to prevent worker redundancies, thereby endangering the survival of low-tech South African commodity-based enterprises and industries. Other commodity enterprises are under the same competitive pressures and have little, if any, capacity to take on redundant workers, or if they do, the same dynamics occur once again (Figure 2). Inevitably economic growth without employment growth (i.e. jobless growth) follows, a situation that has endured for decades.

Solutions

Where can solutions be found? The South African government has focused on an extended public works programme to provide large numbers of low-level workers with some income, and is in the process of strengthening it. This has done much to provide short-term work for the unemployed. However, in the long run such a programme does not provide a sustainable solution for the conundrum. A way has to be found to change the balance of the economy, a fact acknowledged in IPAP 2 (Department of Trade and Industry 2010b: 4-12).

A solution that is not being actively pursued at the moment presents itself, based on the ideas and results discussed here, but it requires a significant paradigm shift in the minds of many stakeholders and role-players. Firstly, the South African government (politicians as well as officials) and role-players such as trade unions have to accept that two primary challenges have to be handled simultaneously, namely the challenge to earn foreign exchange to pay for imports as well as the challenge to provide decent (sustainable) jobs for large numbers of unskilled and poorly schooled unemployed people or menial workers presently serving many of the commodity-based industries. Meeting the former challenge requires the continued use of better technology (moving enterprises from domain

A towards domain D, see Figure 2) but this will make workers redundant. These workers have limited training, cannot be shifted to domain C enterprises and often live in rural areas (particularly when shed by agriculture). To create decent work opportunities for these workers, employment opportunities must be created in domain B.
The success of the wine industry (and many other examples from rural South Africa, see Toerien 2005: 140-156) suggests that it is possible to achieve this in South Africa. However, many rural towns have performed poorly in starting new enterprises that add value to primary products, e g. towns in the semi-arid Karoo of South Africa (Toerien and Seaman 2010: 28). Therefore, significant government involvement in the design and implementation of appropriate support systems and programmes is a prerequisite.

Enterprises that are not tied down to particular locations are called footloose. They can set up more or less anywhere (Allen 1992: 306-7). The term creates the impression that these enterprises cannot be planned for; that they arise as if 'phoenixes from the ashes'. Toerien (2005: 157-170) contests this view and suggests that once the critical success factors are understood, the successful founding of such enterprises (and even clusters of such enterprises) becomes possible.
The enterprises of the 'Creative Economy' are often footloose. For instance there is no reason why Hollywood, the primary location in the world for the movie industry, should be located in southern California. Nor is there a specific reason why Kapula Candles, a world-class candle producer, should be located in Bredasdorp in the southern Cape of South Africa. The size of the 'Creative Economy', which Howkins (2007: 86-7) estimated at $US 2 709 billion (for 2005) or 6.1 percent of the global economy, is huge. Many regions and countries can benefit from the 'Creative Economy', including South Africa and its rural hinterland.

The challenge for the government is to promote both, benefiting simultaneously from commodity exports as well as from domain B enterprises. Assistance (financial and otherwise) should be given to commodity-focused enterprises to help them use modern technologies to maintain and improve their price competitiveness, even if it is fully well known that workers will be made redundant in the process. The government should therefore have programmes in place to foster domain B enterprises and industries by providing appropriate

support programmes (business support systems, tax incentives, training programmes, etc.) to establish such enterprises and to move workers made redundant in commodity-based industries there. Politicians and officials will have to design and implement the right policies to meet these challenges.

Many other role-players will also have to change their paradigms and behaviour. For instance, labour unions will have to limit their objections to technological improvements for commodity exporters and consequential worker redundancies, instead seeking opportunities to extend their memberships in domain B enterprises. Tertiary education institutions will have to institute programmes to provide sufficient numbers of talented professionals such as designers, artists, writers, chefs, wine makers, etc. as well as qualified public officials and business leaders trained in the skills needed to expand domain B enterprises, including the understanding of the principles of building clusters of such enterprises.
Lastly, the owners/shareholders of domain A enterprises that are assisted by government to improve their technologies in order to remain globally competitive would need to realise that this would not be 'freebie' assistance. In exchange these owners/shareholders would have to agree to equip their workers with skills in case they were made redundant. They would have to provide timely training in skills (technical skills, life skills, etc.) that would assist these workers to make the necessary transitions if needed.

The challenges for South Africa are immense but not impossible. With the necessary paradigm shifts and dedication, the bane of ignorance and disregard can be overcome.

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Preface

This Volume II, of the 2011 Proceedings of the 17th Annual Working Conference of the *International Institute for Development and Ethics*, offers seven research papers. Two common items of the first five papers is that they all address various issues of information and communication technology use and that their investigation rests upon Herman Dooyeweerd's theory of multiple aspects of reality. While the remaining two papers focus inter-human communication and time in human operation, respectively, all seven papers presented here deal with normative aspects of human affairs – in that sense all contributions here address human interest in our world. The papers are introduced shortly, as they appear, in the following.

Andrew Basden and Hawah Ahmad, with their *"Down-to-earth issues in (mandatory) IS use: Part I – Types of Issue"*, contribute to the discourse about those kinds of information systems that are mandatory in use. Their starting point is that "use is not serviceable as a guide to evaluating the quality of such use as experienced by stakeholders", as many "down-to-earth issues that are crucial to such quality are overlooked". They suggest that a new approach is required, which is based on what is *meaningful* in everyday life, that in turn may be comprehended by means of H. Dooyeweerd's notion of multiple modalities of

human existence. They conclude that such an approach "provides a philosophical underpinning for not only understanding the nature of down-to-earth issues, nor just showing their diversity, but also for explaining why the notion of DTE issues is needed for analysis and understanding of IS use."

Hawah Ahmad and Andrew Basden, in the *"Down-to-earth issues in (mandatory) IS use: Part II – Approach to understand multiple meaning and reveal hidden issues"*, build their argument on the previous paper here, and thereby further advances our understanding of mandatory use of information systems, by means of the application of H. Dooyeweerd's multimodal theory. The authors present a single case study that makes them derive the conclusion that it is actually possible to obtain an in depth understanding, and to reveal the hidden issues, of mandatory IS use. The authors conclude with the thesis that the here proposed approach is more practical for information system evaluation than other currently employed approaches for such an end.

Samira Atashi and Andrew Basden, in their *"Investigating the effects of IS development ethical issues on information systems units"*, address the debate of the likely effects of ethical issues of information system development on the consequent information systems as such. By means of theoretical study, the authors attempt to apply Dooyeweerd's theory of aspects or reality to ethical issues within the development of information systems and thereby explore and analyses their consequences of functioning regarding good and bad.

Subramanian Krishnan Harihara presents his work in progress in the *"Using Dooyweerd's Aspects to Enrich our Understanding of Idolatry*". This addresses the idolization of technology as a potential cause of the problems. In order to unearth such an idolization, various conceptual means have been advanced. The present contribution shows how H. Dooyeweerd's aspects of reality may be related to Goudzwaard's notion of idolatry; this gives rise to a discussion of how Dooyeweerd's aspects contribute to the understanding of idolatry as a cause of problems in e-government.

Sina Joneidy and Andrew Basden, in their *"How aspects of everyday life contribute to opening the 'black box' of Perceived Usefulness: Understanding the meaning of usefulness constructs"*, offer a meta-theoretical investigation of the seminal Technology Acceptance Model (TAM). For more than the past two decades, TAM has been developed by a diverse community of researches with the

intention to provide explanation of human computer usage behavior and also to predict individual adoption and use of new information and communication technologies to answer the question of: why do not people make use of ICT more? In its current state, the conceptualization of perceived usefulness, within the TAM, is somewhat of a black box; it utilizes some 70 various constructs for its measurement. These constructs are not coherently organized, rather overlapping and competing. In their aspiration to remedy this situation, a re-conceptualization is initiated here. The latter is advanced by means of an attempt to obtain elaborated understanding of each construct available with the help of H. Dooyeweerd's philosophy of everyday life. The authors suggest that "this can lead to a more penetrating understanding of IS usefulness."

Pieter Lems, in his *"The communication of water managers in participatory processes and their effect on the support for implementation: A case study in the Netherlands"* addresses the general dilemma of finding a balance between a policy and its social support, here in the case of water management in the Netherlands. By exploring the communication processes of water manager, the presented case study suggests that emphatic communication enables for a water manager to handle conflicting aims.

Fabian von Schéele and Darek Haftor, in their *"Cognitive Distortion Accounted Workload in Service Operations"*, highlight the generally overlooked phenomenon of the gap between the physical-time and the cognitive-time, which gives rise to the so-called cognitive time distortion. The latter is here elaborated rigorously and thereafter incorporated into the current understanding of an economic organization, i.e. a firm, with regard to the work time-load, both planned for and actually consumed by people within such organizations. A novel Workload Equation is introduced based upon the classic Total Profit Equation; the introduced equation may have a dramatic impact on our understanding and thus on the management of economic organizations, both their health and their financial performance.

This Volume represents a collection of papers that all provide thought provoking inquiries into urgent issues of our current world, so much dominated by technology and economic affairs. In his, the position assumed is of human interest as the primer one. All presented contributions here have a character of working papers that present research in progress. This in turn guarantees that the proposals put forward here are novel and not to be found elsewhere.

Editors: Christine G. van Burken & Darek M. Haftor

Information about the Annual Working Conferences

As an essential for the execution of its research, the IIDE sustains an international North-South network of senior academic researchers and their PhD students who are affiliated with different universities and institutions in the Netherlands, UK, Sweden, and South Africa**[i].**

One of its activities is the organisation of Annual Working Conferences (AWC) at the beautiful venue of the Emmaus Priorij at the river Vecht in Maarssen, near Utrecht, Netherlands. At these week-long events in April or May, participants present papers on their current research, receive comprehensive critical mentoring, and respond with ideas on how their research will be continued.

The formula of these AWC's has proved very successful in generating a flow of high quality papers, informing PhD research, and sharpening up ideas on a wide range of issues. The research of the past has resulted, amongst other things, in a series of Proceedings. The papers that are accepted have been sent out for a peer review. The title of each volume is borrowed from a Discussion paper which aims to foster the ongoing reflection at the AWC's on the mission of the IIDE and its broad research agenda.

NOTE

i. This North-South network, formerly named the Centre for Philosophy, Technology and Social systems (CPTS), operates since 2010 within the organisational framework of the IIDE.

The following Proceedings have been published since 2002:

(2002) *On the Connections Between Philosophy, Technology and Systems Sciences*, edited by Johannes D. Bijkerk, Jan van der Stoep, Sytse Strijbos. Amersfoort: CPTS. ISBN 90-807718-1-3.

(2003) *Towards a New Interdisciplinarity*, edited by Rob A. Nijhoff, Birgitta Bergvall-Kåreborn, Anita Mirijamdotter, Sytse Strijbos. Amersfoort: CPTS. ISBN 90-807718-2-1

(2004) *Interdisciplinarity and the Integration of Knowledge*, edited by Marc J. de Vries, Birgitta Bergvall-Kåreborn, Sytse Strijbos. Amersfoort: CPTS. ISBN 90-807718-3-X

(2005) *Towards Humane Leadership*, edited by Albert Helberg, Jan van der Stoep, Sytse Strijbos. Amersfoort: CPTS. ISBN-10: 90-807718-4-8 and ISBN-13: 978-90-807718-4-0

(2006) *Integrating Visions of Technology*, edited by Andrew Basden, Anita Mirijamdotter, Sytse Strijbos. Maarssen: CPTS. ISBN-10: 90-807718-5-6 and ISBN-13: 978-90-807718-5-7

(2007/2008) *The Problem of System Improvement*, edited by Andrew Basden, Darek Eriksson, Sytse Strijbos. Maarssen: CPTS. ISBN 978-90-807718-6-4

(2009) *Systems Thinking and Philosophy as Interdisciplinarity*, edited by Andrew Basden, Leenta Grobler, Darek Eriksson. Maarssen: CPTS. ISBN 978-90-807718-6-4

(2010). *Interdisciplinary Research for Practices of Social Change*, edited by Roelien Goede, Leenta Grobler, Darek Haftor. Maarssen: CPTS. ISBN 978-90-807718-8-8