



INTEGRATING INDIGENOUS KNOWLEDGE OF SELECTED RURAL AREAS OF THE NORTHERN CAPE INTO DEVELOPMENT PROJECT MANAGEMENT

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ABSTRACT

This study investigated the extent of the integration of indigenous knowledge of selected rural areas of the Northern Cape Province in South Africa into development project management.

South Africa has, in the past endeavoured to develop communities through projects, especially in rural areas but most of them have not done well. In addition, research has shown that high unemployment and poverty levels still seem to prevail. One of the reasons for this is the lack of involvement of communities and their knowledge of the whole project management process; thus, this study was conducted.

The objectives of this study were to determine the extent to which IKs of the Northern Cape are part of the development project management process; to conduct a literature review on the project management process and IK; to empirically identify key IKs of indigenous communities in the rural areas of the Northern Cape Province for inclusion in the management of development projects; to integrate identified IKs of indigenous communities in the rural parts of the Northern Cape Province into the management of development projects; and to develop guidelines for practically integrating IK into the management of development projects in rural areas.

A qualitative method of investigation was followed where a purposive sample of seven (7) rural development projects was drawn from all five municipal districts of the Northern Cape. These projects were identified as the main rural development projects from the sample frame provided by the Departments of Rural Development and Agriculture, and Economic Development, as well as the National Development Agency. This sample was therefore representative of rural development projects in the Northern Cape. Individual and focus group interviews were conducted with the members of the projects, as well as representatives from the departments mentioned above. The data obtained were then captured and analysed using *Atlas.ti*.

The findings revealed the minimal involvement of indigenous communities and the minimal use of indigenous knowledge in the management of development projects which, in some instances, resulted in project management challenges, such as financial mismanagement and indecisiveness. Even the sparse indigenous knowledge used, was on an *ad hoc* basis. Based on

the the empirical research, a framework for integrating IK into development projects is proposed to ensure that indigenous communities are actively involved, from the project's initiation phase to the closure of the project.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	
ABSTRACT	II
LIST OF FIGURES	VIII
LIST OF TABLES	IX
ACCRONYMS	X
CHAPTER 1: ORIENTATION TO THE STUDY	1
1.1 INTRODUCTION	1
1.2 PROBLEM STATEMENT	3
1.3 RESEARCH QUESTIONS	3
1.4 AIMS AND OBJECTIVES	4
1.4.1 Aim	4
1.4.2 Objectives	4
1.5 METHODOLOGY	4
1.5.1 Research design	5
1.5.2 Data collection	5
1.5.3 Data analysis	7
1.6 ETHICAL ISSUES PERTINENT TO THIS STUDY	8
1.6.1 Obtaining permission to do the research	8
1.6.2 Informed consent	8
1.7 DERMACATION OF THE STUDY	8
1.8 OUTLINE OF THE STUDY	9
1.9 SUMMARY	9
CHAPTER 2: RURAL DEVELOPMENT PROJECT MANAGEMENT IN PERSPECTIVE	10
2.1 INTRODUCTION	10
2.2 RURAL REALITIES OF SOUTH AFRICA	10
2.2.1 Poverty	11

2.2.2 Unemployment.....	13
2.3 FINDING SUSTAINABLE SOLUTIONS TO CHALLENGES OF RURAL PEOPLE.....	14
2.4 EMBEDDEDNESS OF RURAL DEVELOPMENT INTO PROJECT MANAGEMENT	16
2.4.1 Conceptualising development.....	17
2.4.2 Conceptualising rural development	19
2.4.3 Conceptualising project management.....	20
2.4.4 Typical steps in development project management.....	44
2.4.5 Stakeholders of a project.....	49
2.4.6 Key stakeholders for rural development projects.....	54
2.5 CRITERIA FOR A SUCCESSFUL PROJECT	56
2.6 FORMS OF PROJECT MANAGEMENT	59
2.6.1 Traditional project management.....	59
2.6.2 Agile project management.....	60
2.6.3 Extreme project management (EPM)	61
2.7 SUMMARY	63
CHAPTER 3: THE ROLE OF IK IN RURAL DEVELOPMENT PROJECT MANAGEMENT.....	64
3.1 INTRODUCTION	64
3.2 MEANING AND NATURE OF KNOWLEDGE	64
3.2.1 Tacit knowledge.....	65
3.2.2 Explicit knowledge	66
3.3 KNOWLEDGE MANAGEMENT	68
3.3.1 Defining indigenous knowledge.....	69
3.3.2 Forms of indigenous knowledge.....	70
3.4 IKS OF THE NORTHERN CAPE IN DEVELOPMENT PROJECT MANAGEMENT	76
3.4.1 Essential oils.....	78
3.4.2 Rooibos tea	79
3.4.3 Aquaculture	82
3.4.4 Land reform.....	83

3.5 INDIGENOUS PEOPLE/ COMMUNITIES AS KEY STAKEHOLDERS.....	84
3.6 INTEGRATING IK INTO RURAL DEVELOPMENT PROJECT MANAGEMENT	87
3.6.1 Parallel studies	87
3.6.2 Best practice cases.....	90
3.7 SUMMARY	93
CHAPTER 4: RESEARCH METHODOLOGY	94
4.1 INTRODUCTION	94
4.2 RESEARCH PARADIGM	94
4.3 THEORETICAL FRAMEWORK.....	95
4.3.1 Social constructivism.....	95
4.3.2 Pragmatism.....	97
4.3.3 Taylor’s scientific management theory.....	99
4.4 Choice of project management approach	100
4.5 Conceptual framework	101
4.6 RESEARCH DESIGN	103
4.5 DATA COLLECTION.....	104
4.5.1 Sampling	104
4.5.2 PROJECTS IN THE STUDY	104
4.5.3 Interviews	107
4.6 ETHICAL CONSIDERATIONS	108
4.7 DATA ANALYSIS.....	108
4.8 INTERPRETATION OF RESULTS.....	109
4.9 RELIABILITY	109
4.10 SUMMARY	110
CHAPTER 5: FINDINGS.....	111
5.1 INTRODUCTION	111
5.2 MAIN FINDINGS	111

5.2.1 Initiation	111
5.2.2 Planning	113
5.2.3 Execution	116
5.2.4 Control	120
5.2.5 Closure	122
5.3 SUMMARY	122
CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS.....	123
6.1 INTRODUCTION	123
6.2 THE PURPOSE OF THE STUDY REVISITED	123
6.3 CONCLUSIONS FROM THE LITERATURE	123
6.3.1 Conclusions from project management literature	124
6.3.2 Conclusions from indigenous knowledge literature	125
6.3.3 Conclusions from the empirical study.....	126
6.4 A FRAMEWORK FOR INTEGRATING IK INTO RURAL DEVELOPMENT PROJECTS.....	128
6.4.1 Participatory initiation	128
6.4.2 Participatory planning.....	129
6.4.3 Execution.....	130
6.4.4 Control.....	130
6.4.5 Closure.....	130
6.5 RECOMMENDATIONS.....	132
6.5.1 Policy/ practice level	132
6.5.2 Research level.....	133
6.6 LIMITATIONS OF THE STUDY	133
6.7 SUMMARY	133
LIST OF REFERENCES.....	134

LIST OF FIGURES

FIGURE 3.1 FRAMEWORK FOR LOCAL KNOWLEDGE ON DISASTER PREPAREDNESS	89
FIGURE 4.1 VYGOTSKY'S CONSTRUCTIVISM THEORY	97
FIGURE 4.2 DEWEY'S PRAGMATIC THEORY	99
FIG 4.2 CONCEPTUAL FRAMEWORK	103
FIGURE 5.1 PLANNING FOR COMMUNITY DEVELOPMENT PROJECTS	116
FIGURE 6.1- INTEGRATING IK IN DEVELOPMENT PROJECT MANAGEMENT	131

LIST OF TABLES

TABLE 1.1 DISTRIBUTION OF THE POPULATION BY POPULATION GROUP AND DISTRICT MUNICIPALITY-1996, 2001 AND 2011.....	6
TABLE 2.1 PROJECT MANAGEMENT PROCESS GROUP AND KNOWLEDGE AREA MAPPING	27
TABLE 3.1 CONVERTING TACIT AND EXPLICIT KNOWLEDGE	67
TABLE 4.1 DEMOGRAPHIC PROFILE OF SELECTED PROJECTS.....	106

ACCRONYMS

ACSA	Airports Company South Africa
APM	Agile Project Management
ASNAPP	Agribusiness in Sustainable Natural African Plant Products
CBOs	Community Based Organisations
CBPs	Community Based Programmes
CRA	Cultural Resource Auditing
CSIR	Council for Scientific and Industrial Research
GDP	Gross Domestic Product
DST	Department of science and technology
GEAR	Growth, Employment and Redistribution
ICS	International Council for Science
ICT	Information Communication Technology
IDPs	Integrated Development Plans
IFAD	International Fund for Agricultural Development
IKSP	Indigenous Knowledge Systems and Practices
ITK	Indigenous Technological Knowledge/ Indigenous Technical Knowledge
IK and IKS	Indigenous knowledge
IKS	Indigenous Knowledge System
IPMA	International Project Management Association
ISRDS	Integrated Sustainable Rural Development Strategy
KM	Knowledge Management
LK	Local Knowledge
MOST	Management of Social Transformations Programme
NDA	National Development Agency
NGO	Non-Governmental Organisation
NC	Northern Cape
NCEDA	Northern Cape Economic Development Agency
NUFFIC	Netherlands Organisation for International Co-operation
PM	Project Management
PMI	Project Management Institute
PMBOK	Project Management Body of Knowledge
PRA	Participatory Rural Appraisal
RDP	Reconstruction and Development Programme

RD	Rural Development
RDPM	Rural Development Project Management
SASI	South African San Institute
SECI	Socialisation, Externalisation, Combination and Internalisation
TK	Traditional Knowledge
UNDESA	United Nations Department of Social Affairs
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNEP	United Nations Environment Programme
UNFPA	United Nations Population Fund
WBS	Work BreakdownStructure

CHAPTER 1: ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Although many indigenous people find themselves surrounded by a fast-changing world, many are still rooted in traditional lifestyles that may create difficulties for development project management (Emery, 2000; Mutangah, 2015). As acknowledged by Hunt (2013), there is a growing demand from indigenous people to play more meaningful roles in making decisions about their own future on their own terms. Similarly, UNESCO (2012) observed a growing demand from local communities to be accorded the right to be heard in development project management. This study concerns the role that indigenous knowledge (IK and IKs for plural) can play in enhancing rural development project management, with specific focus on rural areas of the Northern Cape, South Africa.

Throughout South Africa but especially in rural areas, development projects are being carried out with the aim of uplifting the socio-economic conditions of communities. While this goes on, it is important not to forget that beneficiaries may have concerns about the impact that these projects have on them. Similarly, one can reasonably expect local communities to have a sense of self-identity that they may want to preserve. It is therefore important to heed Keene's (2007: 3) caution that "the ignorance of project planners of the historical, political, social, economic and environmental contexts of a given community" may be a cause of project failures. Thus, as Hiwasaki, Luna, Syamsidik and Shaw (2014: 13) state, genuine community ownership of problems and solutions may be more effective than externally derived solutions and programmes. It therefore becomes essential to actively involve local communities in the management of development projects. One way of achieving this is to identify and use IKs of local communities in the management of development projects in their communities.

In fact, IK has been receiving increasing attention from researchers, development agencies, governments, and international organisations for some time. For example, a former Director General of the Department of Science and Technology (DST), Dr Rob Adam once observed:

As policies and legislative frameworks are developed, the importance of both identifying and protecting indigenous knowledge is receiving increased attention from policy makers the world over. (DST: 2004)

Kuhnlein, Burlingame and Erasmus (2013: 282) also highlight that:

collaboration is required not only for success in the research process of documenting how these food systems can improve the health and well-being of Indigenous peoples, but also for understanding and creating successful policies that involve many actors and many dimensions.

Dr Otsile Ntsoane, a renowned South African exponent of IK highlights the need to value IK and to consider its integration into social intervention programmes. Ntsoane in Mazonde and Thomas (2007) advocates the reconstruction of the developmental agenda as part of engaging with the holders of indigenous knowledge and researchers, so that development should reflect the needs and desires of local people. In a similar manner, the then Minister of the DST, Mosibudi Mangena acknowledged IK as an important means of formulating more appropriate interventions in the drive to eradicate poverty (DST, 2004: 3). Aligned with this assertion, Kuhnlein *et al.* (2013) concede that the effects of globalisation on nutrition and health disparities are far-reaching and reduce exposure to traditional cultural knowledge and the biodiversity of local food resources.

Several international events also attest to the growing stature of IK as a policy issue. Some of the important events include:

- Declaration on the Rights of Indigenous Peoples adopted by the United Nations in 2007 (Department of International Law, 2010);
- The formation of a working group on indigenous populations by the UN in 1982 (Kuhnlein *et al.*, 2013);
- The observation of the international day of the world's indigenous people in 2012 (UNESCO, 2012); and
- The declaration of the two international decades on indigenous people from 1995 to 2015 (Kuhnlein *et al.*, 2013).

The indigenous people of the Northern Cape province of South Africa may have the potential to contribute a great deal of knowledge from which society can benefit. For example, local tribesmen of the Northern Cape province are known to have long been aware of and used the appetite suppressant qualities of a plant called *hoodia gordonii* to suppress their appetites during long hunting trips (Wong, 2014).

While many argue that integrating so-called *traditional or indigenous knowledge* and *scientific knowledge* could be problematic because of their apparent inherent differences, Hiwasaki *et al.* (2014) believe that it is still possible to combine the latest technology and science with IK to give communities and decision makers a sound knowledge base to enable them to make decisions about their environment.

1.2 PROBLEM STATEMENT

The recent escalation of community protests across South Africa regarding RDP housing, electrification, water, sanitation and other development projects are indicative of the problems in delivering on development projects (Mbazira, 2013). Innovative procedures are therefore required to ensure the successful development of project management (Onwuegbuzie, 2009) in South Africa.

At the same time, there is a growing concern that a failure to involve local communities and more specifically their knowledge systems in the management of development projects is detrimental to project success (Keene, 2007: 8). Like other rural parts of South Africa, there are currently a number of development projects taking place in the rural parts of the Northern Cape Province. Judging by the project failures that research has identified, assumptions may be made that these projects too may never yield their desired results.

Given the fact that rural parts of the Northern Cape Province have their own unique cultures with their embedded knowledge and skills that have found use in other human endeavours, it is therefore assumed that the same communities may provide useful IKS that can be integrated into the traditional project management process. Thus, this integrated and inclusive approach will enhance project success.

1.3 RESEARCH QUESTIONS

While failure of development projects is raised as a concern and the integration of indigenous knowledge of the rural areas in these projects may be seen as the solution, the process of integration is not clear. This study therefore responded to the following research questions:

1. To what extent are the indigenous people of the rural areas in the Northern Cape involved in development projects?
2. To what extent can IK enhance the success of development projects?

3. What are the shortcomings of integrating IK into the development project management process?
4. How can indigenous knowledge of rural areas of the Northern Cape Province be integrated into development project management?

1.4 AIMS AND OBJECTIVES

Aims and objectives help focus research. In this study the aim and objectives guiding the research are outlined.

1.4.1 Aim

This study was aimed at improving the success rate of rural development projects in the Northern Cape Province of South Africa by developing an integrated project management process that takes into account key IKs of rural communities in the province. It is hoped that the involvement of these communities through the recognition and use of their IKs will result in buy-in and cooperation from rural communities as beneficiaries of development projects hence eventual success of these projects.

1.4.2 Objectives

The specific objectives of this research were to:

1. To determine the extent to which the IKs of the Northern Cape are part of the development project management process;
2. To determine the extent to which IK can enhance the success of development projects;
3. To establish the shortcomings of integrating IK into the development project management process; and
4. To develop a framework for integrating IKs of indigenous communities in the rural parts of the Northern Cape Province into development project management.

1.5 METHODOLOGY

This section provides only a synopsis of the methodology followed as a more detailed discussion is undertaken in Chapter 4.

1.5.1 Research design

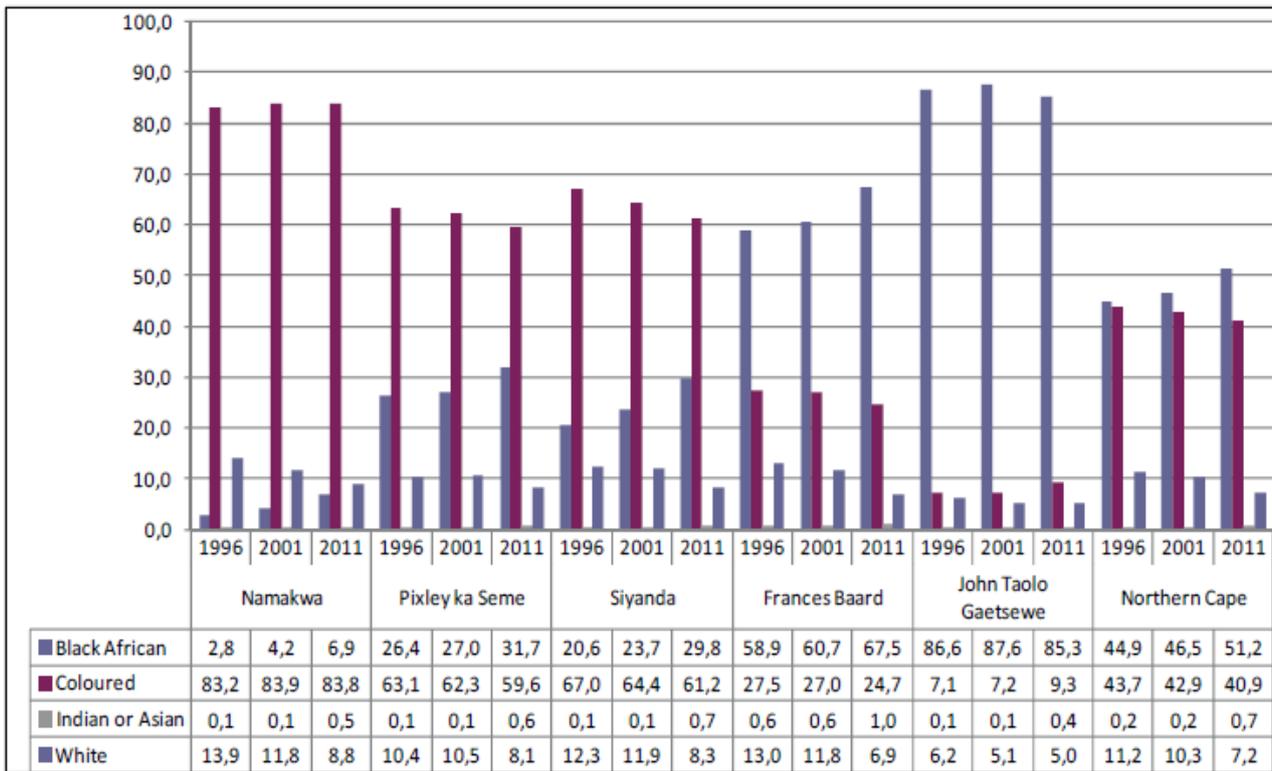
Owing to the nature of the study, the research was conducted using mostly qualitative methods in the data collection and analysis. This approach was followed because qualitative methods enable one to obtain rich information from respondents. Patton (2014: 13) argues that qualitative methods permit the evaluator to study selected issues in depth and detail. Welman, Kruger and Michell (2005: 188) are also of the view that qualitative studies can be used successfully in the description of groups, small communities, and organisations, whereas quantitative methods are more useful in hypothesis-testing research. As Marshall and Rossman (2011: 270) state, qualitative research is primarily used by people working in fields that demand practical answers to difficult questions. Since the focus of this study was on selected issues from specific communities, the qualitative approach as argued above was appropriate.

1.5.2 Data collection

1.5.2.1 Population and sampling

The population from which a sample was drawn consisted of two main indigenous groups in the rural parts of the Northern Cape Province, namely blacks and coloured people, together with the San people. The San people are counted under coloureds as explained in SouthAfrica.info (2007), that the Khoikhoi who are the indigenous people of the Northern Cape, have largely been absorbed into the coloured population. Whilst not disputing that whites are South Africans, they cannot be considered indigenous people as it is common knowledge that they came from Europe and regardless of any sentiments, cannot be counted as indigenous people to South Africa.

Table 1.1 Distribution of the population by population group and district municipality-1996, 2001 and 2011



Source: StatsSA (2011, 10).

According to Statistics South Africa (StatsSA) (2011: 10), more than half (51.2%) of the population of the Northern Cape Province is made of blacks followed by over one third (40.9%) being coloureds (see Table 1.1).

The coloured population constitute the majority in all the districts except in Frances Baard and John Taolo Gaitsewe. The black population group increased while the white population declined (StatsSA , 2011). This decline also adds more to the reason why whites were excluded, apart from having been involved in project management in the past. Asians also form a very small percentage of the population and were not included in the sample.

Unlike quantitative studies, the sample size and sampling method are not issues in qualitative research as the emphasis is more on how information rich a participant is. The researcher therefore purposefully selected participants from relevant stakeholders on the basis that they would provide useful information on project management or IK in the area. The stakeholder groups consisted of:

- Officials of the Local Economic Development offices;

- An official in the Department of Rural Development and Land Reform;
- An official in the Department of Agriculture;
- Leaders and members of development projects; and
- The local municipality administrator.

There are five district municipalities in the Northern Cape Province. Each of these districts is further divided into local municipalities. There are in all, 27 local municipalities (Statistics South Africa, 2007). The departments identified above assisted with the selection of projects such that all five districts were represented.

1.5.2.2 Interviewing

In order to assess the involvement of communities (in the form of their IK) in development projects, as well as key IKS to be integrated into development projects, focus group interviews were held with participants. Focus group interviews were conducted since indigenous people are a collective and usually share the same type of experience (Terblanche, Durrheim and Painter, 2006: 304). According to Gill, Stewart, Treasure and Chadwick (2008: 291) focus groups are used for generating information on collective views, and the meaning that is inherent in those views. They are also useful in generating a rich understanding of participants' experiences and beliefs. Constantinos, Bloch and Seale (2011: 182) highlight another advantage of an interview over a questionnaire; this being that the researcher can explain questions that the respondent has not understood and can ask for further elaboration on responses provided. Terblanche *et al.* (2006: 297) also maintains that interviews give an opportunity to get to know people intimately, so that they can be understood about how they think and feel. The interviews were based on open-ended questions to enable participants to elaborate on their answers.

1.5.3 Data analysis

The culminating activities of any research activity are the analysis, interpretation and presentation of findings. The challenge was how to make sense of the data collected. Another challenge was handling the expected large volume of data; in this case, due to qualitative data collection using open-ended questions that did not inhibit the amount of information participants provided.

Data analysis was done using Atlas-ti. Interview responses were analysed using cross-scale analysis. This method involved grouping together different respondents' answers to common questions or analysing different perspectives on central issues (Patton, 2014: 376). Central issues in the case of this study were phases of project management since questions were focused on these.

1.6 ETHICAL ISSUES PERTINENT TO THIS STUDY

Although there are many ethical issues to be addressed in research in general, in this study, with key ethical issues, permission to conduct the research and to obtain informed consent from participants was sought.

1.6.1 Obtaining permission to do the research

Carrying out this study in the Northern Cape Province required the researcher to liaise closely with the Department of Economic Development which deals with issues of development projects so that relevant information during data collection could be obtained. These are the most common areas where IKs are found; how they are planned and implemented; as well as how these projects benefit indigenous people. The researcher therefore, wrote a letter to this Department introducing the study and what would be required from the Department.

1.6.2 Informed consent

Regarding the communities involved, it was apposite to communicate to them the purpose of the study and what was needed from them so as to gain their co-operation and, at the same time, observe their right to be informed.

1.7 DERMICATION OF THE STUDY

This section is about the areas to which the study was limited. Furthermore, since this study was about the indigenous knowledge of rural areas of the Northern Cape Province, it was limited to the rural areas of the five district municipalities. Further to this, the selection of projects was limited to those involving indigenous people for the sake of relevance to the study.

1.8 OUTLINE OF THE STUDY

Chapter 2 (Project management for rural development in perspective) discusses the literature review on project management and how it can contribute to rural development, taking into consideration the value of indigenous knowledge in development.

Chapter 3 (The role of IK in project management for rural development) explains the nature of knowledge and highlights various forms of IK and the role they can play in development projects. The chapter also covers the theoretical and conceptual frameworks that guide the study.

Chapter 4 (Methodology of the study) describes how the study was conducted including the research paradigm, design, data collection methods and the interpretation of data.

Chapter 5 (Findings and analysis) presents the findings of the empirical study in line with the predetermined themes that are based on phases of project management.

Chapter 6 (Conclusion and recommendations) discusses the findings and concludes by proposing a framework for integrating IK in development projects in line with the conceptual framework discussed in chapter 3.

1.9 SUMMARY

This chapter provides the background to the study and the research questions based on the problems encountered in development projects around South Africa. The aim and objectives of the study are outlined and a qualitative method of research selected to achieve the set objectives. The qualitative method entailed the sampling of participants, interviewing them to obtain data, and capturing and analysing the data collected. Ethical issues are also considered to ensure that the participants were protected from any unethical behaviour. The next chapter discusses project management for rural development in perspective.

CHAPTER 2: RURAL DEVELOPMENT PROJECT MANAGEMENT IN PERSPECTIVE

2.1 INTRODUCTION

As stated in the previous chapter, this study is concerned with the integration of indigenous knowledge into the management of rural development projects in the Northern Cape Province. The study can therefore be conveniently divided into two key concepts namely: (i) indigenous knowledge (IK); (ii) project management for rural development.

This chapter focuses on the second component *rural development project management* in response to the second objective which concerns conducting a literature review. The aim is to provide the basis for understanding and demarcating a role for IK in the management of development projects in the rural context (to be covered in Chapter 3).

The chapter begins with examination of rural development, followed by the description of the concepts, *project* and *project management*. The typical steps in project management are discussed, as well as the typical steps in development project management. Stakeholders of rural development projects are identified and the criteria for declaring a project a success examined. Following this, the three broad types of project management are outlined with specific reference to their nature, advantages, and disadvantages. The chapter ends with a summary.

2.2 RURAL REALITIES OF SOUTH AFRICA

Before rural development can be explored, some rural realities in South Africa are discussed. Rural areas in South Africa face problems of underdevelopment, unemployment, low literacy rates and a lack of basic infrastructure (Mthembu, 2012: 63). The assumption that can be made from this observation is that most people in South Africa's rural areas live in poverty and this is supported by Shah (2010: 1) that in rural areas, poor natural resource endowment and access are among the most important forces sustaining initial poverty and transforming it into long duration and multidimensional poverty.

Poverty, being a long-standing challenge drew the attention of the South African government and was prioritised in the White Paper on Local Government (1998) as part of ensuring a developmental local government. One of the outcomes of a developmental local government in terms of this White Paper (1998: 24) was to create liveable, integrated cities, towns and rural

areas. Access to land and services were indicated as the challenges of rural areas as reflected by Shah (2010) in the previous paragraph. When people lack access to these services, they cannot develop themselves and this is why Rhodes (2009: 49) refers to South Africa as a lower middle-income developing country, with two major priorities, namely expanding the economy and eradicating poverty.

One may also add that the economy can be expanded when people participate in income generating activities and subsequently, poverty will be reduced. Although there has been several interventions and marginal improvements noted over time, Shah (2010: 1) is of the view that the poor in rural areas still find it more difficult to exit poverty, due to a combination of factors, including poor agronomic potential; limited scope for diversification; weak infrastructure; remoteness and social or political marginalisation.

The views reflected above may be indicative of the fact that poverty and unemployment are still real in rural areas and establishing development projects may have a positive impact if these projects are managed properly, as will be discussed later in this chapter. Firstly, the two challenges of poverty and unemployment are discussed below in order to establish the link with rural development projects.

2.2.1 Poverty

Poverty appears to be one of the critical development challenges in South Africa. Mthembu (2012: 63) notes that poverty remains the biggest problem facing rural communities, with more than two-thirds of rural residents in South Africa living in poverty.

The impact of this is seen in children as Statistics South Africa [Statssa] (2014: 29) reports that three-quarters of the children in rural areas live in households with incomes below the minimum subsistence level. Statssa (2014: 42) further indicates that the poorest households also live in poor conditions; have low levels of literacy and education; experience difficult and time consuming access to water, fuel and other services; as well as few opportunities for gainful employment. This results in high levels of malnutrition, morbidity and mortality in children.

The report by Statssa (2014) highlights a connection between the level of poverty, literacy and education levels as articulated, that a strong relationship exists between the incidence of

household poverty and the education level of the household head. The more illiterate and uneducated people are, the higher the poverty levels seem to be. These aspects are worth noting during the project development process in terms of how they can influence the success of projects.

To further explain poverty, a number of perspectives are used by various authors. However, in this case, reference is made to the sustainable livelihoods' perspective by Davids, Theron and Maphunye (2011: 40) because of its relevance to the study. The sustainable livelihoods' perspective according to Davids *et al.* (2011), focus on the participation of individuals and communities in defining and solving their own poverty.

Considering the views on literacy and participation above, one may assume that when people are literate, participation becomes easier because they know in what they are getting involved. However, the participation of communities in defining and solving own poverty may not be the only solution but resources are also needed.

In this instance, Dzansi and Dzansi (2008: 28) are of the opinion that the persistence of poverty in rural communities is sometimes attributed to the "poverty trap" which is described as (a situation in which the poor are unable to escape from poverty due to lack of resources or their inability to take advantage of resources where they exist). Dzansi and Dzansi (2008) also refer to the usual argument that the lack of employment opportunities tends to perpetuate poverty because people are unable to create jobs for themselves even where opportunities exist. The latter view is supported by Sachs cited in Coyne, Sobel and Dove (2010), that when people are utterly destitute, they may need their entire income or more just to survive. They are too poor to save for the future and accumulate the capital per person that could pull them out of their current indigence.

In response to the challenges highlighted above, the South African government introduced various development programmes to improve the situation of the poor in rural areas. However, the International Fund for Agricultural Development [IFAD] (2010), is of the view that many of the poorest groups of indigenous peoples (who are the main focus in this study), are difficult to reach through mainstream development programmes. Several studies, according to IFAD (2010), show that the poverty gap between indigenous peoples and other rural populations is

increasing in some parts of the world. It is further argued that indigenous peoples generally score lower on the Human Development Index – the measure of life expectancy, literacy, education and standard of living for countries worldwide which is particularly true for indigenous women. Indigenous peoples are often isolated, vulnerable and disempowered by a lack of recognition from their cultural and socio-political systems. This undermines their social capital and their ability to shape their future (IFAD, 2010: 12), which further undermines sustainable livelihood that Davids *et al.* (2011) refers to above.

The cultural aspect is seen to be an obstacle towards the development of women (Sachs, 2005; The Philosopher's Beard, 2014) as poverty is seen to have a strong rural and gender bias, mostly in South Africa (Dyubhele, Roux and Mears, 2009: 231). In addition, poverty appears to affect mostly black, rural women who are viewed as the poorest of the poor in South Africa (Davids *et al.* 2011: 47). The authors further argue that South Africa's societal and cultural patterns of patriarchy, gender discrimination and violence against women are some of the main obstacles to women's access to socio-economic rights.

There is generally an agreement by a variety of authors on certain cultural practices and gender discrimination in relation to poverty in rural areas. The significance of these cultural practices to the study is their influence on the involvement of communities in rural development projects to create jobs and reduce unemployment which is discussed in the next section.

2.2.2 Unemployment

South Africa is not immune to the challenge of unemployment. This was confirmed by Banerjee, Galiani, Levinsohn and Woolard (2006: 11), who note that one striking feature of South Africa, is its low level of labour market participation and employment in rural areas. Banerjee *et al.* (2006) further found that the unemployment rate of blacks has increased by about 50% since 1995, which means that most of blacks who entered the labour market were not finding jobs.

The distinction of blacks here is significant because they are indigenous people and since the focus is on indigenous knowledge and rural development projects, it is critical to see how unemployment levels can be reduced as a result of project success in rural areas.

In terms of gender differences, StatsSA (2012: 58) further indicates that the unemployment rate in South Africa was at about 60% where 25.6% represented men and 34.6% were women. With specific reference to rural unemployment, Davies in the Mail and Guardian (2012) reported that these levels had risen from 44% in 2009 to 52% in 2012. It appears that the increase in the disparity between men and women continues to exist as reflected in the fourth quarterly labour force survey (2013) that the unemployment of women remains higher than that of men.

These statistics reflect a further increase in unemployment from what was noted by Banerjee *et al.* (2006). A number of policies were put in place by government to try and improve the situation. According to Davids *et al.* (2011: 43), the first main policy was the Reconstruction and Development Programme (RDP) which, as an integrated policy framework aimed at, among other things, empowering people to become self-reliant; building local capacity through development support; and initiating development programmes and projects on a participatory basis.

The second main policy was the Growth, Employment and Redistribution (GEAR) policy whose main objective was to increase economic growth and create significant new job opportunities (Davids *et al.*, 2011: 44).

It appears that these policies may not have achieved most of their objectives, especially the one relating to unemployment because the National Development Agency Strategy (2010-2013) states that despite progress made in the past to transform the economy for the benefit of all, South Africa is still faced with the problems of unemployment, poverty and inequality.

Project development for rural areas seems to be a possible way to ensure that the challenges above are alleviated. However, for this to be achieved, there is a need to ensure sustainability in any development that is engaged in. The next section discusses finding sustainable solutions to challenges facing rural areas.

2.3 FINDING SUSTAINABLE SOLUTIONS TO CHALLENGES OF RURAL PEOPLE

There are a number of strategies used as sustainable solutions to the challenges of rural people. This section discusses a few of these strategies; how others have and can still contribute to rural development.

Firstly, policy is important because it gives direction on what needs to be done and in this regard Pick and Sirkin (2010: 12) point out the importance of establishing an enabling empowerment framework where people are given an opportunity to develop policies and programmes that can make a difference in their lives. This answers the question of under unemployment aforementioned, about the challenge of policies either not being effective or not implemented properly. It suggests that the gap exists because people are not given an opportunity to develop policies affecting their lives. South Africa has, in an attempt to create this enabling empowerment framework developed some strategies. For instance, a new piece of legislation entitled the Integrated Sustainable Rural Development Strategy (ISRDS) was launched by the South African government in 2000 to improve the development of rural areas (Othman and Sirbadhoo, 2009: 244). This strategy that intended to transform rural South Africa into an economically viable, socially stable and harmonious sector that could make a significant contribution to the nation's Gross Domestic Product (GDP).

Development mainly focused on rural areas because the poverty that exists in the world is predominantly rural (Pade-Khene, Mallison and Sewry, 2011: 188) and if reduced, it may positively influence the entire world's problem of poverty and unemployment.

Although the strategy was introduced in 2000, Othman and Sirbadhoo (2009: 244) argue that there has been inadequate improvement in the rural areas of South Africa. The authors further identify a need for partnership between government and the private sector (project management firms) to achieve the goal of rural area development. This further suggests that rural development can be achieved through development projects.

Furthermore, the participation of rural communities in their own development is important for successful community empowerment. According to Theron (2008: 101) the idea of participation by the beneficiaries of development is even compulsory in all development proposals as part of the community participation strategy. When proposals to carry out development projects are compiled, the element of community participation may need to be included before the proposal can be approved.

Community participation should, however, not only be written into proposals when in reality, the *status quo* remains. Davids *et al.* (2011: 17) believe that people-centred development provides a starting point in addressing the injustices of past development efforts. In line with this view, Deaton (2010) points out that the main objective of economic development for the poorest countries is to help these countries to gain a foothold on the ladder of development. The rich countries do not have to invest enough in the poorest countries to make them rich; they need to invest enough so that these countries can get their foot on the ladder. Once this is done, Deaton (2010) believes that the effect of aids from these rich countries will be observed.

The discussion above indicates that certain principles need to be observed for rural development to effectively take place and be sustained. Hunt (2013: 8) expresses some of these principles for successfully engaging with indigenous communities to improve their lives. These principles include: a need to recognise their cultural differences; to understand their language and cultural protocols; and to develop a trust relationship with communities. Hunt (2013) further emphasises that linking engagement to indigenous aspirations is critical to project success because there will be genuine ownership of problems and solutions by communities. The principled engagement with rural communities is also established by IFAD (2010: 5) through ensuring that rural people have access to natural resources, especially land, water, and improved natural resource management; improved agricultural technologies and effective production services; a broad range of financial services; opportunities for rural off-farm employment and enterprise development; and local and national policy and programming processes.

What seems critical from these principles is that rural development should be done with all relevant stakeholders from the designing of policies through to the planning and implementation of projects that give effect to these policies. It further suggests that one cannot separate rural development from project management if one is to find sustainable solutions to the challenges of rural areas. This leads to the discussion on the embeddedness of rural development into project management.

2.4 EMBEDDEDNESS OF RURAL DEVELOPMENT INTO PROJECT MANAGEMENT

Ghezzi and Mingione (2007) see embeddedness as an expression that social actors exist within relational, institutional, and cultural contexts and cannot be seen as atomised decision-makers

maximising their own utilities. Polanyi in Machado (2011) explains that embeddedness means that economic actions and social relationships are linked. Therefore, since this study is about indigenous knowledge which is obtained through social interaction (as discussed in the next chapter) and project management which entails economic activities, this section therefore examines how rural development can be implemented within the context of project management.

However, first it is important to conceptualise development, rural development and project management in order to determine their interrelatedness.

2.4.1 Conceptualising development

Development is defined as being about people, their needs and the meaning-giving context in which they make ends meet. It is a process faced with uncertainty; ever-changing social, political, economic and environmental contexts (Theron, 2008: 2). Theron further argues that the outcome of development programmes/projects often shows that development is not endogamous (within communities) as it is supposed to be. It is emphasised that the usual type of development has been done from the top to the bottom, meaning that which is imposed on people.

The implication of this view is that the success or failure of development projects may be determined by the extent to which communities are involved, as opposed to deciding on community projects without the contribution of communities. In addition, Davids *et al.* (2011: 2) make an important point that the meaning of development is informed by contextual issues, such as past and present experiences, circumstances, perceptions, values and beliefs. One may further add that for development to be effective, those involved should learn from their predecessors' mistakes and experiences to avoid repeating the same mistakes. At the same time, development cannot be viewed in isolation. In this instance, Dzansi and Dzansi (2008: 18) point out the three concepts that are related to the idea of development, namely unemployment, poverty and inequality. In the authors' view, addressing the identified problems of unemployment, poverty and inequality requires a consideration of the broader issues of development. This view is in line with the aspects referred to earlier in Section 2.3 of this chapter.

All these contexts have an influence on community development. Roseland (2005: 4) explains these contexts in an almost similar manner which suggests that it is important to think of community in terms of assets or capital when looking at sustainable community development. The community capital is said to include natural, physical, economic, human, social and cultural forms of capital.

Both Roseland (2005) and Theron (2008) agree in principle that development takes place in social, physical, economic and cultural contexts. The human context is embraced within the social context because being human implies being social.

What this means is that people are needed for development to be initiated. Furthermore, natural, cultural, physical and economic resources are essential to drive the development process.

Dauids *et al.* (2011: 19) share the same sentiments about the context of development, although in this case reference is made to elements called the building blocks of development which include public participation, social learning, empowerment and sustainability. The participation of the public in their own development contributes to their learning and since this empowers them, development is sustained. The communities are able to pass what they have learnt through to others.

Having examined the definitions above and the contexts referred to, the researcher decided to devise an operational definition from the background gained thus far. Development therefore means facilitating change in society's well-being, taking cognisance of the natural, human, social, physical, economic and environmental context to empower people through participation in decision making and ensuring that future generations benefit from such changes. The result of the change must include job creation, food security and good health for the society (Roseland, 2005, Theron, 2008 and Dauids, *et al.*, 2011).

This definition is adopted for the purpose of this study. The next section addresses the conceptualisation of rural development.

2.4.2 Conceptualising rural development

Anriquez and Stamoulis (2007: 2) define rural development as that which benefits rural populations; where development is understood to be the *sustained* improvement of the population's standards of living or welfare. These authors further indicate that since the 1970s rural development, as a concept, has been highly associated with the promotion of standards of living and as a precondition for reducing rural poverty. The observation from this definition is that rural development is a process that addresses rural realities as outlined in Section 2.2 above.

Furthermore, it has been noted that rural development in South Africa has been prioritised since 1994 through a number of development programmes initiated, as seen in the White paper on Local Government (1998). However, it appears as though the acceleration is not effective enough because according to Jacobs, Nowers and Troskie (2010: 6), the need for rural development has increased exponentially and programmes and practices have to be put in place to take it further. George and Binza (2011: 960) seem to address this concern in their study on the role of traditional leadership in promoting governance and development in rural South Africa. The authors postulate that district municipalities are the main agents for rural development in South Africa and are given the task of ensuring effective and efficient implementation of integrated development planning for the district as a whole which includes areas of traditional leadership. However, since many rural municipalities lack the organisational, technical and administrative ability to do these difficult tasks, they leave the work to traditional leaders to encourage their communities to take part in the development of Community Based Programmes (CBPs), Integrated Development Plans (IDPs) and budgets.

George and Binza's (2011) observation above indicates that there is lack of capacity by the municipalities. At the same time, the shifting of responsibility to traditional leadership does not guarantee that projects will be properly planned and implemented. From the project management viewpoint (as will be discussed in the next section), all relevant stakeholders, each with specific skills and roles to perform should be involved in the project management process.

In view of this background, rural development project management can be defined as the application of the knowledge, skills and experiences of rural people in the facilitation of their

social and economic empowerment. This means that while trying to bring development to rural people through development projects, it should be done with them to ensure effective empowerment in managing their own projects; thus, the embeddedness of rural development into project management.

The next section is on conceptualising project management in order to further demonstrate the linkage between rural development and project management.

2.4.3 Conceptualising project management

In order to understand what project management entails, one needs to first understand what a project is.

2.4.3.1 Defining a project

There are various perspectives on what a project is and most of these have common elements. From an industry perspective, the Project Management Institute [PMI] (2013: 3) on the one hand, defines a project as “a temporary endeavour undertaken to create a unique product, service or result”. It is said to be temporary because it has a definite beginning and a definite end. It is unique because the product or service is different in some distinguishing way from all similar products or services.

On the other hand, from a scholarly perspective, Maylor (2010: 29) views a project as “a conversion or transformation of input into output, under a set of constraints and utilising a set of mechanisms to make the project happen”. According to this author, the inputs include the wants or needs that must be satisfied (outputs) through the project management process. Other scholars, such as Fox and Van der Waldt (2007: 2) regard a project as “a sequence of tasks with a beginning and an end, which is delimited by time, resources and desired results”.

From the definitions above, it appears that a project differs from an on-going process (operation) because it has a definite beginning and end. It means that a time-frame must be set to start and end a project, together with some required mechanisms for carrying out a project.

Having gone through these definitions, a project is operationally defined in this study as a time-specific, resource-based transformative endeavour with planned benefits. In line with this

study, indigenous knowledge is regarded as one of the main resources to ensure a successful transformative endeavour (Maylor, 2010).

It is necessary to understand that projects are different from tasks. Russel (2007: 18) makes the important observation that people mostly cannot differentiate between tasks and projects and they end up being inefficient. This author argues that treating a project as a task prevents one from clearly defining the multiple steps and time commitment necessary to complete it. This therefore creates problems, such as the avoidance of the task because one has not figured out how to do it, or doing small bits of the task but never getting to see it all the way through. The to-do list stays jammed with things that never get done, thus leading to stress and adding to the feeling of having lost control.

In order to address these difficulties, Russel (2007: 18) provides some guidelines on how to differentiate between tasks and projects by using questions that seek to determine if one can complete the activity in one sitting; whether the activity can be done without anyone's help; if the activity has been on one's to-do list for less than a month; and if one can clearly define the measurements one will use to determine if the task is completed. According to Russel (2007: 18) an activity will be regarded as a task if the answer is yes to the majority of the questions above; otherwise it will be a project if the answer is 'no' to most of the questions. These questions may be of significance for project managers to ask from communities while integrating their knowledge into projects and therefore creating an opportunity to educate them on what projects are, as well as how to distinguish them from tasks.

While these questions address the nature of projects, Maylor (2010: 6) indicates that projects have characteristics of emergence. This means that they are sometimes unexpected; they are uncertain because no one can predict the future; and they involve change because new systems might be introduced in the course of the project. Projects are also social constructions because they involve people. The other characteristic is that of integration because projects involve many aspects which need to be integrated to bring them to completion. These characteristics further assist in determining what is and what a project is not.

One other critical aspect to help understand the nature of projects, is knowing the criteria for good projects. In this case, Kinyashi (2006) points out that a project should arise from the active

participation of local communities where genuine needs are identified; that it should aim at empowering communities. A project should be managed, implemented, evaluated and reported on by the members, as well as increasing the self-reliance of the recipients and beneficiaries (Attarzadeh and Ow, 2008).

Kinyashi's (2006) description of a good project brings in the elements referred to in the definition of a project, one of which is achieving the desired outcome. The outcome of a project is the satisfaction of an identified need and the idea that the need identified must come from the grass roots and supports the need for community participation throughout the project management process. Similarly, Attarzadeh and Ow (2008: 235) refer to user involvement as an important criteria for a successful project, further arguing that even if the objectives of the project can be achieved, the project cannot be regarded as successful without the user's involvement. All these elements require an environment that can contribute to the success of a project.

In this regard, Maylor (2010: 26) describes the different environments in which projects operate. These entail the context which refers to the external general influences on the organisation in which the project is taking place; the complexity which means the level of difficulty or complication of a project; and the completeness which refers to how much of the end requirement a project will deliver. The environment may also be competitive in terms of how many other organisations will be competing to deliver the work, and customer focus relates to the expectation that customers will have their needs met by the project.

In practical terms, these various environments mean that when communities identify a need, the project initiated to solve that need should take cognisance of whether similar projects exist in the area, so as to avoid duplication. It should also be ensured that the community will be capable of implementing it successfully. A project cannot take place without consideration of these important aspects; thus, the context is referred to in the previous paragraph.

Maylor (2010) further elaborates on the context as political, economic, social, technical, environmental and legal. The establishment of projects is commonly influenced by the changes in policy or through the political party in power and general or local economics of the area. For instance, when the economy is flourishing, it may be challenging to galvanise people's

involvement in the project. Contrarily, when the economy is in decline, the situation may be different.

The social context relates to the changes on the project environment, such as the methods of communication amongst the members of the project. There is also a technical context where technology will challenge the viability of some projects and create the need for others in order to determine the way in which projects are delivered. With regard to the environmental context, it is necessary for an assessment of the environmental impact to be conducted as part of an emerging interest in corporate social responsibility.

The legal context ranges from the regulations affecting intellectual property to government procurement legislation and other legal pressures that place an increasing bureaucratic load on most aspects of economic activity (Maylor, 2010).

These contexts are important for consideration in this study and should be explained to the communities at their level of understanding. This could create an opportunity for information-sharing between the development practitioners and the communities regarding the practical situation in the community. For instance, while the legal context involves the policies and political parties for the development practitioner, it may relate to traditional leaders and how they apply their rules in rural communities. There is therefore a need for a common understanding of the meaning of a project and the applicable context.

Having comprehended what a project is, it is important to know how to manage a project; the following discussion is on project management.

2.4.3.2 What is project management?

A number of views exist on what project management is and some of them are discussed in this section. PMI (2013: 5) views project management as the application of knowledge, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project. Meeting and exceeding the needs and expectations involve balancing competing demands among the scope, time and quality; the stakeholders with differing needs and expectations; as well as identified requirements (needs) and unidentified

requirements (expectations). According to Maylor (2010: 29) project management is a process through which inputs (needs or wants) are satisfied (outputs).

The two views above reflect on the process of meeting the needs of the people, which further mean that the quality of what is being produced is important to ensure that the people for whom these are meant, are satisfied. For the quality to be sound, there should be methods followed and principles considered.

An almost similar view is shared by Fox and Van der Waladt (2007: 5) who define project management as a means by which projects are managed and change is achieved using a specific intervention.

In this case, project management appears to be regarded as a means to an end, while Richman (2012: 8) asserts that project management stems from the need to plan and coordinate large, complex, multifunctional efforts and is aimed at solving practical problems. Richman (2012) further refers to a set of principles, methods and techniques that people use to effectively plan and control project work. The application of project management principles is said to help in the completion of projects on schedule, within budget and in full accordance with project specifications.

PMI (2013) and Richman (2012) show the need for skills to ensure that the project produces the desired outputs; this will be discussed in detail as project management phases are outlined in later sections.

Russel (2007: 21) indicates the value of project management as increasing the repeatability of project success; the scalability of project work; the ability to manage complexity and to react to business change, as well as one's focus on business results. It is important, according to Russel, to follow a process that gives you enough structure to jump-start your project plan without adding too many overheads and expense.

When the project process to be followed is known and people have the necessary skills, it seems that the project has the opportunity to succeed. Integrating indigenous knowledge of rural communities in project management is about the process and the skills of indigenous

communities. This study therefore identifies the processes followed by indigenous communities and their skills, as well as the role they play or can play in the enhancement of projects. To further emphasise the necessity of the project management process, Richman (2012) indicates that project management allows managers to plan and manage strategic initiatives that generate new revenue in expanding sectors of the market. According to Richman (2012) project management tools decrease time to market, control expenses, ensure quality products and enhance profitability. It helps to sell products and services by positively differentiating them from their competitors. Project management also ensures the success of the organisation (Richman, 2012).

It is however, important to follow a process while managing a project as this gives one direction with regards to the beginning and the end, as discussed below.

2.4.3.3 Project management process

Projects are composed of processes. For PMI (2013: 47), a process is a set of interrelated actions and activities performed to achieve a pre-specified set of products, results or services, with the project management process being about describing and organising the work of the project.

PMI distinguishes between project-oriented processes and product-oriented processes. Project-oriented processes are concerned with describing and organising the work of the project while product-oriented processes are typically defined by the project life cycle and vary by application area. Project management processes and product-oriented processes overlap and interact throughout the project. For example, the scope of the project cannot be defined in the absence of some basic understanding of how to create the product.

There are five phases (process groups) of the project management process. PMI (2013) identifies them as the initiation process; the planning process; the execution process; the controlling process; and the closing process. These process groups are linked by the results they produce – the results or outcome of one becomes an input into another. The process group interactions also cross phases, such that closing one phase provides an input into initiating the next. Each of these phases are linked with ten (10) knowledge areas which are: project integration management; project scope management; project cost management; project time management; project risk management; project quality management; project human resource

management; project communication management; project procurement management; and project stakeholder management. This linkage is illustrated in Table 2.1.

It is important to understand that project management is an integrative undertaking requiring each project and product process to be appropriately aligned and connected with other processes to facilitate coordination. A change in one process may affect another process. For example, scope change will affect the project cost (PMI, 2013: 48).

Indigenous projects also have to follow these processes in order to be successful and in this study they are investigated so as to determine if these processes are adhered to. It would also be necessary to determine if development practitioners implement these processes at the level of indigenous communities' understanding to ensure cooperation and effectiveness. In cases where indigenous processes are different and may need to be enhanced with scientific processes, this should be done from the beginning of the project, and in agreement with indigenous communities. This needs to be done in all the phases which are discussed below.

Table 2.1 Project Management Process Group and Knowledge Area Mapping

Knowledge areas	Project management process groups				
	Initiating process group	Planning process group	Execution process group	Monitoring and controlling process group	Closing process group
1. Project integration management	Develop project charter	Develop project management plan	Direct and manage project work	Monitor and control project work; perform integrated change control	Close project
2. Project scope management		Plan scope management; collect requirements; define scope; create wbs		Validate scope; control scope	
3. Project time management		Plan schedule management; define activities; sequence activities; estimate activity resources; estimate activity durations; develop schedule		Control schedule	
4. Project cost management		Plan cost management; estimate costs; determine budget		Control costs	
5. Project quality management		Plan quality management	Perform quality assurance	Control quality	
6. Project human resource management		Plan human resource management	Acquire project team; develop project team; manage project team		
7. Project communications management		Plan communications management	Manage communications	Control communications	
8. Project risk management		Plan risk management; identify risks; perform qualitative risk management; perform quality risk analysis; plan risk responses		Control risks	
9. Project procurement management	Plan procurement management	Conduct procurements	Control procurements	Close procurements	
10. Project stakeholder management	Identify stakeholders	Plan stakeholder management	Manage stakeholder engagement	Control stakeholder engagement	

Source (PMI: 2013)

2.4.3.3.1 Initiation process

Initiating a project is recognising the need for a project to be carried out. According to the PMI (2013: 54), the initiating process group consists of processes performed to define a new project or phase by obtaining authorisation to start a project or phase. What should be established in this process is the scope of the project, the identification of stakeholders and the project manager.

According to Richman (2012) the project manager must have understanding of the issues surrounding a project as this will create better chances for success. The author further outlines actions that will help in defining the problem or opportunity. These include obtaining from the client a clear definition of the problem to be solved by the project or the opportunity that the project will take advantage of; determining the client's needs and wants; gathering sufficient background information about the current situation; as well as learning and thoroughly understanding the business reasons for the project and the client's motive in undertaking it (Richman, 2012).

A project charter is then developed and this is a document that authorises the project and documents initial project requirements that will satisfy stakeholders' needs and expectations (PMI, 2013: 54).

These activities already create an opportunity for the empowerment of indigenous communities because most of them might not be familiar with the activities leading to a project charter and need to be educated in the process. This will ensure that members of the project team are able to carry out tasks allocated to them.

PMI (2013) further opines that the stakeholders must be identified; this entails the process of identifying people who will be affected or impacted by the project. Information relating their interests, involvement and impact on the project's success must be documented. The important aspect highlighted is that projects are authorised by someone external to the project, such as a sponsor or portfolio committee (PMI, 2013: 30).

In line with the abovementioned, one can argue that indigenous people, as relevant stakeholders, should be the ones recognising the need for a project because they will be directly affected. This means that they may have to be involved in the needs identification process, stakeholder involvement and project charter development. This may take the form of meetings or communication methods that are best understood by the indigenous people, even before they proceed to the planning stage which is discussed below. It appears that communication as a key principle in project management is critical from the very beginning of the process, so as to obtain the buy-in of indigenous people.

2.4.3.3.2 Planning process

Planning is an important stage in any project because it provides a clear direction for implementation. One needs time to do proper planning as Mochal (2009) indicates, that time spent in proper planning of the project will reduce the duration and increase the quality of the project. The whole process of planning is discussed under the sections which are significant and in all these aspects, time plays an important role. The first section is the approaches used in planning.

Approaches to planning

There are various tools that can be used for project identification and planning (Ika, Diallo and Thilier, 2010: 68). These authors indicate that participatory approach tools include workshop and community-based methods for collaborative decision making, as well as stakeholder consultation.

A participatory planning approach involves all stakeholders and is often the most effective and inclusive way to plan a community intervention. It provides community ownership and the support of the intervention; information about community history, politics, and past mistakes; respect; and a voice for everyone (Rabinowitz, 2012).

In addition to these advantages, the approach ensures self-reliance; consciousness-raising; a bottom-up approach to development; and the empowerment of communities (United Nations Human Settlements Programme ([UN-HAHITAT], 2008: 7). Thus, these are the outcomes of an integrated project management process.

Participatory planning also empowers development practitioners to better understand the contexts within which they deliver their programmes, and to make sound assumptions and judgment regarding the possible negative/positive impacts of cultural factors on development interventions (United Nations Population Fund, [UNFPA], 2009: 27). UNFPA (2009) refers to this tool as a culture lens which empowers communities through the knowledge of the legal, political, social, economic and cultural realities; knowledge of the factors that lead to community acceptance and ownership; and knowledge of pressure groups and power structures. Empowerment is also about recognising the knowledge, needs and aspirations of

communities; a sensitivity to culturally specific contexts; and communication, mediation/negotiation, and facilitation skills.

The knowledge of community needs and aspirations reflected above, enables development practitioners to understand the dynamics for change within the cultural contexts they are working in and enhances the sustainability of the development programmes, since communities will be involved in the planning phases. Hunt (2013) argues that the engagement of communities should start early in the process of project development, and that projects must be driven by indigenous people with government being the facilitator. For Hunt (2013), engagement builds on existing community governance structures and indigenous strengths and assets, rather than on deficits and gaps, in an empowering process, with small achievements along the way to mutually agreed longer-term goals. Based on Hunt's (2013) argument, one can assert that the identification of local pressure groups and power structures for the development of effective strategies can facilitate community participation from the beginning of the project. Community participation will ensure proper needs identification through the community structures and projects that are designed in response to these needs. To further ensure effectiveness in communication among community members, the language used should be understood by the communities involved. As Hunt (2013) points out, language and an understanding of cultural protocols are important for successful engagement. Communication encourages participation but if, for instance, English is used to communicate with rural people who cannot speak the language, communication will not be effective.

According to Puri (2007: 18) participation influences content in terms of who participates and who is excluded. For example, through the use of song and dance as examples of mechanisms for participation, community members could participate in the system development process. Possibly, they would have been excluded if only formal systems development methodologies had been used. Participatory processes thus involve negotiations and communication amongst planners. The planning process should result in a project management plan with certain decisions to be made so that work can be done, as discussed in the next section.

Decision-making

The planning process should result in decisions concerning important project activities. In this regard, Tripathi and Bhattarya (2004: 6) postulate that in many projects, the effective participation of a local community in decision making is of paramount importance and affects

the outcome of a project. Similarly, Khwaja (2009: 900) makes the observation that although community participation is important in non-technical aspects of a project, such as deciding on the project type and rules of the project, it may not necessarily be beneficial for the technical aspects, such as deciding on project design and the scale of a project. However, the critical point is that the participatory decision-making process should be meant to satisfy local needs. Non-participation also results in distancing the local community from the decision-making process. Participation differs in various communities as Emery (2000: 27) indicates that in some traditional communities, a strict hierarchy of status is maintained. The elite do not ask for or receive advice from the lower ranks. Women, in some societies, may suffer if they attempt to participate. In these situations, the headman makes all the decisions that would typically be required in a project design. On the contrary, in other communities, Hunt (2013) argues that there is participation by all, including women and children.

The differences in communities reflected in the view above mean that plans will differ from one community to another. However, an important aspect to note is that uninvolved community members may feel disempowered by not making decisions for themselves. This may require that proper discussions take place with indigenous communities to reach consensus regarding the participation of certain groups and highlighting the benefits thereof. A participatory planning process has a deliverable which is a project management plan with a vision directing where the project is going; this is discussed below.

Vision

Every endeavour starts with a vision involving what people want to achieve within a certain time frame. The same applies to the planning of projects. During this process, the Project Manager together with the relevant stakeholders develop a project management plan which according to PMI (2013: 54) is a documentation of actions necessary to define, prepare, integrate and coordinate all subsidiary plans.

During planning, a broader vision is developed for a project and according to Russel (2007: 96), an engaging vision is a key deliverable because it offers the following advantages.

- It provides **focus** by enabling all parties to remain focused on the plans and helps to avoid distractions. Constant attention to a vision keeps people on course and allows correction when things change.

- It provides **inspiration** which is such a vital component of leadership. Leaders harness human potential and human energy towards a desired end, inspiring performance by enthusing people about their roles in the project.
- It provides **hope** in cases where people become frustrated and disillusioned during difficult times; vision provides a positive, forward-facing focus (Russel, 2007: 96).

Developing a vision might seem like a daunting task (Griffin-Blake in Siberman, 2006) for the ordinary illiterate community members. This may necessitate the project leaders to provide guidelines that will assist them to understand the planning process before they can participate in developing their own vision. Lazenby (2011: 60) avers that it is the project manager's primary responsibility to formulate, communicate and enthusiastically present the vision and share it with all the team members. The author emphasises that a shared vision leads to better coordination of the tasks, stronger commitment to the project, higher levels of team member satisfaction and increased loyalty to the team.

It is a known fact that a vision needs to be driven by a set of objectives and PMI (2013: 54) advocates that objectives should be defined and refined, with the course of action to attain them being established. This leads to detailing all the work required to complete the project successfully; it is called a project scope (PMI, 2013: 105) as discussed in the next section.

Scope of the project

As part of planning, the scope of the project needs to be determined and since there is integration in these processes, the scope, according to PMI (2013: 105) includes the defining and documenting of stakeholder's needs (collecting requirements); developing a detailed description of the project and product (defining scope); subdividing project deliverables and project work into smaller more manageable components (work breakdown structure); formalising acceptance of the completed project deliverables (verify scope); and monitoring the status of the project and product scope, as well as changes to the scope baseline (control scope).

In this section, more discussion is on the work breakdown structure (WBS) in order to see how the stakeholders can be involved in the enhancement of project success. Richman (2012: 75) points out that WBS is the basis for time estimation, resource allocation, cost estimation and

collection. If the work breakdown structure is faulty, all further planning will also be faulty. Therefore, all the planning and control activities need to be placed on the WBS and be communicated to the people involved. In addition to this explanation, Otto and Magee (2006: 86) assert that WBS aids in resource allocation and should be based on, among other things, a bottom-up estimation. This bottom-up estimation may actually create an opportunity for key stakeholders to participate in the creation of the WBS in development projects. According to Maylor (2010: 133), WBS gives people responsibility for a manageable part of the project. It also facilitates financial control activities, as individual parts can have their consumption of resources tracked. Its role is to create a linked, hierarchical series of activities, which are independent units but at the same time, still part of the whole. This will ensure that people involved in projects do not work in isolation but work towards a bigger vision.

Portny (2010: 21) links the WBS with identifying the appropriate people (audiences) for the project. It is about including audiences who may play a role during the project, including people's names and the roles they play on the list; team members' functional managers; and end-users of the product. To further bring in the participatory planning principle, it may be useful to ask each person on the list if they can think of anyone else who should be included in the project because they know one another as members of the community. This will help one confirm that people who have been identified as audiences have sufficient authority to make decisions and to perform the tasks for the project (Portny, 2010: 21). The next logical activity to follow is human resource management which entails the allocation of tasks identified during the Work Breakdown Structure.

Human resource management

Human resources are needed for the tasks that must be completed during the project. According to PMI (2013: 255), human resource management includes processes that organise, manage and lead the project team. These processes are developing a human resource plan; acquiring the project team; and developing and managing the project team.

In view of the participatory processes discussed earlier in paragraph (a) above, one would emphasise the involvement of relevant stakeholders in the human resource management processes, although as Richman (2012) argues, the project manager takes the leading role. Geyer (2005: 25) further indicates that team members need to be carefully selected, trained

and effectively supported throughout the lifespan of the project. They also need to be given constant encouragement for the work done.

It may be further added that the project manager needs to be skilled enough to be able to manage human resources effectively and to empower indigenous people to do so. Russel (2007: 42) also states that getting stakeholders involved from the planning stage begins a communication pattern that will save one when problems happen later in the project. In line with these views, Lazenby (2011: 71) maintains that it is important to build a social network by identifying interest groups, which consist of people who should support the project in order to ensure success. Through this, one is able to appreciate what other people value and what one has to offer as a basis upon which a working relationship can be built. This information becomes essential for the selection of suitably influential strategies and tactics and to be able to undertake win/win negotiations.

The application of the views above would require development practitioners to develop good working relationships with indigenous communities so that their planning environment can be conducive and that communities can feel free to share their knowledge.

Time management

Time management is significant during project planning as it involves planning when to start and complete tasks. As PMI (2013: 141) indicates, time management includes processes required to manage the timely completion of the project. The processes entail identifying specific actions to be carried out (defining activities); identifying and documenting relationships among project activities (sequencing activities); estimating the material, people and equipment needed (estimate activity resources); the number of work periods needed to complete activities (activity durations); and developing and controlling the schedule (PMI, 2013).

There is an interaction in all these processes, as well as other knowledge areas. For instance, the work breakdown structure needs time management and in all these processes, it may be necessary to assess the indigenous human resources and how they deal with their time in order to determine the type of impact it will have on project time management.

Integrating indigenous knowledge would require one to develop a time schedule with culture and nature-based indicators about task completion, or of meeting certain milestones (Emery, 2000: 26). The time schedule with culture- and nature-based indicators mean setting time-frames in cultural and natural terms. As Emery (2000) further argues, indigenous people who live on the land are tied to the rhythm of the land, its seasons, and the movement of wildlife. For instance, for many people, hunting or gathering occurs at a particular time of year, or it does not happen at all. Kronik and Verner in Mearns and Norton (2010: 145) add that indigenous people's livelihood relies on their ability to interpret regular natural cycles and act in accordance with them. It is therefore important to plan the schedule for a project with indigenous people using their knowledge to develop a flexible schedule based on their seasonal and cultural requirements. This should be worked out in advance with the local people (Emery, 2000: 26). The indigenous way of observing time as discussed by Emery (2000), Kronik and Verner (2010), may need to be considered from project initiation so that it can be incorporated during planning, as well as in determining which kinds of projects will be relevant for certain times. The project manager will need to be familiar with these factors in order to communicate time schedules effectively to community members who are the stakeholders. The next section discusses communication as a critical aspect in project management.

Communication

Communication plays an important role in planning because everything needs to be communicated to participants so that activities can be carried out properly. Therefore, planning communication is, according to PMI (2013: 287), about defining a communication approach and plan for project communications based on the identified needs of stakeholders. It needs to be done in writing as the basis for future project decisions, including the criteria used to determine if the project or a particular phase is completed successfully.

Most indigenous communities are illiterate and may not be able to produce a written plan; therefore it is critical to communicate what is going to be done and the progress achieved (Kronik and Verner in Mearns and Norton, 2010). This is where, in the integration, development practitioners will be expected to assist with the compilation of the team which has the necessary skills for specific tasks. However, the community should still be afforded an opportunity to give direction regarding their indigenous way of communicating because they know skilled people available amongst them as part of the resources (Kronik and Verner in

Mearns and Norton, 2010). However, where there are no skills available, training can be provided to the team to equip them with skills and this will need budgeting. Budgeting is also an essential aspect in project planning as discussed below.

Budgeting

Budgeting, in this instance, is discussed in relation to resources, such as finances and people. Financial resources play a significant role in planning, for without them, the plan cannot be implemented. In this regard the PMI (2013: 193) advocates the estimation of costs which entails developing an appropriation of the monetary resources needed to complete the project activities. When planning for rural development projects, it may also be important to involve indigenous people in the estimation of costs to see how this integration can enhance the process.

Furthermore the staffing needs and personnel rates are necessary components to be included in the cost estimation (PMI, 2013: 202). It is necessary to determine how much money will be required to pay for the employment and training of people who will carry out the project tasks. The inability access these resources may be a risk and should be identified as such, so that proper intervention can be planned as discussed in the next section.

Risk identification and management

Apart from planning the activities to be executed, planning should also define the risks involved in the project. Mochal (2009) explains risks as events taken for granted, or that one is concerned about, whether one will be able to have sufficient capacity to handle the whole project. In addition to this, Veatch (2011: 42) indicates that projects are often characterised by complexity, uncertainty and ambiguity, thus affecting organisations and the socio-economic environment within which they operate and this implies risk. Some of the risks are event-risks which are due to unforeseen events associated with an activity of a project, the intrinsic viability in terms of the accounted costs of the project, and environmental changes during the project.

It is essential to establish whether indigenous communities understand their own capacity to handle a project, the complexity of their projects and to know about the risks involved, as well as how to manage them. It should also be determined whether their knowledge can be incorporated into the risk management plan so that they can effectively participate in dealing

with identified risks in ways which they know best. However, where this is not known, training is needed to equip them with the knowledge to identify and manage risks while setting their objectives for projects.

Furthermore, Maylor (2010: 220) contends that there is a likelihood of missing objectives, unexpected changes from stakeholders, technological problems, and staffing changes. The author then categorises risks in terms of time, cost, quality, health and safety, as well as legal implications. According to Maylor (2010) there is always uncertainty relating to these risks and therefore, contingency plans should be made to counteract any challenge that might be experienced.

The categories of risks referred to by Maylor (2010) can be easily identified and dealt with if communities participate in the planning because they will be committed to their objectives and will be able to notice when, during implementation, certain objectives have not been met. A risk management plan is therefore important to communicate to stakeholders, with the obtained agreement and their support throughout the project cycle (PMI, 2013: 313). This provides an opportunity to identify and deal with problems as they arise during the project. The involvement of indigenous communities as stakeholders is critical in this case because they will be empowered to continuously conduct reviews and use their own knowledge to handle risks.

In summary, the planning of the project entails identifying the product desired; determining the tasks involved and the people responsible to carry these tasks; as well as determining resources needed. It is about determining potential risks, and planning how to manage them throughout the life cycle of the project. Once a clear written plan has been developed and communicated to the relevant stakeholders, the next phase that follows is that of execution.

2.4.3.3 Executing process

The execution process entails coordinating people and other resources to carry out the plan. It is about completing the work defined in the project management to satisfy the project specifications (PMI, 2013: 56). The process of completing the work should be understood by all the people involved. The principle of involving communities in planning as discussed in the planning phase above, also applies to the execution of the plan.

Richman (2012: 149) suggests that one may start executing the project by holding a formal meeting where a detailed project plan is communicated. While this suggestion may be sound, it is critical to consider the form of communication that will be relevant and understood by indigenous communities. For instance, the understanding of the plan will be determined by the clarity of the language used. In this case, the International Association on Impact Assessment [IAIA] (2012: 3) highlights the importance of accuracy of language translation to ensure that the right information and attitudes are transmitted. Furthermore, people from different cultural backgrounds may have problems communicating because of different ways of thinking about facts. However, Osho (2011) highlights the uniqueness of African means of communication because of its originality and the use of oral media. This means that a project manager should be familiar with the indigenous ways of communicating and use this to encourage the active participation of indigenous people while coordinating the project.

The purpose of coordination is to ensure that the set objectives are met by the members of the project team. They need to have the capacity to carry out their responsibilities; empowerment in the form of training is critical to improving productivity. There is a saying: “If you think training is expensive, try ignorance”. Therefore it means that the project manager should prioritise empowering people to prevent the potential harmful effects of ignorance. PMI (2013: 58) especially highlights the importance of developing a project team in order to improve competencies, team interaction, and the overall team performance.

This said, training should not just be imposed on the indigenous people but effective participation will assist in providing the direction which the project manager should take as facilitator. UNFPA (2010: 36) emphasises the role of a facilitator in different cultural settings as that of being able to listen and hear the community; interact and engage with different cultural backgrounds; show understanding of the socio-cultural context without making value judgments on culture or values; and present the mandate and principles of the organisation in messages that can be understood within the cultural context where they are delivered.

During this execution stage, it is important for the people involved in the project to work as a team. Katzenbach and Smits (2005) argue that teams produce distinct work products through the combined contributions of their members. In a team, the whole is more than the sum of its parts. Holzle’s (2010: 780) view is that a project team and a project manager are regarded only

as a temporary organisational form which will be dissolved at the end of the project. The team combines individual talents with a positive team spirit to achieve results. This relates back to the Work Breakdown Structure discussed in the planning section above and affirms that without this structure, the execution may not be well coordinated.

According to Katzenbach and Smits (2005), the successful ingredients of a team include open, honest communication based on trust and caring; a complementary blend of skills and talent that allows the team to work cooperatively together; building interdependence among the members; as well as a high degree of tolerance amongst one another. There is also a need for an understanding of and commitment to a common purpose and goals and an efficient and flexible structure of leadership that allows the team to work towards achieving results without the confusion of roles and responsibilities. At the end, the team should be able to take strength and energy from one another and celebrate successes and share failures together.

With regard to all these aspects, it needs to be established how indigenous communities strengthen their teams because they could have specific experience of working as teams in some of their activities which could benefit the project. This may further enhance the project manager's strategies of building effective teams.

Project execution also entails spending a large portion of the budget as the duties are carried out because during this phase, results may require planning updates and re-baselining (PMI, 2013: 56). The project manager may therefore need to use financial management skills to ensure effectiveness in the management of the budget. Financial management is, however, a critical area where training needs to be provided to the team, as many projects have failed due to a lack of financial management skills, such as budgeting, and accounting for the money used. Working with indigenous communities would require examining their way of managing finances and strengthening their skills where necessary to enhance their effective participation in the projects to enhance its success. Hart, Burgess and Hart (2005: 204) view community participation as an empowerment process which strengthens people's awareness of their own abilities and resources, while supporting their mobilisation and organisation. In addition to the empowerment of communities, IAIA (2012: 3) argues that community participation contributes to the protection of these communities against exploitation because of their inexperience.

In summary, the execution stage entails the actual carrying out of the project plan by a carefully selected and knowledgeable team which is focused on achieving maximum results through empowering project members and managing the budget well. Maximum results can only be achieved if proper controls are implemented during and at the end of the process. This leads to a discussion of the controlling process phase below.

2.4.3.3.4 Controlling process

The implementation of controlling mechanisms is significant during the project's life cycle. Mochal (2009) highlights the importance of rigorously and proactively managing the project and ensuring that the team and all stakeholders have a common understanding on managing projects.

Simultaneously, Lazenby (2011: 75) avers that control is one of the most neglected areas in project management, yet it keeps people accountable and provides an opportunity to trace problems. According to Lazenby (2011), the evaluation of project performance demands a control process consisting of four steps, namely:

1. The establishment of a standard plan which is found in the work breakdown structure (WBS);
2. The measuring of progress and performance in terms of time and budget which will provide quantitative standards of measurements;
3. The comparison of the plan with the actual situation. Because plans seldom materialise as planned, the deviations must be measured to determine whether any action is required; and
4. The taking of action. If the deviations are meaningful, corrective action must be taken to bring the project into line with the original planning.

With community participation being consistently applied, these control processes need to be followed in a manner that is inclusive of indigenous communities. All the steps should be simple and easy to understand for the indigenous people. In other words, it should be broken down to their level of understanding. Furthermore, indigenous people may also have their own effective control mechanisms and their participation can create an opportunity to share these mechanisms with the whole team.

Simplicity will further create an opportunity for all stakeholders, especially indigenous communities, to participate with confidence in order to reach the set objectives. Maylor (2010: 291) therefore advises that there be provision of control at different levels within the project, using simple and easily understood measures that reflect the objectives of the project. For Touwen (2001: 19), controlling the project means managing activities to ensure progress toward the objectives. It includes comparing the current situation with established goals and objectives; submitting reports to account for project activities and finances; monitoring performance to document the way people carry out their responsibilities; and providing feedback to people on a regular, informal basis, including positive feedback and constructive criticism.

If these activities are simplified for the ordinary stakeholder to understand, they can effectively guide stakeholders to carry out their work. Simplifying them can be made possible by affording them the opportunity to contribute their indigenous way of monitoring and reporting on progress. This is supported by Richman (2012: 157) who emphasises that a project is in control at the macro level only when all team members are in control of their own work at the micro level. In other words, the project manager should create an environment where each member of the team is able to control his/her own work.

While the project may struggle in certain stages or throughout the project cycle, Russel (2007: 169) suggests that the project manager must make strategic choices to get the project back on track. Russel further opines that any project may experience being behind schedule, or over the budget, or may produce output of insufficient quality; or the scope may increase without a corresponding increase in schedule. This may demand that change be acknowledged and addressed appropriately. Therefore, the controls in this case may include increasing time, increasing the budget, decreasing the quality requirements or decreasing the scope of a project.

These solutions will require that changes be made from the original plan which is why PMI (2013: 57) contends that project performance be observed and measured regularly to identify variances from the project management plan. The monitoring and controlling process groups coordinate all project phases in order to implement corrective or preventive actions, so as to bring the project into compliance with the project management plan.

The extent to which stakeholders are able to effectively coordinate project phases will be determined by their involvement in the project and whether they are given opportunity to use their way of knowing. In addition to this, Robinson and Wallington (2012: 2) advocate for co-management agreements where meaningful participation in agenda setting and knowledge production by stakeholders and governance arrangements be implemented to bridge the gap between indigenous and scientific knowledge systems.

Resources availability and management are essential to the success of projects; thus, the value of co-management (Robinson and Wallington, 2012). However, the indigenous communities may not be technologically literate and the development practitioners may also not possess the relevant traditional knowledge. This will necessitate that both parties communicate and agree on how and when to use both types of knowledge.

In summary, the control phase seems to be inseparable from other phases which all integrate the knowledge areas, namely integration management; project scope management; project cost management; project time management; project risk management; project quality management; project human resource management; project communication management; project procurement management; and project stakeholder management. It also indicates that all phases are equally important and if managed well with the participation of the indigenous communities whose knowledge is being integrated, success may be ensured at the closure of the project. The next section is on how to close off the project.

2.4.3.3.5 Closing process

Before a project can be closed, it is essential that an audit be conducted. According to Lazenby (2011: 99), a project audit includes evaluating whether a project delivered the expected advantages to the shareholders, whether it was well managed, and whether the clients were satisfied. It also entails determining what was done wrong, what contributed towards success; and identifying what changes could be made to improve the delivery of future projects. When evaluating the achievements, the team looks back at its vision to see if it was realised and if the objectives were met. This evaluation may also need to be done with the relevant stakeholders who have been involved from the initial phases of the project, so that they can also share their experiences during the project execution and contribute to the improvements where necessary.

It is every project manager's wish to close a project well. However, Russel (2007: 197) indicates that if one has skipped certain phases in the process, it is unlikely that one will finish well. Even if everything has been done satisfactorily, it is still more difficult to end the project. Therefore, the closing should also be about evaluating whether all phases have been implemented effectively with the participation of all relevant stakeholders.

An aspect of following project phases requires that stakeholders should be knowledgeable about these phases and an opportunity for empowering them is right at the beginning of a project when planning takes place. The ending of a project is therefore determined by how it was started. Russel (2007: 197) further adds that stakeholders of a project are the key players in determining what the end will look like. However, like everyone else, they are not completely clear about what they want at the beginning of a project but they will know it when they see it. Therefore, the communication patterns established at the beginning will pay off at the end because deliverables and time frames communicated at the beginning are less likely to be changed at the end. It is also important to continue disseminating project status reports so as to keep the end in sight to everyone.

For rural development projects, it may be more beneficial to use the traditional ways of communicating as a method of conveying the status of a project where indigenous communities are involved. For instance, if reports are conveyed through traditional meetings, then all principles of communication, such as language usage may need to be upheld.

In addition to Russel's (2007) view of a lack of clarity above, Lazenby (2011: 103) also affirms that the end for some projects may not be as clear as has been hoped. The scope statement can define a clear end for a project but the actual end may or may not agree with it. The circumstances for project closure, according to Lazenby (2011: 103), may be normal where projects are completed according to plan; premature where projects are completed before time; and some of the project activities eliminated. In some circumstances certain projects seem as if they will never end because of continual delays and additions. Continuous additions however, suggest that there was a poor definition of the project scope. In certain cases, projects fail and this might necessitate closure. Changing of priorities is also another circumstance for project closure and these might be determined during the continuous review of a project. The

management of the closing of a project is a difficult and challenging task and requires strong leadership abilities of the project manager (Lazenby, 2011).

What is significant is that there are always lessons learnt from project implementation and these lessons may need to be recorded for future reference and the prevention of repeating similar mistakes. The problems are part of the empowerment of the communities involved and as they participate in solving them, this increases their confidence.

In summary, the process discussed above indicates that the involvement of stakeholders in project management is important to enhance project success. Since the aim of integrating IK in project management is to enhance this success, it therefore necessitates the identification of all relevant stakeholders to be involved as discussed below but before this, the typical steps in development project management are discussed.

2.4.4 Typical steps in development project management

Having discussed the project management process above, this section specifically focuses on the typical steps that may be followed in development project management. It is important firstly, to understand what development project management is. According to Marando (2012), development project management requires two sets of skills which are project management (hard-ware of management such as operational planning and budgeting), and people management (soft-ware of management, such as team building, conflict resolution and communication). The latter is pertinent where cultural differences between the innovator and the user apply. Kloppenborg (2013: 5) refers to these skills as soft and hard skills where soft skills include communication and leadership activities while hard skills include risk analysis, quality control, scheduling and budgeting among others. These are seemingly essential attributes that differentiate the development project management from the traditional one.

Linking this view to managing indigenous development projects, it should be emphasised that both sets of skills are needed and actually dependent on each other in order to effect development in rural areas. According to the United Nations Environment Programme [UNEP] (2005), development projects follow a process of five steps, namely: project identification; project preparation and formulation; review and approval; implementation; and evaluation.

2.4.4.1 Project identification

According to UNEP (2005) this step entails an analysis of the actual situation in which a potential development project is embedded. It concerns the analysis of problems, causes and what needs to be done to solve these problems. Situation analysis takes place prior to planning and proceeds from the point of view of community members who are affected by the problems. It is the analysis of all participants and stakeholders; the objectives of the various parties involved; a problem plus potentialities analysis; as well as an analysis of the project environment in order to define risks or assumptions. It should also consist of an analysis of the target groups of the potential intervention which, according to Owuor (2007), may include land owners and residents of the farms or communities.

In other words, a participatory process should be followed to formulate a development project. Mouton in Hart, Burgess and Hart (2005: 203) identifies key principles of a participatory project which are: local identification; local conceptualisation; local control; shared ownership; equity; and empowerment. Consideration of these principles should be done during a situation analysis to ensure that communities are not left out of their own development. Hart *et al.* (2005) therefore indicate that the first stage of involving communities is called 'dreams and ideas' because projects emanate from the communities' dreams to change certain situations.

In line with this view, the activities in this stage need to involve the local people, since they understand their situation better and can share their dreams on how to solve the locally identified problems. Hezron (2009: 35) argues that Community Based Organisations, as safe havens of involving local people, have an advantage of being able to exploit local talent and resources. In view of this, development practitioners must be able to facilitate a situation analysis in such a way that local communities are empowered to actively conceptualise their ideas. Hart *et al.* (2005: 208) state that if the concept seems workable, a feasibility study is conducted to test its practicality and viability. This will determine the continuation to the next step identified by UNEP (2005) as project preparation and formulation.

2.4.4.2 Project preparation and formulation

UNEP (2005) explains this phase as beginning with drafting a proposal which entails knowing who the sponsors of a project are, developing a financing plan, and the detailed training requirements. The total cost of a project is determined in this stage and appropriate funders specified. UNEP (2005) further alludes to the importance of stakeholder involvement in this stage. The participation of indigenous people in this case will require that they be able to determine how much funding they will need for the designed project. While the development practitioner may assist them to carry out this task, they should provide the correct information so that correct budget estimations can be made. For Hart *et al.* (2005: 213) participatory planning is meant to concretise the plans, coming up with mutually agreed indicators and outcomes. Participation will also ensure that communities learn planning skills for future planning of other projects if they did not them already. However, in cases where they possess knowledge and skills, they will be able to contribute valuable information towards planning. It is also critical for a project manager to be knowledgeable to assess the feasibility of projects and his/her readiness to undertake them (UNEP, 2005). The next phase is review and approval.

2.4.4.3 Review and approval

After project proposals have been compiled, there is a need for them to be reviewed and approved for implementation. UNEP (2005) has mechanisms for review and approval in place where specific people are appointed to be part of these reviews and approvals. In terms of community development, this means that the community members need to know what is done during these reviews so that they can organise their plans in line with the criteria set by the specific sponsor to whom they wish to submit their plans. For instance, the following are UNEP's (2005: 12) criteria for funding which may guide the community in their planning:

- The extent to which the activities, results and objectives conform and contribute to the UNEP mandate and strategic and programme objectives;
- The extent to which the results identified are realistic, achievable and sustainable;
- The extent to which gender and poverty perspectives are reflected in project strategies and activities;
- The linkage between the justification or background and the intervention being proposed;
- The capacity of UNEP and implementing partners to undertake the project;

- The extent to which a project incorporates and builds on UNEP's previous experience and lessons learnt;
- The level of risk in full project implementation; and
- The extent to which the proposed intervention is sustainable and replicable.

Although these criteria are specific to UNEP, they are generally what any sponsor would like to see in a project before funds can be committed. Therefore, communities need to be empowered through participation in the preparation of proposals before they are submitted so that they are able to present them and respond to questions which may be asked during reviews.

2.4.4.4 Implementation

Implementation deals with carrying out what was planned. In this regard, UNEP (2005) indicates that project managers should monitor the expenditure, activities, output completion and workflows against their implementation plans, and output delivery, as well as progress made towards achieving the results and objectives according to their anticipated milestones.

Reviewing the implementation progress also needs to involve communities as Hart *et al.* (2005: 213) recommend that stakeholders should be involved when the progress reviews are conducted to ensure the success of the project. This may also assist the stakeholders to identify challenges that may lead to project failure in advance, and address them appropriately.

For instance, where quality seems to be a challenge, Parumasur and Govender (2009) indicate that all people in the organisation must be empowered to perform their work with excellence. When people are empowered through training, their confidence is boosted and they are able to implement the plan effectively, therefore quality is ensured.

The implementation phase concerns roles and relationships amongst role players, internal decision-making process, and external relations. Since communities will have been involved in planning, their continuous participation in implementation and decision making is recommended (Parumasur and Govender, 2009). A project manager needs to facilitate the participation of communities as stakeholders and throughout this process, close monitoring

and evaluation are essential to ensure that implementation is carried out properly, as discussed in the next step.

2.4.4.5 Evaluation

The last step is evaluation, but before evaluating the project, monitoring should be done. Monitoring is the observation of implementation, assessing the data collected, interpreting it, feeding back into the project's steering/decision making (European Cohesion Fund, 2014).

What is critical is that the observation should be made by all stakeholders identified during the initiation phase. It is therefore important for the project manager to facilitate between various partners, rather than steering from one central decision-making position. This will be a learning opportunity for stakeholders as UNESCO (2009) highlights the value of knowledge building achieved through participatory monitoring and evaluation. Therefore, all stakeholders including indigenous communities for whom development is planned should be involved in planning and using the monitoring and evaluation system in order for them to learn, as well as contributing their own knowledge. Although monitoring and evaluation are always used interchangeably as though they mean the same thing, monitoring is more about collecting facts about what has been done, while evaluation is about the impact.

Evaluation assesses the end product of the project; whether everything was achieved according to the plan and if the quality is the desired one (UNEP, 2005). Furthermore, Peffers *et al.* (2007: 13) explain evaluation as an activity that involves comparing the objectives of a solution to the actual results from any intervention. It requires knowledge of the relevant metrics and analysis techniques. Depending on the nature of the problem venue and the artifact, evaluation could take many forms. From the two views above, it means people must be able to analyse the information in terms of what impact it had on the whole project and on all stakeholders. Hart *et al.* (2005) suggest that an external evaluation specialist can be appointed and that all stakeholders should be involved in the evaluation activities.

From these steps, as well as the project management phases discussed earlier, it is evident that stakeholders are significant in the whole process and they need to be involved while being empowered. The next section therefore discusses the stakeholders of the project.

2.4.5 Stakeholders of a project

Every project has stakeholders who contribute to its success and a project manager needs to identify and engage various stakeholders in order to develop a shared vision for the project. PMI (2013: 29) defines stakeholders as persons or organisations who are actively involved in the project, or whose interests may be positively or negatively affected by the performance or completion of the project.

Portny (2010: 20) argues that the success of the project depends heavily upon involving the appropriate people at the right time and describes these people as the project audience. This means a person or group that is interested in, or affected by, or needed to support the project. Portny further identifies, among these people, drivers (people who have a say in defining the results to be accomplished by the project); supporters (people who will help with the performance of the project); and observers (people who are neither drivers nor supporters but who are interested in some aspect of the project). The drivers and supporters are often referred to as stakeholders.

Portny's view that stakeholders must be involved at the right time is supported by PMI which specifically states in its process chart that stakeholder identification should be done during the initiation phase of project management. This is the right time because project initiation must be done with the relevant stakeholders, if not by them. PMI (2013: 32) further identifies a variety of stakeholders, namely customers, sponsors, portfolio managers, a programme manager, a project management office, project managers, a project team, functional managers, operations management, and sellers or business partners. However, for the purpose of this study, the following stakeholders are discussed from the perspective of a variety of authors.

2.4.5.1 The role of the project manager

The role of the project manager is one of the most important roles in project management. The primary responsibility of the project manager is to plan, organise, and control a project to its successful completion (Russel, 2007: 23). The project manager does this by determining the work to be done; resources to do the work; managing communication among all people involved; and he/she adjusting the plan when the project requirements change.

From the context of participatory rural development, a project manager may be able to fulfil these roles by tapping into the expertise of local communities, and through effective communication they may provide, suitable alternatives where change is needed.

The role of a project manager also involves managing the team and for Russel (2007), this requires leadership skills, such as setting the team vision; assigning the best people to the tasks; and coaching and resolving conflict. In addition to these skills, Richman (2012) states that a project manager needs to have people skills which will enable him/her to work with teams; integration skills to ensure that all other elements of the project are coordinated; and technical skills for the identification of problems and effective management of the project. Balance should also be maintained by assigning responsibility, delegating authority and holding people accountable. People skills referred to here are critical for project success because even if project managers are highly educated, without the ability to bring people together and work harmoniously, the project may not succeed. These soft skills complement the hard skills to ensure that all those involved in a team are familiar with their roles. PMI (2013) refers to this as 'stakeholder management' which is more than improving communication and more than managing a team. It implies the creation and maintenance of relationships between stakeholders and project teams.

Anantatmula (2010: 14) makes an important contribution that management functions, such as organisation, planning and control are at the core for ensuring an effective use of resources. Leadership also assumes a similar importance due to project composition and the challenges associated with it. Therefore a project manager, as a leader should be able to, amongst other things, create clarity through communication by defining project goals and outcomes early in the project; defining roles and responsibilities of team members; establishing trust; and offering support to the team. Above all, a project manager should manage outcomes by focusing on the defined project mission and objectives as this will help in the formal evaluation of the project to determine success.

In line with Anantatmula's contribution, one can argue that the project manager, dealing with rural development projects, may need to understand the dynamics involved in rural areas, especially regarding leadership and communication mechanisms. Having to facilitate these, the

manager would not want to do things that contradict traditional leadership in the indigenous communities, therefore failing to get the support of the people.

While a project manager is responsible for ensuring the success of the project, he/she will not be able to do this without the engagement of other stakeholders as discussed below.

2.4.5.2 The role of the sponsor

Every project needs to be sponsored financially (Russel, 2007: 25). The role of the sponsor is to establish the business case; approve the project adjustment; work with a project manager to resolve conflicts between the different parts of the business; and to provide financial and non-financial resources.

This stakeholder is critical since no project can take off without financial support. With this critical role, it is therefore essential to meet the sponsor's expectations and to keep them engaged in project activities throughout the project life cycle (PMI, 2013: 404). Similarly, Russel (2007: 25) cautions that project managers must always communicate with the sponsor and avoid making choices on their behalf. In other words, without the support of the project sponsor, the project might fail. Therefore, the interaction of the project manager with the sponsor on a continuous basis is essential for the project success. It is, in fact, important to agree on a project plan with the sponsor and such agreement must be signed by both parties to avoid problems as the project is implemented.

In rural development projects the sponsor may be government, traditional leadership or international donors and constant communication with them will be essential. It should, however, be borne in mind that customers, who are individuals in the society, should also be given regular feedback on relevant communication. This view leads the discussion to what the role of individuals in society is.

2.4.5.3 Customers (individuals in the society)

The customer is an individual or organisation who uses the project's product(s). Individuals who are beneficiaries of the project are important stakeholders and should participate in the project. Sherwill *et al.* (2007: 505) opine that a policy of decentralisation and participation needs to be applied for the project to be more responsive to local needs. The concept of

connectedness is referred to as the existence of groups of individuals in society and the connections both within and between these groups, from micro to macro levels. On a micro level individuals may be connected through formations, such as street committees because of their engagement in similar activities within the communities, while on a macro level a leader of the street committee may represent the committee in a provincial structure and provide feedback to the lower level whenever critical aspects are discussed.

These connections may be helpful when individuals are allocated tasks in a project and need some form of support. A project manager may need to develop a good relationship with these groups and communicate with them via their representatives in order to obtain and convey the relevant project information.

According to Barkley and Saylor (2001: 143), the customer must be integrated into a project as a means of achieving customer-driven project management. This, according to the authors, can be done through an agreement between the customer and the project management team. In the case of this study, the indigenous community where the project is to be conducted, can be the customer and the agreement may entail their knowledge and how it is going to be used during the project. Emphasising the importance of the customer, Barkley and Saylor (2001: 144) indicate that the team's day-to-day basic responsibility is to provide a deliverable that achieves total customer satisfaction. An almost similar view is held by Kwak and Anbari (2006: 708) who relate to what they call a six sigma method which is a project-driven management approach to improve the organisation's products, services, and processes by continually reducing defects in the organisation. Although this is project-driven, it is a business strategy that focuses on improving customer requirements understanding; business systems; productivity; and financial performance.

It is in this context that a project manager needs to know what to communicate with customers, and when and how to communicate to keep the customer satisfied. It also means that the customer should be given an opportunity to communicate concerns, so as to avoid one-way communication. While a project manager is key to achieving all these, they cannot be done without the organisation. Therefore, the last but nevertheless important stakeholder is the performing organisation.

2.4.5.4 The performing organisation

The performing organisation might be an NGO, Cooperative or Company whose members take part in most of the activities of a project. As indicated in the planning phase of the project management process mentioned above, the performing organisation should have shared values for the project to succeed. Ferguson and Milliman (2008) stated that organisational visions and values need to be consistent with the needs and interests of the organisation's constituencies who must agree on common governing principles. The shared values will promote a sense of solidarity among all the citizens and should lead to a harmonious effort of total citizen empowerment. A shared value system fosters teamwork and pride in the organisation; promotes loyalty in stakeholders; encourages ethical behaviour and creates stability.

Analysing these values against those of indigenous communities, there are some similarities which place them in an advantageous position to do well in organisations because of their connectedness. For instance, Hunt (2013: 5) highlights four critical principles of community engagement, namely integrity (openness and honesty); inclusion (when there is an opportunity for a diverse range of values to be expressed); deliberation (credible information for dialogue); and influence (when communities can make an input into how they can participate). For effective teamwork in the organisation, these elements are essential and since they are part of indigenous communities' culture, having these communities as part of the performing organisation is an advantage.

While the elements above are critical, certain projects may need the formation of strategic alliances between two or more organisations where they do not possess certain skills in order to learn from each other and increase their ability to perform (Zamir, Sahar and Zafar, 2014). Zamir *et al.* (2014) outline the key factors contributing to the success of strategic alliances between large and small firms. They are: are selecting the right partner; support and commitment from top management; clearly understood roles; regular communication between partners; and clearly defined objectives. If the right partner with an understanding of the vision and roles of each other is selected, the team will communicate effectively and subsequently perform well. Similarly, Jiang, Li and Gao (2008) are of the opinion that building alliances goes through four stages, namely partner selection; structuring/negotiation; implementation; and performance evaluation. Once a project manager succeeds in ensuring these key areas, the work

of directing a project becomes easy because the team will know exactly what they need to do and communicate effectively among one another.

Therefore, for a performing organisation to be able to perform well as a stakeholder throughout the project process, they also need to consider their stakeholders and possess a shared vision and shared values (Jiang *et al.* (2008). Furthermore, a performing organisation needs to be skilled in order to give the best performance and thus experience success. In this case, the United Nations Department of Social Affairs [UNDESA] (2009) emphasises a critical aspect of selecting skilled people as part of the group that represents the community without neglecting the indigenous socio-political structures. This requires that in the constitution of the performing organisation, the mandate and authority of the community representatives should be clearly understood to avoid contravening them (UNDESA, 2009). For instance, the communication structures and channels must be followed and the team must understand their limits in decision making.

While the stakeholders discussed above are general, it is important to discuss key stakeholders involved in rural development projects since this is what the study is about.

2.4.6 Key stakeholders for rural development projects

Rural development projects also have key stakeholders and they need to be identified before a project can commence.

2.4.6.1 Traditional leaders

George and Binza (2011: 955) identify traditional leadership as a key stakeholder. It is George and Binza's (2011) view that traditional leaders must be consulted on national and provincial government development programmes that affect traditional communities. In this regard, these leaders are required to complement and support the work of government in national and provincial spheres. For them to succeed in performing these duties, they must form cooperative relations and partnerships with government at national level in development and service delivery, and may participate in international and national programmes geared towards the development of rural communities.

2.4.6.2 Community-based organisations

Community-based organisations (CBOs) are also key project stakeholders as Hezron (2009: 35) avers, that CBOs have the advantage of the setting up of income-generating activities in the rural areas thereby improving the standards of living; dealing with environmental problems; reducing insecurity and arms trafficking; thereby improving regional security. They also deal with the uneven distribution of resources which has largely been due to corruption, nepotism and favouritism within most parts of the continent.

Hezron (2009) further argues that CBOs will reduce the knowledge gaps existing on the continent due to the slow spread of technology. This is because the conception and implementation of ideas is done at the local level, with support from all stakeholders, thereby reducing conflict and encouraging participation (Hezron, 2009). This is an essential aspect of project management.

2.4.6.3 African women

Dyubhele *et al.* (2009: 231) indicate that many African women who are key stakeholders in rural development have been confined to poverty-stricken rural areas which are isolated, and those who live there walk long distances to rivers, fields and shops. They have to work strenuously and for many hours, often in the hot sun, on agricultural plots, preserving seeds and cultivating food crops, using their IK to increase productivity (Dyubhele *et al.*, 2009). This IK about food production and household care is an important factor in enhancing sustainable development.

2.4.6.4 Government

Government also plays a critical role as a stakeholder in development projects by creating an enabling environment through policy, in order for rural development projects to take place. For instance, Olivier *et al.* (2010: 110) refer to section 24 of the South African Constitution which states that people have the right to a safe and healthy environment, and specifically the protection of the environment and the attainment of "ecologically sustainable development and use of natural resources", with the simultaneous promotion of "justifiable economic and social development".

According to Godfrey, Funke and Mbizo (2010: 1), governments are faced with issues of increasing complexity that require them to make decisions which have the potential to impact greatly on society and economies. This growing complexity of issues, as is apparent in the field of environmental sustainability and global change, requires a greater need for evidence in the formulation of policy. In the case of South Africa, there is already an IK Policy available which was adopted by the Department of Science and Technology (2004: 15) according to which, the Intellectual Property of indigenous practices needs to be documented. In order to prevent IK that is already in the public domain from being patented as a new invention in another country, it is vital to provide written documentation of such practices.

Furthermore, Godfrey *et al.* (2010: 5) notes that in order for research organisations to move from outputs and outcomes to impact, they are necessarily reliant upon the input of research by policy-makers, industry and society. Knowledge brokering provides an important means of engaging with key stakeholders upon whom scientists are reliant to ensure uptake and ultimate impact (Godfrey *et al.*, 2010).

It may therefore be logical to suggest that awareness around the policy needs to be created in order to empower indigenous communities to protect their knowledge. Furthermore proper monitoring systems for policy implementation need to be in place so that the policy is not only on paper but is implemented throughout the stages of project management. This must be the responsibility of all stakeholders so that projects can be successful. This leads to the next discussion on criteria for declaring a project a success.

2.4.6.5 Indigenous people

Indigenous people are also key stakeholders in rural development projects and Amnesty International (2011: 4) believes that economic development cannot be pursued as a zero sum game in which the rights of indigenous people are sacrificed. Amnesty International (2011) further argues that human rights norms guarantee the right of indigenous people to take part in the decisions that affect their lives and territories, without discrimination.

2.5 CRITERIA FOR A SUCCESSFUL PROJECT

For one to regard a project as a success or failure, one should have criteria against which to measure project performance (PMI, 2013). There are various perspectives regarding criteria

for successful projects. Firstly, Anantatmula (2010: 13) distinguishes between project success and project management success. Project success is said to be measured against the objectives of the project, while project management success is measured against completing the project within time, cost, meeting scope and quality (Anantatmula, 2010). This means that declaring a project successful, depends on the achievement of objectives, as well as meeting the set time frames, using budgeted resources well and producing the expected quality (PMI, 2013). Therefore, success must be evaluated holistically.

Secondly, Söderlund (2005: 455) has a similar view that successful projects are a function of which projects to pursue (generation of ideas, formation and selection of projects) and how to pursue them (management and organisation of project implementation/execution). This is referred to as project competence and emphasises the importance of the early phases of projects. The author's idea of project competence is the ability to generate/select and implement/execute projects skilfully, thus leading to the satisfaction of the customers' needs.

On the other hand, Ika, Diallo and Thuilier (2010: 72), identify five criteria for measuring project success as relevance; efficiency; effectiveness; impact; and sustainability. In other words, if a project is not relevant to the challenge that is being addressed, and the strategies are not achieving what they were meant to achieve, as well as ensuring that the delivered goal continues to impact the communities, it means that a project cannot be regarded as successful. Therefore, when relating the above perspectives to rural development projects it may require that the identified needs of the indigenous communities be met and that the leaders in the community be empowered to successfully manage these projects. Furthermore, the strategies used should be selected in consultation with the indigenous community to best suit their circumstances and their ability to manage them.

While the success of a project is commonly evaluated at the end, evaluation can also be done from the beginning. This is supported by Karamitsos, Apostolopoulos and Bugami (2010) who postulate that although projects are often considered to be finished when their deliverables are complete, the benefits of the projects are mostly realised over time. It is therefore crucial to observe and identify the benefits of the project early in the life cycle.

Westerveld (2003) and Basu (2012) further use a Project Excellence model to describe the key focus areas of project success. Although in principle, the view is similar to the ones above, Westerveld focuses on two areas, namely the result areas, and the organisational areas. The result area concerns the end results that are appreciated by the client, project personnel, users, contracting personnel, and the stakeholders (Westerveld, 2003 and Basu, 2012). Although the stakeholders are singled out as if all others listed previously are not stakeholders, they are in principle all stakeholders. Therefore, Westerveld contends that all stakeholders must be satisfied at the end of the project for it to be regarded as successful. In the case of rural development projects, this would include traditional leaders, indigenous communities, established committees, and so on.

The second area which Westerveld (2003) and Basu (2012) use as criteria for success involves the successful leadership and the team, policy and strategy encompassing how strategic goals are accomplished, as well as the interaction with the relevant stakeholders. The effective and efficient use of resources to achieve the maximum results for stakeholders seem to be critical, as well as the contractual relationship established with partners, and the ability to control how tasks are performed to achieve the desired results. The success of the project seemingly depends on how stakeholders are treated and how resources are managed.

All these perspectives are indicative of the significance of managing a project well from the beginning. It is clear that results cannot be achieved if the organisation does not perform; therefore, it is critical to analyse the success of a project not only from one angle but from both the results and the organisational angle.

In view of the above, it is therefore essential for all involved in projects to understand the project management process and how to achieve project management success. As Russel (2007: 91) suggests, the success of a project emanates from delivering the right solution to a business challenge or opportunity. Delivering the right solution also requires the right approach and having discussed all the aspects relating to project management, it is vital to know which project management approach is relevant to bring about success in a project. The next section therefore entails different forms of management and which one may be suitable for successfully managing rural development projects.

2.6 FORMS OF PROJECT MANAGEMENT

From the previous discussions, it is clear that the way projects are managed contributes to the success of the project. This section therefore discusses three important forms of project management, namely traditional; agile; and extreme project management. Each one has strengths, as well as weaknesses and at the end, it will become evident which one is ideal for successfully managing rural development projects.

2.6.1 Traditional project management

Traditional project management is described by Fernandez (2009: 11) as a linear strategy that consists of dependent, sequential phases that are executed with no feedback loops. The solution of the project is released only in the final phase. It is characterised by a clearly defined goal, solution, and requirements; few scope change requests, routine and repetitive projects; and the use of established templates (Fernandez, 2009).

Traditional project management, as explained above, seems to have the characteristics of the project management process discussed earlier, as outlined by the Project Management Institute. Furthermore, according to Augustine, Payne, Sencindiver and Woodcock (2005: 87), everything in traditional project management is viewed in terms of the control of change, risk and people. This perspective suggests that life is the same all the time and everything happens in the same way. However, Saynisch (2010: 23) argues that the development of our world and society with its markets, technologies, people, and organisations is not stable and linear. In real life, it is unstable and non-linear. These phenomena therefore require a new and promising management approach with the feature of paradigm. Traditional methods and mechanistic thinking are said to lose their efficiency. Saynisch (2010) further refers to the knowledge areas as described in paragraph 2.6 above, to represent an understanding of traditional management and believes that the latter cannot solve the widespread and profound challenges.

Although Saynisch's (2010) view may hold water, Fernandez (2009: 11) points out some advantages of the traditional management approach which include the fact that the entire project is scheduled. Therefore, one is able to know what to do and when to do it, especially if the resource requirements are known. The most skilled resources are not required and team members can be distributed, thus making the approach less costly.

While traditional project management has the abovementioned elements which can contribute to the success of a project, it also has some limitations. For Fernandez (2009: 11), the plan and schedule do not accommodate change very well and the costs can be very high; it can take a longer period to complete the project, especially if change takes place. The fact that it has schedules, requires detailed planning and should follow a defined set of processes. The approach is unfortunately not focused on the customer but on delivery against the plan. Augustine *et al.* (2005: 87) also point out that although managers use methodologies, tools and practices to manage, tools are said to fail when linear tasks do not accommodate dynamic processes.

The challenge with the traditional approach for rural development projects is the complexity thereof, as it is known that indigenous people are mostly illiterate. The view that this approach does not accommodate change, while rural development projects are about bringing a positive change in rural areas, suggests that applying the traditional project management approach for rural development projects may not be the best choice.

The section below will therefore give an overview of the second project management approach, namely agile management.

2.6.2 Agile project management

Agile Project Management (APM) involves a set of values, principles, and practices that assist project teams in coming to grips with the challenging environment (Conforto and Amaral, 2010: 73). These authors argue that APM emphasises, among other things, participatory decision making. Since the integration of indigenous knowledge involves community participation, it appears that the agile project management may be relevant for rural development projects. Agile project management also requires an understanding of the effects of the mutual interactions among a project's various parts, and continuous learning and adaptation (Augustine *et al.*, 2005: 87). An adaptive leadership is therefore required to manage rural development projects by considering community members as skilled and valuable stakeholders whose collective ability contributes to the success of a project (Augustine *et al.*, 2005).

All these attributes may play a significant role during community participation because of the need to recognise an indigenous community's skills and knowledge in enhancing development

projects. Hope and Amdahl (2011: 57) advocate for user participation and highlight the importance of getting firsthand encounters with the different voices present in the field; the interpreted meanings; and the story behind the observed accounts of their daily experiences.

These daily experiences may present differently at times and may require management adaptation; thus, agile management seems to be more relevant. The success of the Adaptive strategy is, according to Fernandez (2009: 12), highly dependent on the ability to accommodate frequent change and adjust accordingly. The advantages of this strategy include: not wasting time on work that does not add value; and provides maximum business value within the given time and cost constraints. The limitations include lack of a meaningful involvement of the customer throughout the project; something that most projects do not practise (Fernandez, 2009: 12). The approach also cannot identify exactly what will be delivered at the end of a project. Nevertheless, the limitations can, however, also be advantageous because through the meaningful involvement of the customer, one can identify the needs which should be met by the project. Therefore, although it may be a time-consuming activity, agile project management can also be a value-adding activity.

The third and last form of project management to be discussed is extreme project management (EPM).

2.6.3 Extreme project management (EPM)

According to Fernandez (2009: 12), EPM is similar to APM except that in the former, the goal of the project is not known and often realised at the end of the project. Fernandez (2009: 12) points out that this type of project goal uncertainty is also referred to as "chaos" since often the project ends up with the final results being completely different from the project's original intent.

Rural development projects cannot be managed in this manner because the needs of communities may end up not being met most of the time. Being uncertain about goals may be the reflection of poor needs identification which should be done at the initiation phase. Fernandez (2009: 12) however, points out the positive aspects of the extreme strategy which include keeping options open as late as possible, and offering early scrutiny of a number of partial solutions.

These advantages are not convincing enough for one to choose this approach over other forms of management. The fact that a project is an endeavour that is meant to take place within a set period, keeping options open as late as possible may lead to the extension of the period set for the project, which could be costly. Looking at a number of partial solutions may result in not completely solving all the problems. In line with these concerns, Fernandez (2009) highlights the limitations of extreme project management; that one may be looking for solutions in all the wrong places since the goal is not known, as well as being no guarantee that any business value will result from the project. When considering the value of financial resources in projects, this approach can contribute to the inefficient use of resources because of lack of goal clarity and can also result in an unsuccessful organisation in terms of the project management excellence model described in Section 2.5.

In view of the three project management approaches discussed above, and the need to integrate IK-based projects in the project management process, it is suggested that the application of some principles from the traditional approach and some from the agile approach be used for managing rural development projects. While the traditional approach has the potential to guide one through the steps of project management, as well as the specific tasks to be completed, the agile approach will add more value with its user participation and evaluation throughout the process, instead of at the end as in the traditional model.

To further motivate the use of APM, reference is made to Ayuk (2011: 23) who argues that:

Agile methodologies represent a significant shift from the traditional, well-ingrained approaches to project management which often assume that through some thorough conceptualisation, design and planning process, it is possible to employ and control project resources in a fairly predictable manner to achieve fairly predictable outcomes.

One may further add that integrating indigenous people in the project planning process seems to require this kind of management since indigenous people will have the opportunity to contribute their skills and knowledge, as well as taking part in problem solving. Moreover, since there are changes and challenges throughout rural development process, the agile approach will be able to adapt to these, so that the project becomes effective at the end.

2.7 SUMMARY

This chapter presented some rural realities, such as poverty and unemployment in South Africa and solutions which have attempted to deal with these realities. Development and rural development were conceptualised with the purpose of showing the embeddedness of rural development in project management. The process of project management was then outlined leading to a discussion on three different forms of project management, namely traditional, agile and extreme project management. From these three approaches' characteristics, it appeared that a combination of the traditional and the agile project management would be relevant in effectively managing rural development projects. The next chapter focuses on the role that indigenous knowledge can play in project management and also how this knowledge can be integrated in the process.

CHAPTER 3: THE ROLE OF IK IN RURAL DEVELOPMENT PROJECT MANAGEMENT

3.1 INTRODUCTION

The previous chapter provided a perspective on rural development project management; phases of project management; stakeholders involved, as well as the types of project management – topics that make up the first component of the study: **rural development project management**. This chapter comprises the second component: **indigenous knowledge** in order to provide a clear meaning of the concept and how its integration into development project management can enhance success of such projects.

The chapter starts with understanding knowledge management (KM), followed by an examination of IK in its different forms. Following this, IKS of the Northern Cape are identified and their role in development project management are examined. This is followed by a discussion on integrating IK into rural development project management with attention on selected best practices from the parallel studies conducted. The theoretical and conceptual frameworks are also discussed followed by an interrogation of the project management approach adopted for this study. A summary is then provided to conclude the chapter.

3.2 MEANING AND NATURE OF KNOWLEDGE

While the statement “knowledge is power” has become commonplace in knowledge management discourse, a cautious and strategic place to approach knowledge is to explore the constitution of knowledge and its management. Knowledge is viewed by Adam (2007: 8) as both a process and a product; dynamic, mostly available in the “heads” of individuals, and also embedded in a practice of livelihood. Linked to this view is Tripathi and Bhattarya’s (2004: 2) definition of knowledge as the appropriate collection of information, such that it becomes useful in decision making. Since the decision-making process forms the heartbeat of project management, knowledge management is constitutive of project management. This transactive relationship between project management and knowledge management is embodied in the ten knowledge areas constituting project management in Chapter 2. While this relationship can be assumed to be obvious, what remains unclear and underexplored in the mainstream literature is how distinct types of knowledge impact on project management.

According to Bautista-Frias, Romero-Gonzalez and Morgan-Beltran (2012: 48), there are two types of knowledge, namely tacit, and explicit knowledge. Tacit knowledge is acquired only

through experience, while explicit knowledge is codified and documented in manuals and procedures. For Nonaka and Takeuchi (1995: 8), the distinction between explicit and tacit knowledge is the key to understanding the differences between the Western and Japanese approaches to knowledge. In the case of this study, one can relate the Japanese way to the indigenous approach to knowledge. The two types of knowledge are discussed in detail below.

3.2.1 Tacit knowledge

According to Nonaka and Takeuchi (1995: 8), *tacit knowledge* consists of schemata, mental models, beliefs and perceptions so ingrained in people's lives that they are taken for granted. For Adam (2007: 9), tacit knowledge refers to unconscious and intuitive knowledge gained through experience that allows individuals to make decisions without referring to rules or principles. It is personal, practical and context specific, to the extent that even the knowledge holder may not be aware of its existence (Kothari, Bickford, Edwards, Dobbins and Meyer, 2011: 2). Kothari *et al.* (2011) further state that this knowledge is difficult to communicate and can also be described through terms, such as intuition; know-how; procedural knowledge; implicit knowledge; unarticulated knowledge; and practical or experiential knowledge. In addition, Subashini (2010: 36) argues that tacit knowledge is hard to formalise; it is rooted in action, procedures, commitment, values and emotions. Tacit knowledge is not codified, it is not communicated in a 'language' but rather acquired by sharing experiences, by observation and imitation. Rambe and Mlambo (2014: 14) similarly argue that tacit knowledge is that personal knowledge which the possessor finds difficult to articulate or explain but whose skills and techniques the possessor may demonstrate naturally. The knowledge is said to be embedded in the individual who performs activities or functions naturally and unconsciously. From the afforesaid, it is logical to conclude that indigenous knowledge can be classified as tacit knowledge because it is personal and transferred from generation to generation through observation and imitation (Subashini, 2010: 36). What this implies for integrating IK in project management is that obtaining tacit knowledge may not be easily done without direct interaction with the holders of that knowledge to observe and experience it from them. This is supported by Mbeki (2012) alluding to what Africans 'know' as the 'knowledge' that could be used to change their conditions for the better (Mbeki: 2012).

Mbeki's view suggests that knowing the nature of indigenous African knowledge may enable development project leaders or workers to integrate this knowledge with project management

knowledge to enhance the success of rural development projects. While this integration may appear challenging, Bautista-Frias *et al.* (2012: 48) argue that for tacit knowledge based on workers' experience to always be available to the organisation, mechanisms, such as the codification of knowledge, which leads to the exteriorisation of knowledge can be implemented. The objective of codification is to make institutional knowledge available to those who need it (Bautista-Frias *et al.*, 2012). The availability of this knowledge can benefit development projects in rural areas.

Therefore, mindful of the tacit nature of indigenous knowledge, its integration into rural development projects necessitates its availability to development practitioners. Practically, this implies that IK may need to be collected from rural communities in order to enable other project team members to access the knowledge, codify this knowledge and provide proper guidance on initiating and managing projects that will impact human lives positively.

3.2.2 Explicit knowledge

Explicit knowledge can be expressed in words and numbers, can easily be shared in the form of hard data, scientific formulae, codified procedures or universal principles (Nonaka and Takeuchi, 1995: 8). Finestone and Snyman, (2006) believe that explicit knowledge exists outside of the individual and is readily communicated, making it possible to create a record of memory for an organisation or institution. Explicit knowledge can be related to scientific knowledge which involves western technology or techniques (Mercer *et al.*, 2009: 4). It is articulated and accessible to anyone who reads, hears or looks at it (Adam, 2007: 9). For Anand, Ward and Tatikonda (2010: 305) what makes explicit knowledge easily communicated or transferred is its codification, documentation and its transfer can be impersonal through written instructions and diagrams. Therefore, the involvement of codification, documentation and written instructions in traditional project management knowledge, typifies the knowledge as explicit.

For Nonaka and Takeuchi (1995: 62-69), knowledge conversion follows a four stage *SECI* process namely: *socialisation* (tacit to tacit); *externalisation* (tacit to explicit); *combination* (explicit to explicit); and *internalisation* (explicit to tacit). These processes are explained by Nonaka and Takeuchi (1995: 62-65) as follows: *Socialisation* is a “process of sharing experiences and thereby creating tacit knowledge such as shared mental models and technical

skills”; *Externalisation* is a “process of articulating tacit knowledge into explicit concepts and metaphors are frequently used to facilitate the process”; *Combination* “consists of the activities of systemising concepts and exploiting knowledge into a knowledge system through different media; and *Internalisation* is a process of embodying explicit knowledge into tacit knowledge”.

Following the descriptions above, it can be argued that these processes play a critical role in project management to create meaning between the two types of knowledge (tacit and explicit) involved in development projects for rural areas. The interaction between these two types of knowledge, through the processes defined above, is illustrated in Table 3.1.

Table 3.1 Converting tacit and explicit knowledge

Socialisation (explicit to tacit) Indigenous people can share their knowledge with project participants through interaction	Externalisation (tacit to explicit) Making tacit knowledge to be easily communicated so that it can be understood by all participants in projects (coding)
Internalisation (explicit to tacit) Changing explicit knowledge into tacit so that indigenous people can understand and apply it	Combination Explicit knowledge is transferred to different participants in different ways, such as e-mails, documents, meetings or data bases

Source: (adapted from Nonaka and Takeuchi 1995).

The implications of these processes for integrating IK into project management are that as indigenous people are afforded the opportunity to participate in projects, they need to share their knowledge with team members (socialisation) and this knowledge can be codified for use by all members (externalisation). At the same time, this codified knowledge will be disseminated to other members through various media, such as emails, data bases, and so forth (combination), and can be accessed and used by all other members. It would also mean that indigenous people should be trained on how various media work (internalisation).

The socialisation, externalisation, combination and internalisation processes could inform decision making in projects. However, these processes need to be managed so that the knowledge can be used and re-used to benefit the people, organisations and the communities (Jain, 2011: 3). The next section discusses knowledge management in detail.

3.3 KNOWLEDGE MANAGEMENT

Knowledge management is essential for every project as it enables proper decision making to be made and this section reflects on what it means in relation to project management. Tripathi and Bhattarya (2004: 2) are of the opinion that knowledge management focuses on the processes involved in creating, sharing and leveraging of knowledge among scientists, communities, resource managers and policy-makers. Similarly, Sharifi, Ayat and Sahibudin (2008: 231) concede that knowledge management entails a range of practices used by organisations to identify, create, represent, and distribute knowledge.

The link between these two definitions and the study on integrating indigenous knowledge into project management is that both knowledge and project management entail systems and processes of management. Since IK entails the practices of local communities, there is sufficient scope to argue that the effective integration of IK into rural development projects should undergird the involvement of these local communities in the planning of such projects.

According to Le Grange (2004: 86) the common elements of all knowledge systems are their localness, although their differences lie in the way they are assembled. Social strategies and technical devices are employed for establishing equivalences and connections between heterogeneous and incompatible components.

The equivalences and connections that need to be created in this case, relate to the tacit and explicit knowledge as discussed above where these social strategies and technical devices may play an important role. It is essential to demonstrate that indigenous knowledge as tacit, can serve the same purpose as explicit knowledge in managing projects for rural development. What is of significance is the participation of indigenous people when these strategies are devised, using their knowledge. Le Grange (2004: 87) is of the view that knowledge is given coherence through the application of social strategies and technical devices (social labour). Le Grange (2004: 87) further indicates that as connections are created and equivalences established between isolated and heterogeneous knowledge, a social order of trust and authority is simultaneously created which results in a new knowledge space. From this statement, one can argue that the significant participation of indigenous people in knowledge creation processes enables them to develop trust and a willingness share their valuable knowledge for projects. This view supported by Lambiotte and Panzarasa (2009: 181) who

state that communities which are connected through overlapping ties, may also suggest a possible organisation of the network into clusters of nodes that are homogeneous, with respect to some non-relational attributes.

While knowledge can be shared by indigenous people, Roux *et al.* (2006) posit that indigenous knowledge in most communities around the world is generally not documented but is shared through traditional, oral communication systems and further commonly exchanged through personal communication and demonstration. Unfortunately, the traditional oral channels of communication are being disrupted as people no longer live in homogeneous blocks of community due to modernisation disrupting traditional communication systems. Through urbanisation and globalisation the preservation of IK in most communities around the world is under threat (Roux *et al.*, 2006).

The identified challenge on the preservation of IK in communities indicates the need for effective knowledge management which is essential to improve the lives of people, especially the local communities through development projects. According to the Northern Cape Provincial Government (2008), the context of the knowledge must be attuned to the needs and opportunities that exist within the local environment, where people are seeking to create sustainable livelihoods. Taking the context of knowledge into consideration may require effective communication strategies relevant to indigenous communities. Furthermore, the Northern Cape Provincial Government (2008) highlights the importance of stimulating the transfer of technology to local communities to assist development processes through relevant technologies and training. In this way, IK will be preserved using electronic technology, such as computers, while at the same time, communities are empowered to use technology.

Having discussed knowledge management and considering that IK is one form of knowledge that needs to be managed, it is essential to elaborate on the nature of IK.

3.3.1 Defining indigenous knowledge

According to Grenier (1998: 1), IK is the unique, traditional, and local knowledge existing within and developed around the specific conditions of women and men indigenous to a particular geographic area. Chisenga (2002: 16) defines IK as “a body of knowledge and beliefs built by a group of people, and handed down generations through oral tradition, about the relationship

between living beings and their environment. It includes a system of organisation, a set of empirical observations about the local environment, and a system of self-management that governs resource use". This definition reflects the importance of language and the environment in which human beings live with one another because Langill in Chisenga (2002: 17) contends that IK is expressed in local languages. Therefore language plays a critical role in the transmission of IK. For IAIA (2012: 1) the terms "traditional knowledge" and "Indigenous Peoples" go hand-in-hand and traditional knowledge is transmitted through oral tradition and first-hand observation. It includes a set of empirical observations about local environment and a system of self-management that governs resource use.

The World Bank (2011: 1) defines IK as local knowledge that is unique to every culture and society. It is the basis for local decision making in agriculture, health, natural resource management and other activities. It is embedded in community practices, institutions, relationships and rituals and is part of everyday life, such as herbal medicines and acupuncture (World Bank, 2011).

According to Most and Ciran (2003), the term refers to the large body of knowledge and skills/practices that has been developed outside the formal educational system, and that enables communities to survive. However, the dominance of the western knowledge system has largely led to the neglect and ignorance of indigenous knowledge (Most and Ciran, 2003).

All these definitions have a lot in common but most importantly, IK is local and obtained outside formal education. From these definitions (Grenier, 1998, Chisenga, 2002, Most and Ciran, 2003, World Bank, 2011 and IAIA, 2012), the operational definition of indigenous knowledge is that it entails knowledge, skills, technologies, practices, and beliefs that a local community accumulates over generations of living in a particular environment and which have enabled such communities to achieve stable livelihoods. To further clarify indigenous knowledge, the next section focuses on different forms of indigenous knowledge.

3.3.2 Forms of indigenous knowledge

There are various forms of IK and those discussed in this section are not exhaustive. The focus is mainly on those considered relevant/applicable to project management.

3.3.2.1 Indigenous food preservation

Food preservation is carried out in different food types. According to Shava (2005: 77), most rural communities have knowledge about indigenous food plant species, their distribution, seasonal availability, and how they are prepared or used. While these food plants provide a very diverse food resource base, they are unfortunately, not available in all seasons, thus the need to preserve them. Aworh (2008: 1) states that:

High post-harvest food losses, arising largely from limited food preservation capacity, are a major factor constraining food and nutrition security in the developing countries of West Africa, where seasonal food shortages and nutritional deficiency diseases are still a major concern.

Aworh (2008) further indicates that food preservation is done using traditional technologies and that traditional food processing activities constitute a vital body of indigenous knowledge handed down from older to younger generations over time. Aworh avers that rural development is closely linked with the promotion of small-scale food industries that involve lower capital investment and rely on traditional food processing technologies (2008: 3).

3.3.2.2 Indigenous music and communication in development project management

Communication plays a critical role in project management. PMI (2008: 243) defines project communication as the timely and appropriate generation, collection, distribution, storage, retrieval and dissemination of information. PMI further indicates that effective communication creates a bridge between diverse stakeholders involved in a project, and in the case of integrating IK into project management, indigenous music and communication can be critical. According to Chukwureah (2010: 218), indigenous communication media, such as drums, folklores, popular theatre, proverbs, and idioms and so on, were used by indigenous communities as necessary interactions and programme promotions in local communities. Indigenous communication forms were the local media that are said to have existed within rural communities and were used for communication before the emergence of modern media. Chukwureah further argues that strategies which have links with the indigenous knowledge of local consumers could be very useful in promoting marketing activities in rural communities; an essential component of project management. This author further emphasises that for rural dwellers, meaningful communication strategies need to be employed to attain desired marketing goals.

Integrating indigenous communication in project management may require that one consider certain aspects, such as the possibility of cultural and social interaction during the project (Emery, 2000; Osho, 2011). According to Emery, and Osho, these aspects will indicate the types of indigenous communication used by the local communities which need to be used to encourage more involvement by indigenous people. They may further be encouraged to implement their communication strategies to express their project plans and successes.

3.3.2.3 Indigenous games in development project management

Indigenous people are known for their games according to different cultures and these games are meant to achieve various objectives. For instance, Nyota and Mapara (2008: 192) posit that many social skills can be learnt about Shona tradition through children's games, such as *Nhodo* (a game similar to Jacks) and *Ndondo* (Nyota and Mapara, 2008). The authors state that children learn to manage conflict, such as responding to a playmate's accusation; for example, when a playmate says, "*Wabira*" (You have cheated), especially when the accuser has been beaten in a competitive game. Furthermore, Mawere (2012: 64) refers to a game called riddles (*Zvirahwe* in Shona) which can be defined as a puzzle or word play. This game needs one to exercise some high degree of abstract thinking and reasoning. Another game that can teach the essential skill of teamwork is African darts called *Nhuri* or *Nhicha* (Mawere, 2012: 66).

Children's games referred to above, are an indication that certain skills are acquired from childhood. In relation to project management, the knowledge of these games becomes relevant where certain skills such as conflict and team management need to be developed among the project team members. Nyota and Mapara (2008: 190) further indicate that as tools of the socialisation process, these games and songs become part of IK unique to a community or culture. Therefore, the development practitioner who is knowledgeable about indigenous games can employ these games or skills learnt at any stage of project development, with the help of indigenous people, to make project management easily understandable for indigenous people.

3.3.2.4 Indigenous education in development project management

Education in indigenous ways has always existed. Mckinley (2005: 230) expresses the importance of connecting school science education with the students' cultural backgrounds. This author proposes two strategies: (1) making science relevant to the student, which involves

teaching in a culturally-relevant context or everyday science; (2) improving indigenous students' learning through more appropriate teaching approaches and models, often called culturally-responsive teaching or culturally-based pedagogy.

These arguments relate to project human resource development in that as indigenous people are taught about the project management processes, it should take their existing knowledge into consideration. This further means that the project manager should understand their culture to be able to do this. As Shava (2005: 79) argues, traditional methods of teaching and learning can be used for developing project members (oral transmission methods). Moreover, Shava (2005) encourages the use of the local community resources people, particularly the elders who are considered as repositories of indigenous knowledge in communities. McNamara, Westoby, and Parnell (2010: 31) on the one hand, concede that the transfer of knowledge from the elders may be a challenge, since some of them may be reluctant to share their knowledge which is critical for development.

On the other hand, Nkopodi and Mosimege (2009: 389) investigated the incorporation of an indigenous game called *morabaraba* in the teaching of mathematics, finding that as learners engage in a variety of games, they use a number of terms in the game. The authors therefore saw this as an opportunity for educators to:

Correct, introduce and highlight some of the mathematical concepts (such as geometric shapes, ratio and proportion, symmetry, logical reasoning and counting) that are part of the game being used. (Nkopodi and Mosimege, 2009: 389)

While games are meant for fun, they can be used to share knowledge with indigenous people on project management. Integrating the indigenous way of teaching games in project management may require the training of participants to be done from the indigenous people's perspective, which they will understand more and even contribute to positively, especially when a project addresses the needs of their communities. For instance, since *morabaraba* can assist in logical reasoning and counting, as indicated by Nkopodi and Mosimege (2009), it can promote the budget training aspect in project management where there is a need to count money and account for its usage. Indigenous communities will easily understand when they are taught in indigenous ways.

3.3.2.5 Ethno-development project management

Ethno-development is about putting indigenous knowledge at the centre of development. The question is whether IK can contribute positively to rural development. Posey (2004:3) indicates that business and industry discovered many years ago that indigenous knowledge could be a source of income. In the earliest forms of colonialism, extractive products (called 'drogas do sartao' in Brazil) were the basis for colonial wealth. Thus, it appears that IK can contribute positively to rural development.

Integrating IK into project management may necessitate that indigenous people be protected from exploitation by developing relevant policies where their knowledge contributes to development. Posey (2004: 3) says the following regarding exploitation:

Pharmaceutical industries have become major exploiters of traditional knowledge for major products and profits. Although there are no comparable figures for natural insecticides, insect repellents and plant materials acquired from native people, the annual potential for such products is easily that of medicinal plants.

In essence, indigenous people possess the knowledge which can enable them to make money if they are given an opportunity to participate in and manage projects. Their involvement in every step of project management, using their knowledge, is critical to successful integration.

As Posey further discusses, native people must have economic resources and, if income is to preserve the land, the people and their cultures, then traditional knowledge itself must be compensated for in financial terms (2004: 144). Shava (2005: 79) agrees that local communities are the sources of knowledge on indigenous food plants and therefore, they should derive direct benefit from the commercial applications of their knowledge.

The most recent view on this aspect is by Fu, Pietrobelli and Soete (2010: 1209) who assert that in low-technology industries that use un-skilled labour intensively, labour-augmenting indigenous technology will be more efficient than foreign technology. However, foreign technology from industrial countries will be skilled-labour augmentation, and it will be more efficient than indigenous technology in the technology-intensive sector that uses skilled labour intensively. This argument, in a sense, highlights the value of indigenous knowledge when used

in low-technology industries which may imply that rural development projects can benefit greatly from indigenous technology. To further demonstrate the development value of IK, De Beer and van Wyk (2011: 94), in their ethnobotanical survey explored Hoodia and how the Khoi-san came to know its medicinal benefits. Hoodia gordonii is a food item which was used by Khoi-San hunters to suppress hunger and thirst, as well as stomach pain. Malgas and Oettle (2007: 7) regard the Khoi-San as the earliest inhabitants of the Cederberg and adjacent Bokkeveld Plateau (Northern Cape). According to Wong (2011), there are about thirteen types of Hoodia and these have an ingredient called P57 which is a steroidal glycoside. This P57 was isolated as an active ingredient by the British company, Phytopharm and the pharmaceutical giant Pfizer, expressed interest in developing a Hoodia drug, after learning about Hoodia (Wong, 2011).

This knowledge clearly belongs to indigenous people who, in this case, are the Khoi-San. However, it is also evident from the paragraph above that, although their knowledge was used to generate money, they did not benefit from it. De Beer and van Wyk (2011: 95) highlight that a benefit agreement was signed only when questions were asked about the intellectual property rights of the indigenous (San) people, who have used this plant for many decades or perhaps even centuries. Although the agreement was signed, it was noted that it created problems because only one San community was acknowledged, whereas the plant is widespread in the drier areas in South Africa, and other communities did not benefit from this agreement. This may be one of the reasons why Pfizer announced that it will no longer develop the commercial use of *Hoodia*, though the restructuring of the company was given as the official reason for its withdrawal from the project (de Beer and van Wyk, 2011). However, illegal trade in *Hoodia* has led to the plant becoming an endangered species (de Beer and van Wyk, 2011: 95).

The hoodia situation indicates that there is a need for policy on matters relating to development in order to protect those involved in the process. It means that as part of empowering indigenous communities, they must be made aware of policies affecting them so that they can make informed decisions and refer to such policies during the monitoring of their projects.

The significant argument here is that for successful project management to be realised in integrated rural development, projects initiated using indigenous knowledge should yield the

outcome that is beneficial to the indigenous communities. The participation of indigenous people becomes important not only in the making of products but also in monitoring and evaluating projects which should reflect whether indeed the communities benefited from projects. This can be made possible by the presence of social organisations, such as NGOs which Sena (2010) argues are essential and crucial elements for ethno-development because they are change agents through their teaching and developing indigenous people. Ethno-development may further make the integration of indigenous knowledge into project management easier if development practitioners can liaise with social organisations throughout the project process to ensure successful projects. The different forms of IK presented above are followed by a discussion on IKS of the Northern Cape (NC).

3.4 IKS OF THE NORTHERN CAPE IN DEVELOPMENT PROJECT MANAGEMENT

The Northern Cape Province has a number of IKS that are relevant to development project management. This is reflected in the vision of the Northern Cape Department of Cooperative Governance, Human Settlements and Traditional Affairs (Northern Cape business: 2009). The vision is aimed at ensuring that the people of the Northern Cape live in integrated sustainable human settlements, with responsive, accountable and highly effective municipalities and traditional institutions.

Developing integrated sustainable human settlements requires the utilisation of IK to ensure that the needs of communities are correctly addressed (Northern Cape business: 2009). From the statement above, there is an expectation that municipalities and traditional institutions should effectively respond to the needs of the indigenous communities by involving them in the design and implementation of development projects. The vision is made a reality through the assistance of some local economic development agencies, one of which being the Northern Cape Economic Development Agency [NCEDA] (Pretorius and Blaauw, 2008: 156). This agency is aimed at generating relevant economic development and planning, as well as identifying and facilitating sustainable and viable projects that contribute towards economic growth and social development. It focuses on the following sectors:

- Agriculture, agri-processing and value-adding;
- Mining;
- Mineral beneficiation; and
- Tourism infrastructure.

Since the development of a vision for any project is part of planning, it is important to indicate that planning for sustainability needs the involvement of indigenous communities so as to improve their commitment and ownership of projects. Their knowledge on the focal areas indicated above will add more value to the planning. Chambers (1992: 32), in referring to Participatory Rural Appraisal (PRA) explains this by using the word reversal where a question is asked about “Whose reality counts?” and the answer is “Their reality”. The implication is that planning for development should start with listening to the needs of the community.

The Northern Cape is, to a certain extent, involving communities in such planning through community structures. According to Dyll (2004: 49), the South African San Institute (SASI) is the key Non-Governmental Organisation (NGO) which is responsible for the issues of the development of the San community. Francis and Francis (2010: 211) further elaborate that SASI is a local advocacy group which comprises self-defined San people interested in lobbying government on issues of rights, development and access to resources. In addition to this, SASI (2009-2011) emphasises that it facilitates, amongst other things, development projects in the Northern Cape Province as part of its regional mandate. These include language projects where SASI has worked with linguists to assist the Khomani community to write and teach the Nju language. SASI also supports the tracker training programme where beginner and advanced trackers are trained. In order to prove that there are still a number of Nju speaking elders, SASI has helped to create an electronic data base and trained San people to conduct the registration.

While this participation by indigenous people is a critical factor in the success of development projects, it is not sufficient. Research has shown that a minority of community members are involved in development projects due to, among other things, a feeling of disempowerment (UNESCO, 2011). To deal with this challenge, SASI (2009-2011) aims at supporting the San people to grow and develop so that they can take permanent control over their lives, resources and destiny in order to harness with pride their unique heritage.

A critical component of controlling and deploying knowledge as a resource appears to be the preservation of such knowledge for sustainable use and development. SASI (2009-2011) initiated Cultural Resource Auditing (CRA) as one way of preserving knowledge; a process of creating an inventory for physical and conceptual cultural resources of significance to the community. Usually, this work is conducted with elders who hold particularly vulnerable

knowledge, such as language and tracking in the bush that they wish to pass on to the younger generation, but where the opportunities for intergenerational knowledge are not present (Dyll, 2004: 52).

The vulnerability of knowledge may mean that if not protected through the intellectual property rights, the knowledge can be used by other people without benefiting the holders thereof, as in the case of hoodia reflected in section 3.3.2.5. For instance, Nunez (2008: 489) mentions two reasons why traditional knowledge needs protection; these are conservation, and the maintenance of diversity, as well as the fact that knowledge contributes to the industrial innovation process. Nunez (2008) further indicates that the knowledge, innovations and practices of indigenous and local communities, developed and passed on for centuries through traditional culture are closely linked to the protection of biodiversity.

In line with this view, the inventory created through the CRA, as part of knowledge management, can assist in a process to support the San to regain control over their cultural resources and indigenous knowledge (SASI, 2009-2011). This control can positively contribute to the initiation, planning and even execution of projects, as the community will also possess a data base to which to refer for relevant knowledge (SASI, 2009-2011). A number of agricultural development projects are discussed in the sections below to examine the use of indigenous knowledge and the involvement of local communities in the initiation, planning and execution of these projects, as well as the value added by this involvement.

3.4.1 Essential oils

The essential oils project was established by the Department of Science and Technology (DST) in the area called Onseepkans in the Northern Cape. This was made possible by the province's suitability for cultivating aromatic plants and the Department took advantage of this, as well as the growing global market for the essential oils distilled from these plants (South Africa.info reporter: 2007).

While the plant was established by DST, the knowledge about plants from which these oils are derived, comes from the indigenous people. According to the Country Life Magazine (2012), the Khoi-San, Khoi-Khoi and Xhosa people have, for centuries, used indigenous plants for medicinal and herbal purposes. It is however, not clear from this establishment whether indigenous

people had a role to play in the initiation process. For one to argue that IK was integrated into this project, indigenous people should have played a pivotal role in the initiation and DST would have assisted with the necessary technology. As stated in the speech of the then Minister of the Department of Science and Technology, Mr. Mosibudi Mangena, on the launch of the Essential Oils Cluster in the Northern Cape (DST: 2007), that the strategy of the Department was to transfer the technical know-how to the communities of the Northern Cape to equip them with skills to produce high quality essential oils at quantities that are commercially viable (DST: 2007).

As it is, the Council for Scientific and Industrial Research (CSIR) is in charge of the distillation plant for rose geranium essential oils, which has created jobs for 34 community members. What made this area an ideal place for cultivating the rose geranium is said to be the well-drained, abundant soil, as well as the constant availability of irrigation water from the Orange River (South Africa. Info reporter: 2007). A similar project is being implemented in Pella, not far from Onseepkans as part of the second phase of the Northern Cape essential oils initiative.

The Minister's statement above indicates that integrating IK for the success of projects also needs the training of communities on technology use to enhance their knowledge, together with the involvement of the key Department. However, it may also be essential to determine if indigenous people do have their own technology that they have been using and then enhance this through modern technology.

3.4.2 Rooibos tea

Rooibos is an indigenous plant which is regarded as one of the many legacies of the Khoi-San who understood the value of rooibos tea as a herb and health-giving beverage. However, what is questionable is whether these Khoi-San as indigenous people have been participating in the production of rooibos. According to van de Kop, Sautier and Gerz (2006: 54), small-scale farmers and underprivileged communities produce only around 2% of the total output. The authors argue that:

Almost all the output of big processors is cultivated, while small-scale farmers still gather from the wild part of their output (less than 1%). Production per hectare can vary between 250kg and 1000 kg of fresh leaves per year. Large-scale farmers are said to be producing rooibos on up

to 1500 or 2000 ha, while small-scale farmers grow rooibos on plots ranging from a tiny 0.2 ha, up to 18 ha in the case of Heiveld Cooperative members.

The statement above suggests little participation by indigenous people who are small-scale farmers, in spite of their wealth of knowledge. The reason for this may be found in Swiderska's argument (2001: 23) that the participation of indigenous and local communities can be costly at times.

This may require particular investment of resources and time to overcome constraints, such as the difficulty in defining representation, the geographical dispersal of communities, large population size ... low literacy levels, the complexity of the issues, and a lack of formal mechanisms/structures for participation of indigenous and local communities in policy-making. In some cases, migration or displacement has fragmented communities and weakened their structures and organisations.

An almost similar view is held by Li (2006: 141) who argues that involving local communities in decision making can be costly and can further decrease efficiency. The implication of this argument is that integrating IK into projects may require the consideration of a number of critical issues, such as formal mechanisms for local participation and land redistribution, as well as the views of the communities on their need for participation which may be viewed as costly for any project. Although the cost needs to be considered as one of the knowledge areas, other studies conducted, such as the best practices (Boven and Mohorashi, 2002) showed that once done properly, the integration of IK into projects can yield many benefits. If the involvement of indigenous people is done from the beginning where they participate in initiating and planning their own projects, as well as receiving financial support, a wealth of knowledge exchange is bound to take place. The example of such knowledge exchange is the case of the Heiveld Cooperative rooibos project. According to Oettle, Arendse, Koelle and Van der Pol (2004: 6), the rooibos project was facilitated by the Environment Monitoring Group (EMG) and commenced through the participation of the communities (Van de Kop, Sautier and Gerz, 2006: 56). Oettle *et al.* (2004: 116) define effective participation as:

Making resource users so much a part of the conceptualisation and actualisation of actions that they feel a strong sense of ownership and will promote and adapt them in their ongoing activities.

In the case of the rooibos project, this principle of participation was put in practice. Oettle *et al.* (2004: 118) confirm that after EMG was requested by the community to assist with collective organisation, an initial meeting was held with community representatives in the course of which, a number of principles were agreed to, and subsequently served as the basis for all further actions (Oettle *et al.*, 2004). Some of the principles were that local community members should contribute their knowledge and skills and also benefit from the development process, while the poorest were to benefit most. The development process should assist in changing the lives of the local community for the better.

The said principles indicate that indigenous people were taken as important stakeholders of the project. It was further expected that they should benefit as much as they were going to contribute to the project. This benefit was made possible by following a number of steps as they implemented the project. These included developing a shared vision for development; developing the community exchange concept and the funding proposal; establishing a facilitation team with various role players; and conducting preparatory workshops with the facilitation team and community members interested in rooibos production (Oettle *et al.*, 2004: 119). Exchange visits were also conducted and after this, a decision was made to form a rooibos producer organisation. This led to the establishment of the Heiveld Cooperative Limited. A few months were spent on training on how to draw up a business plan and capacitating the Treasurer on how to keep books (Oettle *et al.*, 2004: 123).

This practical involvement of indigenous people during project planning seems to have contributed to the commitment of community members to the success of the project. Furthermore, this shows that although there is a cost to the involvement of communities, their involvement provides them with an opportunity to learn how to allocate resources and control costs, so as to reach the desired outputs with available resources. Training as an essential aspect of project management ensures that project members become familiar with the roles they must carry out. Once people are provided with knowledge, they are empowered to succeed and the cost is reduced.

3.4.3 Aquaculture

The policy for the development of a sustainable freshwater aquaculture sector in South Africa (2006: 47) defines aquaculture as the farming of aquatic animals and plants, including fish and molluscs under controlled or selected aquatic environments (fresh, sea or brackish waters) for any commercial, subsistence, recreational or any public purpose. The Department of Environmental Affairs and Tourism (2009: 2) adds to this definition that farming also implies individual or corporate ownership of the stock being cultivated. Feike (2008: 6) asserts that the Northern Cape coastline is climatically suitable for farming a variety of marine fish species. It is said to provide the coolest water along the South African coast, which is an important pre-requisite for fish farming. To facilitate fish farming, Ponte (2007) argue that government started with external transformation where new entrants into the industry were encouraged, as well as internal transformation approach where monitoring of transformation was done within the industry. This was based on the observation that few previously disadvantaged individuals owned or were involved in aquaculture operations at senior management levels hence the policy's focus on transformation and broader participation.

The support from these departments signifies the recognition of the need to empower indigenous communities with the necessary technological skills, while integrating indigenous communities' knowledge into project management. This said, empowerment should also consider the skills already possessed by these communities and establish what they need to enhance these skills.

While the aquaculture sector enjoys support from the said departments, there still exist some challenges, especially relating to the participation of local communities. As reflected in the State of the Environment in South Africa-Northern Cape (2005: 3):

The majority of the Northern Cape population does not enjoy public access to the marine and coastal resources of the Province. Marine and coastal resources can therefore not be utilised to their maximum sustainable capacity for the socio-economic benefit of the people of the Northern Cape. From an economic perspective, lack of access to marine and coastal resources has limited the development of other economic activities, such as fishing, mariculture and tourism. This has implications for community

development projects and the long-term sustainability of the economy of coastal areas.

The lack of access highlighted in these statements reflects resources as an important knowledge area in project management. Even if all other prerequisites are available, if access to resources is lacking, the whole project will be negatively affected. Furthermore, Sackey and Kasilo (2010: 91) argue that in spite of the important role traditional knowledge plays in sustainable development, it continues to be largely disregarded in development planning. It currently plays only a marginal role in biodiversity management and its contribution to the society in general is neglected (Sackey and Kasilo, 2010). The authors believe that indigenous knowledge can contribute to several development strategies and policies if not neglected.

In addition to the involvement of indigenous people in policy matters referred to above, fishing and mariculture projects require technology for enhancement. As a result, the development of marine aquaculture technology, particularly for indigenous species, was identified as a key strategy for growing the marine aquaculture sector (Department of Environmental Affairs and Tourism, 2006: 15). The Department indicated in the Fishing and Mariculture Strategy that linked to the need for growing this sector, is also the need to make South African producers more internationally competitive by reducing costs through improved technology.

This statement focuses on the importance of technology in the reduction of costs and the increasing competitiveness of services and products. Since producers will be indigenous people, it would be wise to build their capacity regarding technological skills development. However, their indigenous technology first needs to be identified, acknowledged and recognised and then, by agreement with them, enhanced with new technology if necessary.

3.4.4 Land reform

Maisela (2007: 42) analysed some of the land reform projects in Vaalharts and indicated that agriculture forms a significant part of the economy of the Northern Cape Province. Similarly, Farm Africa (2007: 3) views agriculture as the second most important productive economic sector and the second largest employer of labour and posits that the Northern Cape Province is mostly arid to semi-arid with the bulk of development along the Orange and Vaal Rivers.

From two of these projects which were analysed by Maisela (2007), he noted that the planning did not involve the project members as the business plan was designed by consultants. This resulted in the lack of commitment to the plan to the extent that members could not implement it. Some even stopped participating in the projects and there were tensions amongst the members, consequently, they were not able to repay the loans secured from the banks. This confirms the importance of involving relevant stakeholders, such as indigenous people in the planning of projects. Furthermore, these people needed to be trained on project implementation, which includes financial management, for them to effectively manage their project.

While there were gaps in some projects in the Northern Cape, there have been some exceptions. For instance, FARM-Africa (2007: 3) has assisted eight land reform groups in the Northern Cape under the auspices of the Community-Based Natural Resource Management Project from 1999. The purpose of this project was to strengthen community management of natural resources, which in turn, was expected to reduce poverty for these groups. All these groups went through a process of background research, followed by the development of participatory land use plans to guide their future use of land. At the same time, there was a mutually agreed and planned programme of capacity building for each group, focusing on group and financial management, constitution interpretation, and natural resource management (especially livestock and water).

The significance of community participation is noted in the projects referred to above. The main purpose was the capacity building of these communities to ensure that natural resources were properly managed to the benefit of communities. All examples discussed have shown that stakeholder involvement is critical for the success of projects. The next section specifically discusses indigenous people as key stakeholders.

3.5 INDIGENOUS PEOPLE/ COMMUNITIES AS KEY STAKEHOLDERS

Indigenous people are the holders of indigenous knowledge and this makes them key stakeholders in integrating their knowledge into the project management of rural development initiatives. Dei, George, Budd, Hall and Rosenberg (2002: 23) indicate that indigenous knowledge is derived from a number of sources which include traditional teachings. Since these teachings come from indigenous people, they should then be considered as stakeholders in

development projects. According to Dei *et al.* (2002: 23) traditional knowledge has been handed down from previous generations.

With variations from nation to nation, it tells of the creation of the world and the origin of clans in encounters between ancestors and spirits in the form of animals; it records genealogies and ancestral rights to territory; it memorialises battles, boundaries and treaties; and instils an attitude of wariness or trust toward neighbouring nations. In most aboriginal societies the wisdom of elder generations is highly regarded and elders are assigned major responsibilities for teaching the young.

The teaching of the young by the old indicates that IK is sourced from the older generation. This is supported by Emery (2000: 16) who opines that in traditional communities, all people hold at least some traditional knowledge. He further emphasises that the most accomplished practitioners and disseminators of traditional knowledge are the older people in the community. However, simply being old does not automatically confer a depth or breadth of traditional knowledge. From his explanation, Emery (2000: 16) says “the depth or breadth of knowledge depends on how often people use this traditional knowledge”. Every traditional community is however, aware of experts in traditional knowledge.

IAIA (2012: 2) asserts that local or national laws provide for the treatment of indigenous peoples as stakeholders in impact assessments separate from the general public. In this regard, close liaison with them may be important to obtain the relevant knowledge for all phases of project management but also to ensure that their knowledge is promoted and protected (Department of Science and Technology, 2015). Amongst these indigenous communities, it is also clear that the older people are more able to transmit knowledge to the younger generation. Green, Billy and Tapim (2010: 339) emphasise the importance of the intergenerational transmission of knowledge and indicate that this cultural knowledge is not written, but shared between generations through songs and stories. Green *et al.* (2010) further indicate that a lack of documentation has already led to the loss of some of this knowledge with the death of elders. In addition, Green *et al.* (2010) opened up calls for recording culturally appropriate knowledge to prevent further losses.

Knowing the sources of IK is also relevant for planning agricultural projects on which climate change has an impact. As Manandhar, Vogt, Perret and Kazama (2011: 342) state, indigenous knowledge systems provide the basis for local adaptations to climate change. In their study on adapting cropping systems to climatic change in Nepal, they found that farmers in certain villages had a rich indigenous knowledge of rainfall, forecasting from their long experience in rain-fed agriculture. They still make rainfall predictions for the near future and schedule farming operations accordingly. Accurate forecasts of 3-6 months ahead of time allow farmers to make decisions that more effectively reduce unfavourable impacts or that allow them to take advantage of expected favourable climate conditions.

While this wealth of knowledge is found in indigenous people, the technological assistance is sometimes needed to accelerate rural development through projects. However, Fakude (2009: 44) suggests that an opportunity to accelerate rural socio-economic development through technological progress has been missed by dismissing indigenous technological knowledge possessed by the very communities targeted for development. Fakude further refers to one of the strategies of doing business with the poor, which emphasises leveraging their strengths, skills and knowledge. According to Fakude (2009), the strategy suggests that the research and development of products or even processes aimed at promoting rural economic development must include at their centre the indigenous knowledge which, in this case, may be technical. Hart and Vorster in Fakude (2009: 43) highlight the characteristics of indigenous technology as based on experience, tried and tested over generations and centuries and adapted to local environment and culture.

These characteristics need to be critically considered before using new technology to bring about rural development. As Fakude (2009) indicates, a systemic approach focused on integrating indigenous and modern technology, with possible adaptations is necessary to accelerate rural economic development. This is in alignment with this study's focus on integrating IK into development project management because there may be a need for some adaptations on either side.

Before such a strategy can be developed, there is a need to look into the relevant literature which will support the need for the integration of IK into project management. The next section

focuses on the literature integrating IK into rural development projects, which is the foundation of this study.

3.6 INTEGRATING IK INTO RURAL DEVELOPMENT PROJECT MANAGEMENT

From various discussions above, including rural realities, development and indigenous knowledge, it is essential to review the literature that focuses on the integration of IK into project management-based rural development for successful implementation.

3.6.1 Parallel studies

A number of studies have been conducted regarding the integration of IK into project management. For instance, Emery (2000) and the International Association for Impact Assessment [IAIA] (2012) developed guidelines and principles on how to include indigenous people and their knowledge in development projects, so that mutually beneficial results can be realised. For Emery (2000) and IAIA (2012), the aim of these guidelines and principles is to suggest ways in which the two systems (indigenous and scientific) can be harmonised throughout the stages of development projects to improve the ultimate results of projects. The value of this union is derived from the claim by Sackey and Kasilo (2010: 91) that traditional knowledge has often played an important role in the development of modern science, especially healthcare systems. Sackey and Kasilo (2010: 92) further clarify the relationship between indigenous and scientific knowledge by indicating that:

At the core of mainstream Science is the desire to negotiate nature through sequential processes such as hypothesis formulation, experiment and prediction. Knowledge production in mainstream Science includes phases of experimentation through trial and error.

The examples provided in the statement above suggest that science originates from or draws on indigenous knowledge. Therefore integrating IK into project management, which is one form of scientific knowledge, requires the inclusion of indigenous people in the planning and implementation of development projects. To make this possible, [IAIA] (2012: 2) identified a number of guidelines which include allowing indigenous people in the area to take part in the project; respecting their traditional rights; and allowing them to be independent throughout the project process. While including indigenous people from the beginning of the project and

building on the strengths of the indigenous knowledge, a trust relationship must also prevail, so that indigenous people are willing to avail their knowledge (IAIA, 2012).

The success of the integration of indigenous knowledge into project management is dependent on doing certain things correctly (IAIA, 2012). The respect and trust afforded to the indigenous people (Watts, 2012) are meant to create an environment where there is cooperation amongst development practitioners and indigenous people. What seems to be lacking in these principles is the creation of an opportunity for both science and tradition to learn from each other. What works from indigenous knowledge may just be adapted and modified by science, as indicated in the best practice examples in Section 3.3.2 below. An example of such an adaptation is seen in another study on the framework for integrating indigenous and scientific knowledge for disaster risk reduction. Mercer *et al.* (2009: 2) found that indigenous people have adjusted their livelihood strategies to adapt to gradual change for centuries, but new global pressures have significantly changed people's social, economic, political and environmental contexts. These authors further believe that it is essential that indigenous knowledge be drawn upon in addressing the accelerated pace of change in today's global world, its impacts upon environmental hazards and the consequences for indigenous communities situated within hazard-prone areas. It is further argued that in order to engage indigenous knowledge productively in development, requires moving beyond the dichotomy of indigenous versus scientific, and rather working towards building bridges across the indigenous and scientific divide. Although Mercer *et al.*'s (2009) study focuses on a risk reduction project, the principles of integration seem to be applicable to any project. Dekens (in Mercer *et al.*, 2009) covers those principles in the framework displayed below:

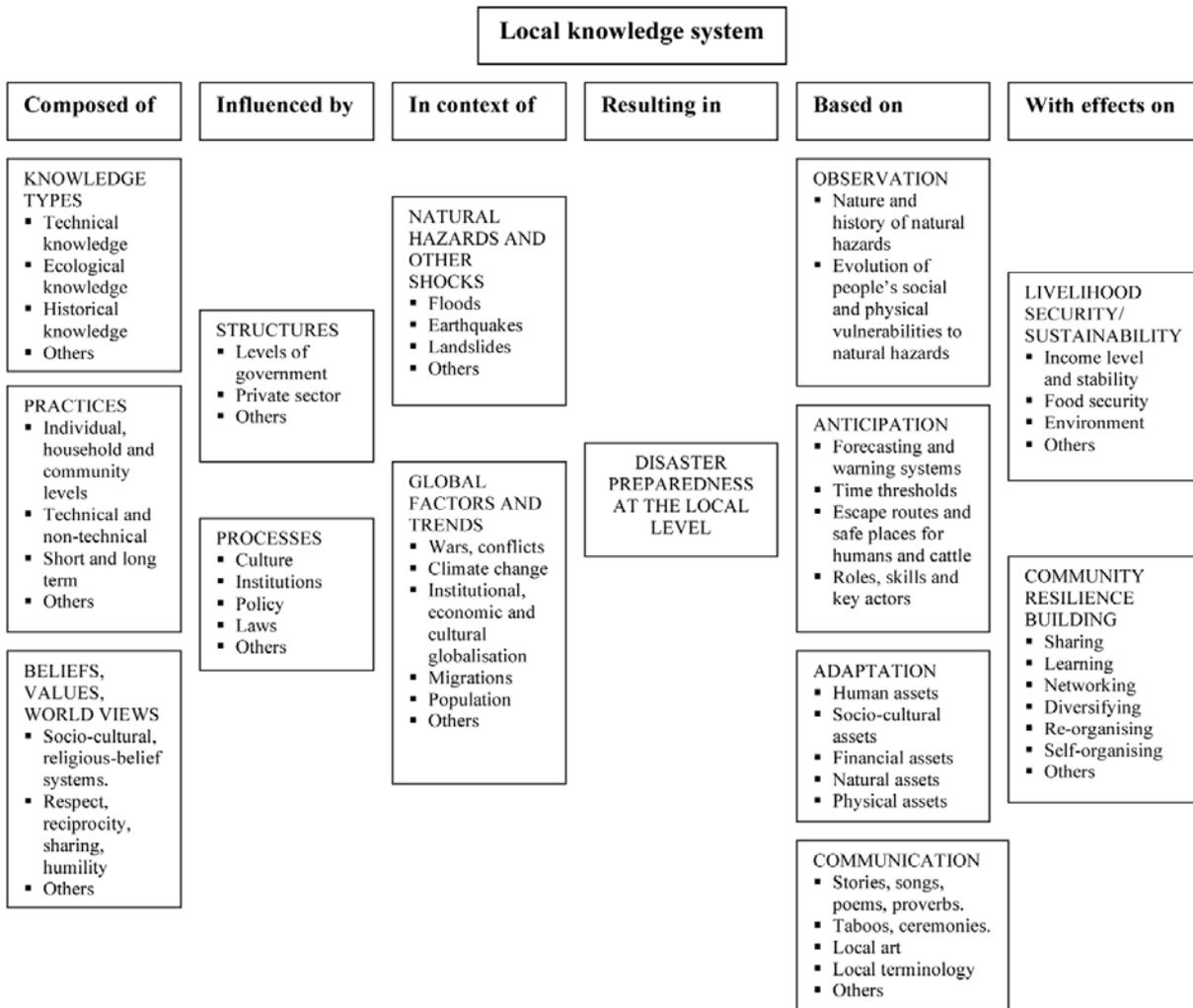


Figure 3.1 Framework for local knowledge on disaster preparedness

(Source: Dekens, 2007a)

This framework assists in identifying the linkages and relationships between local knowledge and practices in disaster risk reduction, and the influences upon them. Relating this model to the integration of IK into project management, it is imperative that the knowledge possessed by indigenous communities should be identified in line with the project to be implemented. The knowledge includes indigenous communities' beliefs, values, and ways of communication and since communities already have structures which can be incorporated in the project planning, they can be consulted regarding specific knowledge to be obtained. Throughout the process of project initiation to implementation and evaluation, some adaptations will be made, which include the training of indigenous communities where additional knowledge is given to them.

Training by indigenous communities may also be necessary where their knowledge is found to be valuable and can be used without any adaptations. The outcomes of following such an integrated strategy are sustainability and the community's resilience and empowerment which is what is aimed at as outlined in the conceptual framework in Section 4.2.

While the studies above provide some guidelines for the integration of indigenous knowledge into rural development projects, there are also some recorded best practices that can be scrutinised as reference points; these are discussed in the next section.

3.6.2 Best practice cases

A number of best practices for integrating IK into development projects are documented both nationally and internationally. Delgado (2007: 101), citing Kessler, Gira and Poertner defines best practice by identifying five common aspects namely: (i) practising wisdom; (ii) emulating similar systems; (iii) using expert advice; (iv) using professional guidelines; and (v) evidence-based practice. These common aspects are also found in Minnery, Manicaros and Lindfield's (2000: 244) definition which states that best practice refers to examples of action which could be recommended for further application, whether in a similar or adapted form. According to Boven and Mohorashi (2002: 263), best practice is an approach or methodology that has proved to be effective for a particular purpose in a particular context, but could also be effective in other contexts if properly adapted and applied. Best practice is thus held up as a model worth emulating in other parts of the world. Since integrating IK into project management is a fairly new practice, it is essential to identify best practices against which to benchmark. According to Boven and Mohorashi (2002), the main characteristics of best practice using IK are innovation; making a difference; having a sustainable effect; and the potential to be the source of inspiration to others. Best practice should be able to create new solutions to the problem and positively impact communities in a sustainable manner.

These are some attributes observed in an IK-based project which are regarded as best practice. Based on the definitions above, the following **operational definition** will be used: Methods, procedures and strategies which can be replicated and adapted in the implementation of projects in order to contribute to sustainability. There are different ways of assessing projects or cases as best practices. Boven and Mohorashi (2002) identify twenty-two best practices internationally, assess them in terms of content and approach, the role of indigenous

knowledge, and achievement and results, as well as a source of inspiration. In all these twenty-two best practices, the indigenous people had their knowledge of doing certain things. To obtain this knowledge, committees were established through which consultation was made regarding the introduction of innovative ways. Communities were then trained in the new technologies. Because they were involved and understood the purpose of the innovation ways introduced to them, the results of the projects were satisfactory, especially as their knowledge continued to be used for rural development projects (Boven and Mohorashi, 2002). Two examples from these best practices are discussed below because of their relevance to this study.

In Kenya, water was stored in wide-mouth clay pots and a calabash or a cup was used to draw water from the pot (Boven and Mohorashi, 2002). Often the cups were contaminated and resulted in diarrhoeal disease. Because the people were not willing to change to plastic vessels designed to reduce or eliminate post-contamination, local potters with technical assistance from the Nyanza Healthy Project began to produce modified clay pots. They fitted the conventional pots with a narrow mouth, a spigot, a lid and a flat base for easy water extraction. There is a space in the cup to retain sediment and water is treated, stored and accessed through the spigot. Young girls developed an interest in making pots and they learnt the skill through playing with clay. The significant aspect here is that the original knowledge used to make a new product for prevention of disease, came from the indigenous people. The community easily adapted to the technology because the modifications were compatible with the original product. When the product was introduced in the community, the demand was high and the manufacturing and selling costs were affordable (Boven and Mohorashi, 2002: 30). The practice is sustainable, locally managed and has positively enhanced the project success.

Another example (UNESCO and NUFFIC, 2002) is that of a man named Namwaya Sawadogo, an ecologist from Touroum in Burkina Faso who started farming with just one hectare of land, and a few guinea fowl in the semi-arid climate with sparse annual rainfall. According to UNESCO and NUFFIC (2002), this man used various indigenous practices, such as constructing stone bunds which was a well-known technique in Burkino Faso and had a positive impact on his yields. He also made barriers of perennial grasses, composting, mastering how to produce tree seedlings of local species, and was thus able to develop his own technical knowledge for treating seeds. He used donkeys to transport the stones for constructing the stone bunds, and having

integrated all this indigenous knowledge into his knowledge of scientific farming, Namwaya Sawadogo's project became very successful (UNESCO and NUFFIC, 2002).

While these best practices seem to be remote (in some distant past), the principles of indigenous integration still apply in recent best practices recorded. For instance, Tindana *et al.* (2007) recorded a best practice called the Navrongo model, where primary healthcare was introduced into rural communities in Ghana. The critical aspects in this practice included consultations with the Chiefs and residents to establish a trust relationship and the identification of key stakeholders consisting of community leaders known as Chiefs, district health authorities, development partners and researchers. All the identified stakeholders were involved throughout the implementation of the project. Household heads were also consulted about any new activity to be introduced in the community, and this model led to a policy known as the Ghana Community-Based Health Planning and Services Initiative which has since been adopted by a number of districts in Ghana. This practice suggests that if communities are consulted with respect and are involved in all phases of the project, the project will probably succeed (Tindana *et al.*, 2007).

In addition to the principles highlighted in the practices above, IK may also need technology for enhancing sustainability and success. Regarding this aspect, Hunter (2005: 126) raises the important issue of recording indigenous knowledge. Apart from simply recording this knowledge, Hunter suggests the dissemination of the best practice guidelines, and data bases of projects demonstrating best practice for the use of information, communication and technology (ICT). Hunter's (2005) view complements the views of Boven and Mohorashi (2002) by adding the use of information technology for recording indigenous knowledge because integrating ICT into IK-based project management will ensure that knowledge becomes readily available.

From these best practices, the application of the knowledge areas of project management should be noted. The fact that people were involved from the beginning and became part of initiating and designing the projects and were consulted for their knowledge, they became committed to the implementation of the projects, as well as being receptive to the technical innovation (Boven and Mohorashi, 2002). Human resources development was implemented because HR training was provided to ensure the sustainability of projects. The value of both

print and electronic recording is therefore found to be helpful for ease of reference during the planning of any IK project. These would ensure that indigenous communities' knowledge is not merely used without their being empowered at the end. These aspects are incorporated into the conceptual framework used for this study in 4.2.

3.7 SUMMARY

This chapter began with the explanation of the nature of knowledge with a focus on knowledge management. Indigenous knowledge was then defined using various definitions which culminated in an operational definition. Different forms of IK were briefly discussed with the aim of determining what role they could have in enhancing project management if integrated into rural development projects. Since projects cannot be carried out by one individual or structure, key stakeholders were identified with regard to rural areas and the role they could play in project management. The chapter also examined some IKs in the Northern Cape, the area of study and further identified best practices. The next chapter focuses on the methodology of the study.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 INTRODUCTION

In the preceding chapters, the literature provided a description of the project management process, its phases, as well as the relevant stakeholders involved (Chapter 2). It also showed the role that IK can play in rural development project management (Chapter 3). These chapters provided a direction for this study with regard to what aspects to look for in the empirical study. This chapter therefore focuses on the methodology used to investigate the integration of indigenous knowledge of rural areas into the rural development project management process. This chapter discusses basic principles and philosophical assumptions of the study. It also focuses on the research design, data collection methods and data analysis as part of the broader methodology.

4.2 RESEARCH PARADIGM

This study resides in the interpretive paradigm where interaction with people is used to obtain knowledge (Henning, 2011). According to Henning (2011: 20), knowledge is explained by descriptions of people's intentions, beliefs, values and reasons, meaning-making and self-understanding. That is why the interpretive research is a communal process, informed by participating practitioners and/or scrutinised by others (Henning, 2011).

This paradigm is based on the assumption that access to reality can be achieved through social constructions, such as knowledge, consciousness, shared meanings and instruments (Myers, 2009: 38). Lapan, Quartaroli and Riemer (2012: 76) also contend that interpretivists take the position that social and cultural phenomena emerge from the way actors in a setting construct their meaning. These assumptions suggest that for a researcher to construct meaning about the situation, the researcher has to interact with the participants in that situation; this was the case with the indigenous people in the rural areas of the Northern Cape. The interaction was meant to understand people's possession and use of IK knowledge in development projects, as well as to describe the role of their involvement in enhancing these projects. In addition to these, a number of development agencies and financiers were interviewed to understand how they relate to project beneficiaries. This necessitated the use of qualitative methods of research in the collection and analysis of data for the purpose of contributing to existing knowledge as discussed in the theory-building section below.

4.3 THEORETICAL FRAMEWORK

The study was based on more than one theoretical framework since it consists of two domains, namely indigenous knowledge, which is contextual and project management, which is content knowledge. Walliman (2010: 67) states that a theory is a statement that makes a claim about a phenomenon. The theories discussed in this section are intended to explain the use of IK in development project management. The first domain in the study - *indigenous knowledge* is based on social constructivism.

4.3.1 Social constructivism

Social constructivism assumes that knowledge is constructed by interacting with one's immediate environment. Powell and Kalina (2009: 243) state that:

Levy Vygotsky, the founding father of social constructivism, believed in social interaction and that it was an integral part of learning. Social constructivism is based on the social interactions of a student in the classroom along with a personal critical thinking process.

Linked to this statement, Liu and Matthews (2005: 387) present another view held by constructivists, that knowledge is not mechanically acquired but constructed within the constraints and offerings of the learning environment. Learners are believed to be enculturated into their learning community and appropriate knowledge based on their integration with the immediate environment (Liu and Matthews, 2005). These views on enculturation and socialisation both indicate the value of social interaction in learning. In addition to these views, Jaramillo (1996: 135) adds to Vygotsky's argument that social experience shapes the way of thinking of humans and their interpretation of the world. Jaramillo believes that:

Individuals within group contexts construct their own interpretations and therefore knowledge of the world rather than accept a universally imposed scheme.

Jaramillo (1996) further argues that the learner is not an empty passive vessel to be filled with drops of knowledge from the instructor's lecture. Rather, he/she prefers to be actively involved in hands-on learning activities that interest him/her and that are just above his/her current level of competence. A student-centred approach is recommended where a teacher facilitates

rather than directs what and how students learn concepts. Furthermore, Jaramillo indicates that Vygotsky used the concept of networking in social constructivism to determine how students make sense of themselves and their world through their experiences, as well as the social interactions in their environment (1996).

While this interaction is important, it can only be made successful by the use of language. Luria (1976: 10) argues that in mastering linguistic systems, children are led to develop new motives and forms of conscious activity, as well as posing new problems. In line with this view, Liu and Matthews (2005: 393) also add that the mastery of language use represents the acquisition of individual subjectivity and external social reality. Furthermore, Powell and Kalina (2009: 245) refer to the importance of language in enhancing learning and that language precedes knowledge or thinking. Luria (1976) further highlights the influence of the adult's speech in teaching the child to distinguish and fix on behavioural goals, as well as rethinking relationships between things and developing new emotional responses. Through language, these responses become generalised emotions and character traits.

The implication of these views for the integration of IK into project management is that there is a need to acknowledge that indigenous people already possess a wealth of knowledge, that project management knowledge should not simply be imposed on them. Therefore, a development practitioner needs to interact with indigenous communities and facilitate the process of obtaining their knowledge, which will be relevant for project management. This way communities will be constructing their own interpretations (Jaramillo, 1996) regarding development project management. Jaramillo, further argues for a bottom-up approach where a project manager can facilitate as opposed to directing how indigenous communities should manage their projects.

What is important in this theory is that learning about indigenous knowledge can take place by interacting with communities using language. Since the purpose of the study is to integrate indigenous communities' knowledge into project management for rural development, interaction with them will enable development practitioners to obtain from, and share relevant knowledge with indigenous communities in the language understood by the said communities. These will ensure that development is not imposed but planned with the direct involvement of the people. In addition, the use of language will positively contribute to knowledge conversion,

making the conversion meaningful (Nonaka and Takeuchi: 1995). Figure 3.2 presents a summary of this theory in a network diagram.

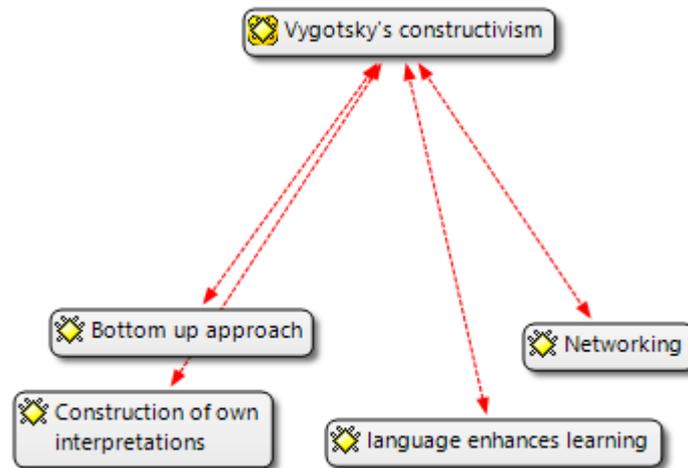


Figure 4.1 Vygotsky's constructivism theory

The second domain in this study is project management. This will be discussed based on two theories, namely Dewey's pragmatic theory and Taylor's scientific management theory.

4.3.2 Pragmatism

According to this theory, knowledge comes from practice or experience. Dewey in Gordon (2009: 49) postulates that pragmatism does not imply that knowledge comes only by thinking or acting but from integrating the two, through acting and then reflecting on the action which subsequently produces knowledge. Hookway (2013) explains the core of pragmatism as the rule for clarifying the contents of hypotheses by tracing their practical consequences. Dewey in Hookway describes pragmatism as the systematic exploration of the logic and ethics of scientific inquiry, where inquiry is seen as beginning with a problem and being involved in an indeterminate situation. Dewey believed that when we fix the situation, we begin with the situation we do not know (indeterminate), on our way around, and inquiry comes to an end where we do know (determinate). This experience provides the material for knowledge and conceptualisation, but it does not, in itself, have a content that is informed by concepts, practical needs or anything else non-sensory (Hookway, 2013). In this case, Vo, Mounoud and Rose (2012: 377) state that:

The chief value of theory for Dewey is that it can be a useful organising device to help solve real world problems. A pragmatist researcher is interested in knowing what differences a given knowledge will have in

practice. The practicality of knowledge is an important criterion to differentiate between meaningful and not meaningful knowledge.

Therefore, when one does something to try to solve a problem, the knowledge application and the consequence are important. The consequence may be good or bad and if it is good, the practice is normally repeated (Hookway, 2013). This is why Dewey cited in Vo *et al.* (2012) thought that experience was full of inference. He saw experience as a process through which we interact with our surrounding or our context, obtaining information that helps us to meet our needs (Hookway, 2013) and then asserts that we have managed to impact the situation using the context-dependent knowledge. In addition to this, Ralston (2012: 6) views management as a process that involves pairing appropriate tools or instruments with the problems before us.

Vo *et al.* (2012: 376) further refer to Dewey's acknowledgement of:

The context-dependent and personal nature of knowledge to the extent that he defined knowledge as being the outcome of inquiry, located in the transaction between us and the environment. Knowledge, by this account, is always contextual, because it is always related to the specific inquiry in which it was achieved.

Looking at project management from the perspective of the aforementioned views and linking these to indigenous knowledge, one can argue that integrating IK with project management will be integrating practice with theory. This integration is about reflecting on what indigenous people know (practice). As Bautista-Frias *et al.* (2012: 48) explains, this knowledge is then codified so that it can be available to the external world. Similarly, Shields (1999: 7) corroborates Dewey's emphasis on the role of community in inquiry.

An inquirer in a given special field appeals to the experiences of the community of his fellow workers for confirmation and correction of his results.

This confirms the value of involving indigenous communities in project management for development because communities will contribute their valuable practices, which can be codified to be part of project management. The following figure represents a summary of Dewey's pragmatic theory.

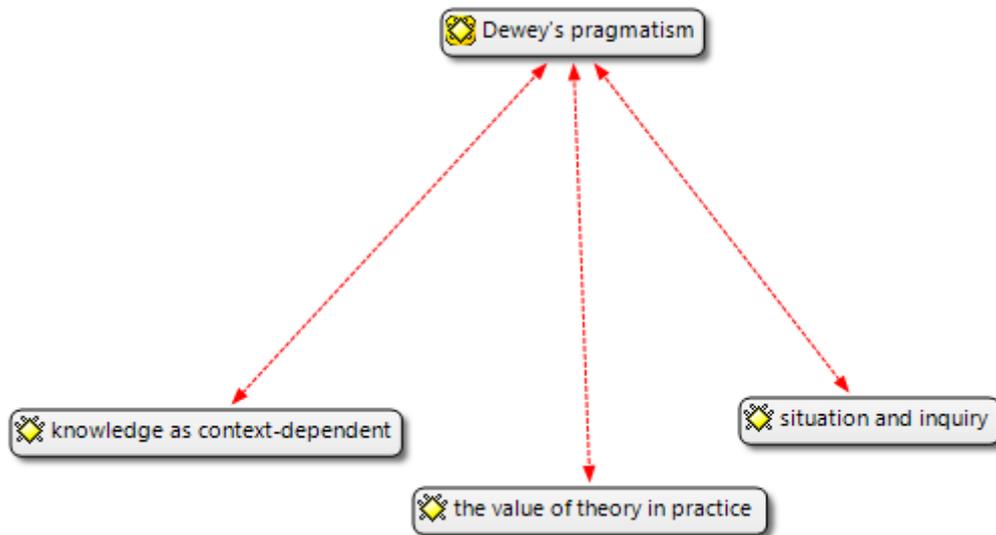


Figure 4.2 Dewey's pragmatic theory

4.3.3 Taylor's scientific management theory

Fredrick Taylor's theory assumes that knowledge of management comes from applying a set of principles. Taylor in Ralston (2012: 8) describes scientific management as a philosophy in industrial management which can be distilled into four principles as follows:

1. There is one best way to complete a job/task;
2. Workers must be selected scientifically to match the task they are to perform;
3. Workers must be paid as a function of how efficiently they accomplish the job/task; and
4. Congenial worker management relations result when managers ensure that workers understand the job/task, are properly trained and agree to submit to the experimentation required to determine the one best way.

Ralston (2012: 8) refers to Taylor's principle of one method which is quicker and better than the rest which can only be discovered or developed through a scientific study and analysis of all methods and implements in use, together with accurate, minute, motion and time-study requirements (Ralston, 2012). Furthermore, Chung (2013: 48) refers to Taylor's scientific management view that there is no single element but a whole combination, summarising it as follows:

Science not rule of thumb, harmony not discord, cooperation not individualism, maximum output in place of restricted output, the development of each man to his greatest efficiency and posterity...

From these views, one can further assume that while indigenous knowledge may play an important role in project management for rural development, there is a need to organise it in such a way that it is used in line with scientific systems with proper guidelines to ensure efficiency. As Chung (2013: 49) indicates, the purpose of scientific management is to serve management so as to enhance the welfare of all parties in the organisation.

This theory seems to be in agreement with project management for rural development, the aim of which is to improve the wellbeing of rural communities. Although the emphasis is on science and not rule of thumb, the aspects of harmony and cooperation are symptomatic of rural life. Maximum output is, however, lacking because indigenous communities produce on a subsistence level. Therefore, the introduction of project management as scientific knowledge to indigenous communities can enhance maximum output for rural development projects. (Chung, 2013). Part of the training for the indigenous people involved in projects may be the introduction of systems, such as the allocation of specific tasks to certain people according to their skills, so as to enhance productivity and efficiency in projects.

4.4 CHOICE OF PROJECT MANAGEMENT APPROACH

Understanding these three theoretical frameworks provides the basis for choosing which project management approach to take. Having briefly analysed these approaches against the perspectives on the integration of IK into project management, it makes sense to use a combination of traditional and agile project management (discussed in Chapter 2) for the benefit of communities which the projects are meant to empower. While the traditional approach is necessary to guide one through the steps of project management, as well as the specific tasks to be completed, the agile approach will add more value with its user participation and evaluation throughout the process, instead of only evaluating at the end, such as in the traditional one. McGovern (2010) indicates, on the one hand, that incorporating agile management techniques into projects foster a focus on the benefits of each of the features. While in traditional project management, on the other hand, the teams strive to finish the project on time and under budget, McGovern (2010) argues that teams often lose sight of the overall benefits which the entire effort is intended to bring to the organisation.

With agile methods, indigenous people will therefore be able to contribute their skills and knowledge and also take part in problem solving. Furthermore, since there are changes and

challenges throughout a project process, especially in rural areas, the agile approach will enable participants to adapt to these, so that a project becomes effective at the end.

According to Rizzuto (2010), agile methods can deliver better results faster and less expensively than the traditional *waterfall* approach. Smaller teams work to meet the needs of a fully engaged customer, who may be involved almost daily to provide feedback as the developers rollout working software (Rizzuto, 2010). According to the author, the challenge with using software for rural development projects may be a lack of sufficient training for rural people, different cultures and a lack of flexibility (Rizzuto, 2010). However, these aspects need to be considered during project planning in order to provide relevant training. Rizzuto (2010) further indicates that project managers using the agile method will learn that they are not there to manage the team but to facilitate and to help the team collaborate. In addition, they are to remove impediments that would prevent the team from being successful in achieving its objectives.

The purpose of integrating IK into project management is indeed not to manage indigenous people because managers have been doing projects previously, but to assist and guide them to effectively and productively use their knowledge. This assertion is conceptualised in Section 4.5.

4.5 CONCEPTUAL FRAMEWORK

The conceptual framework for integrating IK into the development project management process in rural areas is derived from the literature discussed in this chapter and specifically from the selected best practice cases, as well as the theoretical framework discussed in sections 3.6.2 and 3.6.3 respectively. Since theories are abstract and cannot be measured, concepts are then used as building blocks of theories (Walliman, 2010: 66). This section uses certain concepts to measure the theory of integrating indigenous knowledge into project management.

The framework is adapted from Dzansi and Dzansi's (2009: 453) framework wherein dimensions, elements and outcomes are clearly outlined. The critical dimensions are: (a) Community involvement; and (b) Community empowerment.

Community involvement

The community whose indigenous knowledge is being integrated into PM, needs to be involved as repeatedly discussed in the sections above. Their involvement will be measured using the following **elements**:

- Local identification of projects;
- Local conceptualisation of projects;
- Local collection of data; and
- Local planning and project management.

Community empowerment

As reflected in the best practices in section 3.6.2, the integration of IK into project management should have the purpose of empowering the communities and not just exploiting their knowledge. Training has also been highlighted in Taylor's scientific management theory (Ralston 2012). Furthermore, human resource development is one key knowledge area in project management. **Elements** of community empowerment include:

- Training of local people (in technology and finance management);
- Job creation for local people;
- Shared ownership;
- Women involvement in projects;
- Community strategy;
- Established committees;
- Self evaluation;
- External evaluation; and
- Report compilation and recording of project activities and outcomes.

All empowerment should be done mainly during the implementation, monitoring and evaluation of the project, since every project has to have an **outcome** for the empowerment of participants. The desirable outcomes for an integrated IK-based project management for rural development include:

- Sustainable projects;
- High success rate of development projects; and
- Empowered communities.

These three outcomes will be an indication that communities have been involved and empowered, demonstrating that they can run successful and sustainable projects by drawing on their indigenous knowledge. Figure 4.2 represents the whole conceptual framework.

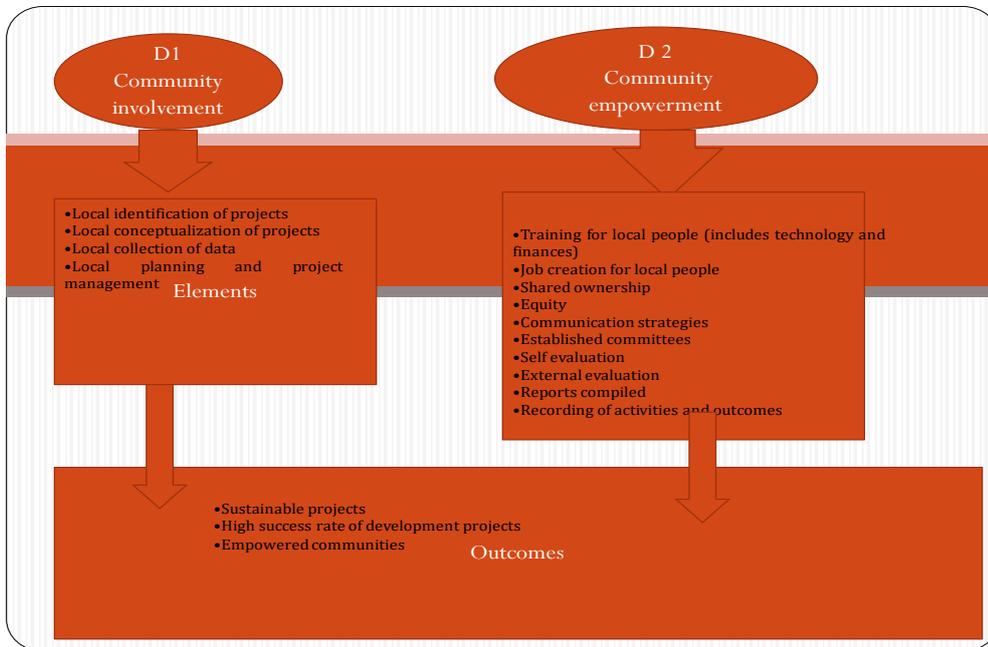


Fig 4.2 Conceptual framework

Adapted from Dzansi and Dzansi (2009: 453)

4.6 RESEARCH DESIGN

This study followed a qualitative research design informed by the two domains, namely indigenous knowledge (contextual) and project management (conceptual knowledge). Furthermore, these two domains determined that the study should reside in the interpretivist paradigm; thus qualitative design. To this effect, Lapan *et al.* (2012: 8), argue that qualitative researchers generally hold an interpretivist research perspective. Obtaining indigenous knowledge of rural communities necessitated the researcher’s visiting indigenous communities and obtaining the relevant information using qualitative methods.

The underlying discipline in qualitative research is the problem-solving method through the use of a wide range of data collection methods and data types, as well as the application of diverse conceptual frameworks (Pellisier, 2007: 23), guided by honesty and objectivity. The latter two attributes have been critical because without them, the researcher would not have been able to obtain the information required, especially as some information was regarded as

too personal/sensitive and could only be disclosed where honesty and objectivity were displayed.

In addition, qualitative research is helpful if one wants to study a particular subject in depth (Myers 2011: 9) and is ideal for investigating the social, cultural and political aspects of people (Myers, 2011: 9), as was the case with this study. The development projects studied here involved people's information (social); knowledge relating to cultural practices (cultural); as well as political aspects of indigenous communities. Therefore, qualitative research assisted in going deeper into these aspects through interviewing the relevant people. The researcher managed to go to all projects identified in table 4.1 and obtained the necessary information for the study because project participants were assured of honesty and objectivity.

4.5 DATA COLLECTION

This section discusses how sampling was done, how data were collected, the methods and instruments used.

4.5.1 Sampling

Since it is difficult to study the whole population in most research, sampling is necessary. This is where a representative sample is selected among the population of interest for observation and analysis (Bhattacharjee, 2012: 65). In line with this principle, the study followed a purposive sampling which aims at drawing a specific sample from a population that will allow a researcher to examine a phenomenon effectively (Lapan and Quartaroli, 2009: 254), and was based on the purpose and rationale of the study (Patton, 2014: 245). The sample for this study was then obtained by consulting with the two major Departments responsible for rural development in the province, namely Economic Development and Agriculture, to explain the purpose of the study. Both departments then provided a sample frame (Bhattacharjee, 2012: 66) of a number of rural development projects in various districts from which selection was made through their guidance, as discussed in section 4.5.2 below. Table 4.1 reflects the development projects selected from each of the five districts.

4.5.2 PROJECTS IN THE STUDY

The projects involved in this study were seven (7). These projects are in various municipal districts of the Northern Cape Province. Other participants included a representative from the

National Development Agency, a representative from the Department of Rural Development and Agriculture, and a representative from the Local Municipality where one of the projects is operating. A brief profile of projects in the study is provided and illustrated in Table 4.1.

Manyeding Agricultural Cooperative

Manyeding Agricultural Cooperative (Coop) started in 2011 in the JohnTaoloGaetsewe District municipality with 10 registered members, although there are 159 beneficiaries from various farms around Manyeding in Kuruman. Of the 10 registered members, four were youth and six were adults comprising five men and five women. The coop is mainly constituted of Setswana speaking people, both young and old, males and females.

D S Bosman Day Care Centre

D S Bosman is a daycare centre established in 1997 also in the JohnTaoloGaetsewe district in Cassel, Kuruman. At the time of this study, the project had thirteen (13) members who were all blacks. The ages of project members ranged between 22 and 71, eleven females and two males.

Riemvasmaak Ecotourism

Riemvasmaak is an ecotourism project in Kakamas in the ZF MNcau district. It consists of 1 200 members from the communities of the Naamas and Xhosas. The representative of this project who was interviewed was a 56-year-old coloured male. Although he was able to speak Afrikaans and English, he was from the Naama culture (classified as coloured).

Staar na die stere language school

This is a project in Upington, still in ZF MNcau district municipality. It was founded by an 80-year-old woman called Ouma (Grandma) Katriena with no educational background, who then involved her granddaughter and three community members, two females and one male. Their ages ranged between 22 and 80 years, and in terms of gender representation, four females and one male. The project was registered in 2006.

Basadi ba bokamoso project

Basadi ba bokamoso project farms with ostriches in Campbell in the Pixley Ka Seme district municipality. It was started in 2009 by the wives of farmers through the encouragement of their

husbands. It comprised twelve women who are black, coloured and Khoisan. Their ages ranged between 24 and 64 years.

Tshwaraganang hydroponics

This is an agricultural project in the Francis Baard municipality which specialises in the production of cucumbers through a greenhouse. The project was initiated in 1999, but the actual commencement occurred in 2006. It consists of 8 members; the project leader who was interviewed was a 38-year-old Setswana-speaking male, although he spoke English and Afrikaans very well.

Ebhenasia opkomende boere vereeniging

Ebhenasia is a project of five farmers who farmed with rooibos and sheep. They leased land from the municipality, farmed with rooibos, harvested and sold to the rooibos factory. It was started in 2009 with thirteen members but at the time of the interview, they were five. The reduction was due to the realisation that they were too many and subsequently, bought eight of them out. All members were males between the ages of 40 and 72.

Table 4.1 Demographic profile of selected projects

Name of project	District	Nature of project	No of participants	Age of respondents/participants	Gender	Turnover
Manyeding agricultural coop	John TaoloGaetsewe District	Agricultural project	10 registered 159 beneficiaries	4 youth and 6 adults	50% male 50% female	Nothing yet
D S Bosman day-care centre	John TaoloGaetsewe District	Early childhood development	13	22-71	11 females 2 males	R5 700
Riemvasmaak ecotourism project	ZF MNcau (Siyanda) District	Ecotourism	1 200	56	Male	Not known
Staar na die steretaalskool (Gaze at the stars language school)	ZF MNcau (Siyanda) District	Indigenous language school	5	Between 22 and 80 years	4 females and 1 male	Nothing
Basadi ba bokamoso project	Pixley Ka Seme District	Ostritch farming	12	Between 23 and 64 yrs	All females	R82 000 in 2013
Tshwaraganang hydroponics	Francis Baard District	Cucumber production	8	38	Males	Enough to sustain the business
Ebhenasia opkomende boere vereeniging	Namakwa District	Rooibos and livestock farming	5	Between 40 and 72	Males	R30 000

4.5.3 Interviews

Data were collected using interviews in line with Manoharan (2010: 13) who indicates that qualitative research focuses on in-depth interviews. The purpose of interviews according to Patton (2014) is to allow the researcher to enter into the other person's perspective. In line with this view, open-ended interview questions were compiled as an interview guide to ensure that the same basic lines of inquiry were pursued with each person interviewed (Patton, 2014). Patton further indicates that the interview guide is essential in conducting focus group discussion. There were three sets of interview guides designed. The first one was for the financiers to determine how they involved indigenous people in the whole project process. The second set was for the project leaders to assess how they led and managed the projects, and the last set was for the project participants. These were the members of the project and their interviews were meant to understand whether they were indeed involved in project management; whether their knowledge was used; and to what extent they attributed the success of projects to their involvement. The questionnaire was then translated into Setswana and Afrikaans as the most prevalent languages in the Northern Cape.

Interviews were held with representatives from the key departments reflected in section 4.5.1, as well as the National Development Agency (NDA) responsible for funding most of the development projects. Since these two sources mainly provided information regarding the nature of projects that existed in the province and the kind of assistance provided to them, participants and project leaders were interviewed to obtain more information regarding the process followed from the beginning to the closing phase of the projects. From all these, it became clear that these people had different roles in the project process.

With regard to the project participants, focus group interviews were conducted in order to obtain the views of the various members of the project. This was in line with what Morgan in Trainor and Graue (2013: 125) refers to as the dynamic exchange of ideas based on questions and responses with a group of participants. The size of groups ranged from two (2) to five (5), depending on the availability of the members and this gave each member an opportunity to say something. These numbers are not the actual participants in the projects but members who were available for the focus group discussion.

4.6 ETHICAL CONSIDERATIONS

Conducting research has some ethical considerations in order to minimise the risks to research participants (Lapan and Quartaroli, 2009: 3). Letters requesting permission and assistance were written to the Heads of Departments of Agriculture and Economic Development who are responsible for rural development in the province. These departments then appointed contact people with whom to liaise from the project identified.

The researcher communicated the projects' contact people in advance to briefly explain the purpose of the study and secure appointments. On arrival at the project sites, the letters were always presented to the participants before interviews could be conducted to confirm the legitimacy of the researcher. Furthermore, before interviews, the researcher explained the purpose of the research and ensured participants of confidentiality and anonymity. All participants identified, accepted their participation and provided all the necessary information. In addition, permission to have the interview recorded was obtained verbally prior to the interview, as Lapan and Quartaroli (2009: 287) suggest. This gives the participants the respect they deserve and the right to choose what they want or do not want.

4.7 DATA ANALYSIS

Data analysis is the process that precedes interpretation. After all data were collected for this study, analysis was done qualitatively by transforming data into findings (Patton, 2014). Interview responses were transcribed as an approach to generating analytic focus and transcripts used as a resource for analysis (Gibson and Brown, 2009: 111 and 169). The authors further indicate that transcription is also a way of analytically working through a problem in relation to data. To be able to do this, the transcripts were then loaded onto Atlas.ti for the purpose of coding, which according to Lapan and Quartaroli (2012: 98), is the classification of ideas, themes, topics and activities relevant to the study.

These coding categories are created and refined as the researcher builds smaller units into larger domains. The researcher examines and describes variation within each code category, identifies links amongst code categories, test these with further examples and then explains and interprets them.

In this study, after collecting data, hermeneutic units on Atlas-ti software were opened for files with all the responses. The responses were then coded into themes and families after which networks were created (Schiellerup, 2008). As Shiellerup (2008: 165) argues, the tools used in ATLAS-ti assisted in increasing the level of abstraction in the interpretation of the data. For instance, the network displayed in chapter five provides a clear interpretation of data collected.

While the researcher reflected that data analysis was done after collection, there was some analysis done during the data collection, as Patton (2014: 436) argues that ideas for making sense of the data that emerge while still in the field, constitute the beginning of analysis. For instance, the fact that very little IK was used in almost all phases of a project was established even before data collection was completed. According to the author, this is common in qualitative research because of the interaction with the people being interviewed. The analysis was done from two sources in line with Patton's (2014: 437) suggestion which is questions that were generated (interview guide), and the analytic insights and interpretations that emerged during data collection. Data interpretation is discussed in the next section.

4.8 INTERPRETATION OF RESULTS

After the analysis of data, interpretation was done and findings reported as discussed in the next chapter. Interpretation brings about the meaning of data through analysis (Patton, 2014: 476). Patton explains interpretation as:

attaching significance of findings to what was found, making sense of findings, offering explanations, drawing conclusions, extrapolating lessons, making inferences, considering meanings and otherwise imposing order on an unruly but surely patterned world. (p.480)

The significance of findings in this study which is mainly on community empowerment and sustainable development is clearly elaborated in Chapter 5. The focus is on the participation and non-participation of indigenous people with their knowledge in rural development projects.

4.9 RELIABILITY

The reliability of qualitative research is determined by a number of criteria in line with the theoretical framework discussed in the literature chapter. Patton (2014: 542) identifies the

traditional scientific research criteria, social construction and constructivist criteria, amongst others. In relation to the traditional scientific criteria, Patton (2014) argues that science has traditionally emphasised objectivity and the qualitative inquiry within this tradition emphasises procedures to minimise bias. In line with this argument, the method used in the study is reliable because of the objectivity of the inquirer. The fact that interviews were recorded and transcribed assisted in avoiding bias. The results of this study can, however, not be generalised to the whole population due to the size of the sample. It means that there is no external validity.

In the second criteria of social construction and constructivism, Patton (2014: 546) refers to important aspects, such as authenticity, trustworthiness, and subjectivity, among other criteria. These are also applicable in this study because as the researcher interacted with the communities being studied, the information obtained was authentic, since the responses were the community's perspectives of their situations and these responses were even audio-recorded. The researcher could be trusted by the participants who demonstrated this trust by freely providing the requested information. Patton (2014) further explains constructivism as embracing subjectivity as a pathway for understanding the human dimensions of the world in general. Indeed, the interaction with the participants enabled them to provide their subjective views on project management. These views are discussed in Chapter 5.

4.10 SUMMARY

The methodology as discussed in this chapter has been a qualitative one following an interpretivist paradigm. The theoretical framework was also discussed, as well as the ideal project management approaches for integrating IK into project management. The conceptual framework was explained with dimensions and elements that would guide and evaluate whether the integration of IKs in project management will, in fact, enhance the success of rural development projects. The relevant ethical considerations were observed before and during the collection of data. The sample of participants was constituted with the assistance of the relevant departments and the National Development Agency (NDA), ensuring that development projects were selected from each district municipality. Having collected data, qualitative analysis was then conducted with the use of Atlas.ti and this further aided in the interpretation of data as codes were classified into categories to be able to show the significance of the data. The next chapter discusses the findings of the study in detail.

CHAPTER 5: FINDINGS

5.1 INTRODUCTION

In Chapter 4, the research method was discussed detailing the paradigm, research design, and theoretical and conceptual frameworks, as well as data collection methods used to investigate the integration of indigenous knowledge into rural development projects. The data collection methods involved how the sample was constituted and the interviews conducted.

This chapter presents findings based on the analysis of the data collected from the selected rural communities of the Northern Cape into development project management. These findings follow themes which have been predetermined using phases of project management. It should be noted that the transcripts were referenced without being language edited.

5.2 MAIN FINDINGS

The findings discussed below, are in line with the predetermined themes according to project management phases, since interview questions were meant to elicit responses that would indicate the extent to which indigenous knowledge of rural areas of the Northern Cape was involved in projects. Perspectives of project participants, project leaders, and financiers are specifically highlighted where there were differences because they responded to different sets of questions. The project management phases as discussed in Chapter 2 are initiation, planning, execution, control and closure.

5.2.1 Initiation

It was found that community involvement in the initiation of projects varied from project to project. However, in most cases, indigenous people initiated the projects themselves. In the Basadi ba bokamoso project, the participants, who are women, indicated that their husbands encouraged them to start the project since they (husbands) were already in farming. The members of the Manyeding agricultural project, on the other hand, reported that they initiated their project because of the passion they had for agriculture and experience gained from their involvement in farming as part of their livelihood. The interview results showed that the project was funded by the National Development Agency (NDA) and this was verified by a representative from NDA who said:

NDA assists with the formulation of projects but the initiation comes from communities and they come to NDA for financial assistance.

In some projects, tribal authorities were involved as stakeholders. In most projects, members were regarded as stakeholders because they initiated the projects and possess the experience. For instance, members of Riemvasmaak ecotourism reported that the project had existed before these communities could go to Namibia in 1974 but only whites were involved. The respondents indicated that:

When we came back we realised that we could lift ourselves up and get involved. So one man went for workshops at the Government Departments and we requested some financial sponsors who also gave us workshops on ecotourism.

From the perspective of the Department of Agriculture, it was reported that extension officers initiated the projects on behalf of the communities where they saw potential for a specific project, as stated by one representative of the Department of Agriculture that:

As an extension officer you are there in John TaoloGaetsewe; you will see that the area, the village does not seem to have a place where they can auction their cattle. So there's a project right there where we will provide live-stock handling facilities for the auctions, for all the requirements that you can have in your live-stock.

The implication of this statement is that extension officers from the Department of Agriculture occasionally advised the community about possible projects where they saw a need and this was how projects were initiated.

In instances where the indigenous community initiated their own projects, the involvement of development agencies was through providing guidance regarding the application for funding. For instance, the National Development Agency representative stated that they assisted only with the formulation of projects but the initiation came from the communities. It is during the formulation of the projects that the community's indigenous knowledge becomes apparent, as argued by the representative of NDA that:

Indigenous knowledge comes out when we do project formulation. We do not specifically ask for the knowledge, especially in the area of agriculture; people always show knowledge of rain periods. They will tell you that although we have summer rainfalls, we did not have rain in the past five

*years. We do the baseline assessment; IK comes out, history of the area.
They tell us about patterns in the area. IK comes by default.*

From the seven (7) projects investigated, it was evident that very little was drawn from IK for the initiation of projects.

5.2.2 Planning

The finding regarding planning was that although the Department of Agriculture advocated for participatory planning, there was no evidence of the involvement of specific IK during the planning of projects. The needs of communities were identified through a profiling process where some community structures called the Council of Stakeholders participated in the profiling process and the information collected is then used for project planning.

A lack of awareness on indigenous policy by project members, development agencies and departments was noted. For instance, one representative of the Department of Agriculture articulated a lack of awareness on policy in this way:

I don't have a copy of the policy. I would appreciate if you could get me one.

The process followed by the National Development Agency was found to be guided by a standard funding application form which must be completed by project members requesting assistance. This form did not provide for obtaining any information regarding indigenous knowledge possessed by project members.

With regard to the Tshwaraganang project, the project manager reported that everything was done by the members and a mentor organisation. He indicated that a mentor organisation called Agribusiness in Sustainable Natural African Plant Products (ASNAPP) was appointed to develop a business plan with them. Furthermore, the project manager asserted that he had been part of all the meetings. There was however, no involvement in writing the plan.

In most cases, participants did not take part in writing their own plans as they were assisted by consultants or leading departments. However, plans were communicated to them through meetings which were conducted in the language understood by all members. This was confirmed by the NDA's representative when asked about the communication of the plan that:

...after the application is approved, funding agreement is drawn up between the parties. Normally we go out and sign two copies of the agreement and they get one copy and NDA has its copy. We use that and ask them that in terms of the expenditure they can refer to that. When we monitor, we monitor according to the contents of that agreement. We communicate through meetings by grouping the parties together and visit them every three months because the places are very far from each other. We also do telephonic monitoring to check the financials.

An interesting finding in one specific municipality in which one project (Staar na die stere language school) operated was that there was little municipal involvement in the planning of projects. In an interview with the municipal representative, it was reported that the municipality is not involved at all in the planning or running of this project and that their only relationship was regarding the application for land. For example, a municipal administrator articulated this non-involvement thus:

We as the municipality are only involved with the application for land. We are not involved in the assessment of the project because we referred them to the Department of Education as part of the curriculum of the Department of Education so that the language can be incorporated in the mainstream or something of that nature. So we are not involved. Our part just begins and ends with the application. (Municipality Administrator)

The administrator also indicated that the project members kept on threatening the municipality that the Aiports Company South Africa (ACSA) would withdraw their sponsorship if they did not get the land.

On the contrary, results showed that a representative from the Department of Rural Development and Agriculture made a request to the Municipality to follow up on the challenge of this project as clearly elaborated below:

When the Minister was here, no.... her project is registered and she receives funding from ACSA but it's not a formal project in our department. When the Minister was here for Khoisan 2, she actually stood up and said her place was arsoned, she is battling and she needs support and I did a follow-

up meeting with her, requested the municipality to do a report, on where she is coming from, what's happening and what ACSA has done.

Furthermore, the members of the project indicated that they did not do any planning, but just started operating the project. For example, Ouma Katriena initiated the project with no planning at all. She explained the starting process as follows:

We just started with a dance, and Naama music and as people saw us, they started showing interest. Then children started coming after school. They were about 50 but after the school got burned, the number reduced. Children used to be transported from other townships to come and attend.
(Ouma Katriena)

From the interviews conducted, it can be deduced that most members in different projects were not knowledgeable about risk identification as part of the planning. For instance, in the Ebhenasia project, the representative members demonstrated their uncertainty about decisions to be taken as follows:

...and from June 2014 we do not know what is going to happen because our lease for land is coming to an end; we had it for three years. We are not doing any planning now because we are not sure if we will still have land.

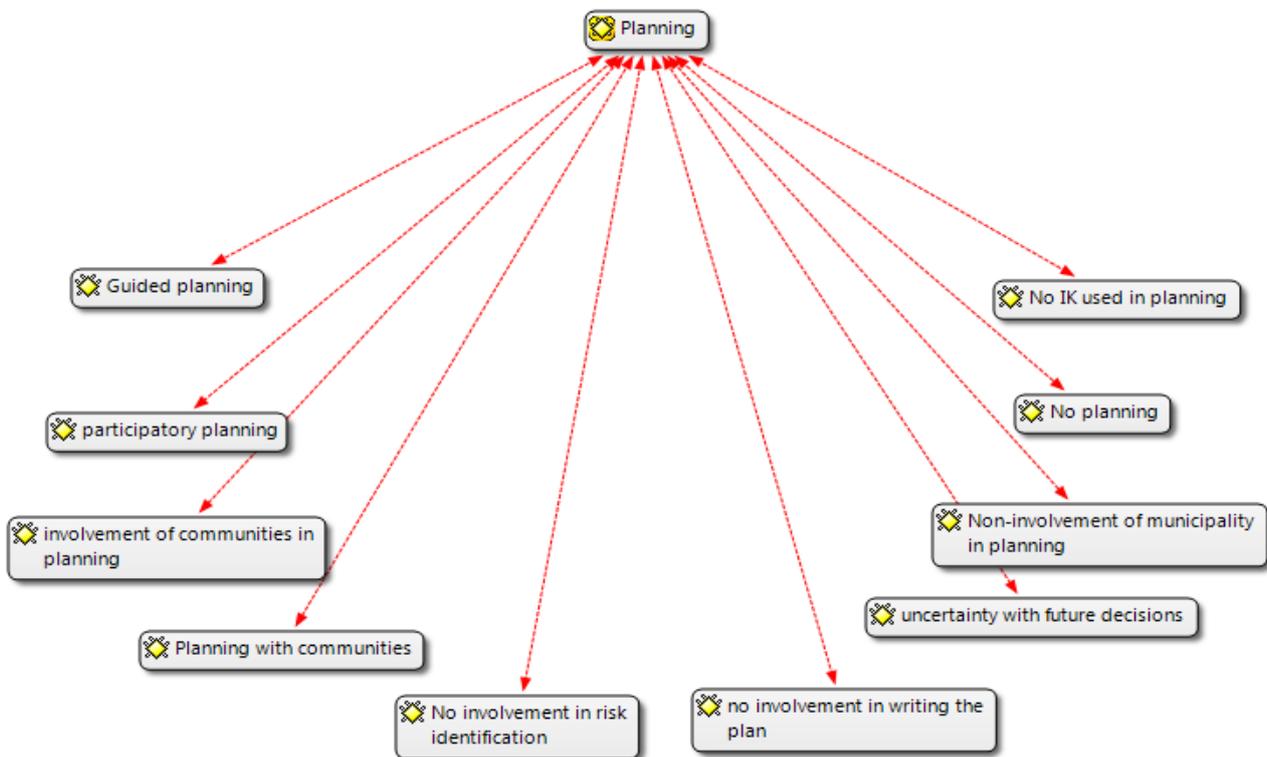


Figure 5.1 Planning for community development projects

When asked about the appointment of a project manager and project team members, various respondents explained that the appointment was based on passion, guided by the constitution and relevant educational qualification. This was verified by the statements below:

Nomination was done based on the interest and passion of the people for children but most importantly, the relevant qualification for ECD. (D S Bosman members)

We are guided by our constitution. Our elections are held every two years. Since we started, she is our third Chairperson so that we can all have an opportunity. (Basadi ba bokamoso)

5.2.3 Execution

The study found that all members of the projects were involved in the execution of planned activities. However, there was minimal utilisation of IK in some of them. For instance, the day-care centre staff used indigenous games, such as diketo and morabaraba to teach children counting. Manyeding Agricultural Coop used their indigenous knowledge to create their own manure and Basadi ba bokamoso used crushed egg shells to feed ostriches to help with the

prevention of illness. While this IK was applied, it was not known by the development officers. Participants used these informally.

In the case of Ebhenasia, it was reported that although an official from Kimberley guided them through the business plan which seemed easy to implement, the actual implementation was said to be difficult. This was articulated as follows:

The plan was there on paper but the implementation was difficult. It was ok for the first year or two while the government was helping us. But the fact that we did not receive stipends and some of us working, we had to depend on those who were off duty to look after the sheep. We had to work and had to farm.

It was also found that little IK was used as the basis for work allocation in most projects. Instead, members of projects reported that work was allocated based on the skills they possessed and in some cases, according to their literacy level. The following statement from a representative of the Tshwaraganang project reflects the method and rationale for work allocation:

Young employees are involved with activities that require some literacy as they need to record and read important instructions. Older people do packaging and labelling.

On the other hand, the allocation of work to members of the Basadi ba bokamoso project was done in such a way that two (2) people were always at work, as articulated in this statement: *We allocate 2 people per shift which starts from 08:00 -16:00. Not all of us work in one day.*

Results further showed that execution was aided by relevant training which was provided to almost all projects except one (Staar na die stere language school). This is corroborated by the following quotations from some of the interviews:

...in the very first training when we were trained on how to take care of ostriches, how we must dress. (Basadi ba bokamoso)

At the beginning of the project we take them through some capacity building to ensure that they are able to comply. We spend a lot of time and

effort on capacity building because this is a problem in organisations. (NDA representative)

In terms of finances, the project (Staar na die stere language school) reported not to be making any profit at all as they would charge R5.00 for learners but this was never paid. They indicated that they lacked management structure with financial knowledge and interest in fund-raising to assist them. Structures, such as the South African San Institute (SASI) in the district which they reported to be assisting, could not be reached. In fact, one member indicated that SASI was no longer operating.

The NDA specifically reported that they provided members of the projects they funded with financial management training so that they could account for the funding made available to them. When asked what was included in the training provided to projects, the NDA representative responded in this manner:

Financial management. They have been trained but you still find problems where members withdrew R20 000.00 from the bank. It is a nightmare. We always advise them to open cheque account because it is better to manage and control. When we checked the other projects, we were informed that one of the members withdrew R30 000.00. When we asked how this happened, they said they went to get a debit card and one guy gave the pin to the other one who then went and withdrew from the ATM R1000, then R5000; by the time it was realised, an amount of R30 000.00 was used.

A representative from Tshwaraganang hydroponics reported that his project was allocated a mentor, ASNAPP who trained them on the technical operation of the greenhouse.

In the Riemvasmaak project, it was reported that there were cases of financial mismanagement which led to the project being under administration and financial training was needed on that basis. In his response to the question: "Which aspects were included in the training planned for the team?" a representative from Riemvasmaak said:

None, but I think we need training on financial management to avoid problems from recurring.

However, the nomination of project team members involved the indigenous communities as verified by the respondent that:

The process of nomination was followed during meetings and nominations are done from both Naamas and Xhosas. But now the Trust is under administration because they misused the funds.

The need for financial management training was also evident in the Basadi ba bokamoso project who agreed that:

There we have honestly been a bit careless, because we would draw up a budget but then go over the budget. For instance, at times we would not budget for cleaning and would still use the money because we need to clean. Sometimes ostriches eat a lot and we did not budget to collect their feeding on a weekly basis, and find that we budgeted R20 000 for transport and you find that maybe we use that R20 000 in two weeks.

This financial challenge was attributed to a lack of transport and space to keep more food for the ostriches. It was also indicated that they can sell ostriches only after four months, while they must continue feeding them and this costs them more money.

It is because we do not have own transport and we also do not have enough space to store large amounts of food. The other thing that puts us off the budget is the registration that we had to pay at the Department of Agriculture. The selling of ostriches also disadvantages us because we can only sell them after 4 months or when they weigh 40kg and sometimes this takes about 12 months while we continue feeding them.

Communication during the execution phase was done through meetings where a common language, such as Setswana or Afrikaans was used for the benefit of local communities. It is only in one project, namely the D S Bosman daycare centre where it was found that the communities still held traditional meetings and these had an influence on the decisions made in the projects, as articulated in this statement:

Consultation was done through meetings with the authorities. The advantage in this case is that the wife of the Chief is a member of the committee.

Since the NDA was the funder of this project, they had to request permission from the Chief to erect a building for the daycare centre and a letter from the tribal authorities was issued to this effect.

5.2.4 Control

It was found that there was minimal utilisation of monitoring and evaluation systems. The problem was articulated by the Department of Agriculture:

We don't have empirical statistics that I can fall back on. So what I am saying is all anecdotal, this yes and no business.

Although the department did not have records, project participants reported that proper recording of all activities, including finances was done as a form of controlling and monitoring progress. This also assisted with monthly and quarterly reports compiled for the departments and NDA as participants stated.

In terms of the quality of the products, the results showed that various ways of assessing quality were followed in different projects. For instance, the Manyeding project weighed their agricultural produce but also followed their indigenous knowledge. A specific example given was how they determined that a pumpkin was ready for harvesting by checking whether the stump was dry. This was done in addition to weighing on the scale.

In the case of the Ebhenasia project, results showed that they did not have much control of their business as articulated by the representative of the project below:

So we started with 40 sheep and in five years we are now at 150 but that's not the way to do sheep farming. You must have the land because after the sheep gave birth to their lambs, you must take them away after 5 months and give their mothers a chance to produce again but we cannot do that due to lack of enough land. That is one of our main problems, especially with sheep.

Regarding quality of ostriches in the Basadi ba bokamoso project, members reported that they weighed them to determine whether they were ready to be sold. They also recorded daily, how

many ostriches were received, how many died and every activity done on them, including giving water, food and medicine.

We have a daily recording book where we write the date, name, how many ostriches received, how many died.

They also submit a monthly report to the Department of Agriculture and a quarterly one to the NDA by the Treasurer as confirmed in this statement:

The monthly report goes to the Department of Agriculture while NDA requires quarterly reports which are submitted by the Treasurer.

According to the members of the ECD project, the Social Development Department does the monitoring through regular visits and meetings to guide them on how to run them effectively. The tribal authorities also maintain law and order in the community in which the project is run by ensuring that major decisions made must be communicated to the Chief before they are implemented.

In addition, the results suggest that some projects were not doing cost control because participants indicated that they were simply purchasing their stock from the nearest service provider without comparing prices, mainly due to a lack of transport to various service providers. This is how they stated it:

We can get different markets but this one is the closest.

Although some participants in various projects reported the recognition of IK in the control and monitoring of projects, results indicate that there was generally no specific IK used in the monitoring of projects. The NDA specifically stated that some projects require more frequent monitoring than others and explained the reasons in this statement:

Some projects require frequent monitoring than others. Like the project of Edwin (Tshwaraganang); we used to monitor it frequently because of the large amounts of money invested but now, because it is running smoothly, I speak to Edwin telephonically more than I visit him.

The members of the Basadi ba bokamoso project admitted that they were not doing cost control and were even advised by one of the community development officers to keep a record of prices. When they were asked how they did cost control they said:

It is not done but we know how much are the chicks because last time Mr Nkosinathi (Community development officer) was here, he told us to keep the record of the prices.

This is an indication that the members are not strictly adhering to procedures which may be the reason why their project is not doing well.

5.2.5 Closure

All the projects were currently running during the investigation. However, participants indicated that the projects were making a positive impact on their lives. For example, participants reported that most of the communities were satisfied with the progress of the projects, even though they are not yet making a substantial amount of profit, and not yet contributing to the financial well-being of communities. Two specific projects the participants of which were dissatisfied with the outcome of their projects, were Riemvasmaak ecotourism and Staar na die sterre because of the problems of financial mismanagement by the committee in the former, and a lack of support from the municipality regarding land acquisition in the latter.

5.3 SUMMARY

This chapter reported the findings and results of the study. Key findings include the following: Firstly, there was minimal utilisation of IK in the initiation of projects. Secondly, there was little participation of indigenous communities in the planning and decision-making of development projects. Thirdly, although participation in the planning was minimal, plans were communicated to the project members through meetings held using the language commonly understood by all to ensure proper execution. Fourthly, there was minimal utilisation of monitoring and evaluation systems, as well as minimal specific indigenous knowledge used in the control of projects.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

The previous chapter presented the findings made from the empirical study and this final chapter discusses the conclusions made from the literature (Chapters 2 and 3), as well as from the empirical study (Chapter 5). The discussion continues to follow the predetermined themes that are guided by the phases of project management. Finally, a framework for integrating IK into development project management will be proposed, followed by a summary of the chapter.

6.2 THE PURPOSE OF THE STUDY REVISITED

The study was aimed at the following objectives:

1. To determine the extent to which the IKs of the Northern Cape are part of the development project management process;
2. To determine the extent to which IK can enhance the success of development projects;
3. To establish the shortcomings of integrating IK into development project management process; and
4. To develop a framework for integrating IKs of indigenous communities in the rural parts of the Northern Cape Province into development project management.

These objectives were partly attained through an extensive literature review on rural development project management and indigenous knowledge, together with the empirical study which was conducted. Following the literature study, an in-depth empirical study was conducted in selected projects from five rural district municipalities of the Northern Cape Province. Conclusions were therefore drawn from these exercises and recommendations made based on the findings of the empirical study. Furthermore, a framework is proposed for integrating IK into rural development projects.

6.3 CONCLUSIONS FROM THE LITERATURE

Chapters 2 and 3 discussed the literature on the rural development project management perspective and the role of IK therein. Conclusions made from these chapters are discussed separately in the sections below.

6.3.1 Conclusions from project management literature

Chapter 2 provided a rural development project management perspective by first interrogating rural realities and then highlighting how project management could be enhanced through the involvement of indigenous people. The stakeholders in rural development project management were identified, as well as different approaches to project management. The following are conclusions made:

1. The outcome of development programmes/projects often shows that development is not endogamous (within communities) as it is supposed to be (Theron, 2008);
2. It is important to ensure that the need for projects is recognised before a project can be initiated (PMI, 2013);
3. It was noted that projects are often characterised by increasing complexity, uncertainty and ambiguity affecting organisations and the socio-economic environment within which they operate (Veatch, 2011), which implies that projects involve risks and need careful consideration during planning;
4. It is important for communities to be involved in the planning of their own projects, as well as risk identification because this involvement provides community ownership and support of the intervention; information about community history, politics, and past mistakes; respect; and a voice for everyone (Rabinowitz, 2012);
5. The community's active involvement enables them to develop a shared vision which leads to better coordination of the tasks; stronger commitment to the project; higher levels of team member satisfaction; and increased loyalty to the team (Lazenby, 2011);
6. The involvement of communities in planning, makes the execution of the plan easier because communities would have been involved in defining the work to be performed (PMI, 2013);
7. It was learnt from the literature that control is one of the most neglected areas in project management and yet, it keeps people accountable and provides an opportunity to trace problems relating to a project (Lazenby, 2011);
8. Provision should be made for control at different levels within the project using simple and easily understood measures that reflect the objectives of the project (Maylor, 2010);
and
9. It is crucial to note that if one has skipped certain phases in the process, it is unlikely that one will finish a project well (Russle, 2007).

6.3.2 Conclusions from indigenous knowledge literature

Chapter 3 entailed a discussion on the role that IK could have in rural development project management. The chapter engaged in various forms of IK; how IK as tacit knowledge could be used together with scientific knowledge which is explicit; as well as the theoretical frameworks, namely: constructivism, pragmatism and scientific management that underpin the whole study.

The following insights have been gained from Chapter 3:

1. Indigenous knowledge is tacit because it is personal, practical and context specific, to an extent that even the knowledge holder may not be aware of its existence (Kothari, Bickford, Edwards, Dobbins and Meyer, 2011);
2. Indigenous knowledge is local knowledge that is unique to every culture and society. It is the basis for local decision making in agriculture, health, natural resource management and other activities. It is embedded in community practices, institutions, relationships and rituals (World Bank, 2011). These attributes may contribute to the success of projects;
3. Among various forms of IK explored, all could play an important role in community development projects. For instance, through indigenous games, skills can be learnt (Nyota and Mapara, 2008); education can be provided (Nkopodi and Mosimege, 2009); and that local communities are the sources of knowledge on indigenous food plants. Therefore, they should derive direct benefit from the commercial applications of their knowledge (Shava, 2005);
4. A systemic approach focusing on integrating indigenous and modern technology, with possible adaptations is necessary to accelerate rural economic development (Fakude, 2009);
5. The fact that IK is transmitted from one generation to another is that it is expressed in local languages (Langill in Chisenga, 2002), and links to the theoretical framework that views IK as originating from the interaction with people (Powell and Kalina, 2009). From this assumption, it is further concluded that the participation of indigenous communities in rural development projects can create an opportunity for them to be empowered in all the necessary principles of project management; and
6. Lessons learnt from best practices demonstrate that if indigenous people, with their knowledge, are involved in rural development projects, they can enhance the success of projects.

6.3.3 Conclusions from the empirical study

The empirical study was conducted using the methodology described in Chapter 4 and findings are reported in Chapter 5. In this section, insights drawn from this empirical study are discussed in line with the phases of project management.

1. During the initiation phase, no specific IK was used and in instances where IK was involved, it was by default. For instance, the following statement by a representative from the Department of Agriculture further shows that indigenous communities were not given an opportunity as key stakeholders to share their knowledge before the department decided to provide the livestock handling facilities.

As an extension officer you are there in John TaoloGaetsewe; you will see that the area, the village does not seem to have a place where they can auction their cattle. So there is a project right there where we will provide live-stock handling facilities for the auctions, for all the requirements that you can have in your live-stock. (Section 5.3.1)

2. There was also no involvement of specific IK during the planning phase. There was little participation of communities because in some cases, consultants were used. This scarce participation of communities in the planning contributed to challenges, such as indecisiveness and the poor management of finances because they did not know how to identify risks and plan the management thereof. In projects where communities were involved in the planning, success was achieved. For instance, in Tshwaraganang where, although the consultants were used to do the business plan, the project manager was involved (see Section 5.3.2) and the project did so well that it is no longer monitored frequently because it is now running smoothly (see Section 5.3.4).
3. The execution of projects in this study faced some challenges due to a lack of active participatory planning by indigenous communities. For example, the declaration by one member that the plan was there on paper but the implementation was difficult, confirmed this problem. It further indicated that although training was said to be provided, it was not adequate, especially on the aspect of financial management because members of the projects, as well as the NDA confirmed that finances were not managed properly. This is verified by the following statements:

Financial management. They have been trained but you still find problems where members withdrew R20 000.00 from the bank. It is a nightmare. We always advise them to open cheque account because it is better to manage and control. When we checked the other projects, we were informed that one of the members withdrew R30 000.00. When we asked how this happened, they said they went to get a debit card and one guy gave the pin to the other one who then went and withdrew from the ATM R1000.00, then R5000.00; by the time it was realised, an amount of R30 000.00 was used. (NDA representative)

There we have honestly been a bit careless, because we would draw up a budget but then go over the budget. For instance, at times we would not budget for cleaning and would still use the money because we need to clean. Sometimes ostriches eat a lot and we did not budget to collect their feeding on a weekly basis, and find that we budgeted R20 000.00 for transport and you find that maybe we use that R20 000.00 in two weeks [Basadi ba bokamoso]. (see Section 5.3.3)

4. It is further concluded that the minimal IK applied during execution is not known by development practitioners, as it is simply used informally. Examples of indigenous games, such as diketo and morabaraba which were used to educate children at the day-care centre were on an *ad hoc* basis. The members of the project only mentioned these when further probed about the indigenous way of educating children. This may again be attributed to the lack of active involvement in the planning because this is where different forms of IK would have been identified and recorded so that they could be applied correctly during execution (see 5.3.3).
5. Although indigenous communities highlighted a few ways in which they exercised control in their projects, these were informal and not known by development officials. In other words, there is lack of proper monitoring and evaluation systems as articulated by the representative of the Department of Agriculture (see paragraph 5.3.4). Therefore, it is concluded that if communities are not actively involved in the planning, it will be difficult for them to effectively participate in the monitoring and evaluation of their projects. They may submit reports as required by the financiers merely as a form of compliance, without understanding the main purpose.
6. Most of the projects were still running during this investigation but it was clear that the closure may not be satisfactory in some of them, as was already the case with two

projects (see section 5.3.5). This is mainly due to inadequate involvement from the first phase of the project.

7. Although there was generally lack of awareness on indigenous knowledge policy, project participants demonstrated some knowledge and application of policy as they reported that they allocate work in terms of their constitution (see section 5.2.2).

It should also be noted that not all responses to questions could be provided due to lack of information in those aspects, as well as lack of involvement. One example relates to how the time schedules of the projects were done and the response was that these were determined by the sponsors of the project.

In view of all the conclusions arrived at from the literature and empirical study, a proposed framework for integrating IK in rural development projects is presented in Figure 6.1 and discussed in Section 6.4 below.

6.4 A FRAMEWORK FOR INTEGRATING IK INTO RURAL DEVELOPMENT PROJECTS

This proposed framework is informed by the findings from the literature review (Chapters 2 and 3), as well as the empirical study (Chapter 5). In this framework (Figure 6.1), indigenous people with their knowledge should be at the centre of development projects as reflected by the links to all phases of project management. The framework suggests activities to be carried out with indigenous communities in each phase of the project, since their involvement will instil a sense of ownership and commitment in them. This framework does not disregard the processes followed by Financiers and Government departments but will guide the inclusion of indigenous people in development project management.

6.4.1 Participatory initiation

Initiating projects must be done locally and the first action by the development practitioners is to identify stakeholders comprising indigenous people, local municipalities and relevant financiers/government departments. Awareness on indigenous knowledge policy should be created among all stakeholders through consultative meetings/workshops so that decisions can be based on correct policies. Relevant knowledge that exists within the community, such as indigenous communication strategies, indigenous education, and so forth, should be shared among the stakeholders and codified so that it is accessible. A data base of this knowledge

should be compiled for future reference. Then, a participatory identification of needs should be facilitated to guide the conceptualisation of development projects. Once a project has been conceptualised, the benefits available for indigenous communities should be identified for the purposes of benefit-sharing agreements where applicable. The project team should then be established ensuring that indigenous people with relevant skills and knowledge are given an opportunity to be part of the team. This should be followed by the appointment of the project manager within the team. For the purpose of involving indigenous communities in the continuous monitoring, stakeholders should be given an opportunity to reflect on the process of every phase and indicate whether they are satisfied or not. An opportunity should then be provided to them to suggest any improvements or seek clarity.

6.4.2 Participatory planning

Planning must follow participatory approaches as discussed in paragraph 2.4.3.3.2 (a). Consultative meetings/workshops should be conducted where the vision, objectives and activities of a project are set. Relevant indigenous knowledge from a data base to be compiled during the initiation phase should be applied. Communication during the planning process should be through a language that is common to the indigenous community in the area to ensure that everyone understands the process and can participate with ease. Critical indigenous knowledge policy areas should be considered during planning. It is important to determine the scope of the project and create a work breakdown structure while at the planning phase. Tasks should be allocated to team members according to their skills and knowledge possessed. Financial resources need to be allocated to activities identified and a user-friendly monitoring and evaluation system should be designed. Project risks and a contingency plan should be designed. A training programme needs to be developed in line with identified training needs. A written plan comprising all of the above deliverables should be made available to all team members who participated in the process. The designing and signing of benefit-sharing agreements should be facilitated where necessary. A communication strategy for the project should be determined and a plan and communication strategy should reflect the nature of the knowledge (indigenous or scientific) involved. It is beholden on stakeholders to reflect on the process followed during planning.

6.4.3 Execution

The participation of indigenous communities should still continue during execution. This should be done by conducting initial meetings to communicate the execution of the plan, using traditional meetings where relevant. Training for identified needs can be conducted, as well as implementing the plan and recording activities which are indigenous and not indigenous in nature. All stakeholders should again reflect on the process followed and make suggestions for improving future execution where necessary. Alignment with the plan should be closely monitored to ensure that unplanned things are added in during execution.

6.4.4 Control

Strict control should be ensured, in line with the set objectives and activities. Progress on activities should be monitored daily and discussed with stakeholders to ensure that they are involved in the monitoring. Indigenous communities as stakeholders, should contribute their knowledge on how they exercise control of project activities. The quality of products; the expenditure incurred; profits made; and the impact that the project has on the lives of communities, need to be tracked. Reports need to be compiled indicating all activities done, the successes achieved, the obstacles encountered and how these obstacles are addressed. The recording of new knowledge from indigenous communities should be undertaken.

6.4.5 Closure

A project should be evaluated in line with set objectives. The impact of the project on communities, including indigenous communities in terms of changed lives, jobs created, training received and how many people participated, specifically women, should be monitored. Indigenous communities should be given an opportunity to do the evaluation of the impact. In cases where not much impact on communities has been noted, there may be a need for alternative projects, and the first phase of initiation will apply again.

Figure 6.1 below presents the proposed framework for integrating indigenous knowledge into rural development project management for enhancing the success of development projects in rural areas as described above.

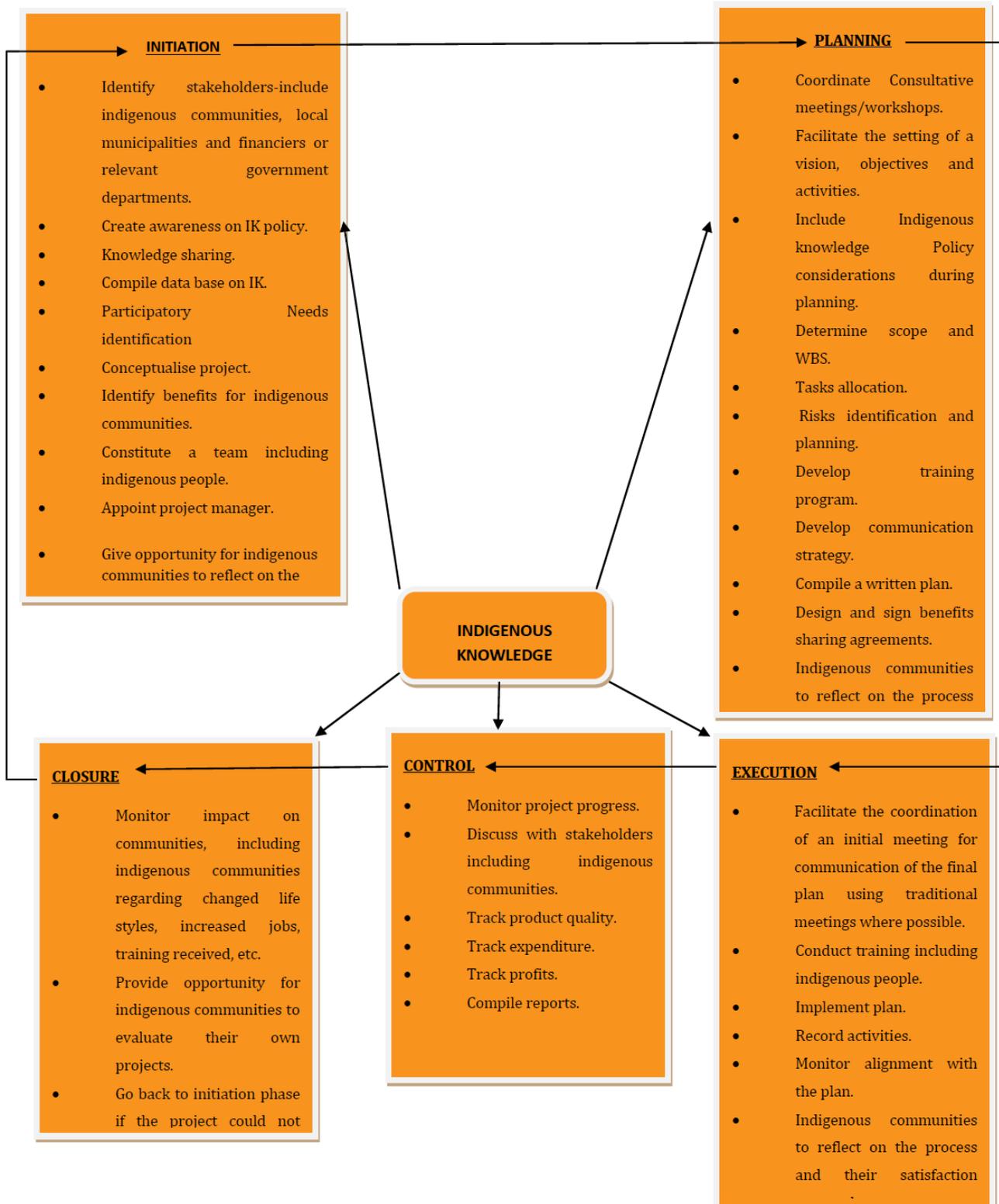


Figure 6.1- Integrating IK in development project management

6.5 RECOMMENDATIONS

Having presented the findings from the literature and empirical study, as well as the proposed model for integrating IK into rural development projects, recommendations are hereby made at two levels, namely policy/practice and research levels.

6.5.1 Policy/ practice level

On a policy and practice level, it is recommended that:

- Awareness be created on available indigenous policies so that all development practitioners working with indigenous people and the indigenous communities themselves are aware of their role in implementing the policies. Where necessary, available policies should be amended to cater for the current needs of indigenous people;
- Stakeholder committees consisting of indigenous communities should be established for consultation purposes during the initiation of development projects. These committees should be consulted and be involved in all phases of the project management;
- Continuous training should be provided for indigenous communities on project management and that they should be allowed to share their knowledge with regard to how they have managed their project;
- A system of recording should be created to ensure that all the indigenous knowledge that is available is recorded for reference in other development projects both at local, regional and national levels;
- A collaborative strategy between holders of IK and facilitators of development should be developed to ensure that both types of knowledge are used and managed effectively for the success of a project, without alienating the holders of each type of knowledge;
- This proposed framework should be used as a point of reference when engaging in rural development projects;
- Mechanisms should be developed for sharing benefits with indigenous communities where their knowledge or innovations are utilised; and
- Project managers should empower themselves on communicating explicit knowledge to indigenous people at the level of their understanding, as well as converting tacit knowledge of indigenous people into explicit knowledge.

6.5.2 Research level

On a research level, it is recommended that:

- A thorough profiling of indigenous knowledge of the Northern Cape Province relevant for project management be conducted in selected rural areas of the Northern Cape. This can be a study on its own and is based on the fact that most of the project participants who were interviewed for this study, were not knowledgeable about the IK specifically used for project management. Older indigenous people can be consulted and such IKs be recorded for future use; and
- A further study be conducted on the project 'Staar na die stere' to assist the project with comprehensive project planning, in liaison with the local municipality and other relevant stakeholders.

6.6 LIMITATIONS OF THE STUDY

The greatest anticipated limitation of this study was the language barrier. Owing to the rural setting of the Northern Cape Province, there were cases where communication in English was not possible. As Welman *et al.* (2005: 200) indicate, language and cultural values of participants must always be taken into consideration in research. Researchers often experience difficulties when they have to rely on interpreters in cross-cultural interviews, since this can lead to misunderstandings and biases which can have serious detrimental implications for data integrity. Fortunately, in all the interviews, people could either speak English, Afrikaans or Setswana, in which the researcher could communicate. Furthermore, the interview questions were translated into these languages prior to the interview.

6.7 SUMMARY

This concluding chapter presented some insights from the study based on the literature and empirical work, with a particular focus on providing a framework for integrating IK into rural development project management, linked with the conceptual framework discussed in Chapter 4.

5. The proposed framework which covers all phases of project management, was discussed in detail and recommendations made. It is hoped that this framework will assist in enhancing the success of development projects in rural areas and not only the Northern Cape Province.

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