

Developing a socio-economic framework for assessing the effectiveness of
Expanded Public Works Programmes (EPWP): The case of the *Prosopis*
mesquite Working for Water clearing project in the Northern Cape Province,
South Africa

A thesis submitted in fulfilment of the requirements for the degree of
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By

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Declaration

I, Sinazo Ntsonge, declare that this is my own original work which has not been copied from anywhere else without the proper acknowledgement. Where ideas have been taken from other authors, the authors have been cited and referenced appropriately.

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Date: 17/01/2023

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“I would have lost heart, unless I had believed that I would see the goodness of the LORD in the land of the living.”

Psalm 27:13 (NKJV)

This was probably one of the hardest things I have ever had to do in my life, but the LORD stood with me and gave me strength (2 Timothy 4:17). As a first generation academic, nothing could have prepared me for the journey from undergraduate up to this point, but I am grateful for the journey and everything that came with it, which taught me valuable life lessons that will last me a lifetime. I remember when I was younger how my (late) father would often jokingly remark that I liked to “philosophise” everything. At the time I did not even know what the word meant. Now, years later here I am, “uNtombikayise”, with a Doctor of “Philosophy” degree. I clearly was going somewhere with that.

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ABSTRACT

The EPWP functions as a bridge between unemployment and entry into the labour market by providing work readiness skills training to its beneficiaries who receive below-market rate stipends for the short-term duration of their participation. The EPWP combines service delivery issues with social development objectives by promoting intensive manual labour in its projects. As a social protection strategy, public works programmes cater to those who do not meet the criteria to receive government social grants. As one of the programmes under the EPWP dealing with the control and eradication of invasive alien plants, the Working for Water (WfW) programme also uses intensive manual labour methods for clearing alien plant species. Although the clearing successes of WfW are well documented, the programme has focused little attention to the longer-term livelihood impacts of the temporary work and skills training provided to beneficiaries. This study suggests this could be due to a lack of the appropriate indicators to measure these outcomes. Therefore, an evaluation framework for environmental public works projects is proposed, which consists of outcome indicators to track the livelihood impact of the work experience and skills training on the beneficiaries post-participation, since the aim of these EPWP interventions is to improve beneficiaries' labour market outcomes. The Northern Cape province's *Prosopis mesquite* clearing project was used as the case study to develop and test the evaluation framework. The outcome indicators were informed by the key stakeholders' interviews and the beneficiaries' survey, specifically since the beneficiaries were well placed to give feedback on the benefits of the work experience and training post-participation. The combined strengths of the Sustainable Livelihoods Approach and the Capability Approach were useful for formulating the outcomes indicators, while the indicators for the inputs, activities and outputs were formulated from the key stakeholder interviews and online EPWP reports. A mixed methods approach was used and primary data were collected through key stakeholder interviews with the *Prosopis mesquite* clearing project managers and an online survey with some of the beneficiaries. Online EPWP reports and records obtained from WfW were used as secondary data. Data analysis used RStudio, Microsoft Excel and GraphPad Prism. The data analysis and evaluation framework indicators constituted the results section and aimed to highlight the factors that managers should focus on to achieve the desired livelihood outcomes. The proposed outcome indicators can be used to gauge the effectiveness of environmental public works' social development interventions. The results revealed that the project budget fluctuations resulted in the Working for Water managers adopting a myopic view in administering the workdays and skills training, which diminished the livelihood impact of the *Prosopis mesquite* clearing project to merely a 'make work' project with no observable longer-term livelihood benefits. The selection input indicators and their utilisation during project activities needs to be better aligned with the desired longer-term livelihood outcomes that these environmental public works projects seek to achieve, mainly that of preparing beneficiaries for jobs in the labour market.

TABLE OF CONTENTS

Developing a socio-economic framework for assessing the effectiveness of Expanded Public Works Programmes (EPWP): The case of the Prosopis mesquite Workingfor Water clearing project in the Northern Cape Province, South Africa i

TABLE OF CONTENTS v

CHAPTER 1: INTRODUCTION 1

- 1.1 Preamble 1
- 1.2 Economic grounding 3
- 1.3 Rationale for the study 4
- 1.4 Goals of the research 7
- 1.5 Thesis outline 8

CHAPTER 2: THEORETICAL FRAMEWORK AND REVIEW OF RELEVANT LITERATURE ON PUBLIC WORKS PROGRAMMES 11

- 2.1 Introduction 11
- 2.2 Theoretical framework 12
- 2.3 Literature review: Overview of public works programmes 33

CHAPTER 3: The Expanded Public Works Programme (EPWP) in South Africa 47

- 3.1 Introduction 47
- 3.2 Background of public works in South Africa 47
- 3.3 The Expanded Public Works Programme (EPWP) in South Africa 49
- 3.4 The process of securing EPWP Poverty Relief Funding for projects such as the *Prosopis mesquite* clearing project 51
- 3.5 Conclusion 55

CHAPTER 4: The socio-economic context of the Northern Cape province 57

- 4.1 Introduction 57
- 4.2 The impact of invasive alien plants in South Africa 57
- 4.3 The History of *Prosopis mesquite* in the Northern Cape 61
- 4.4 Profile of the Northern Cape province and its economy 63
- 4.5 Conclusion 69

CHAPTER 5: The Program Logic Model - linking inputs to outputs and outcomes 70

- 5.1 Introduction 70
- 5.2 The purpose of a Program Logic Model and its practical applications 70
- 5.3 The utilisation and structure of a typical Program Logic Model (PLM) 72
- 5.4 The benefits to using a Program Logic Model 74
- 5.5 Limitations of Program Logic Models 75
- 5.6 Evaluating environmental public works projects using a Program Logic Model 76
- 5.7 Conclusion 77

CHAPTER 6: Methodology and research procedures 78

- 6.1 Introduction 78
- 6.2 Research design 78
- 6.3 Sampling procedure 80
- 6.4 Data collection tools and methods 82
- 6.5 Data analysis 86
- 6.6 Combining the strengths of the Sustainable Livelihoods Approach (SLA) and Capability Approach (CA) to analyse the factors affecting the achievement of desired livelihood outcomes 88
- 6.7 Reliability and validity of the data analysis methods 92
- 6.8 Conclusion 93

<i>CHAPTER 7: The key stakeholders’ perspectives of the success of the Prosopis mesquite clearing project’s social development initiative in achieving its objectives and the beneficiaries’ perceptions of the subsequent impact on their livelihoods.</i>	94
7.1 Introduction	94
7.2 The targeting objectives of the <i>Prosopis mesquite</i> clearing project in Phases I, II and III	95
7.3 Age categories by gender in the three project phases.....	99
7.4 The education levels of the <i>Prosopis mesquite</i> project beneficiaries and the job positions and training received.....	102
7.5 Results from key stakeholder interviews: Working for Water managers’ perceptions of the Northern Cape’s <i>Prosopis mesquite</i> clearing project	106
7.6 Results from the online survey with the Northern Cape’s <i>Prosopis mesquite</i> clearing project beneficiaries	125
7.7 Conclusion.....	134
 <i>CHAPTER 8: Development and application of the evaluation framework to the Northern Cape’s Prosopis mesquite clearing project.</i>	 136
8.1 Introduction	136
8.2 The structure of the evaluation framework for environmental public works projects.....	139
8.3 Selection of criteria for the measurement of outcome indicators.....	145
8.4 Conclusion.....	153
 <i>CHAPTER 9: Concluding remarks and recommendations to Working for Water managers.</i>	 155
9.1 Recap of the impacts of invasive alien plants in South Africa	155
9.2 The nexus between public works and service delivery	155
9.3 Overview of different public works designs and their similarities to the <i>Prosopis mesquite</i> clearing project	156
9.4 Operationalising a livelihood lens to measuring outcomes of EPWP social development interventions ..	159
9.5 Summary of research findings.....	161
9.6 Revisiting the research questions.....	166
9.7 Conclusion	171
9.8 Recommendations for Working for Water project management, monitoring and evaluation.....	172
9.9 Limitations of this research study	175
9.10 Further research.....	175
 <i>LIST OF REFERENCES</i>	 178
 <i>Appendix 1: Key stakeholder interview questions</i>	 222
 <i>Appendix 2: Informed consent form for beneficiary online survey</i>	 227
 <i>Appendix 3: Beneficiary online survey questions</i>	 230

LIST OF TABLES

Table 7.2.1: Total beneficiaries divided into the project phases	95
Table 7.2.2: Percentages of women, youth and disabled people recruited into the <i>Prosopis mesquite</i> clearing project in Phases I, II and III.....	95
Table 7.3.1: Age categories in Phase I (2004 to 2008).....	99
Table 7.3.2: Age categories in Phase II (2009 – 2013)	99
Table 7.3.3: Age categories in Phase III (2014 – 2018)	100
Table 7.3.4: Different government social grants received by beneficiaries’ households.....	101
Table 7.4.1: Gender distribution in each of the <i>Prosopis mesquite</i> clearing project job categories across Phases I, II and III,.....	103
Table 7.5.1: The list of key stakeholders that were interviewed.....	107
Table 7.5.2: Average number of accumulated person days of employment for each year in Phase II (2009 – 2013), in relation to the EPWP’s FTE target of 230 person days of employment.....	109
Table 7.5.3: Average number of accumulated person days of employment for each year in Phase III (2014 – 2018), in relation to the EPWP’s FTE target of 230 person days of employment.....	109
Table 7.5.4: Types of training offered by the Northern Cape’s <i>Prosopis mesquite</i> clearing project and the number of people in each one in Phases II and III.....	115
Table 7.5.5: Summary statistics for the Budget, Work and Training variables.....	121
Table 7.5.6: The Shapiro-Wilk Test for normality for the Budget, Work and Training variables.....	122
Table 7.5.7: One-way ANOVA for budget and work variables.....	123
Table 7.5.8: Kruskal-Wallis Test for Budget and Training	124

LIST OF FIGURES

Figure 4.2: Map of Invasive species introductions.....	58
Figure 4.4: Map of study site showing the five district municipalities in which the clearing of the <i>Prosopis mesquite</i> takes place as well as the different features of the land and its uses	64
Figure 5.3: Simple Program Logic Model	72
Figure 6.2: The triangulation design (convergence model)	79
Figure 6.6.1: Adaptation of Sen’s framework as a model of household behaviour	90
Figure 6.6.2: The Sustainable Livelihoods Framework	92
Figure 7.4.1: Education outcomes of <i>Prosopis mesquite</i> clearing project beneficiaries by gender	104
Figure 7.5.1 and 7.5.2: The real annual budgets over the years and the creation of workdays across Phase II (2009 – 2013) and Phase III (2014 – 2018) of the <i>Prosopis mesquite</i> clearing project, respectively	108
Figure 7.5.3 and 7.5.4: The real annual budgets over the years and the creation of training days across Phase II (2009 – 2013) and Phase III (2014 – 2018) of the <i>Prosopis mesquite</i> clearing project, respectively	114
Figure 7.6.1: <i>Prosopis mesquite</i> clearing project beneficiaries’ general perceptions about the project.....	126
Figure 7.6.2: Beneficiary responses to how long they had been in the <i>Prosopis mesquite</i> clearing project.....	129
Figure 8.1: Framework for evaluating environmental public works projects.....	138

CHAPTER 1: Introduction

1.1 Preamble

Government intervention in the markets is often motivated by a need to correct market failures which result in inequalities in society. The most popular forms of government intervention include taxation, providing subsidies, delivering public goods, providing social security in the form of social grants, and passing laws which prohibit certain activities in society (Lee and Clark, 2013; Vyskočil, 2013). Labour market interventions usually take the form of skills training when there is a skills gap, providing temporary employment opportunities through public works programmes, enacting wage legislation, and giving wage subsidies to firms for youth employment (Kasongo, 2013; Levinsohn *et al.*, 2014; National Youth Development Agency, 2015; South African Government, 2019). The most prominent example of government successfully intervening in the labour market was during the Great Depression in the 1930s where five public works projects were launched as part of the 'New Deal' to stimulate economic activity in the United States (Field, 2009; Holland, 2017). The New Deal was the term used to refer to a number of public policy reforms which were launched by the United States government which included financial reforms, industrial regulations governing trade and public works programmes which were grouped under the Works Progress Administration (Brinkley, 1996; Hardman, 1999; Pederson, 2011).

The Works Progress Administration (henceforth, WPA), which was the name given to the bundle of public works programmes under the New Deal, hired unskilled and skilled women and men who had been unemployed for a long time or had been displaced from work due to the Great Depression (Woolner, 2010; Pederson, 2011; Seufert, 2013). The goal of the WPA was to provide a job to any household whose primary wage earner was unemployed, mainly due to the Great Depression. To cater to the different skillsets of the individuals in the labour force at the time, highly diversified programmes were introduced which provided jobs in the field of arts, housekeeper training and job placement for women, and construction jobs for unemployed youth (Pederson, 2011). Each of these programmes were housed within sub-branches of the WPA, namely, the Federal Art Project, Federal Theatre project, the Federal Writer's Project, the Federal Music Project and the Household Service Demonstration Project (Abramovitz, 1996; Swain, 2004; Seufert, 2013; Flynn *et al.*, 2020; Mattingly, 2012). Men who were low skilled were mainly absorbed into the construction projects, while women who were the heads of households and thus the sole breadwinners were taken into the programmes which taught soft skills related to housekeeping and sewing on Clothing and Production Projects (Flynn *et al.*, 2020; Pederson, 2011; Mattingly, 2012; Seufert, 2013; Loomis, 2014). Women who were relatively more skilled or semi-skilled were assigned to projects such as working as librarians, teaching in public schools, secretaries, working as researchers for government and running adult education programmes (Seeber, 1990; Flynn *et al.*, 2020; Swain, 2004). Some of the structures that resulted

from the construction component of the WPA are the Lincoln Tunnel, Hoover Dam, the Overseas Highway, the Grand Coulee Dam, and the Great Smoky Mountain National Park (Holland, 2017).

The WPA also catered to unemployed youth between the ages of 18 to 24 years to work on natural resource conservation projects including flood and erosion control and forestry (Speulda and Lewis, 2003; Levine, 2010; Pederson, 2011; Mattingly, 2012). This programme, the Civilian Conservation Corps (CCC), was geared specifically towards youth who were not considered in the other programmes since they were not primary wage earners in their families and the programme's mandate was to create jobs "the construction, maintenance, and carrying on of works of a public nature in connection with the forestation of lands, the prevention of forest fires, floods, and soil erosion, plant pest and disease control, the construction, maintenance or repair of paths, trails and fire-lanes in the national parks and national forests" (Levine, 2010: 6).

In South Africa, the scope of public works programmes was expanded to include projects that would cater to women who would not be able to carry out some of the activities requiring heavy lifting in infrastructure construction programmes. The programme, which has since the 2003 Growth and Development Summit (GDS) been named the Expanded Public Works Programme (EPWP) covers four sectors, namely, infrastructure, social, non-state and environment and culture (Kelobang and Boon, 2018). The social sector of the South African EPWP is the one that caters to project activities more tailored to women's perceived innate capabilities and these projects are Early Childhood Development (ECD), National School Nutrition Programme (NSNP) and Home Community Based Care (HCBC) (Mohapi, 2013; Economic Policy Research Institute, 2015; Kelobang and Boon, 2018). Women are one of the vulnerable groups targeted by the programme, the other targeted groups being the disabled, the low-skilled poor, those living with HIV/AIDS, single-headed households, ex-offenders and historically marginalised groups living in rural areas which are considered areas with high levels of poverty (Magadlela and Mdzeke, 2004; Mohapi, 2013; Economic Policy Research Institute, 2015). Similar to the CCC, the EPWP also seeks to address youth unemployment. This is reflected through its National Youth Services Programme (NYSP) which pays recipients a stipend and in which they are expected to partake in a mandatory training and skills development programme running parallel with the NYSP (Economic Policy Research Institute, 2015; Kelobang and Boon, 2018). Despite the apparent picture being portrayed of public works programmes being the panacea for addressing unemployment while also tackling factors contributing to service delivery backlogs, the assessment of the effectiveness of these programmes has been limited. This has especially been the case in the South African context where the majority of the literature tends to extensively focus on the success of the programmes in terms of either its efforts in clearing invasive alien plants, rehabilitating previously invaded lands, the most cost-effective methods of clearing invasive alien plants and more recently the livelihood and

commercial value of some invasive alien plants to poor people and industry (Dold and Cocks, 2000; Van Wilgen *et al.*, 2001; Marais *et al.*, 2004; Shackleton *et al.*, 2011; Barirega, 2014; Dickie *et al.*, 2014; Ah Goo and De Wit, 2015; Badimo *et al.*, 2015). It is against this background that this study will develop a framework that can be used to assess the success of expanded public works programmes, especially in terms of their contribution to the livelihoods of the beneficiaries.

1.2 Economic grounding

Economics is a broad discipline concerned with the way nations, governments, businesses and individuals choose to allocate finite scarce resources to a multitude of needs and wants and the strategies employed to achieve this (Black *et al.*, 2012). The concept of scarcity applies to both goods and services as well as the innate capabilities of individuals, or lack thereof, which might be at the root of their inability to access certain goods and services (Sen, 1985; Alkire, 2005; Clark, 2005; Deneulin and Shahani, 2009). This informs the core theme of development economics, a sub-discipline of economics, which “ultimately describes and explores the causal reasons why some countries, communities and people are rich, and others are poor” (Barrett, 2007: 2). Development economics focuses on understanding how human behaviour, institutional arrangements, public policy, private policy, historical trends and household dynamics jointly influence the evolution of the human condition (Barrett, 2007; Black *et al.*, 2012; Janse van Rensburg *et al.*, 2015). Since its focus is on improving policymakers’ knowledge on how individuals fall into poverty and the “processes by which people avoid or escape poverty and enjoy improved standards of living” (Barrett, 2007: 1), development economics sits at the centre of many development approaches aimed at providing solutions to the issues of poverty, inequality and unemployment.

Development policies that are decided on the microscale by governments or international aid agencies to assist with a country’s development often intersect with human welfare at the individual and household level. This top-down process of policy implementation with bottom-up feedback on their effectiveness highlights the interaction between the macro and micro economic scales of decision making as well as the interconnectedness of development economics and welfare economics as the ‘economics of poverty’. Baujard (2013: 1) defined welfare economics as an economic discipline which “offers the theoretical framework used in public economics to help collective decision making, to design public policies and to make social evaluations”. Going back to the definition of economics as a discipline concerned with the way resources are allocated in society, the implications of these allocations for human welfare introduce the concepts of economic efficiency and equitability into the discussion. Whether equitability or fairness in resource allocation was achieved after a policy was implemented, in this case a public works policy, is usually reflected by income distribution, poverty rates in the region in which the project was implemented, employment levels among the population targeted by the project, unemployment rates in the region, statistics on household food security, rates of full-time employment amongst beneficiary households and

specifically those that participated in past projects in relation to the number project cycles they took part in, and household expenditures (Olaskoaga-Larrauri *et al.*, 2010; Crouse and MacCartney, 2016). Chakravarty and Muliere (2003) stated that indicators of the degree of inequality in income distribution cannot be measured without introducing social judgements based on the targeted populations' preferences. Consulting with the targeted populations to determine their preferences results in a better understanding of their livelihood dynamics and how they may have been impacted by policies aimed at improving their livelihoods which would be observed in follow up studies aimed at gauging the impact of the project. To be able to delve deeper and obtain these types of results in a well-structured manner, conducting a livelihood analysis is required. This study will employ a theoretical framework consisting of a combination of Sen's (1985) Capability Approach and the Sustainable Livelihoods Approach, which is elaborated on in the next chapter.

1.3 Rationale for the study

As a government social protection tool, public works programmes have been implemented both in developed and developing countries to revive the economy through employment creation. Public works programmes (PWP) can take different forms. The design of each programme is context-specific, and the programmes operate for specific periods of time depending on the circumstances of each country and the specific goals the government aims to achieve through them. Since it is often the role of the markets to create employment, when governments intervene to create employment through these programmes, they are employers of last resort (Meth, 2011; Philip, 2013). This means that, in the case where markets fail to balance the supply and demand for labour, government intervenes to absorb the numbers of individuals who are disqualified from entering the labour market either due to their lack of skills, or due to jobless growth in the economy (Lieuw Kie Song and Philip, 2010; Mahadea and Simson, 2010; Festus *et al.*, 2016). The design of public works programmes is often aligned with the provision of public goods such as infrastructure (which supports economic growth), environmental conservation, and community-based agricultural schemes which are aimed at strengthening resilience within poor communities (Phillips, 2004; Wilcock, 2005; The World Bank, 2006; Department of Public Works, 2010; van de Meerendonk *et al.*, 2016). In South Africa, the government expanded the scope of the public works programmes to the different government ministries to cover a broad range of social, environmental, non-state (providing wage subsidies to non-profit organizations), and infrastructure issues that are bottlenecks to economic growth in the country (Department of Public Works, 2010). The scope of programmes was expanded to deal more effectively with the issues of chronic high unemployment, to address backlogs in the provision of public services, and to provide a broader set of skills training to the beneficiaries of the programmes (Phillips, 2004; Department of Public Works, 2010). Furthermore, South Africa's public works programmes were aimed at individuals who do not fit the categories specified by cash transfer systems like South Africa's state

social grant system, which targets children from low-income households, children in foster care, elderly people, and those who are disabled (Brynard, 2011; SASSA, 2014). Therefore, since the country is plagued by high levels of youth unemployment which also affects those who are not covered by the social grant system, the public works programmes work in tandem with these other policies, which also include the youth wage subsidy which was introduced to incentivise firms to hire inexperienced job hopefuls (Kasongo, 2013; Levinsohn *et al.*, 2014). More recently during the COVID-19 pandemic, the South African government introduced the Social Relief of Distress Grant (SRD) which is targeted at unemployed individuals who are non-recipients of the government social grants, who are in the age range of 18 to 60 years old and who do not receive any other sort of income support (Atkins, 2021; UNHCR, 2022). The introduction of this grant was also especially important since due to the pandemic regulations on social distancing meant that the work activities of public works programmes were also ceased. Therefore, even though there are arguments of the grant being insufficient to even cover the basic necessities (Ritchie, 2021), the relative nature of poverty meant that to those who were receiving it in comparison to receiving no financial assistance at all, the income was important for buying groceries and toiletries (Attwood, 2022). Even though data on whether there were any individuals registered in the South African public works database who were recipients of the SRD grant was beyond the scope of this research project, since the EPWP also targets individuals who do not receive the government social grants, it could perhaps be deduced that they had also applied for the grant.

Although much hope is placed on public works programmes as a poverty fighting tool, Devereux (2006) argued that the extent to which these programmes can reduce poverty is dependent on the scale of the programme in terms of the number of jobs it can create, the duration of the employment period as well as the level of wages received by the employees. Public works programmes have been criticised for intentionally paying desperation level wages that are often not enough to meet the basic needs of the recipients (Devereux, 2001; McCord and Wilkinson, 2009; Gehrke & Hartwig, 2015). These low wages prey on the vulnerability of poor people as the wage rates offered are usually lower than local labour market wage rates, thus mainly attracting those who have few or no other options to earn an income and are desperate to make ends-meet (Devereux, 2001; Lal *et al.*, 2010). Moreover, considering the highly labour-intensive nature of the projects, the wages earned by the participants in these projects often do not justify the work carried out daily. These can potentially take away from the effectiveness of the programmes since their success relies on the following three factors or pillars: (1) how the income earned impacts on livelihoods in terms of poverty reduction; (2) the impact that participating in socially useful activities has on the individuals; and (3) the significance of the services or assets created through the programmes (Philip, 2013). When one of these pillars is prioritised over the other ones, the impact of the programme remains minimal. Employment in public works programmes does not follow the conventional rules of labour

economics, which postulate that households will only supply hours of labour if the opportunity cost of leisure, measured in terms of real wages, is high enough and in turn firms will only demand labour if the wage rate is low enough (Mtessigwa, 2006; Zeilstra and Boxhoorn, 2017). In the case of public employment programmes, government positions itself as the demander of labour and offers lower than market rate wages which are meant to induce self-selection or self-targeting in those who are poor and have no other reliable sources of income to support their livelihoods. As such, since the employment is offered on a temporary basis and is only meant to be transitional and merely a steppingstone for the beneficiaries to be able to move on to better paying jobs after their employment contracts on the public works programmes have ended, one could view the offering of exploitative wages as a necessary evil (Common Ground, 2003; Department of Public Works, 2010).

McCord and Slater (2009) also pointed to the “cookie-cutter” approach in the implementation of public works programmes without consideration of the context. McCord and Slater (2009) attributed the failure of most public works programmes in sub-Saharan Africa to the failure of policymakers to identify the most appropriate design and implementation procedures for such programmes. This results in the anticipated social protection outcomes failing to materialize (McCord and Slater, 2009). Despite these criticisms, public works programmes continue to be used as active labour market policies and have even been included in international human rights treaties as part of social protection strategies (UNDP, 2016; International Labour Organization, 2019). The formulation of the development agenda through sustainable development goals as the meeting of basic human rights (for example, Goals 1 and 2 on No Poverty Zero Hunger, respectively), necessitates the involvement of governments in a complementary fashion in the realization of these goals. This can be achieved through social protection interventions like public works programmes. Moreover, since Goal 8 advocates for “sustained, inclusive, and sustainable economic growth, full and productive employment and decent work for all” (UNDP, 2016: 7), the provision of training and employment through public works programmes could also contribute to the realisation of self-sustaining economic growth and the achievement of full employment in the long term.

This study aims to develop a framework that can be used to evaluate the success of public works programmes and the Working for Water (WfW) programme will be used as a case study. The role of WfW will be assessed from the perspective of it being a response to the failure of the labour market in providing jobs for the majority of unskilled and semi-skilled people who take part in the programme. The programme is housed within the Department of Environmental Affairs (DEA). Working for Water was instituted in 1995 to clear invasive alien plants and thereby free the country’s scarce water resources from use by these species and channel it towards more productive uses (Department of Public Works, 2010). As one of the first platforms through which the employment-creation goals of the Reconstruction and Development

Programme (RDP) were realised, the WfW programme aims to not only restore ecosystem functioning through the clearing of invasive alien plants, but also create socio-economic benefits through employing low skilled people especially those living in rural areas (Working for Water, 2001; Common Ground, 2003).

The Working for Water (WfW) programme is a collaborative effort between the Department Environmental Affairs, the National Department of Agriculture, and the National Treasury (which has a similar function to the RDP funding office by channelling funds from the partnering government departments mentioned), Rand Water, and other private and foreign donors (Common Ground, 2003). A timeline for the employment creation potential of the programme over the years shows an increase in the number of jobs created. Magadla and Mdzeke (2004) quoted the number of jobs that were created by WfW in its first six months as 6163 and by 1997 this number had risen to nearly 40 000 jobs as the programme spread to other provinces from its first office in the Western Cape. In a report on the national success of expanded public works programmes between 2005 and 2009, the number of jobs created through the 300 projects that the programme was currently running across the country was 185 686 (Department of Public Works, 2010). The demographics of employees of Working for Water consist largely of women, especially those in the position of household headship, unemployed youth, and a small percentage of those living with disabilities (Working for Water, 2001). To make the programme even more socially relevant, the programme also targets ex-offenders and those living with HIV/AIDS for employment (Working for Water, 2001; Common Ground, 2003).

This study will analyse the success of the *Prosopis Mesquite* clearing project in the Northern Cape province which is administered by the Working for Water programme in terms of the project fulfilling the programme's other goals of providing income and poverty relief and social development, which accompany its main objective of environmental conservation. This study area has been chosen because the species mentioned has been present in the surrounding environment for a long time and there is a body of literature of its impacts as well as successes in clearing it to protect native biodiversity (Zachariades *et al.*, 2011; Van den Berg *et al.*, 2013; Shackleton *et al.*, 2015). The programme's viability will be assessed in the context of its ability to contribute towards meeting the social protection objective of the National Development Plan (NDP, 2011), which emphasises the long-term role of public works programmes in addressing structural unemployment in the country.

1.4 Goals of the research

The main goal of this study is to develop a framework that can be used to assess the success of public works programmes and to determine the impact of such programmes on the livelihoods of those it employs.

The research sub-goals are:

- a) Developing the assessment framework by drawing on the two theories to formulate the assessment criteria
- b) Application of the framework to analyse the success of the Working for Water programme with reference to environmental, social and economic themes with lessons learned for publicworks programmes
- c) Conducting a sensitivity analysis on the quantitative data to determine the effects that changes in inputs, over the period under consideration, had on the outputs of the Working for Water programme
- d) To discuss the implications of the findings for the design of Public Works Programmes and how they are evaluated

The specific questions that this research study will be aiming to address are as follows:

1. What are the Key Stakeholders' perceptions about the socio-economic aspect of the Workingfor Water programmes' *Prosopis mesquite* project considering its targeting objectives of creating employment and training opportunities?
2. What are the beneficiaries' perceptions of the socio-economic intervention of the *Prosopis mesquite* clearing project in terms of its impact on their livelihoods?
3. What are the factors used by *Prosopis mesquite* clearing project management to measure the success of the socio-economic aspect of the project?
4. How effective are these measures considering the desired outcomes of the *Prosopis mesquite* clearing project?

1.5 Thesis outline

1.5.1 Chapter 1: Introduction

Chapter 1 gives an overview of the study and briefly introducing the literature supporting the rationale for the study. The chapter discusses the economic orientation of the study, which underlies the choice of theoretical framework that will be employed. An outline of what each chapter of the thesis entails is also presented.

1.5.2 Chapter 2: Theoretical framework and review of relevant literature on Public Works Programmes

Chapter two outlines the theoretical framework which combines the Sustainable Livelihoods Framework and the Capability Approach in the first section. The second section discusses the rationale for public works programmes looking at both developed and developing country examples. The design approaches of the programmes, objectives, targeting strategies, the parallel programmes launched to ensure long-term

benefits, the results and limitations of each programme will be discussed. This chapter will also discuss how the success of public works programmes are measured and the indicators used to assess the success of the programmes.

1.5.3 Chapter 3: The Expanded Public Works Programme (EPWP) in South Africa

This chapter sets out the history of the public works programme in South Africa as well as the premise for its introduction. The chapter also discusses the Expanded Public Works Programme, which resulted from the expansion of the scope of public works to accommodate the socioeconomic and skills requirements in the economy. The discussion narrows in to focus on the Working for Water programme which houses environmental public works projects, including the *Prosopis mesquite* clearing project. The chapter discusses the funding structure which determines the achievement of both the main objectives of invasive alien plant clearing as well as the social development objectives EPWP projects and how the *Prosopis mesquite* clearing project's social development objectives were affected by the reprioritisation of government funding in Phases II and III.

1.5.4 Chapter 4: The socioeconomic context of the Northern Cape province

This chapter sets out the context of the study site by briefly outlining the history of the Northern Cape, discussing the pillars of the region's economy, the social dynamics of the region which are linked to its demographic information. The chapter also discusses the policy interventions and initiatives that have been enacted in the province pertaining to social development as well as what public works programmes, as one of the initiatives, seek to achieve. Lastly, the chapter discusses the linkages between government initiated public works and the private sector to facilitate the process of employment for those who exit the programme at the end of the contract period.

1.5.5 Chapter 5: The Program Logic Model – Linking inputs to outputs and outcomes

Chapter four introduces the concept of Program Logic Models (PLMs), their purpose and different uses especially in evaluation. The chapter discusses the suitability of a PLM to the evaluation of a public works project such as the *Prosopis mesquite* clearing project. The chapter discusses formative and summative evaluations and how they would be carried out in this research study using the evaluation framework developed. This chapter also includes the limitations of PLMs.

1.5.6 Chapter 6: Methodology and research procedures

Chapter five discusses the research paradigm, description of the study area, the mixed methods research approach used, the type of sampling used, data collection and data analysis. The chapter also mentions how the research methods were modified in response to the COVID-19 pandemic. This chapter also includes the study's limitations and concludes with an outline of the ethical considerations.

1.5.7 Chapter 7: Analysis of key stakeholder interviews and the online survey with the

Prosopis mesquite clearing project beneficiaries

Chapter 6 presents the analysis of the quantitative and qualitative data for each of the five-year periods under consideration (Phase II and Phase III). The chapter illustrates through statistical analyses how changes in annual budget allocations affected projected programme outcomes (workdays and training days created) and the challenges that resulted from those changes. The chapter presents the beneficiaries' perspectives of those challenges alongside the key stakeholders' responses. The chapter also discusses how those challenges were addressed. The data analysis in this chapter informed the formulation of the evaluation framework and its indicators.

1.5.8 Chapter 8: Development and application of the evaluation framework to the Northern Cape's *Prosopis mesquite* clearing project

Chapter 8 outlines the evaluation framework which consists of the indicators that can be used to evaluate the success of the *Prosopis mesquite* clearing project's social development intervention over Phase II and Phase III. These criteria are drawn from the primary and secondary data as well as the online reports of the EPWP.

1.5.9 Chapter 9: Concluding remarks and policy recommendations

Chapter 9 presents the conclusions drawn from the study as well as some policy recommendations.

CHAPTER 2: Theoretical framework and review of relevant literature on public works programmes

2.1 Introduction

The first section of this chapter discusses the theoretical framework which will inform the argument throughout the thesis, while section two outlines the relevant literature on public works programmes in developed and developing countries. Poverty is a multidimensional concept which is caused by several factors which can be better understood by performing an analysis of an individual's or household's livelihood strategies and portfolio. Several theories and frameworks have been put forward to explain how people construct their livelihoods. This has not only improved people's understanding of livelihoods, especially rural livelihoods, but has also added to the understanding of the factors which hinder people from realising the livelihood outcomes they desire.

The Capability Approach and the Sustainable Livelihoods Framework have been some of the most prominent theories which have provided the lens through which the complexities of livelihoods, the various aspects of poverty, and the internal and external constraints that households are subjected to in the process of creating their desired livelihood outcomes are assessed. Public works programmes, as one of the catalysts for poverty alleviation and job market relevant skills improvement through temporary work creation (Tsukamoto, 2017), can contribute to sustainable livelihoods by promoting opportunity freedom through capability enhancement. The experience of other countries from implementing public works programmes, in terms of their policy design and implementation outcomes is contrasted with South African literature on the Expanded Public Work Programme (henceforth, EPWP). The majority of studies on the EPWP reveal that people's participation in the programme is motivated by chronic unemployment, mainly resulting from a lack of skills and poverty (Phillips, 2004; Del Ninno *et al.*, 2009; Goldman, 2015; Dlabantu, 2017; Kelobang and Boon, 2018). The EPWP provides income relief through temporary employment while also providing various skills training aimed at addressing the skills deficit (Phillips, 2004; Department of Public Works, 2007; Del Ninno *et al.*, 2009; Lieuw-Kie- Song and Philip, 2010; Kelobang and Boon, 2018). Moreover, the EPWP specifically aims to address social issues such as gender disparity in the incidence of poverty as well as targeting individuals with disabilities and ex-offenders who would otherwise not be able to find employment in the mainstream labour market (Strebel, 2004; Muatjetjeja, 2006; McCord and Slater, 2009). The aligned socio-economic impact initiative of the programme has not received much attention in the literature as most studies have tended to focus on the core objectives of each programme, which in the case of Working for Water has been the management and clearing of invasive alien plants as well as the monitoring of lands that were previously invaded by alien plants (Marais *et al.*, 2004; Richardson and Van Wilgen, 2004; Poona, 2008; Andrade and Rhodes, 2012; Shackleton *et al.*, 2015). Furthermore, the framing

of the social objectives of public works programmes to align with social issues such as the relationship between gender and household structure needs to be highlighted to further emphasise the importance of the programme.

2.2 Theoretical framework

2.2.1 The Capability Approach

a.) Theoretical underpinnings of the Capability Approach

In formulating the Capability Approach, Sen mainly drew from the philosophical works of Aristotle's *Nicomachean Ethics* (340 BC), Immanuel Kant's *Groundwork of the Metaphysics of Morals* (1785), Marx's conception of human agency and positive freedom or 'species being' (1844) and more recently John Rawls' *Theory of Justice* (1971). Aristotle's contribution to the Capability Approach can be summarised by the Greek term 'eudaimonia', which has been translated as human flourishing and the ability to live a life of moral virtue and excellence (Nagel, 1972; Sen, 2003; Capuccino, 2013). This term resonates with Sen's notion of 'doings and beings' which is a term which describes the functionings that individuals' capabilities allow them the freedom to achieve (Sen, 2003). The achievement of eudaimonia is twofold: Firstly, the individuals should already possess the capability at the most basic level and be indicating the existence of this capability through their functionings. This would serve as a signal to policymakers and planners of which policies to enact to enhance those capabilities and thus create the conditions possible for a good human life of flourishing to be chosen and lived (Nussbaum, 1987; Nussbaum, 2011). This basic underdeveloped capability, which allows individuals a certain level of freedom to choose certain functionings, also gives them the responsibility to work hard at cultivating their virtues or capabilities so that they will transcend to higher capability levels, achieve greater freedom of choice and thus reach a higher level of eudaimonia (Nagel, 1972; Nussbaum, 1987; Sen, 2003; Nussbaum, 2011; Vittersø, 2016).

Kant (1785) focused on the concept of human dignity in his formulation of a categorical imperative which advocates for the universal recognition, protection, and respect of an individual's inherent human dignity. Formosa and Mackenzie (2014) identified two types of human dignity, namely, status dignity and achievement dignity. The former refers to the common respect-worthy status or inherent dignity of all human beings, while the latter references their status owing to the degree of their beings and doings (Formosa and Mackenzie, 2014). In most societies, the widely recognised type of dignity is achievement dignity and a person's status dignity are often dependent on it. Having a low level of achievement dignity, which is often the case among those who are poor, can also determine how an individual is treated in society as well as affect their prospects of accessing certain spaces that would contribute to elevating their status. This is one of the considerations often missed by utilitarian approaches which promote economic growth as the ultimate end, while human beings are treated as mere means to the achievement

of this growth (Caldwell, 2012).

Acknowledging the status dignity of each individual involves acknowledging their most basic characteristic functionings as a human being, having a sense of reverence for those functionings, and then seeking to intervene in ways that would assist in the enhancement of those functionings through targeting the inherent capabilities that make those functionings possible (Nussbaum, 2006; Nussbaum, 2011; Formosa and Mackenzie, 2014). This concept of individuals' inherent value influenced the formulation of global and national human rights treaties such as the Universal Declaration of Human Rights and the Constitution of the Republic of South Africa, which both focus on the socioeconomic rights of citizens and are there to protect the dignity of each person (Steinmann, 2016). Drawing from this moral and ethical philosophy of Kant, Sen (2003: 41) argued for the importance of adopting a dualistic view of individuals as both ends and means by stating that "human beings are the agents, beneficiaries and adjudicators of progress, but they also happen to be directly and indirectly the primary means of all production". As ends in themselves, human beings are able to partake in ventures geared towards economic prosperity to improve and enrich themselves.

The Marxian influence on the Capability Approach mainly echoed Aristotle's views of functionings and to a certain degree, Kant's concept of one's standing within society. Marx argued that human beings are intrinsically relational and acknowledged the role played by social relations in increasing one's identity and social standing. Instead of the rich economy, Marx focused on the rich human being who both influences and is influenced by the society in which they exist. Therefore, to be able to flourish, the human being requires exposure to diverse social interactions to be able to self-realise (Giovanola, 2005). In other words, no human being can flourish successfully in isolation as there need to be social interactions between diverse groups of individuals, mainly the rich and poor, so that there can awaken the need to self-realise in each of them through observing from one another what each one lacks. The multifacetedness of each human being expressed through their functionings then serves as an indication to others about the types of capabilities they would need to acquire to operate in certain spaces, which Marx conceptualised as a process which gives both poverty and richness a human and social meaning (Wolff and Leopold, 2021; Giovanola, 2005).

Rawls' (1971) arguments on self-respect lean towards Kant's concept of dignity, or more specifically achievement dignity, in that Rawls' focus was on improving the economic position of the worst off in society even in the presence of persistent inequalities. Inequality was justified in cases such as having a competitive economy that pays out competitive wages to incentivise productive workers (Cohen, 2008; Moon, 2015). Rawls' argument was also heavily influenced by the utilitarian perspective in that it only spoke of equal access to primary goods and commodities such as income and wealth, which were merely means, without a discussion on what capabilities might have contributed to certain individuals being able to

transition to a more well-off position (Sen, 2003). Despite this point of contention between the capability approach and Rawls' Difference Principle which justifies inequalities if they result in the worst off being in a better position (Rawls, 1971), taken together, the Capability Approach seems to make up for the shortcomings of Rawls' theory.

b.) Formulation of the Capability Approach

The Capability Approach was first articulated by the Indian economist and philosopher, Amartya Sen, Sen (1979) in his Tanner Lecture on Human Values and further developed by him and other authors who have since elaborated on the definitions of the two main concepts which define the Capability Approach, namely, Capabilities and Functionings.

The Capability Approach was formulated in the early 1980s as a rebuttal of some of the tenets of the Basic Needs approach, which was the basis for the 1976 World Employment Conference report put forward by the International Labour Organization, as well as other earlier development approaches which were utilitarian (Emmerij, 2010). In a comparison of the philosophical underpinnings of the Basic Needs Approach and the Capability Approach, Wong (2012) defined the former as a consumption-centred approach which is predicated on the idea of ensuring that everyone has access to the means through which they can pursue their desired wellbeing. The materialistic focus of the Basic Needs Approach stems from what Wong (2012) called the unidimensional definition of poverty which it describes as income-deficiency resulting in resource deprivation. The Basic Needs Approach defined the most basic needs of individuals as shelter, sanitation, clothing, education, food and public transportation, and the meeting of these basic needs was attached to the level of economic growth which was supposed to boost incomes through employment creation (Emmerij, 2010; Wong, 2012). Employment was viewed as both the means and ends for households' incomes to increase above a nationally defined poverty line so that they would be able to afford and maintain their access to these needs (Emmerij, 2010). Daw *et al.* (2017) criticized the 'consumption deprivation' angle to poverty analysis taken by the Basic Needs Approach, stating that it only seeks to implement policies that will raise the incomes of poor people without a subjective analysis, of poverty experienced by each individual household. As such, this approach views the poor as a homogeneous group that can be lifted out of poverty through merely raising their household incomes above the nationally defined poverty line (Emmerij, 2010; Dicken, 2015).

Based on its myopic view of poverty, the Basic Needs Approach has also been criticised on grounds questions such as, who defines needs? Is the goal only to address the unmet basic needs?, Or to promote overall human development? Do the poor have the opportunity to participate in the definition of these needs? How is the financing of these needs going to be carried out? (Alkire, 2005). The shortcomings of the Basic Needs Approach led to its gradual fading away from mainstream use in favour of the Capability

Approach which was introduced in subsequent years as a human-centred approach focusing on individual values and choices in the pursuit of one's desired wellbeing (Alkire, 2005; Wong, 2012). Essentially, the advantage that the Capability Approach has over the Basic Needs Approach is that it is concerned with addressing issues behind deeply entrenched inequalities and social injustices which exist in society. Such issues might also include discrimination on grounds of gender, class, age, race, disability and sexuality (Staupe-delgado, 2014). These types of discrimination have the potential to result in capability failures which limit people's freedoms to enhance their livelihoods. However, despite the criticisms levelled against the Basic Needs Approach for attempting to prescribe a set of goods and services that individuals need to improve their wellbeing, the approach and others that came after it still informed the formulation of the United Nations Millennium Development Goals (MDGs), and subsequently the Sustainable Development Goals (SDGs) (Emmerij, 2010).

There have been several definitions put forward by various authors as to what the capability approach is, with each one providing a different perspective on what the approach entails. The approach has been defined by Amartya Sen (2003: 43) as an approach that "sees human life as a set of 'doings and beings'—we may call them 'functionings'—and it relates the evaluation of the quality of life to the assessment of the capability to function"; as an evaluative approach on how individuals differ in the abilities to convert the same resources into functionings (Wells, 1995); As the freedom to take advantage of opportunities available to an individual which ultimately determines the level of wellbeing that an individual will achieve (Nussbaum, 2011); and as "a broad normative framework for the evaluation of individual wellbeing and social arrangements, the design of policies and proposals about social change in society" (Robeyns, 2003: 5). The concept of a capability, or more aptly human capability, can itself be defined as the characteristics of a person or the abilities residing within a person such as their personality traits, being able bodied, their mental and emotional capacities, their state of health and bodily fitness, being able to read, write and communicate and the internalised skills that they possess (Sen, 1985; Clark, 2005; Nussbaum, 2011). Functionings, on the other hand, are the achievements of an individual which are directly related to their living conditions, or what Sen (1990) termed as the "valuable beings and doings" of an individual such as being well-nourished having strong supportive social networks, having a job, having a place to live, being educated, which are related to income and resource acquisition (Sen, 1990; Robeyns, 2003; Alkire, 2005; Nussbaum, 2011). Therefore, functionings reflect the freedom of choice of individuals in the presence of various choices and opportunities for livelihood improvement. This means that the observation of an individual or household's functionings can often act as a proxy for the identification and measurement of capabilities. Nussbaum (2011) distinguished a person's Capabilities into two sets, namely, *internal capabilities* which reside inside a person and are honed over time such as someone's health status, intellectual capacity, skills and internalised learning; and *external capabilities* which are the political,

economic and social spaces which provide an enabling environment for people to pursue opportunities for livelihood improvement. These internal and external capabilities combine to afford people the freedoms to pursue their desired livelihood opportunities.

Sen was opposed to the compilation of a definitive list of capabilities instead opting to promote an *ad hoc* selection of capabilities by practitioners according to the context or adopting participatory approaches which allow the poor to identify their own capabilities. However, he acknowledged that there was a set of basic critical capabilities which exist as the basic characteristics of being a human being and only varied in their strength according to the context within which a poverty, inequality or individual wellbeing analysis was being conducted (Sen, 1990; Robeyns, 2003; Clark, 2005; Nussbaum, 2011). In this vein, Nussbaum (2011: 33) constructed a comprehensive list of what she deemed as central capabilities which, in their absence, the very essence of a human being's dignity would be eroded. These central capabilities are:

1. "Life – Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living
2. Bodily health – Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter
3. Bodily integrity – Being able to move freely from place to place; to be secure against violent assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.
4. Senses, imagination, and thought – Being able to use the senses, to imagine, think and reason and to do these things in a 'truly human' way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid non-beneficial pain.
5. Emotions – being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)
6. Practical reason – Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience

and religious observance.)

7. Affiliation – Being able to live with and toward others, to recognise and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)
8. Other species – being able to live with concern for and in relation to animals, plants, and the world of nature.
9. Play – Being able to laugh, to play, to enjoy recreational activities
10. Control over one's environment – (a.) Political: Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association. (b) Material: Being able to hold property (both land and movable goods) and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason, and entering meaningful relationships of mutual recognition with other workers."

The two common threads amongst the list of capabilities are that of individual autonomy and physical health as the underlying human needs for the existence of subsequent capabilities (Doyal and Gough, 1991). As although the list of central capabilities seems to cover multiple facets of human wellbeing, it can be revised and amended to accommodate respective cultural and societal circumstances and histories (Nussbaum, 2003). People's innate capabilities, some specified in the list, interact with the social, political and economic environment to achieve what Sen (1990) termed as 'substantial freedoms', which are the opportunities available to choose certain livelihood outcomes. Nussbaum (2011) employed the term 'combined capabilities' to describe the interlinkages between personal abilities and one's external environment and further added that a person's internal capabilities are not fixed but are constantly being developed and retrained through experiences and interactions with their external environment and various institutions that have been established for this purpose. Moreover, the focus on each person's individual capabilities as the starting point of development allows for an analysis of how and why different individuals differ in their ability to convert those into desirable livelihood outcomes. In doing so, relevant policies can then be implemented to rectify any issues identified as hindrances to the successful conversion of one's capabilities into valuable functionings as well as any other bottlenecks that may be existing in the economic, political and environment within which individuals operate.

c.) Critique of the Capability Approach

Despite its undeniable attractiveness emanating from its humanistic approach to development and its

applicability in different contexts, the Capability Approach has had some criticisms levelled against it. In a theoretical sense, the Capability Approach seems to be all-encompassing in terms of being able to diagnose the hindrances to development. However, Qizilbash (2011), articulating Sugden's numerous writings critiquing the Capability Approach, stated that defining capabilities may encroach on individuals' freedoms in that it might result in practitioners and society confining themselves only to these capability classes, or worse imposing on people capability sets which may not coincide with their actual desired livelihood outcomes. This critique is geared more towards Nussbaum's (2011) more concise list of suggested capabilities which are deemed optimally necessary for human dignity. These specifications narrow and limit the scope of applicability of the Capability Approach. However, accounting for Nussbaum's reasoning behind listing specific capabilities as merely being examples of capabilities that are accepted universally as being essential to a good life, practitioners could do individual exercises where individuals would be asked to list the functionings that would be most useful or beneficial in helping them achieve their desired livelihood outcomes. Thereafter, the practitioner could, still with the participation of the individuals concerned, work backwards to identify which capabilities may be required to facilitate the manifestation of the functionings listed by the subjects of the capability analysis. This would be a practical application of Nussbaum's (2011) concept of combined capabilities, where the primacy of people in the development process is highlighted through adopting a bottom-up process which allows people to reveal their ideal livelihood outcomes, the underdeveloped capabilities they possess, taking suggestions from the designated list and collaborating with the people to determine the types of policy interventions that would aid them in reconciling what they currently possess and what they can achieve. The final step would be to utilise policy to address the incongruities between the livelihood outcomes they desire and the ones they currently have. Benicourt (2004) echoed the same sentiments as Qizilbash (2011), arguing that the use of the terms 'capability' and 'functionings', which were invented by Sen himself, make it difficult to understand the approach. Mainly, the difficulty lies in choosing, in a particular context, what constitutes a capability and which functionings are appropriate to use as proxies to determine the presence of capabilities (Clark, 2005; Frediani, 2010). Even though clarity of what the capability approach entails has been provided over the years since its inception both by Sen and other authors, the various criticisms that have been put forward are worth mentioning as they have the potential to contribute an additional layer of understanding of the approach.

Dean (2009: 1) highlighted three factors which the capability approach fails to account for, namely, "the constitutive nature of human interdependency; the problematic nature of the public realm; and the exploitative nature of capitalism". The capability approach neglects to account for the effects of social hierarchies that exist within societies and their ability to either interfere by constraining or enabling capabilities (Dean, 2009; Qizilbash, 2011). Moreover, the societies and communities within which

individuals exist also influence the formation of their individual identities and their perceptions of the world in terms of their valuation of functionings (Dean, 2009). For example, people in rural areas may not be aware of the existence of other functionings which, if they were to be made aware of them, would deem them useful and valuable in achieving their desired livelihood outcomes. However, even so, their low capability levels could still hinder them from pursuing a set of functionings. Viewed through the lens of Nussbaum's (2011) list of capabilities, this depicts somewhat of a violation of the tenth capability about having control over one's environment. However, an individual who has only been exposed to one particular way of existence in society because of their socio-economic circumstances may not even be aware that this is a capability and that it is being violated, albeit by situations outside of their control. Therefore, Sen (2005) noted that situating capabilities within the context of human rights can assist in understanding capabilities, since both concepts deal with individual freedoms. Going back to Sen's (2005: 153) definition of a capability as that which allows one the opportunity to "achieve valuable combinations of human functionings", it becomes clear how phrasing some capabilities as human right entitlements could assist in expanding an individual's opportunities since it would be illegal to deprive them of said capabilities.

The obstacles faced by individuals in their quest to pursue the livelihood standards they desire from the capabilities they possess, or what Qizilbash (2011) termed negative freedom which is the freedom to act without interference, is another factor that the capability approach neglects to provide a solution for how to circumvent its potential effects on people's freedoms, even though Julhe and Hamilton (2016) noted that Sen (1988) does touch on the subject of negative freedom. In the same vein as the argument on how social hierarchies can negatively affect the pursuit of one's valuable functionings, Dean (2009: 9) argued that the capability approach glosses over the "systemic impediments to human freedom that are associated with the capitalist mode of production". As Qizilbash (2011) argued, the capability approach assumes positive freedom where there are no significant factors opposing one from exercising their freedoms to pursue functionings. Although the capability approach is clear in its stance on not viewing human beings as mere inputs to the process of economic production, the exploitative nature of the capitalist system that was lamented by Marx is not explored extensively. For instance, the social structure of the haves and the have-nots often dictates the terms of engagement between parties, where those who depend solely on the sale of their labour power to obtain basic subsistence are at the mercy of those who are in a more advantageous position (Dean, 2009; Frediani, 2010). This unequal power dynamic often breeds conditions of labour exploitation which may leave those with little to no bargaining power unsatisfied in terms of not being able to pursue opportunities to enhance their capabilities or to pursue those functionings which are not regarded as work worthy of reward by the capitalist system (Marx, 1844; Mooney, 2004; Dean, 2009). The capitalist system operates opposite to what the capability approach

promotes, which is an approach concerned with the 'species being' in its entirety, where human beings are not viewed only as economic actors, but as rational beings with agency to choose their desired livelihoods. Therefore, to ensure that the approach can be properly adopted in practice, there needs to be consideration of factors which may encroach on individuals' freedoms through providing the conditions for one party to pursue their functionings at the expense of another. Navigating this space of what Fraser (2007) described as multiple public spheres, referring to the social hierarchy of powerful elites and subordinates with mutual and competing interests, requires an approach that will assist in presenting the process and outcomes of a capabilities analysis without going against Sen's wishes to not provide a fixed list of capabilities which practitioners would have to strictly adhere to.

To come up with a solution to the issues that arise from attempting to apply the abstract concepts of the capability approach, Frediani (2010) proposed the concept of a capability space. This is a space in which the focus is on the mechanism of transforming resource endowments into functioning achievements and in which specific attention is paid to the series of factors which affect peoples' abilities, choices and opportunities to transform resources into achieved functionings (Frediani, 2010). These factors, which Frediani (2010) termed conversion factors, follow a hierarchical order of either being individual, local or structural factors, where individual factors are a person's literacy levels or physical condition such as a disability; local factors are local power structures, social norms of relation and community facilities; and structural factors are the political structures and market mechanisms which can either constrain or promote individual freedoms (Frediani, 2010). This institutional view of capabilities not only accounts for the effects of negative freedom as was raised by Qizilbash (2011), but also provides a neat way of grouping each of the factors that might be affecting people's abilities to convert capabilities into functionings which could contribute positively to the process of improving the operability of the capability approach in influencing the policy formulation and implementation process.

d.) Practical application of the Capability Approach

Perhaps the 'deliberate incompleteness and openness' (Frediani, 2010) of the capability approach in not specifying capabilities has worked in its favour as the approach has enjoyed widespread application in various contexts, ranging from global to rural contexts (Ataguba *et al.*, 2010; Oni and Adepoju, 2011; Bucheli, 2016). The Capability Approach has had some influence on the United Nations Development Programme (UNDP) because acknowledging that the human development process is an enhancement of human capabilities (Dean, 2009). However, still holding on to utilitarian views, the UNDP misconstrued Sen's notion of human capabilities by using the term interchangeably with the concept of human capital which views human beings as merely means of production and not ends in themselves (Sen, 1999; Dean, 2009; Human Development Report, 2010). Dean (2009) blamed this on the difficulty in attempting to apply the Capability Approach, especially in the context of developing countries which often have low levels of

economic growth and thus require stimulation of the economy to drive the process of human development (Ranis and Stewart, 2000; Dean, 2009). In such cases, practitioners could end up reverting to conventional ways of growth-led development, while still adopting the language of the capability approach.

Lanzi (2004: 1) compared the idea of capability enhancement with the United Nations' capacity development principles, defining the latter as a practice which is "based on civic engagement, participation, autonomous development and fruitful social interaction". Using education as an example for how an individual's capacity may be developed, Lanzi (2004) noted that educational attainment is often viewed through the lens of the capitalist system, in terms of the benefits that it confers to the system as a component of human capital. An attempt is also made to highlight that although this is the case, education also contributes towards capability enhancement as it also endows an individual with a certain level of freedom to choose their desired functionings (Lanzi, 2004; Wigley and Akkoyunlu-Wigley, 2006). The United Nations Development Programme (UNDP) (2009: 4) defined capacity development as "the process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time". The United Nations Development Programme uses the terms capacity and capability interchangeably, but a closer examination of the terms reveals that the latter seems to fall within positive economics, while the latter is a normative approach to what the trajectory of development should be for it to be more equal and beneficial to all stakeholders involved. Approaches which fall within positive economics focus on facts and figures which one can refer to as proof of the effect or a result from an action, such as the implementation of a policy and this is often the route employed by economic growth-led approaches to development which focus on returns on monetary investments, wage levels and economic growth levels (Johnson, 2001; Carneiro *et al.*, 2010; Morgan and Knuuttila, 2012). It is evident that the capacity development approach of the United Nations takes a positive economic stance in that progress and success of the capacity development programmes is measured according to the development assistance that was poured into them which recipient countries need to account for to donor countries (UNDP, 2009). The UNDP (2009: 2) further states that capacity development is "a process of transformation of leaders and managers, communities and organizations from the inside, based on nationally determined priorities, policies and desired results". This, again, highlights the tendency of some practitioners to adopt the dialect of the capability approach while continuing to either ignorantly or deliberately divert from its central claims of letting people dictate the terms of the development outcomes which will ultimately affect them in the long run.

Going back to Nussbaum's (2011) concept of underdevelopment, the capacity development approach seems to be on the right track in identifying the underlying capabilities, but the diversion from Sen's framework of capabilities is the capacity development approach's focus on the underdeveloped

capabilities only if they have the potential to benefit the production process through enhancing human capital. This is in direct contradiction to Sen's (1999) argument for people to be considered not merely as means to the ends of the production process, which is economic growth, but as ends in themselves. This conflation of capacity development and capability building as if they mean the same thing also highlights the difficulty in operationalising the capability approach.

In line with Staupe-Delgado's (2014) argument on discrimination being one of the barriers to development through its tendency to hinder individual agency, Dean (2009) highlighted the example of the United Kingdom's Equality and Human Rights Commission (EHRC) which was established in 2007 as one of the ways in which the Capability Approach has been operationalised. The aim of the EHRC is to reduce inequality, eliminate discrimination based on age, disability, gender, race, religion or belief, sexual orientation or transgender status and encourage compliance with the Human Rights Act" (European Institute for Gender Equality, 2006: 1). In keeping with Sen's emphasis on substantive freedoms, the role of the EHRC is to assess and monitor people's substantive freedoms and opportunities individually and amongst a group in society (European Institute for Gender Equality, 2006; Burchardt and Vizard, 2011). The use of the Capability Approach in this manner presents a supportive structure for those capabilities that have been characterised under human rights, by making provision for the protection of those capabilities and devising strategies to mitigate factors that would impede people's freedoms.

Despite the limitations of the approach, it has been adapted and applied widely in various fields such as education (Walker and Unterhalter, 2007; Hart, 2012), gender issues (Robeyns, 2003; Addabbo, 2011), social work (Saleeby, 2007; den Braber, 2013), technology design and development (Oosterlaken, 2013; Haenssger and Ariana, 2018), and the health field (Ruger, 2004; Mitchell *et al.*, 2017). However, one area in which literature on the application of the capability approach is scarce is the area of work or employment.

Julhe and Hamilton (2016) stated that the influence of the capability approach in the workplace can be observed in career choice and how an individual manages their career and the opportunities available to them in the workplace could provide some clues on their capability sets. For instance, in some workplace scenarios, parental leave is usually only granted to those in higher positions in the workplace, even though the desire for a work-family balance may be a functioning that is valued also by those in subordinate positions (Julhe and Hamilton, 2016). Moreover, individuals with a more diverse skills-set are more resilient in the face of economic or political shocks and during periods of labour market uncertainty since their levels of employability are usually high compared to those who are low skilled (Robertson and Egdell, 2018). The discrepancy between those with high and low skills highlight a space for labour activation policy interventions which, in the language of the Capability Approach, would increase people's opportunity freedoms (Robertson and Egdell, 2018). Such labour activation policies may take the form of government-

subsidised vocational training programmes under the Technical and Vocational Education and Training (TVET), public works programmes, on-the-job training provided by one's employer or the individual deciding themselves to engage in continuous development training programmes to update their skillset (Akoojee *et al.*, 2005; Robertson and Egdell, 2018; Renold *et al.*, 2018). In the case of public works programmes, the literature is silent on the application of the capability approach to their analysis. Public works programmes are discussed more in-depth in section two of this chapter.

Julhe and Hamilton (2016) stated that several authors who have in the past used the capability approach in the contexts of their respective projects have consulted local records of information that could be interpreted and categorised either as capabilities or as functionings. For example, Burger *et al.* (2015) applied a variation of the Capability Approach to formulate an understanding of the middleclass in a developing country context using South Africa as a case study. Similar to Julhe and Hamilton's (2016) account, Burger *et al.* (2015) also used data records that would provide grounds for an analysis of the characteristics and attributes of the middle class. The data sets that were used were the 2008 NIDS (National Income Dynamic Survey) and the PSLSD (Project for Statistics on Living Standards and Development) which was published in 1993 since the study was to compare the attributes of the middle class before and after the dawn of democracy (Burger *et al.*, 2015). The Capability Approach was used in the study because of the high socio-economic inequalities and political fragmentation which affect people's abilities to emancipate themselves from poverty (Burger *et al.*, 2015).

Alternatively, in line with Sen's (1990) preference for capabilities and functionings to be selected in an *ad hoc* manner with the authors themselves developing the set of indicators to judge the extent of people's opportunity freedoms, one example of a study where researchers generated their own dataset would be Anand and van Hees' (2006) study on the wellbeing of English voters in the United Kingdom. The data was collected using questionnaires with questions that were designed to capture elements of what constitutes capabilities (Anand and van Hees, 2006). The findings from the study were presented in tabular format using scores where respondents indicated the levels of satisfaction with the capabilities that each of them possessed to varying degrees. Ordinal logistic models were used in the study, which is a statistical technique used to assess cause and effect relationships between dependent and independent variables (Ranganathan *et al.*, 2017).

By way of concluding, the openness of the Capability Approach has allowed it to be used widely as outlined above. However, as already discussed, this openness could present some limitations when attempting to apply it, especially to situations where there is not enough evidence to support its adequacy to overcome its own limitations. This would be the case when attempting to apply it to the analysis of work or employment, specifically the case of public works programmes which aim to absorb those who are

socioeconomically marginalised into employment. Public works programmes present an interesting case for a capability analysis since the multidimensionality of poverty, which is claimed by the Capability Approach, is highlighted within the groups who participate in these programmes. However, since the approach lacks a guiding structure to which practitioners can adhere to when presenting the results of their capability analyses, for this study the Capability Approach will be combined with another complementary approach to development and the process by which this will be achieved is outlined below.

2.2.2 The Sustainable Livelihoods Approach

The Sustainable Livelihoods concept was formulated around the same time as the Capability Approach in the 1980s. More specifically, the concept of a sustainable livelihood was formulated from the Brundtland Commission's 1987 definition of sustainable development and was subsequently developed by Chambers and Conway (1991) for use in the analysis of rural livelihoods. The core concepts emphasised by the Sustainable Livelihoods Approach are capital assets, the vulnerability context, policies and institutions and the livelihood outcomes component which results from the interactions of the first three components (Krantz, 2001; Serrat, 2008; Morse *et al.*, 2009). The introduction of the approach signalled a significant transition from national food security measurements and indicators to household and individual nutrition and food needs which opened a policy space to interrogate the factors that could be contributing to a household having inadequate food security (Frankenberger, 2000). Consequently, the narrative changed from national food security to household livelihood security, which Frankenberger and McCaston (1998: 31) defined the latter as "adequate and sustainable access to income and resources to meet basic needs; including adequate access to food, potable water, health facilities, educational opportunities, housing, time for community participation and social integration". Although the aim of a household livelihood security strategy is ultimately to ensure better livelihood outcomes for the individuals concerned, it places more emphasis on the factors that contribute towards ensuring this, such as health, education, economic security, empowerment and the choices, perceptions and actions taken by individuals and households (Frankenberger and McCaston, 1998; Rahman and Akter, 2012). With the introduction of the household livelihood security concept, the focus shifted from the macro to the micro level. This was because there was empirical evidence, like the 1980s food crises in African and Asian countries, which showed that the availability of food supply at the national or macro scale did not always automatically translate to food availability at the household level, due to issues of accessibility which arose from circumstances that eroded people's entitlements to the food stocks (Sen, 1981; Frankenberger and McCaston, 1998; Frankenberger, 2000). This speaks to Sen's (2003) concept of opportunity freedom, discussed earlier in this chapter. Moreover, the concept of household livelihood security lies at the core of the Sustainable Livelihoods Approach as it encapsulates the purpose of the Sustainable Livelihood Approach, which is to identify and assess the various factors which affect livelihoods at the household level. These factors are categorised

under the four categories of the framework.

a.) Application of the Sustainable Livelihoods Approach

The Sustainable Livelihood Approach has been applied in different variations, with practitioners focusing on either the vulnerability context, the policies and institutions, the classes of the capital assets or the entire interactive dynamics within the framework depending on the context. For instance, the Cooperative for Assistance and Relief Everywhere (CARE) takes a more rights-based approach to livelihoods analyses by focusing on the policy environment since it influences the level of access people have to resources (Frankenberger *et al.*, 2000). Creating an enabling policy environment for people to achieve their desired livelihood outcomes includes recognising human rights, fostering participation with local people, gender equality, natural resource management and learning strategies to manage risk (Frankenberger *et al.*, 2000). From this perspective of policy and institutional assessment, the approach allows for a thorough analysis of poor people's livelihoods through unpacking the underlying issues that contribute to poverty in people's lives, which contrasts with income-based economic analyses.

Fostering the participation of people whose livelihoods are the target of policy intervention emphasises the people-centredness of the approach to development. Sustainable Livelihood Approaches prioritise local needs through recruiting local people to be part of development projects aimed at improving their livelihoods as they are the ones who know their needs best (Krantz, 2001; Serrat, 2008). This bottom-up strategy was introduced to replace utilitarian approaches. In the latter case, development practitioners would diagnose issues that may be contributing to poverty in a particular context, and then impose solutions that were tried and trusted and which they believed would work best without much consideration for the views and interests of those concerned (Serrat, 2008). Consideration for the livelihood strategies that are pursued in the local context allows development practitioners to understand the unique ways that people construct their livelihoods in a particular context.

On the recognition of human rights within livelihood analyses, Foresti *et al.* (2007) argued that the approach does not fully interrogate the role of power dynamics and how rights are considered within societies. This is despite the Sustainable Livelihoods Approach's acknowledgment of the importance of both tangible resources, represented by the capital assets, and intangible resources such as claims and access to resources (Krantz, 2001). Moreover, they also argued that the Sustainable Livelihoods Approach is dismissive of issues related to differentiation within societies on the grounds of gender, class, ethnicity and religion (Foresti *et al.*, 2007). Differences which occur within households can be disaggregated and analysed from the cultural and societal perspective which is dictated by the context of the research. To be more accommodating of the issue of human rights, Foresti *et al.* (2007) proposed for the merging of the Sustainable Livelihoods Approach with some elements of the Human Rights-Based Approach (HRBA). The

Swiss agency for Development and Cooperation (SDC) (2006) defined the HRBA as a development approach which not only advocates for the integration of human rights principles in its development policies in an effort to strengthen the role of national governments as the duty-bearers tasked with fulfilling the human right entitlements of citizens, but also empowering the individual citizens themselves as the right-holders.

However, since focus of this portion of this research study is to explore the complementarities between the Capability Approach and the Sustainable Livelihood Approach and operationalising them to the case of public works programme success, employing the concept of substantive freedoms and consulting with human rights documents of the relevant countries, international human rights treaties and Nussbaum and Sen's conceptualisations to understand capabilities should suffice. This view is supported by Osmani (2006) who described the concept of capabilities as the fundamental link between poverty and human rights, thus making poverty a denial of human rights. Moreover, since human rights exist on a spectrum or hierarchy, depending on each one's impact on an individual or household's poverty levels, discretion will be exercised in choosing the sorts of capabilities whose denial represents a human rights violation, as mentioned previously. The issue of gender equality, which in the context of a livelihoods analysis speaks to the position of women in society often occupying the bottom of the totem pole in terms of access to resources compared to their male counterparts in higher positions, represents one such violation of human rights. According to the Swiss agency for Development and Cooperation (2006), human rights should be indivisible and universal. This means that equal human rights should be afforded to all individuals with no special attention to one party's rights at the expense of another (Swiss agency for Development and Cooperation, 2006). In the context of capabilities, addressing the factors contributing to higher poverty rates amongst women will require policy practitioners to interrogate the human rights violations that have robbed women of opportunities to emancipate themselves from poverty. In the rural context, this would also extend to women's level of command over natural resources.

Managing risk brought about by one of the factors specified under the vulnerability context often involves the diversification of one's livelihood portfolio to mitigate the impacts of disturbances to individual and household livelihoods as they help to build resilience to poverty (Jorgensen and Siegel, 2019). Gebru *et al.* (2018: 1) defined livelihood diversification as "the maintenance and continuous alteration of highly varied range of activities and occupations to minimize household income variability, reduce the adverse impacts of seasonality, and provide employment or additional income". Some ways in which poor households have been known to diversify their livelihood portfolios is through non-agricultural employment where some household members migrate to find work and support the rest of the family left behind with remittances (Serrat, 2008), engaging in the informal economy (Hovsha and Meyer, 2015) and through government-initiated social protection programmes (Maxwell *et al.*, 1999). Social protection interventions often include

a wide range of safety net policies aimed at not only preventing the erosion of human capital, but also improve it through policy interventions in the labour market and more passive forms such as old age insurance to smooth out household consumption (Maxwell *et al.*, 1999). The relevance of social protection to the sustainability of livelihoods is that it does not only concern itself with the surface-level impacts of shocks but emphasises and supports livelihood diversification strategies that poor people undertake to mitigate the limiting effects of the vulnerability context on their ability to achieve their desired livelihood outcomes (Maxwell *et al.*, 1999; Serrat, 2008; Jorgensen and Siegel, 2019).

In cases where practitioners consider all the categories in the livelihood framework during a livelihood analysis, this is often done to monitor and review the success of existing projects or activities in terms of their impact on livelihoods (DFID, 1999; GLOPP, 2008). In approaching this type of livelihood analysis, the Sustainable Livelihoods Approach is used as a checklist for all the factors that should be considered when attempting to understand poverty in a contextual setting (GLOPP, 2008). For instance, Farrington *et al.* (1999) described how a livelihood analysis was conducted on a Butterfly farming project in Kenya which was launched in 1997. The livelihood impact of the project was assessed in relation to each of the categories of the Sustainable Livelihoods Framework (Farrington *et al.*, 1999). The first point of analysis was how much the Butterfly project was contributing to agriculture in the area in terms of the percentage of incomes earned by the farmers. However, since there were high risks associated with the project and the incomes were seasonal, thus unpredictable, the impact on the farmers' livelihood assets varied from positive during peak times, to negative as the population of butterflies began to decrease (Farrington *et al.*, 1999). Participating in the Butterfly project had an overall positive impact on the social capital of the farmers since they had increased access to other external institutions such as Kenya's Forest Department (currently known as Kenya Forestry Service) (Farrington *et al.*, 1999).

Relating the Sustainable Livelihoods Approach to the Capability Approach, the former seems to embrace what Sen (2003) described as the dualistic nature of human beings, which is that of being both the means and ends of development. The holistic view taken by the approach encapsulates both the material and intangible resources required by individuals to make a living. However, despite the seemingly all-encompassing framework of sustainable livelihood components, the approach has some limitations which, when considered against those of the Capability Approach, allow for a space of complementarity between these two development approaches, specifically in the context of a social protection programme like public works. Xweso (2021) used the sustainable livelihoods approach to highlight the plight of day labourers who wait daily indefinitely near traffic lights for any job opportunity that would put their plumbing, paving or other skills to use which would help them to make ends meet through the incomes they would earn. In this scenario, the channel discussed by Xweso (2021) through which the sustainable livelihoods approach can

be operationalised to remedy the situation is through enhancing the social capital livelihood asset. In the study, this was achieved through community development initiatives. As a concept which promotes inclusivity through facilitating the socioeconomic development of marginalised communities, community development is an intervention strategy which seeks to promote active citizenry through strengthening the capacity of people as part of community groups, organisations and social networks (Xweso, 2021). This practical application of the concept follows from the NACDEP's (National Association of Community Development Extension Professionals) definition of community development as a practice that promotes sustainable development, participatory democracy, equality, rights, social justice, and economic opportunity through the organisation, empowerment and education of people within communities in rural and urban settings. This example highlights the interconnectedness of the livelihood assets since interventions by community development practitioners can expand the range of economic activities for the community members involved, which would in turn enhance their financial capital and thereby improve their economic position. Community development entails the enhancement of human capital as a way to ensure that the development process is self-sustaining since each individual community member's skills are enhanced, and this enables them access to opportunities including those in the formal labour market (Xweso, 2021).

Another notable use of the sustainable livelihoods approach which highlights its versatility as a tool for development is its use to evaluate the livelihood impacts of South Africa's transition to more sustainable energy sources in the face of high inequality and high unemployment levels in the country. Maseko (2021) stated that these two factors could compromise the inclusivity of the transition process by affecting the livelihoods of low-income households, both in terms of affecting the jobs of those employed in mines and poor households that depend on fossil fuel-based energy products and sources and which may not be able to afford the new types of environmentally friendly energy sources. In this case, the role of the sustainable livelihoods approach will be to build the resilience of the livelihoods of those likely to be affected by the transition through assisting their adaptation to new technologies (Maseko, 2021). The entry point for the use of the sustainable livelihoods approach in this case will be to increase the resilience of poor communities to climate change, especially those in informal settlements. This would be an improvement to physical capital assets of the individuals in the communities through the provision of government-subsidised solar home panels devices that improve the efficiency of water use and others that improve agricultural yield (Maseko, 2021). Furthermore, decarbonising the transport sector through the expansion of rail services would also be an improvement to physical capital and the government subsidies applied to rail and bus services would assist in improving the financial capital assets of the individuals in the targeted communities. The overall impacts of this in aiding the transition to green energy sources is that it would ensure that poor households that otherwise would not have been able to afford the switch are not left

behind.

b.) Combining elements of the Capability Approach with those of the Sustainable Livelihoods Approach

The mention of capabilities is contained in Chambers and Conway's (1991:6) definition of a livelihood, which they defined as "the capabilities, assets (stores of material resources, and social resources such as claims and access to those resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base". This definition encapsulates the tangible and intangible resources that are required to ensure the sustainability of a livelihood, but most notably, it situates the concept of livelihoods within a rural context where livelihoods are supported through subsistence means. This speaks to the original focus of the Sustainable Livelihoods Framework. However, the observed diversification of rural livelihoods over time has meant that there are some livelihood strategies that a household may pursue which are not sustainable in the sense that they are pursued temporarily. For instance, individuals may migrate temporarily due to what Keshri and Bhagat (2011) termed distress-driven migration, from poor rural areas to urban areas to partake in seasonal labour. Although this may depict an exercise of people's positive freedom, Juran (2016) argued that how effective the migration decision is to livelihoods depends on the conditions surrounding the decision to migrate and the individual's agency. This difference can be observed in local and international migration processes where the usually high level of capabilities in those who migrate internationally is higher and continues to increase as a result of the more diverse freedoms they are afforded by those capabilities. In contrast, those who migrate locally may find themselves faced with more hardship as, lacking the education and skills to take advantage of certain functionings, their freedoms are constrained, and the move does not contribute to the sustainability of their livelihoods. From the literature, it is apparent that the central premise of the Capability Approach is to leave the operationalisation of capabilities and functionings to the discretion of the practitioners, often with results that are inconsistent with the central claims of the Capability Approach. Julhe and Hamilton (2016: 235) lamented that with no method to follow like other theoretical frameworks, one is often left with a "fuzzy and fluctuating information base", making the approach too malleable and prone to incorrect and inconsistent application. Despite this, the interpretative power of the Capability Approach is undeniable. Although it lacks a definitive structure which could be used by practitioners to neatly package their chosen capability and functioning indicators, the Capability Approach allows for a better understanding of social states and provides explanatory power for issues related to wellbeing and livelihoods which have a bearing on whether people are able to flourish within society (Alkire, 2005; Julhe and Hamilton, 2016). Therefore, combining the approach with the Sustainable Livelihoods Approach will potentially provide a neat representation of the core concepts of the Capability Approach in a complimentary way since the common ground between the two approaches is their focus on people-

centred development. Indeed, several authors embrace the 'prospect of methodologically complimenting the capability approach' (Julhe and Hamilton, 2016). For example, Lienert and Burger (2015) combined elements of the Capability Approach and Sustainable Livelihoods Approach to analyse the sustainable use of aromatic and medicinal plants in rural areas of Nepal. The purpose of the authors merging the two approaches was to allow for a more detailed assessment of the social and environmental aspects of rural people's livelihoods which play a significant part in their subsistence-based livelihood strategies.

Merging the two approaches assists in overcoming the tendency of the Sustainable Livelihoods Approach to be prescriptive in terms of its tendency to impose the development goals that people *should* aim to achieve, especially in the case of physical and financial capital, without much consideration for each individual's agency (Kleine, 2008). Perhaps this is because poor people, whose livelihoods the Sustainable Livelihoods Approach was developed to assess, are usually in a state of deprivation and thus are preoccupied with survival such that the livelihood choices they make are out of necessity, instead of being influenced by each person's sense of agency. Therefore, the Capabilities Approach A seeks to identify the underlying factors compromising people's agency to take actions towards enhancing their assets and the policy steps that can be taken to address them. In turn, the Sustainable Livelihoods Approach allows for the practitioner to assess collectively the capabilities of individuals within communities, aggregating them and observing patterns in how the poor act collectively to expand their capabilities and collective freedoms (Ibrahim, 2011). In this way, the SLA expands the CA's focus on individuals to understand livelihoods within social structures, while the CA helps to overcome the prescriptive list of what the outcomes of a sustainable livelihood should be, with increased household income topping the list (DFID, 1999; Kleine, 2008). In this way, the two approaches enrich each other.

2.2.3 Combining the Capability Approach and Sustainable Livelihoods Approach to assess Public Works Programmes

Dong (2008) stated that the influence of the Capability Approach can be observed in policy design. Referring to the building projects that ensued following the Sumatra-Andaman earthquake and other similar events that occurred in subsequent years, Dong (2008) discussed how the people who were affected by the disasters were included not only in the public works programmes that were initiated to rebuild their communities, but also in the design stage of the public works policy. In the spirit of the Capability Approach, Dong (2008) mentioned that placing local people at the centre of policy formation allows people to set their self-defined goals and reflects Nussbaum's (2011) tenth capability of having control over one's environment. Furthermore, it promotes the freedom of the public to carry out public works programmes, with local government structures tasked with the role of creating the right conditions and facilitating a space for people's innate capability to design to be transformed into the actual act or 'doing' of policy design. One of the benefits of encouraging participation by local people in public works policy development is that it fosters

a sense of ownership and most importantly helps in ensuring that they do not feel compelled to carry out predetermined project functions which may not align with what they desire (Dong, 2008). This could contribute to the success of the socio-economic aspect of a public works project. However, Dong (2008) noted that in some contexts, public works programmes are imposed on the potential beneficiaries and participation by local communities in the initial stages of policy design does not occur in many contexts for the sake of expediency in the process of implementing the project according to the timelines. The influence of the Capabilities Approach or its connection to the Sustainable Livelihoods Approach can be seen in the study by Azad and Pritchard (2022) who found that increased access to financial capital of households that were exposed to flood risk in Bangladesh was instrumental in determining households' adaptation strategies. In other words, adopting the language of the Capabilities Approach, increase households' access to financial capital influenced the choice of functionings that could be pursued in the process of adapting to flood risk. This angle to highlighting the complementary relationship between the Capabilities Approach and the Sustainable Livelihoods Approach is relevant to the case study of public works projects since the stipends that the beneficiaries receive are the channel through which the projects impact their livelihoods which are described by the five livelihood assets outlined by the Sustainable Livelihoods Approach. Mishra (2022) explored the role that the Sustainable Livelihoods Approach as a tool to assess the role of sustainable skills training in reducing unemployment and increasing resilience in the face crises and other shocks which might impact their livelihoods. Since skills training enhances the human capital livelihood asset, it improves an individual's innate capabilities which in turn expands the choices of functionings that individuals are able to carry out. This ties in with the skills training component of the EPWP which is meant to improve the beneficiaries' employability and expand their choices of functionings through improving their innate capabilities, which would improve their overall portfolio of livelihood assets.

For this study, merging the CA and the SLA will be to utilise the strengths of the latter to reflect the success of the socio-economic objectives of the Working for Water programme, while the CA will serve as a tool to analyse the effectiveness of the EPWP policy design in promoting the enhancement and development of capabilities. Sen and Nussbaum's examples of central human functional capabilities will come in handy in this regard. The role of the CA in this case will be to unpack what people would deem as a more just public works policy, and thus what they would define as a 'successful' programme. Considering the dynamics of the public works project under review and environmental public works projects in general, this was the most suitable choice of theoretical framework for analysis against other forms of analyses tools such as the Cost-Effectiveness Analysis and the more widely used Cost-Benefit Analysis.

The unsuitability of the Cost Effectiveness Analysis and the Cost Benefit Analysis for the data analysis carried out in this research study is explained by Glewwe and Todd's (2022) comparison between the two

methods. Firstly, both require detailed estimates of the costs incurred in the implementation of a project. Considering the poor record keeping that often plagues public works projects (Woodworth, 2006; Coetzer and Louw, 2012), obtaining an accurate estimation of costs incurred in the implementation of a public works project would be a difficult undertaking. Furthermore, although accounting for the expenditure of public funds is important, the Cost Effectiveness Analysis and Cost Benefit Analysis are perhaps more suitable for use in assessing the impacts of private sector projects where the focus is profit-maximisation. This is because in quantifying the costs, the purpose of these other two analyses methods is to assist decisionmakers in determining whether a proposed project is worth the costs it is estimated to incur (Glewwe and Todd, 2022).

Despite the importance of accurately accounting for the expenditure of public funds, the fixation on determining whether a project is worth being implemented may go against government's mandate of improving the wellbeing of citizens. This is especially relevant in the case of public works projects where the benefits may only materialise after the beneficiaries have exited the project. Furthermore, some of the benefits, as demonstrated in the data analyses of this research study, may be intangible like improvements in beneficiaries' job relevant skills after they have received skills training on the project. Lastly, since EPWP projects, including those concerned with the eradication of invasive alien plants, are a permanent feature of the South African policy landscape to address the problem of structural unemployment and poverty among the three targeted groups, assessing them using any of the other two tools would reflect negatively on the poverty mitigation intent and strategy of the managers of these projects. Referring to the data analysis of the case study used in this research study, when the annual budget was reduced, the managers prioritised poverty mitigation over the mandate of administering the required workdays and training days to reduce structural unemployment. This prioritisation of poverty mitigation was done through recruiting more beneficiaries above the stipulated percentages in some of the project phases to allow the beneficiaries to still benefit financially from the stipends even at the expense of them not receiving the 230 person days of employment and sufficient skills training they had been promised. Therefore, merely assessing cost-effectiveness or whether the benefits of EPWP projects outweigh their costs would be a challenging undertaking since some of the benefits are intangible, like the skills gained and the increase in status dignity and achievement dignity which are abstract concepts that can be captured the Capabilities Approach. Likewise, capturing concepts like increases in the beneficiaries' social capital is a concept that cannot be quantified but rather described, as collected through qualitative means.

2.2.4 Conclusion

This theoretical section of the literature review chapter explored the two livelihoods analysis approaches, namely, the Capability Approach and the Sustainable Livelihoods Approach. The two frameworks were evaluated according to the relevance of their key concepts to the current study. The theoretical

underpinnings of each approach were outlined as well as their versatility in terms of how each one has been used in practice. Furthermore, the limitations of each approach and the views of different authors on how to circumvent the shortcomings of each one was discussed. Finally, this section explored the complementary relationship between the Sustainable Livelihoods Approach and the Capability Approach and discussed the way in which the two approaches will be combined to meet the objectives of the current study. Section three of this literature review chapter outlines the case studies on public works programmes around the world; their origin, rationale, policy design, the projects launched under each public works programme and different success measures used in each programme.

2.3 Literature review: Overview of public works programmes

2.3.1 Introduction

One of the first instances of government intervening in the market economy to raise employment was during the Great Depression through the implementation of the Works Progress Administration (WPA), which was a public works initiative under the New Deal programme (Fields, 2009; Philip, 2013; Holland, 2017). The WPA operated for eight years until the war years when weapons production contributed to employment creation so that state-funded employment programmes were no longer needed (Mulcahy, 2011). The intervention of the U.S. government through these programmes marked a significant turning point in economic thought as the classical economic view that markets were able to self-regulate their way back to the full employment equilibrium was proven to be inaccurate in cases of severe economic downturns (Rittenberg and Tregarthen, 2012; Kates, 2016; Navarro, 2019). Public works programmes were also implemented during the Asian crisis as part of several economic policies that were introduced to mitigate the effects of the economic crisis on the labour market (UNESCAP, 2002). The examples of the New Deal and the employment-creation initiatives that were implemented during the Asian crisis attest to governments being capable of creating employment even in the absence of economic growth (Frey and MacNaughton, 2016).

Contrary to their implementation in developed countries where they were introduced temporarily to address transient poverty, in developing countries such programmes are often introduced as a long-term strategy to respond to problems of chronic structural unemployment and poverty (McCord and Slater, 2009; Lieuw-Kie-Song and Philip, 2010; Philip, 2013). Although this is the case, there have also been instances when they have been implemented as a response to a short-term crisis, like Malawi's PWP – CCT (Conditional Cash Transfers) programme, which was implemented from October to December of 2005 (The World Bank, 2006). This programme was in addition to an already existing agricultural public works initiative which had been running for 10 years prior under the Malawi Social Action Fund (MASAF) and was

meant to reinforce the impact that the original programme was having on food security by providing income protection for households that were impacted by the drought (The World Bank, 2006). This practice of introducing another project to reinforce the effects of an existing intervention is similar to the COVID-19 Social Relief of Distress (SRD) grant discussed previously, which was introduced to mitigate the impacts of the pandemic on the livelihoods of unemployed people in South Africa. Like Malawi's PWP – CCT programme, the SRD grant was introduced as a short-term response to the unemployment and poverty that was exacerbated by the onset of the pandemic and its accompanying lockdowns which negatively affected people's livelihoods. Another country that has had longstanding public works initiatives is Botswana, which has implemented multiple programmes to address underdevelopment in the rural areas, unemployment and poverty (Gobotswang, 2004; Muatjetjeja, 2006). The public works programmes that were in operation in Botswana were the Labour-Intensive Routine Road Maintenance Programme, the Labour-Intensive Public Works Schemes, the Rural Roads Programme, Labour Intensive District Roads Programme, National Public Works Programme and the Intensive Drought Relief Programme (Muatjetjeja, 2006).

However, despite the ability of the Working for Water programme to absorb large numbers of poor people into gainful employment, there has not been research done on its success in terms of its social development objective and the extent of its socio-economic impact on the communities where it is operating. Records of the programme's success mainly focus on the cost-effectiveness of the clearing methods employed and the subsequent benefits to improved ecosystem service functioning after the alien plants have been cleared (Le Maitre *et al.*, 2002; Pejchar and Mooney, 2009; van Wilgen and Richardson, 2012; Stafford *et al.*, 2017). Information on the budget amounts allocated towards the payment of wages and salaries to the workers employed on the various clearing projects around the country has been lacking and at most limited to average percentage estimates by the National Treasury. A recent report by the National Treasury (2018) quotes the average percentage of the Working for Water budget flowing into households as 16.7 percent in the last quarter of the 2017 financial year. Therefore, to provide a more complete view of how successful Working for Water has been in especially meeting its socioeconomic objective of reducing poverty, a more in-depth analysis of its socio-economic impact to the communities within which the projects are carried out is required. Working for Water was chosen because of its three-pronged approach to employment, which consists of environmental protection, social development, and economic prosperity (Magadla and Mdzeke, 2004; Turpie *et al.* 2008). The programme's approach speaks to the principles of sustainable development which emerged as a rebuttal to the 'business as usual' approach to economic growth, which often results in the social and economic exclusion of already marginalized populations (Smith, 2017). Through recruiting the poor and marginalized to participate in socially useful activities such as the clearing of invasive alien plants in Working for Water, the long-term goal of public works programmes is to create

an inclusive economy where all individuals can have access to decent work (UNDP, 2015).

2.3.2 Rationale for public works programmes

The decision to adopt public works programme policies differs from developed to developing countries, but the underlying rationale is always to mitigate negative impacts of economic, climatic, or political disturbances on the labour market (UNESCAP, 2002; McCord and Slater, 2009; McCord, 2012). These disruptions can vary from temporary to permanent and the length of time that a public works programme will be in operation will depend on the severity of the situation which it was meant to solve (Del Ninno *et al.*, 2009; Kalola and Kavale, 2017). Subbarao *et al.* (2013) performed an analysis of public works as a safety net for rural households and outlined the primary objectives in this context. As a safety net, public works programmes are used to mitigate the impacts of idiosyncratic or covariate shocks to the household (Subbarao *et al.*, 2013). These two types of shocks are differentiated by the scale at which they occur. Covariate shocks are experienced geographically or by the community, while idiosyncratic shocks are the unique challenges faced individually by households (Günther and Harttgen, 2006; Subbarao *et al.*, 2013; Mazumdar *et al.*, 2014). Both these shocks can impact on household assets such as physical infrastructure, common property resources, income and can also impact on human capital, albeit in different ways, depending on the type and intensity of covariate or idiosyncratic shock under consideration (Mazumdar *et al.*, 2014). The latter category of shocks includes illness, death and unemployment within a household, while the former includes political and economic crises, epidemics and natural disasters (Günther and Harttgen, 2006; Subbarao *et al.*, 2013; Mazumdar *et al.*, 2014; Pradhan and Mukherjee, 2016).

Addressing the impacts of idiosyncratic and covariate shocks on poor households

The relationship between the two categories of shocks is that covariate shocks can reinforce the effects of the idiosyncratic shock to the point where they can prolong the effects of household-specific shocks (Subbarao *et al.*, 2013). Although most of the households at some point experience some of these shocks, the severity of their impacts depends on the resilience of that household's livelihood, which is determined by the assets it has at its disposal (Mazumdar *et al.*, 2014; Pradhan and Mukherjee, 2016). Livelihood resilience is defined by Tanner *et al.* (2015: 23) as "the capacity of all people across generations to sustain and improve their livelihood opportunities and wellbeing despite environmental, economic, social and political disturbances". Since the state of being poor describes an "enforced lack of socially perceived necessities" (Mack, 2011:1), when shocks occur, poor people's livelihoods are usually the most severely affected since they were already vulnerable. The types of assets required to ensure the resilience and sustainability of a livelihood as well as the factors which make livelihoods vulnerable are represented in the Sustainable Livelihoods Framework (Chambers and Conway, 1991; Krantz, 2001; Solesbury, 2003). These categories of livelihood assets govern the quality of life of each individual and household (Chambers and Conway, 1991).

Acting as a safety net through creating employment in infrastructure development programmes

Since the immediate basic needs of those living in poverty are often not met due to limited opportunities to generate income resources, the immediate response is to introduce programmes aimed at raising household incomes (Zimmerman, 2014). This aspect of public works programmes in acting as an immediate safety net to cushion households from income shocks constitutes the short-term strategy, while the training component offered by some programmes is a long-term strategy to assist beneficiaries to graduate to better employment opportunities in the future (Zimmerman, 2014; Del Ninno *et al.*, 2009; Nyoka, 2016). Creating employment is grounded in the expectation that at the micro or household level, receiving some form of income will help mitigate unemployment-induced poverty as people are able to afford basic necessities (McCord, 2004; Zimmerman, 2014; EyeWitnessNews, 2017). To justify their need, public works programmes often have the overarching objective of addressing issues that are hindrances to government's mandate of service delivery to its citizens (McCutcheon, 2001; Wilcock, 2005; Devereux and Solomon, 2006; Federal Reserve Bank of Atlanta, 2008). To accommodate the other objective of poverty alleviation through employment-creation, public works programmes employ a labour-intensive approach to absorb the large numbers of unemployed people (McCord, 2003; Thwala, 2007; McCord and Slater, 2009; Gehrke and Hartwig, 2015). The targeting of unemployment to address poverty aligns with government's mandate of social protection for citizens. Norton *et al.* (2001) defined social protection as actions taken by a national government as a response to vulnerability, deprivation and risk which are deemed unacceptable in a particular societal structure. This definition resonates with the definition of poverty given earlier as both emphasise the importance of context in understanding what constitutes deprivation and vulnerability. This context-specificity is reflected in the design of public works programmes as well as in the choice of sectors that each programme targets. For instance, in rural regions where majority of people's livelihoods are supported through agricultural activities, such as India's Maharashtra Employment Guarantee Scheme (henceforth, Maharashtra EGS), public works programmes are introduced to mitigate the unfavourable effects of a covariate shock such as drought, which was the case in the arid zone of Maharashtra (Del Ninno *et al.*, 2009). The Maharashtra EGS focused on road and infrastructure construction (Dev, 1995; Overseas Development Institute, 2005; Ingle, 2007; Del Ninno *et al.*, 2009). The thrust of the programme was to create infrastructure that would improve the productivity of agriculture such as the construction of irrigation and drainage schemes, water and soil conservation structures, afforestation and building roads in and around the rural areas (Moore & Jadhav, 2006; Ingle, 2007; Del Ninno *et al.*, 2009; Chakwizira, 2010).

Another example of a public works initiative that had a strong infrastructure development component was Indonesia's *Padat Karya* which was relaunched as part of the Social Safety Net Programme during the Asian Financial crisis of the late 1990s (Devereux and Solomon, 2006). The programme was revisited in the wake

of the Asian financial crisis due to its effectiveness in providing infrastructure in the 1970s and 1980s (Devereux and Solomon, 2006). The *Padat Karya* projects were community-based and focused on improving water supply and sanitation in villages (Devereux and Solomon, 2006). Early examples of major infrastructure investments by government by way of public works programmes were first seen during the Great Depression with the Works Progress Administration (WPA), which was introduced as part of a package of programmes under the New Deal (Field, 2009; Holland, 2017). The infrastructure projects that were launched under the WPA resulted in some of the most prominent structures that can still be found in the United States like the Lincoln Tunnel, Hoover Dam, the Overseas Highway, the Grand Coulee Dam, and the Great Smoky Mountain National Park (Holland, 2017). Investments in infrastructure benefits the economy through improving productivity and efficiency in the use of production resources, especially in the areas of transportation and communication (Federal Reserve Bank of Atlanta, 2008). The infrastructure development programmes are most often followed by ongoing post-project infrastructure maintenance programmes aimed at prolonging the job tenure of the beneficiaries and to ensure the sustainability of the resources resulting from the programme (Thwala, 2007; Del Ninno *et al.*, 2009; McCord and Slater, 2009; Subbarao *et al.*, 2013). In some cases, public works programmes are launched with the sole purpose of maintaining already existing infrastructure, such as South Africa's Zibambele Road Maintenance System which operates in the rural areas of KwaZulu-Natal (Strebel, 2004; McCord and Slater, 2009). The programme was launched as a combined effort by the Kwazulu-Natal Department of Transport and community structures which were the Rural Road Transport Forums (RRTFs) and various Savings Clubs (Strebel, 2004). Under the programme, each rural household was assigned and contracted to maintain a particular stretch of rural roads that needed maintenance which were identified through the RRTFs and consisted of elected community members (Strebel, 2004; McCord and Slater, 2009). The Savings Clubs were organized groups of contractors that were formed with the purpose of assisting them with saving a portion of their incomes, which they were then encouraged to invest in productive enterprises in the hope that they would generate more jobs through those enterprises (Strebel, 2004; eThekweni Municipality, 2006). Another African country example highlighting the use of road maintenance programmes include that of Botswana's Labour- Intensive Routine Road Maintenance Programme, the Labour-Intensive Public Works Schemes, the Rural Roads Programme, Labour Intensive District Roads Programme, National Public Works Programme and the Intensive Drought Relief Programme (Muatjetjeja, 2006). Similar to programmes implemented in other developing countries, the programmes focused on the areas that were observed as hindrances to economic growth and development in the rural areas.

Addressing social issues which influence the distribution of poverty

Public works programmes may initially focus on a particular sector, such as infrastructure. However, depending on the severity of poverty in the region, the scope of the public works policy may be expanded

overtime to include other areas which have been identified as potential areas for poverty reduction, and which can enhance the effectiveness of government antipoverty intervention efforts. This is also done to accommodate social issues which often result in the skewness of poverty towards certain groups in society. One of these issues has been the high incidence of poverty amongst female-headed households, relative to those headed by males (Posel and Rogan, 2009; Rogan, 2014; Nwosu and Ndinda, 2018; Zizzamia *et al.*, 2018). The reasons for this have been articulated in the literature as being related to past gender-specific labour migration laws which left women in the rural areas often to shoulder the household burdens by themselves which, in cases of abandonment, sinks the household into poverty when the culturally and socially defined breadwinner does not provide through remittances (Buvinić and Gupta, 1997; Desai and Bernaji, 2008; Rahman, 2015; Nwosu and Ndinda, 2018). To deal with this kind of poverty, majority of public works programmes in developing countries have specific quotas for the number of women that ought to be employed on the programmes. For instance, the Zibambele (loosely translates to 'doing it for ourselves') programme has as one of its objectives the aim to empower women in the rural areas of Kwazulu-Natal through road maintenance and life skills training (Strebel, 2004). Zibambele was reported to have granted 95 percent of its contracts to women which, since the contracts were granted per household, this implies that these households had women in the position of headship (Strebel, 2004). Examples of other public works programmes that have a clear mandate to target women in an economically vulnerable position include India's Maharashtra EGS, Malawi's Social Action Fund (MASAF), the various programmes that were launched in Botswana and South Africa's Expanded Public Works Programme (EPWP) (McCord, 2003; Muatjetjeja, 2006; Chinsinga, 2009; Del Ninno *et al.*, 2009; McCord and Slater, 2009; Chakwizira, 2010). To emphasise its targeting of women, Dev (1995: 2671) states that the Maharashtra programme was also known as the "programme of women", and this was evidenced by the annual increases in percentages of women participating which went up to 39 percent in 1980 and then from 45 to 64 percent in 1988. Malawi's Social Action Fund aimed to achieve equal numbers of participation by men and women, with 50 percent of the Project Management Committees and Local Authority Managed Project committees being women (The World Bank, 2004; Subbarao *et al.*, 2013). The South African EPWPs sets its target of women employment at 40 percent, while the other 60 percent consists of beneficiaries in other vulnerable groups identified by the programme to address the chronic structural unemployment plaguing the country since democracy (Del Ninno *et al.*, 2009; National Planning Commission, 2011; Subbarao *et al.*, 2013; Kelobang and Boon, 2018).

Del Ninno *et al.* (2009) argued in support of the gender-affirmative aspect of public works programmes, stating that there is a strong link between women's participation in the labour force, increases in income and improvements in child welfare. This is related to the culturally determined role of women as nurturers and homemakers. The provision of local infrastructure is also tied to this role as the availability of resources

such as clean water contributes to the smooth running of a household (Dejardin, 1996; Del Ninno *et al.*, 2009). To appeal more to women who often have a limited role in infrastructure construction projects due to their relatively reduced 'physical strength' and to further accommodate their plight of heading households by themselves under conditions of poverty, some public works programmes create new or additional work programmes beyond the original programme (Kelobang and Boon, 2018). These complementary programmes specialising in 'soft skills' are often launched to absorb more women into the works programmes. In South Africa, the scope of public works programmes was expanded to include the social sectors which covers the areas of Home-Based Care for HIV/AIDS patients, Community Safety and Early Childhood Development (Department of Public Works, 2010; Subbarao *et al.*, 2013; Kelobang and Boon, 2018). Work in the social sector is created through learnerships which are run in tandem with training courses which are compulsory for beneficiaries (Department of Public Works, 2010). The Social Sector component of the EPWP is a combined effort by the provincial departments of health, social development and education (Department of Public Works, 2010).

Public works as an 'active' labour market policy

Public works programmes are one type of Active Labour Market Policies (henceforth, ALMPs) which national governments often introduce to stimulate the labour market through taking steps to absorb people into employment (Meth, 2010; McKenzie, 2017; Bown and Freund, 2019). Labour market policies are differentiated into two categories of 'passive' and 'active' policies, where the former consists of social insurance like South Africa's Unemployment Insurance Funds, and social grants to cushion against income loss from illness, disability and unemployment (Meth, 2010; Schön, 2016). ALMPs, on the other hand, include strategies such as assisting unemployed people with their job search efforts, involving them in work readiness activities and assisting them with job applications (Koralek and Klerman, 2013). The choice of either passive or active policy is determined by the issues that need addressing. For instance, where there is high structural unemployment, active labour policies would be more effective, as Schön (2016) stated that it is more beneficial to enforce strategies to reintegrate people into the labour market rather than merely paying them for the loss of income.

An example of an ALMP that has often been used by governments parallel to public works programmes is the employment subsidy, which is a policy aimed at incentivising employers to hire more workers by reimbursing them a portion of the wages they would pay to the additional workers (Hamersma, 2006; Brown, 2015). Some historical references to employment or wage subsidies include the 1970s examples of temporary wage subsidies that were introduced in some developed countries, namely, Germany, France, the United Kingdom, Sweden, the Netherlands, Spain, Jamaica, Japan, Ireland and the United States of America (International Monetary Fund, 1978; Martin, 2015). The wage subsidies that were introduced in these countries were to curb the effects of high unemployment and high inflation in the post-war period.

The subsidies took the form of marginal wage subsidies, where the government subsidises a portion of the wages of workers who would otherwise be unemployed without the subsidy (International Monetary Fund, 1978; Hamersma, 2006; Brown, 2015). Other types of temporary wage subsidies that were implemented included a general wage subsidy which was applied broadly to the entire workforce, and a categorical wage subsidy which was paid only to employers in a particular industry or those who employed people with particular demographic characteristics (International Monetary Fund, 1978).

South Africa utilised this policy under the banner of the Employment Tax Incentive, commonly known as the youth wage subsidy, which was introduced in 2014 and targeted at low-skilled unemployed youths between the ages of 18 to 29 years and who were in the below R6 000 income category (Ebrahim and Pirttila, 2019). As discussed above, the youth wage subsidy was a combination of the marginal wage subsidy and the categorical wage subsidy. Although the Employment Tax Incentive targeted unemployed youths who were low-skilled or unskilled, it was aimed at the formal sector and thus the success of the subsidy depended on its uptake by private businesses. Musgrave (2015) discussed several factors that contributed to the wage subsidy not being as effective as policymakers had hoped it would be, one of which was that it was set too low to have any effect on the hiring decisions of private businesses. This implies that the rate of youth unemployment remained high, thus creating a policy space for government to act as the 'employer of last resort' through public works programmes.

Skills training

To ensure that the effects of a public works programme will be long-lasting in terms of reducing poverty, majority of these programmes often have a training component being run parallel to the works programme. Participation in public works programmes is meant to be transitional and this is ensured through providing skills training to beneficiaries, in addition to the incomes earned from participating in the daily activities (Dejardin, 1996; Del Ninno *et al.*, 2009; McCord and Slater, 2009; Subbarao *et al.*, 2013; Nyoka, 2016). Training is meant to alleviate some of the pressure on the government social security system overtime, as possessing marketable skills and work experience raises one's probability of finding more sustainable forms of employment. In some programmes, such as the Zibambele Road Maintenance System and the EPWP, participation in the programmes is predicated on the beneficiary agreeing to enrol in compulsory training courses (eThekweni Municipality, 2006). The types of skills training offered under the Zibambele programme include technical skills on road maintenance as well as soft skills pertaining to social development skills. As a public works programme, the Zibambele programme also offers life skills training which ranges from carpentry to bricklaying (eThekweni Municipality, 2006). The provision of training in public works programmes depends on the objectives of each programme as discussed in the following section on the different types of public works programmes. However, sometimes even if training is on the

programme agenda, its provision may be constrained by the unavailability of funds as the Parliamentary Monitoring Group (2019) end of phase three review reported that the EPWP could not train all the beneficiaries in the different provinces due to limited funding and proposed outsourcing training to the private sector in the future. Failing to train the beneficiaries only fulfils half of the public works mandate which is allowing them to gain work experience. However, considering that some of the on-the-job skills they acquire rarely have any marketable value in the mainstream labour market since they are unique to their respective project functions, the work experience alone that they get might not assist in improving their job market prospects. Moreover, looking at this scenario from a capability perspective, beneficiaries may still be faced with constrained freedoms after their participation in a public works programme. Therefore, training should be top priority when practitioners assess the success of any public works programme as it also defines the overall end goal of why the programme exists in the first place, which is to contribute towards decreasing income inequalities as beneficiaries move on to better paying employment.

The case studies discussed paint a picture of public works programmes as being the panacea for solving the problems of unemployment, poverty and income inequality. However, these programmes usually fail to fulfil their objectives due to the inter-governmental politics involved in executing them. Some of these failures are discussed and contrasted against the factors that contribute to the success of public works programmes.

2.3.3 Effectiveness of public works programmes

Kloppenborg *et al.* (2012) suggested two ways to measure the effectiveness of a project. Firstly, setting targets and thereafter assessing the project outcomes against the goals that were set. Alternatively, scheduling routine checks over the course of the project's duration to capture any patterns that emerge from changing project activities or deviations from the expected results (Kloppenborg *et al.*, 2012). Especially relevant to public works programmes, Zimmermann (2014) stated that the success and impact of these programmes depends on how well the programme has been designed and how well that design translates in practice. In the case of community-based projects, Gehrke and Hartwig (2015) stressed the importance of consulting with local people before a programme is implemented to foster a sense of ownership over the projects and the assets resulting from the projects. An important point to consider is the context in which the proposed programme will be implemented as it informs whether the objectives of the project can be met appropriately given the circumstances. Prior to a public works programme being implemented, the correct level of wages that will be low enough to induce self-targeting needs to be determined, as this can either promote or derail the programmes' aim as a social protection strategy. Samson *et al.* (2010) cited government capacity as the major determinant of the level of success of a public works programme. Raising the issue of government capacity is due to the administratively intensive

process of managing a public works programme. Moreover, related to the capacity of governments, Samson *et al.* (2010) stated that governments need to be able to deliver programmes that are cost-effective in the sense that they maximise benefits both to society from the services they provide, as well as to the beneficiaries in the projects. The need to ensure cost-effectiveness can potentially compromise the social protection role of public works projects by presenting a trade-off between the number of beneficiaries that can be included, and how much that will cost the government including the budgetary allocation towards the equipment used in the projects (McCord and Slater, 2009; Samson *et al.*, 2010).

McCord and Slater (2009) identified four types of public works programmes which are classified into these categories based on the variation in their policy design, which derives from what each programme aims to address. The public works programme typology that was proposed by McCord and Slater (2009: 2) is as follows:

Type A: Programmes provide short employment periods and are administered as a response to sudden disturbances to people's livelihoods as a result of an idiosyncratic or covariate shock (McCord and Slater, 2009; Subbarao *et al.*, 2013). The basic premise of these programmes is to act as a safety net by allowing individuals and households to cope in the short term. These programmes encapsulate the original idea of a public works and one example of such a programme is Malawi's PWP – CCT (Conditional Cash Transfers) programme which was discussed earlier in this chapter.

Type B: This programme type provides employment on a continuous basis to anyone seeking it during times of livelihood loss. Termed as government employment programmes, these programmes are initiated directly by national governments or through its delegation of employment creation to the private sector and non-profit organisations. An example of a programme bearing elements of a type B programme is the Non-State Sector category of South Africa's EPWP. To bring this programme to life, the South African government has partnered with non-governmental organisations, faith-based organisations and community organisations through subsidising the wages of previously unemployed individuals to work in projects like maintenance of public infrastructure such as public parks and graveyards, community small gardens and child and elderly care, to name a few (McCord and Slater, 2009; Department of Public Works, 2014).

Type C: These programmes are infrastructure-focused and promote labour-intensive construction activities to ensure labour absorption into the projects, and thus increase labour demand. These are programmes which typically provide an average period of four months paid employment as part of their social protection mandate. Furthermore, a contractor training and development programme is attached to Type C programmes. According to McCord and Slater's (2009) description of these types of programmes, the contractor training and development programme is meant to foster entrepreneurship in those who have

been temporarily appointed as contractors for the various publicworks infrastructure projects, so that will be able to carry on and manage other projects of a similar nature.

Type D: Programmes which are geared towards providing previously unemployed beneficiaries with work experience as well as providing them with skills training opportunities to address structural issues limiting the supply the labour. Such programmes are more popular in developed countries and an example would be the Works Progress Administration (WPA) that was launched during the Great Depression (Loomis, 2014; Seufert, 2013). These programmes consist of a series of training programmes which are meant to improve people's prospects of finding jobs, thus alleviating pressure on government to provide unemployment handouts. The effectiveness of Type D programmes is predicated on labour substitution not taking place, as this could potentially reverse the positive impact on the employment rate in the economy.

Although there are public works programmes that may neatly fall within one of the categories discussed above, some public works programmes display characteristics of more than one programme type, while still retaining its core aims and design (Del Ninno *et al.*, 2009; McCord and Slater, 2009). An example of this is South Africa's Expanded Public Works Programme (EPWP), which possesses elements of each of the programme types discussed. The EPWP creates employment in the four sectors of environment and culture, social, infrastructure, and non-state. The EPWP sectors have partnerships with other sub-programmes that provide skills training for beneficiaries, skills which will enable them to find work elsewhere after the termination of their contracts with the EPWP (McCord and Slater, 2009; Meth, 2011; Department of Public Works, 2013). The infrastructure sector reflects some elements of a Type D programme through its use of labour-intensive activities to absorb people into labour to allow them to develop on-the-job practical construction skills. Similar to how a Type D programme was used during the Great Depression, the infrastructure sector of the EPWP focuses on the provision of public infrastructure such as the construction of sidewalks, trenches, various water projects such as irrigation, storm water drains and water harvesting infrastructure; waste management, erosion protection, renewable energy and sanitation projects (Department of Public Works, 2015). Moreover, the design of the EPWP infrastructure sector also contains elements of a Type C programme through its Vuk'uphile (loosely translated as 'get up and make a living') contractor learnership sub-programme which trains beneficiaries to become NQF level 2 contractors and NQF level 4 construction project supervisors (Department of Public Works and Infrastructure, 2018).

Having outlined the different aspects pertaining to public works programme design, an understanding of the different design templates for public works programmes is crucial in ensuring that targets are reached as treating public works implementation in a cookie-cutter manner may compromise their outcomes. Therefore, as Gehrke and Hartwig (2015) stressed the importance of a bottom-up approach to public works

design and implementation, designing the appropriate programme also requires the input of local people who are the potential beneficiaries of the programmes. This is especially crucial when looking at public works as a strategy that is meant to enhance the capabilities of the beneficiaries, either directly through the tangible benefits such as increased household income and the intangible benefits that contribute to their overall wellbeing as illustrated by Sen's (1985) and Nussbaum's (2011) conceptualisation of wellbeing. However, as Dong (2008) noted, the step of consulting with local people is often skipped for the sake of expediency, thus often resulting in the implementation of programmes that do little in the way of addressing local issues related to livelihoods. Nyoka (2016) echoed this sentiment by stating that the major contributing factor to the failure of public works programmes is the lack of communication with all the stakeholders involved. Del Ninno *et al.* (2009) argued that a lack of coordination amongst practitioners who have been tasked with carrying out the various activities involved in the implementation of a public works programme could compromise the outcomes of a public works programme. McCord (2008) stated that this is amplified by the coexistence of multiple objectives within one project, where priorities could become confused and limited funds could force practitioners to prioritise one objective over the others. Despite this, any small progress that is made in terms of meeting the objectives counts since the targeted populations would not have had the opportunities afforded to them by the programme.

2.3.4 Employment-creation as an indicator of success in public works – Empirical evidence

Since the main objective of public works programmes is employment creation, their success is often also expressed through the number of jobs they create quarterly or within a financial year. According to a report by the Parliamentary Monitoring Group (2019) the EPWP had managed to create jobs that amounted to 58 percent of its job creation target for the 2018/19 financial year (845 162 out of a target of 1 455 840 jobs). In terms of its five-year job creation target, which began in 2015 and ended in 2019, the EPWP had managed to achieve 73.2 percent of its employment creation target of 6 million jobs across the four sectors (Parliamentary Monitoring Group, 2019). During its first phase, which spanned the period between April 2004 to March 2009, the number of jobs that were created by the EPWP in the 2004/05 financial year were 223 400 jobs in the infrastructure sector, 58 800 in environment and culture, 2500 jobs in the non-state sector and 1 600 jobs in the social sector (Department of Public Works, 2010). However, despite the apparent success of the EPWP, the Parliamentary Monitoring Group (2019) stated that there is often poor reporting by local municipalities, which means that some of the figures may either be understated or overstated. McCord and Slater (2009) lamented the sometimes-poor quality of data records on public works programme costs, project outcomes, socioeconomic profiles of beneficiaries to ensure the programme is reaching the intended recipients, and how this could potentially compromise the success and continued funding of public works programmes. To resolve this issue of poor record keeping, McCord and Slater (2009) suggested the establishment of a set of common norms and conventions for recording

data within the community of researchers conducting research studies on public works programmes.

Although there seems to be a clearly defined inverse relationship between employment and poverty, Muhammad and David (2019) stated that one can be employed and still be living in poverty. Considering that public works wages are set below minimum wage rates in the labour market to induce self-targeting by the poor, the success of such programmes as poverty-fighting policies was called into question. For instance, Majavuxx (2019) pointed to the case of EPWP beneficiaries in the Eastern Cape who were trapped as 'permanent casuals' who received a conditional transfer of R744 per month from street cleaning. Moreover, Majavuxx (2019) quoted one of the beneficiaries who had been in the programme for a decade but had not received the training that was promised. This could be a reflection of a lack of capacity on the part of local government structures in carrying out the project tasks, or a lack of coordination amongst those who have been tasked with administering the programme. Contrasting the poor outcomes of the Eastern Cape with those of other provinces, like the Zibambele programme in Kwazulu-Natal, highlights the validity of McCord and Slater's (2009) argument of the need to improve data keeping. This would also allow public works practitioners in government to ensure that they are meeting the national stated objectives of the EPWP.

2.3.5 Conclusion

This section of the literature review chapter discussed the rationale for public works programmes and examined the different design methods that are often employed by practitioners according to the context in which a project will be implemented. It discussed the determinants of success or failure of public works programmes and the suggestions from various key authors on how failures can be mitigated or avoided. The review of literature on public works programmes revealed that there are inconsistencies in defining what constitutes success in terms of the social development aspect of public works programmes and that this has often resulted in poor project outcomes where beneficiaries do not reap the benefits they were promised. This requires a more nuanced assessment of what success means to the beneficiaries themselves. This gap defines the space for this research study, which will develop a framework for assessing the success of the *Prosopis mesquite* clearing programme in the Northern Cape, which is a programme conducted under the national Working for Water public works programme. The preceding section on the Capabilities Approach and the Sustainable Livelihoods Approach provided justification for the choice of theoretical frameworks as it pertains to answering the research questions laid out in chapter 1. Furthermore, it provided a foundation for analysing the different public works project designs and their intended impacts on the livelihoods of beneficiaries based on the design and context in which the project was implemented. The roadmap for how the analysis of the intended livelihoods impacts of a public works social development intervention will be provided by the complementarities between the Capabilities Approach and the

Sustainable Livelihoods Approach, which have an individual and community focus, respectively. Essentially, this chapter laid out the theoretical frameworks that will guide the analysis and discussion as well as the review of the literature which justifies the choice of these theoretical frameworks.

CHAPTER 3: The Expanded Public Works Programme (EPWP) in South Africa

3.1 Introduction

This chapter begins by discussing the premise for the introduction of public works projects in South Africa and the expansion of their scope in later years to cater to the different service delivery and skills requirements in the economy. The *Prosopis mesquite* clearing project is one of the projects under the class of environmental public works projects housed under the Working for Water programme, which is in turn under the broader class of Expanded Public Works Programmes (EPWP). As a conflict species the strategies for controlling *Prosopis mesquite* species are influenced by its categorisation in national legislation which are structured to accommodate both the benefits that are derived from the species and the harm they cause on the natural environment. As one of the flagship projects of the Working for Water programme, the *Prosopis mesquite* clearing project's functions, which include its social development component, have been subjected to the different funding systems of the Working for Water programme which have either enhanced or limited its impact in providing beneficiaries with work experience and training. The chapter concludes with a discussion of the challenges to meeting the job creation and training objectives which arise when government funds are reprioritised, including during the current COVID-19 pandemic.

3.2 Background of public works in South Africa

South Africa's unemployment problem in the new democracy can be traced back to the end of apartheid which came with increased economic growth and a demand for skilled labour (Overseas Development Institute, 2004). However, since the political and economic policies that were instituted during the apartheid era produced a system of structural unemployment which was skewed towards the majority population of black Africans, this population group remains overrepresented in the unemployment statistics (Overseas Development Institute, 2004; Leibbrandt *et al.*, 2010; Kelobang and Boon, 2018). This has contributed to the persisting racial inequalities and high unemployment, of which the latter is a prime cause of poverty (McCord, 2004; Overseas Development Institute, 2004). Therefore, to simultaneously address the problems of unemployment, poverty and inequality as well as backlogs in the provision of public services, the South African government introduced public works programmes, which were later renamed the Expanded Public Works Programme (EPWP) and create short-term and long-term part-time employment for low-skilled people, unemployed youth and marginalised groups of women and people with disabilities from marginalised and rural areas (McCord, 2003; Phillips, 2004; Dladla, 2020).

The Expanded Public Works Programme (EPWP) was preceded by the National Public Works Programme (henceforth, NPWP) which was introduced in 1994 as one of the job creation strategies of the Reconstruction and Development Programme (Overseas Development Institute, 2004; South African Cities Network, 2016). The National Public Works Programme was launched with the two objectives of providing

infrastructure through long-term infrastructure projects, and Community- Based Public Works Programmes (CBPWP) which were implemented at the grassroots level. The CBPWP enlisted the help of representative community structures over the decision-making processes pertaining to the infrastructure that should be built, the design of the infrastructure, the appointment of persons who will be involved in its construction, the employment contracts that will need to be drawn and the training that will accompany the projects (Adato and Haddad, 2001; Parliamentary Monitoring Group, 2001; Phillips, 2004). The overarching objective of the CBPWP was to provide poverty relief to local communities through job creation, while also building the capacity of local communities for development by adopting a participatory approach for local people to be directly involved in deciding on a plan of action to improve their communities (Adato and Haddad, 2001; Phillips, 2004; Philip, 2013).

The plan for the large-scale infrastructure programme consisted of government funded labour- intensive infrastructure building projects which were meant to boost job creation (Phillips, 2004). However, plans to form partnerships with the construction industry and proposing that they integrate a labour-intensive approach to its technological approach failed due to the lack of the relevant skills amongst those who were targeted for employment (South African Cities Network, 2016). Moreover, during the pilot stage of the programme, the lack of skills compromised the quality of the infrastructure and threatened to push down wages, which was not supported by labour unions (South African Cities Network, 2016). The long-term infrastructure programme was eventually subsumed into the CBPWP by augmenting the latter with a complimentary skills training programme component. This was achieved through upscaling the community-level model of the programme to provincial and municipal levels which ensured that training was prioritised as a major component of the public works programme next to job creation (McCord, 2004; Thwala, 2007; South African Cities Network, 2016). This upscaling process was achieved through decentralising the administrative work of the NPWP from the national scale to the provincial and municipal levels of government and this provided the blueprint for the current Expanded Public Works Programme (McCord, 2004).

In addition to the NPWP and CBPWP infrastructure-focused public works programmes, the RDP also introduced Working for Water as a programme that was geared towards environmental conservation (O'Malley, n.d; South African Cities Network, 2016). The specific focus on infrastructure and repairing environmental damage was to form positive linkages with industry and the agricultural sector, which are some of the sectors that are important for economic growth. Despite the failure of the NPWP, some earlier projects that were launched under it such as the Working for Water programme, which was launched in 1995, and the Zibambele Road Maintenance System which came in early 2000 were carried over into the Expanded Public Works Programme's list of programmes (South African Cities Network, 2016).

3.3 The Expanded Public Works Programme (EPWP) in South Africa

As a policy response in government's arsenal of poverty reduction strategies, South Africa's Expanded Public Works Programme (henceforth, EPWP) operates under four broad sectors, namely; infrastructure, non-state and community work programmes, the social sector, and environment and culture (Department of Public Works and Infrastructure, 2018). Del Ninno *et al.* (2009) stated that to ensure the success of any public works programmes, there needs to be clear objectives, careful selection of projects aligned with the creation of valuable and useful public goods, and reliable sources of funding. The objectives of public works programmes as far as their role as a poverty reduction strategy are influenced by the socioeconomic data of a region, which is drawn from household surveys.

The EPWP has as its main goal the increased participation of the unskilled and unemployed in the country's economy (Phillips, 2004; Mubangizi and Mkhize, 2013). To achieve this, the EPWP targets the members of society who are considered the most vulnerable in terms of employment prospects and as a result are underrepresented in the national employment statistics (Maluleke, 2019; StatsSA, 2019). These groups are identified by the EPWP as the youth, women, people with disabilities and those with criminal records which affect their employment prospects (Department of Environmental Affairs, 2019). Each sector of the EPWP targets certain percentages of these targeted groups. For instance, the Working for Water programme targets 60 percent women, 5 percent of disabled people and 20 percent youth for its short-term employment contracts (Department of Environmental Affairs, 2019). These objectives of the Working for Water programme are devolved to the smaller programmes which focus on the clearing of specific invasive alien plants, like the *Prosopis mesquite* clearing project. In line with similar public works programmes in other countries, the three main areas of focus of the EPWP are creating employment, providing skills training to the beneficiaries employed on short-term contracts and generally addressing socio-economic issues related to poverty and inequality.

3.4 The *Prosopis mesquite* clearing programme

The Working for Water programme operates in all nine provinces of South Africa and is made up of smaller projects focusing on different types of invasive alien plants that have been found to be problematic in each area (Martin, 2018). The *Prosopis mesquite* clearing project is one of these smaller projects which was introduced in the Northern Cape to curb the spread of the species. Although the *Prosopis mesquite* has economic value, which could be used to justify its control rather than complete eradication, its negative impacts on groundwater reserves, grazing potential of agricultural land and the loss of native biodiversity resulting from invasion outweigh the benefits (Van den Berg, 2010; Wise *et al.*, 2012). When the Working for Water programme was launched in 1995, the *Prosopis mesquite* had already invaded approximately 314 580 hectares of land in the Northern Cape by 1990 (Van den Berg, 2010). This was despite the existence

of various biological control efforts which preceded the Working for Water programme. Although it is unclear whether the *Prosopis mesquite* clearing project was introduced within the same year that the Working for Water programme was launched, however, since the species had already been identified as problematic in years prior, it can be assumed that it was one of the earlier programmes.

Invasive alien plant control policy in South Africa developed gradually, with specific guidelines published for how each species should be controlled based on its dispersal and invasion pathways. The first record of a comprehensive piece of legislation for the control of alien plants was The Noxious Weeds Act (Act 42 of 1937) which was a modification and replacement of pre-existing colonial and post-colonial invasive alien plant legislation (Lukey & Hall, 2020). Although the purpose of the Act was to repeal previous ones that were no longer effective, it still incorporated lessons from previous standalone projects on how to deal with problematic exotic plants as well as outlining the role of landowners in each case (Lukey and Hall, 2020). This Act was subsequently replaced by the Conservation of Agricultural Resources Act (CARA) (Act 43 of 1983) which mainly prioritised the economic interests of the agricultural sector (Lukey and Hall, 2020). Therefore, as one of the plant species that had been identified as a pest to agricultural land, the family of mesquites were declared in the CARA as invader plants that must be effectively controlled, especially in the farmlands of the Cape Province (its area encompassed the western part of the country including the Eastern Cape and the Orange Free State (which lay at the centre, bordering the northern parts of Lesotho) (Henderson and Harding, 1992).

The *Prosopis mesquite* species was listed nationally as a Category 2 invader in the CARA legislation, which specified for them to not be traded, but instead grown in demarcated areas which will have been obtained with permission from the relevant government department (National Department of Agriculture, 1983; The Organic Organisation, 2005; Lukey and Hall, 2020). The categorisation of the *Prosopis* under Category 2 was a way to accommodate its economic value nationally, as well as its value to livelihoods within the communities in which it is found (Lukey and Hall, 2020). When the CARA legislation was repealed in 2004, making way for the National Environmental Management Biodiversity Act (NEM:BA), the socioeconomic value of the *Prosopis mesquite* was given more consideration, specifically in the Northern Cape where it is most abundant. The species was assigned a Category 3 status in the terrestrial regions of the Northern Cape, while it was categorised as Category 1b near water bodies, which necessitates its strict control and complete destruction where possible with no further propagation of the species (NEMBA, 2004; Heystek, 2014; Shackleton *et al.*, 2015; Sustainable Agriculture in South Africa, 2018). The Category 3 status of the *Prosopis mesquite* influenced the choice of control strategy. The major control strategy for *Prosopis mesquite* administered under the auspices of the Working for Water in the Northern Cape is biological control, through the introduction of the *Prosopis* seed feeding beetles, with occasional use of mechanical and

chemical methods (Zimmermann, 1991; Klein, 2002; Zachariades *et al.*, 2011; Shackleton *et al.*, 2015; Shackleton, 2016). As a Category 3 invader in the Northern Cape, another method of control that has been promoted is utilisation. Promoting the utilisation of products from invasive alien plants, in this case the *Prosopis*, assists in cutting back on the costs that would be incurred from clearing (Klein, 2002). In the rest of the country, the species is a Category 1b invader which restricts trade and promotes its eradication and destruction (Shackleton *et al.*, 2015; NEM:BA, 2004).

3.4 The process of securing EPWP Poverty Relief Funding for projects such as the *Prosopis mesquite* clearing project

3.4.1 Strategic partnerships between government departments and state-owned enterprises within the EPWP

The EPWP is a collective government effort which is administered under the Department of Public Works (henceforth, DPW) which is tasked with the function of developing and implementing legislation and policies on the use and maintenance of fixed public assets (Nzimakwe, 2008; Department of Public Works, 2011; National Government of South Africa, 2012). The national DPW also oversees the carrying out of projects related to the construction of government-funded infrastructure such as public housing, hospitals, public libraries within communities, schools, road construction and maintenance, water supply, energy provision, and recreational infrastructure (National Government of South Africa, 2012; Corporate Finance Institute, 2015; National Treasury, 2017; South African Government, 2019). Government's immovable or fixed assets are grouped under the four categories of land, natural resources, constructions (buildings and road structures) and underground structures (such as water and energy provision) (Department of Public Works, 2008; Western Cape Government, 2019; Department of Human Settlements, 2021). Other than the use of these fixed assets to carry out their mandates, each government department's portfolio also includes the management and maintenance of these immovable assets and to achieve this, they form strategic partnerships with the DPW to lead the coordination and implementation of construction and maintenance projects through the Expanded Public Works Programme (Department of Public Works, 2011; Department of Human Settlements, 2021). Therefore, through these strategic partnerships, each government department contributes towards the policy mandate of the EPWP which is the creation of jobs and poverty alleviation (National Government of South Africa, 2012). As part of the EPWP, the function of state-owned enterprises (henceforth, SOEs) draws on their role as tools for correcting market failure in the economy, which in this case are the high levels of structural unemployment which have resulted in increased levels of poverty especially amongst particular racial groups (Kelobang and Boon, 2018; Kikeri, 2018). This role is explicitly tied to the social goals of government since creating employment contributes towards poverty reduction and ultimately income inequality when the beneficiaries use the work experience and skills gained through training offered move on to better forms of employment (Phillips,

2004; Department of Public Works, 2008; Kelobangand Boon, 2018). To this end, SOEs work together with government departments to create employment for the specific groups of individuals targeted by the EPWP (Phillips, 2004; South African Cities Network, 2016; Melody and Zonyana, 2017). The employment created by state-owned enterprises as their contribution to the EPWP depend on the functions of the SOE concerned and the jobs offered are tailor-made to the skillset and objectives of the EPWP.

The EPWP creates labour-intensive projects under the four thematic areas of environment and culture, infrastructure, non-state, and social (Phillips, 2004; Department of Public Works, 2018). Each of the areas or sectors is headed by a single department, with its smaller provincial and municipal departments and other departments with similar portfolios organised under it. In this structure, the Department of Environmental Affairs heads the environment and culture sector, the non-state and infrastructure sectors are led by the national Department of Public Works, and the social sector is led by the Department of Social Development (Department of Public Works, 2019). The responsibilities of each of these government departments are, respectively, to develop and oversee the implementation of social protection policies (Department of Social Development), the sustainable protection and management of the nation's natural resources for the benefit of all citizens in all communities (Department of Environmental Affairs) and the manifold functions of the Department of Public Works which are to assist with providing the strategic direction for the integration of public works into government's policy plans, being an overseer of the functions of the construction and property industries and managing the leasing of government's fixed assets (National Government of South Africa, 2012; South African Cities Network, 2017; Department of Forestry, Fisheries and the Environment, 2021). To achieve these policy mandates, each municipality, department, and province allocates a portion of its line-function budgets towards expanded public works projects (Department of Public Works, 2005; Knysna Municipality, 2016; EPWP Integrated Grant Manual, 2018). Each of the four sectors' reports on project successes against targets and the information is recorded in the EPWP Reporting System (EPWP-RS), which is consolidated, verified, and analysed by the Department of Public Works and Infrastructure as part of the EPWP's monitoring and evaluation activities (Department of Public Works and Infrastructure, 2019). The EPWP sectors report on the details about the project, personal details of the beneficiaries, the number of person days of employment received by each beneficiary and the wages paid, the type and duration of training administered to beneficiaries, information about enterprises developed through the project, budget and expenditure information during the financial year, project outcomes and service providers that were contracted on the project (Department of Public Works and Infrastructure, 2019). The monitoring and evaluation for each sector is carried out under the guidance of the four principles of implementation. These four principles of EPWP implementation are, namely, ensuring adherence to the EPWP conditions of employment and minimum wage level decided on by the Ministerial Determination, ensuring that the targeting of beneficiaries follows

the specific processes of the EPWP which are defined by a specific set of criteria, ensuring that the work carried out by the EPWP project benefits local communities and improves public goods and the services, and ensuring adherence to minimum labour intensity benchmarks in each sector (Drakenstein Municipality, 2018; EPWP Integrated Grant Manual, 2018).

3.4.2 EPWP funding sources

The South African Expanded Public Works Programme (EPWP) is funded from government departments' baseline budgets and is implemented as a collaborative effort by different government departments through partnerships with state-owned enterprises (Phaahla, 2015; South African Cities Network, 2016; Department of Public Works, 2017; Kelobang and Boon, 2018). EPWP projects are also funded through intra-governmental transfers through the Integrated Grant. The Integrated Grant is issued to municipal and provincial governments as a reward for reaching a specified minimum employment target in projects funded through baseline budgets (National Department of Public Works and Infrastructure, 2012; National Department of Public Works and Infrastructure, 2020). The second criterion for the issuing of the integrated grant is that the grant should target areas where it can make the most impact, which are areas with high incidences of poverty, high unemployment, and public service backlogs (Department of Public Works and Infrastructure, 2012). The criteria which determine the amount of the conditional grant which will be allocated are whether the municipal and provincial departments earmarked for the disbursement of the grant have the capacity to expand the size of their projects, the cost-effectiveness of the labour-intensive methods used in previous financial years, service delivery indicators which are expressed as percentages of the households benefitting from a service in a community, and the average length of the jobs created (National Department of Public Works, 2018).

3.4.3 Mechanisms for budget allocation: The Baseline FTE and Conditional Grant FTE

The EPWP uses the FTE (Full Time Equivalent) factor to measure the minimum number of jobs created from the baseline budgets and from the conditional grant (National Department of Public Works, 2018). The FTE is used to tally and convert the working hours of part-time employees into the equivalent of full-time employee hours (Humphrey, 2016). The EPWP tallies the number of jobs that should be created and sustained throughout the EPWP projects from each tranche payment of the baseline budget and conditional grant. This FTE level of employment is set as the equivalent of 230 person days of work in the EPWP during one financial year for both the Grant FTE and Baseline budget FTE, and both budgets allocate 30 percent of the budgets for stipend payments to beneficiaries (National Department of Public Works, 2011; South African Cities Network, 2016; Melody and Zonyana, 2017). The FTE factor was introduced at the commencement of the second phase of the EPWP (2009 to 2013), out of a concern that the job opportunities that were created during the first phase (2004 to 2009) were too short to make any

sustainable or tangible impact in the lives of the beneficiaries (Melody and Zonyana, 2017). In phase I, work opportunities were used as a measure of the effectiveness of the EPWP. The definition that was used to characterise a work opportunity was any number of days that a beneficiary worked on one of the EPWP projects, even if they worked one day (Department of Public Works, 2012). This definition of work opportunities did not accurately depict the effectiveness of the projects in providing jobs and training opportunities to the targeted beneficiaries, since working for only a few days meant that those beneficiaries did not receive the training that that was meant to accompany the work opportunities. Therefore, the purpose of the FTE factor is to give a more accurate depiction of the impacts of EPWP projects on the nation's unemployment levels (Leibbrandt *et al.*, 2010). The FTE of 230 person days of employment is the guide which the EPWP uses to determine how the job and training opportunity targets will be met given the budget amount allocated for each financial year. Alternatively, the number of employment and training opportunities that can be created is determined by the budget available to fund the creation of 230 person days of employment for each targeted individual. The conditional grant is also referred to as the Incentive Grant or Integrated Grant, since it incentivises government departments to create more employment, and the grant is issued for use across the four EPWP sectors and not to a specific sector (National Department of Public Works, 2010; National Department of Public Works, 2018).

3.4.4 Challenges in deciding on funding priorities

Given the nation's gross debt which increased from 65.6 percent to 80.3 percent between 2020 and 2021 and the fiscal deficit which currently stands at 14 percent of Gross Domestic Product (The National Treasury, 2021), the South African government has had to select key focus areas to prioritise for funding especially considering costs related to the COVID-19 pandemic responses (The National Treasury, 2020; Parliamentary Monitoring Group, 2020). The budget allocations towards EPWP projects depend on the total funding received by each department within each sector, since the EPWP is funded from a portion of national, provincial and municipal department budgets. Therefore, when government departments' funding is reduced due to shortfalls in the fiscus, this affects the number of jobs and training opportunities that can be created through the EPWP (South African Government News, 2016). This was the case during the COVID-19 global pandemic, where the South African government had to issue budget cuts in areas characterised as non-interest spending and divert those financial resources towards various COVID-19 responses (Naidu and Dell, 2020; The National Treasury, 2020). Among the areas that were identified by the government as non-interest spending was expenditure on social development activities geared towards youth, women and people with disabilities, which are the very people that the EPWP targets (The National Treasury, 2020). Since the Department of Higher Education and Training (DHET) is one of the key providers of training to EPWP beneficiaries in collaboration with the National Skills Fund (NSF) and the Sector Education and Training Authority (SETA) which ensures that the training courses are aligned with the types

of in-demand skills in the economy and meet the required standard, the redirection of funding towards COVID-19 emergency relief funds could also affect the number of training opportunities provided to the beneficiaries (Henderson, 2012; Naidu and Dell, 2020). Furthermore, since the EPWP projects fall under either short-term (less than 12 months), medium term (12 months to two years), and long-term or on-going projects (two to three years), the lack of funds to provide training could result in beneficiaries being delegated to short-term projects, which require little to no training or only require individuals to participate in capacity building initiatives which are aimed at improving the life skills of beneficiaries and providing them with financial literacy training (Henderson, 2012; Department of Public Works and Infrastructure, 2019). Some of the short-term EPWP job opportunities that were created as a result of the reprioritisation of funds within the basic and higher education sector during the pandemic included temporary jobs for people who would assist with the cleaning and sanitisation of classrooms and other school facilities, as well as screening the learners (The National Treasury, 2020).

Although branded as a temporary arrangement to address issues arising because of the global pandemic, this deviates from the core mandate of the EPWP which is to ensure that beneficiaries receive skills training alongside the employment from the EPWP (Henderson, 2012; South African Cities Network, 2017; Department of Public Works, 2018; Kelobang and Boon, 2018). The determining factors for whether an area of expenditure will be characterised as non-interest, was if the department from which the funds were being redirected was already experiencing delays in project implementation due to the lockdown regulations, the department had a history of poor performance or if the department's portfolio consists of activities that can be postponed until the next financial year (The National Treasury, 2020). Since the mandate of the EPWP is to employ a labour-intensive approach to execute the projects, the economic shutdown and lockdown regulations of social distancing and stay-at-home orders delayed its project activities, since operations had to be halted to prevent the spread of the virus amongst the workers in field (Mahmud, 2020; Samson, 2020).

3.5 Conclusion

This chapter has outlined the socioeconomic context of the Northern Cape in terms of its suitability for an environmental public works programme such as the Working for Water programme. To achieve this, a brief synopsis of the impact of invasive alien plants in South Africa was given, and this was followed by a discussion on the *Prosopis mesquite*, which is the focus of this study. Public works programmes have a long history as part of governments' tools for employment creation in the long and short term. In South Africa specifically, such programmes have become a permanent feature of the socio-economic landscape and an important tool to address infrastructural, social, economic and environmental issues which are part of a cause-and-effect relationship with unemployment, poverty and inequality. Information on the

effectiveness of public works programmes in South Africa has mainly been presented in the form of reports which outline their overall performance in terms of their main objectives, the jobs created annually, and the on-the-job training opportunities offered. However, this approach is top-down, as it does not consult with the beneficiaries of these programmes to ascertain what the impact has been on their livelihoods, especially since South Africa's Expanded Public Works Programme (EPWP) is designed to assist in the fight against chronic unemployment, poverty and rampant inequality both along transracial lines and between genders. This chapter has outlined that although the Northern Cape is not amongst the poorest provinces of South Africa, the province is not exempt from the previously mentioned issues which plague the rest of the country, making it the right context for the introduction of an environmental public works programme. The Working for Water-sponsored *Prosopis mesquite* clearing project was introduced to address the socio-economic issues in the province, such as unemployment and poverty. The following chapter will discuss the role of Program Logic Models which are useful tools in various activities including highlighting the suitability of these models for analysing the steps involved in the implementation of a public works project. As such, the discussion will inform the development of the evaluation framework which is the goal of this thesis. The more nuanced, bottom-up approach taken by this study in attempting to understand the effectiveness of an environmental public works programme from the perspective of the beneficiaries will assist in corroborating the national data on the *Prosopis mesquite* clearing project's effectiveness. It will also unpack the challenges at the ground level that may be impeding the achievement of the project's stated desired outcomes which confer to the beneficiaries as a result of the work experience and training they received in Phase II and III.

CHAPTER 4: The socio-economic context of the Northern Cape province

4.1 Introduction

This chapter begins with a focus on the impact of invasive alien species in South Africa and narrows the discussion to specifically focus on the *Prosopis mesquite* species' history in the Northern Cape. A discussion of the socioeconomic context of the Northern Cape is provided to justify the introduction of a public works programme in the region, which is located within a developing country, South Africa. The discussion on the demographics and poverty distribution within the Northern Cape highlights the suitability of this context for a project which the specific demographic targets that EPWP projects have. Furthermore, the discussion on the poverty distribution intertwined with the official data on unemployment rate in the province further highlight the need for a project like the *Prosopis mesquite* clearing project in the Northern Cape. The chapter also makes a case for the introduction of environmental public works programmes which are housed within the structure of the Working for Water programme as an ongoing solution to the invasive alien plant problem in South Africa. The discussion narrows into the *Prosopis mesquite* clearing project in the Northern Cape as one of the longest running environmental public works projects operating and how its benefits conflict with its negative impacts on native biodiversity.

4.2 The impact of invasive alien plants in South Africa

The Convention on Biological Diversity (2009) defines invasive alien species as animals, plants and other organisms that are non-native to an environment or ecosystem and which cause harm to the environment, human health and the economy. Invasive alien species are introduced into new environments outside their geographic range, either intentionally for specific uses, or unintentionally as a result of human movement, trade and transportation (Invasive Species Specialist Group, 2005; Pooley, 2010; Richardson and Rejmánek, 2011; Faulkner *et al.*, 2020). Some species are introduced into new environments through natural means, such as through natural disasters and through animal droppings or as parasites on the exotic species being transported (Invasive Species Specialist Group, 2005). Some of the reasons for the introduction of invasive alien species to foreign environments include horticulture, food, forestry, agroforestry, biofuels, pharmaceutical and cosmetic products, fodder, ornamental uses and as pets (Invasive Species Specialist Group, 2005; Pooley, 2010; Richardson and Rejmánek, 2011; Atyosi *et al.*, 2019; Faulkner *et al.*, 2020).

The diagram below (Figure 3.1) illustrates the process of a species into a new environment beyond its natural geographic region. Although every non-native species has the potential to be invasive, not all of them become invasive. The two major determining factors for both animal and plant alien species are the

number of eggs, seeds or species introduced into the area, the number that survive in the new environment, the number of the species that self-perpetuate and disperse in the new environment, and their ability to successfully compete with the native species in the process (Invasive Species, Specialist Group, 2005; Richardson and Rejmánek, 2011; Dutta, 2018; Faulkner *et al.*, 2020; Measey *et al.*, 2020). The process of invasion is determined by the extent to which the species self-perpetuates and disperses in the new environment to the point that it begins to cause environmental and economic problems (Richardson *et al.*, 2000; Faulkner *et al.*, 2020; van Wilgen *et al.*, 2020). Species that become problematic as a result of their uncontrolled propagation often become listed in national legislations under different categories based on the extent of the damage they cause to the new environment and the clearing costs incurred as a result (Marais *et al.*, 2004; Richardson *et al.*, 2000; van Wilgen *et al.*, 2020).

Species that escape or spread to areas beyond the environments into which they were initially introduced affect the environment through their ability to reproduce rapidly because of the absence of their natural enemies (UNEP, 2020). This rapid propagation of the alien species overwhelms native biodiversity, and these alien species often outcompete the latter for water, food and space (Martens *et al.*, 2021; Pyšek & Richardson, 2010; Bartz & Kowarik, 2019). This not only destroys the aesthetics of an area in the case of alien plants overtaking an environment, but it also has implications for livelihoods in cases where the land is used for agriculture or the native plants support local livelihoods, especially in rural areas (Pejchar and Mooney, 2009; Shackleton *et al.*, 2018; Rai and Singh, 2020).

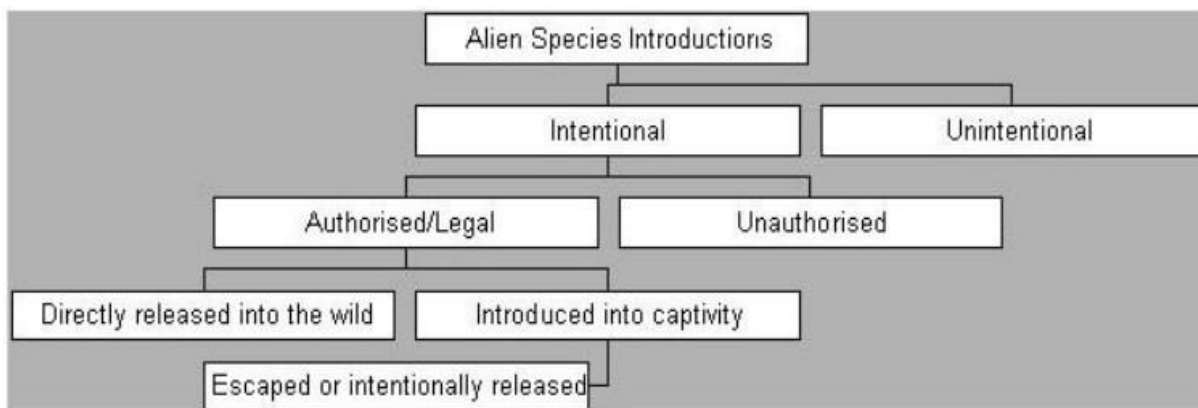


Figure 4.2: Map of Invasive species introductions

(Source: *Invasive Species Specialist Group, 2005*).

4.2.1 The legislative management and control of alien and invasive alien species in South Africa
 The South African legislation for the management and conservation of biodiversity is the National Environmental Management: Biodiversity Act No.10 of 2004 (NEM:BA, 2004). The regulations listed under the portion on alien species provide guidelines for preventing the introduction of alien species and the protocols for reducing their risk if they are introduced (NEM:BA, 2004; Davies *et al.*, 2020). To carry out the

mandate of the legislation as it relates to alien plant and animal species, various programmes were initiated. To manage and eradicate invasive and alien animal species, various programmes were launched under the auspices of South Africa National Parks (SANParks) (Davies *et al.*, 2020).

These programmes are administered at the municipal and local levels, such as Cape Nature, which is tasked with maintaining public nature reserves and wilderness areas in the Western Cape province (Cape Nature, 1999). At the municipal level, the eThekweni Municipality has a website dedicated to tracking and documenting alien and invasive species in the Kwazulu-Natal province including an outline of management strategies aligned with the NEM:BA national legislation on alien and invasive species (eThekweni Municipality, 2014). Some local and international non-governmental organisations focused on the control of invasive alien plants and the conservation of native biodiversity include the Global Invasive Species Program (GISP) which operates under the Convention on Biological Diversity, Defenders of Wildlife, the World Conservation Union, The Nature Conservancy (TNC) and the Cape Action for People and the Environment (CAPE) programme (Convention on Biological Diversity, 2009; Davies *et al.*, 2020). The global legislations and strategies for the control of invasive alien plants work in unison with those of countries to ensure the suitability of the approaches to each country context, each country's climate and general structure of the ecosystems which have been invaded by the alien species (Simpson *et al.*, 2009; Convention on Biological Diversity, 2009; Davies *et al.*, 2020). These collaborations amongst invasive species monitoring networks enable the sharing of data on information pertaining to plant and animal species that have the ability to be invasive once introduced into new environments, such as their introduction pathways, their effects once they become invasive and allows practitioners to develop the appropriate early detection and response mechanisms to counter these effects (Simpson *et al.*, 2009; eThekweni Municipality, 2014). Moreover, the sharing of invasive alien species data introduces an interdisciplinary angle to the study of invasive alien species through highlighting the species' usefulness to livelihoods (Shackleton *et al.*, 2011; FAO, 2013; Zengeya *et al.*, 2017; Davies *et al.*, 2020).

To specifically address the problem of invasive alien plants, the Department of Water Affairs and Forestry (now the Department of Environment, Forestry and Fisheries) launched the Working for Water programme back in 1995 with the specific objective of managing and clearing invasive alien plants (Department of Environment, Forestry and Fisheries, 2019). The collaborative effort amongst invasive species monitoring networks assisted with the formulation of the Working for Water programme's objectives, as Hobbs (2004) stated that information on the environmental impacts of woody alien species on native biodiversity was complemented by research findings from studies that were conducted elsewhere which revealed their ability to reduce runoff and thus affect water supply. These findings were used to inform the strategies that would be used to manage woody alien plants in the Cape Region, and this resulted in the launch of the

Working for Water programme (Hobbs, 2004).

Since the launch of the Working for Water programme coincided with the dawn of democracy in South Africa, the programme was included as one of the strategies that would be used for job creation and poverty alleviation (Hobbs, 2004; Padayachee, 2005; Mosala *et al.*, 2017). To this end, the social development objectives of the Working for Water programme are to target the most vulnerable members of society such as women (60 percent), youth (20 percent), and those with disabilities (2 percent) and ex-offenders for short-term labour-intensive employment contracts (Magadlela, 2001; Department of Environment, Forestry and Fisheries, 2019). The programme participants from these predetermined target groups self-select according to their willingness to work at the low wages offered by the programme and others like it operating under the umbrella of the Expanded Public Works Programme (Department of Public Works, 2018). The programme partners with other government departments, local municipalities, businesses, non-governmental organisations and various community structures to carry out its activities, which include accompanying the short-term employment contracts with training contracts to allow project participants to progress into more permanent forms of employment (Del Ninno *et al.*, 2009); McCord and Slater, 2009; Subbarao *et al.*, 2013; Department of Public Works, 2015). The Working for Water programme was not the first government initiative aimed at controlling and eradicating invasive alien plants. Hill *et al.* (2020) recount the biological control of two species of Prickly Pear, the Drooping Prickly Pear (*Opuntia monocantha*) and the Mission Prickly Pear (*Opuntia ficus-indica*), through the release of the Cochineal Insect (*Dactylopius ceylonicus*) in 1913 and again in the 1930s, respectively. The success in controlling alien invasive plants through the introduction of these species' enemies cemented biological control as an effective invasive plant control method and led to the subsequent institution of the Jointed Cactus Eradication Act (Act 52 of 1934) which resulted in the introduction of a number of government-led management interventions which expanded the scope of management approaches to include mechanical clearing (Hill *et al.*, 2020). This information and other data obtained through collaborative efforts led to the national adoption of the standards of the Convention on Biological Diversity (CBD) in 1995, which is an international agreement that was instituted at the 1992 Earth Summit in Rio de Janeiro to conserve biological diversity, promote the sustainable use of biodiversity and ensure the equitable and fair distribution of benefits derived from the use of biological resources (United Nations Convention on Biological Diversity, 1992). The adoption of the CBD paved the way for the introduction of the Working for Water programme in 1995 (Hill *et al.*, 2020). As a contracting member to the agreement, South Africa also ventures to "prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species" (Convention on Biological Diversity, 2009:1). The Working for Water programme now operates in all nine provinces of South Africa targeting different invasive alien plants found in each of the provinces, marginalised communities and those who are chronically unemployed for short-term labour-intensive

employment (Martin, 2018).

The Working for Water programme has been hailed as one of the most successful in the world in terms of its success in controlling invasive alien species, restoring catchment function, and providing poverty relief through job creation (Magadlela and Mdzeke, 2004; Phillips, 2004; Turpie *et al.*, 2008; Martin, 2018). According to Martin (2018), it has positioned itself as one of the world's most successful public works programmes through its three-pronged approach of addressing environmental, social and economic challenges using an intersectoral and multidisciplinary approach. The success of the programme in terms of its social development goals is often measured as the number of jobs that the programme created during each project phase (Independent Online, 2007; Brand South Africa, 2014; Kilian, 2015; South African government, 2015). The aggregate number of jobs created by the programme varies between the project phases. For instance, by the end of the 2014 financial year, which fell under Phase III, Working for Water had managed to create 39 000 jobs nationwide (Kilian, 2015). In previous financial years, the number of work opportunities that were created by the programme were 30 440 jobs by the end of the 2004 financial period, which coincided with the Growth and Development Summit (GDS) where the scope of South Africa's public works programme initiatives was expanded (Phillips, 2004; Department of Public Works, 2010). At the start of the next five-year project cycle (Phase II) of the Working for Water programme in 2009, the number of jobs that had been created was 29 531 (Department of Public Works, 2010). According to Martin (2018) the Working for Water programme has instituted a goal of 50 000 jobs per year across all nine provinces in which the invasive clearing programmes operate.

4.3 The History of *Prosopis mesquite* in the Northern Cape

The *Prosopis mesquite* are a group of woody plants which are thorny, leguminous and deciduous trees in the genus *Prosopis* L. (*Fabaceae*) which grow up to 4 to 10 meters high and are native to North and South America (Zimmermann, 1991; van den Berg, 2010; Zachariades *et al.*, 2011). Some subspecies which are found within the genus *Prosopis* and which were introduced into South Africa are *Prosopis glandulosa*, *Prosopis chilensis*, *Prosopis velutina*, *Prosopis pubescens* and *Prosopis juliflora*, although there is some confusion on which species have become naturalised also as a result of hybridisation (Zimmermann, 1991; Coetzer & Hoffmann, 1997; Zachariades *et al.*, 2011). The species were introduced intentionally into the semi-arid and arid regions of South Africa in the late 1800s for their pods which are used as fodder for livestock especially during dry seasons, as a shade tree for livestock, to be used as fuelwood by local communities, as a source of nectar for honey production, timber, medicine and in some contexts the consumption of the nutritious pods in various forms by humans (Meyer, 2005; Pasiecznik *et al.*, 2006; Choge *et al.*, 2007; Van Klinken *et al.*, 2009; Zachariades *et al.*, 2011; Shackleton *et al.*, 2015). The species was introduced on farmlands on a large scale, such that by the time its invasive potential was recognised,

the situation was already out of control as far as the rate at which the species was spreading (Zimmermann, 1991). Furthermore, Zimmermann (1991) also stated that due to its high level of pod production, the planting of the *Prosopis* species was encouraged by the Department of Agriculture and Forestry until the 1960s when it began spreading uncontrollably (currently known as the Department of Agriculture, Land Reform and Rural Development as of 2019).

The extent of land covered by *Prosopis mesquite* in the Northern Cape in 2007 was stated as 1.473 million hectares, which amounted to 4 percent of the province's total land area, when in the late 1980s the amount of land covered in the Northern Cape was estimated at 180 400 hectares (Zimmerman, 1991; Van den Berg, 2010). In comparison to the total land areas it has invaded in the Northern Cape, the amount of land invaded by *Prosopis* in the whole of South Africa was estimated at 1.8 million hectares, or 1.5 percent of the country's land area, with an annual increase in invasions of between 3.5 percent to 8 percent (Shackleton *et al.*, 2015). Henderson, (2007) stated that the *Prosopis* species was the second most invasive alien plant species in South Africa after the Australian acacia species. Some of the recorded impacts of the species on ecosystems and biodiversity include its ability to consume large quantities of water which affects water supply, stunting the growth of native species through allelopathy, increasing the mortality of key stone species, reducing species richness, affecting grazing potential by outcompeting native species and through forming dense canopies (Muturi *et al.*, 2013; Shackleton *et al.*, 2015; Ndhlovu *et al.*, 2016). The two main ways by which the species spreads are through seeds contained in animal droppings and dispersion through surface water runoff when they are planted near water bodies (Zimmermann, 1991). The success of the species despite the arid conditions in the regions it has been planted is due to its deep root structure which is able to penetrate the water table as well its ability to survive in brackish water which is unsuitable for human consumption and agricultural use (Zimmermann, 1991). Some methods that have been used to control and eradicate the *Prosopis* species in an effort to mitigate their impacts on the environment, include biological control methods through the introduction of four seed-feeding beetle types; namely, three species of the Alydid Bug (*Nariscus cinctiventris*, *Nemausus sordidatus*, *Zulubius maculatus*) and the *Bruchidius submaculatus* (Zimmermann, 1991). To ensure the success of these *Prosopis* clearing efforts, the use of these biological agents was pursued in conjunction with labour intensive mechanical and chemical methods of control (Zimmermann, 1991; Zachariades *et al.*, 2011; Shackleton *et al.*, 2015; Shackleton, 2016). Despite its high invasion potential and the negative impact it has on the environment, the *Prosopis mesquite* is prized for its value to livelihoods as well as its economic value (Choge *et al.*, 2007; Wise *et al.*, 2012; Shackleton *et al.*, 2014). Therefore, to ensure that both the clearing and livelihood objectives are considered in the management of the species, the intensive utilisation of the *Prosopis* has also been promoted as one of the strategies for control. The effectiveness of utilisation as a control method depends on the intensity of use of the species as well as the compatibility of the uses with

the other control methods. The intensive utilisation of the *Prosopis* species has been promoted through the conversion of different parts of the weed trees into commercially valuable products (Choge *et al.*, 2007; Shackleton *et al.*, 2015). The conflict between the benefits and costs of the species has influenced the choice of other control methods as Zimmermann (1991) stated that in South Africa the main method of control has been biological control through the destruction of the seeds by the insect agents to reduce the load of viable seeds without compromising its availability for livelihoods. Since the seeds are indigestible, thereby making them useless for consumption, the introduction of the insect agents does not compromise the availability of the *Prosopis* for consumption. Furthermore, the availability of *Prosopis* is also maintained since the insects do not completely eradicate the *Prosopis* tree stands but are instead deployed as a control measure to slow down the spread of the species. Van Klinken *et al.*'s (2009) argument resonates with this, as they stated that in contexts where the *Prosopis mesquite* presents a conflict, biological control needs to be considered more broadly for it to be sustainable in the long term. Adopting a purely scientific approach to the management of *Prosopis* by eliminating the possibility of its use could compromise the sustainability of the control efforts.

In South Africa, efforts to accommodate the utilisation of *Prosopis* have been expressed through the release of biological agents that only feed on the roots, stems and foliage of the species (Zachariades *et al.*, 2011). This has allowed for the flourishing of a small industry in the Northern Cape which is based on the medicinal properties of the species. The medicinal products are made from the pods, which are processed into different value-added products such as organic tablets for blood sugar support, menopause support and low GI (glycaemic index) shakes to control food cravings (Wise *et al.*, 2012; Mannaplus, 2020). Therefore, since the species has become the backbone of some small industries in the Northern Cape, it is categorised as a Category 3 invader, which means that it may remain in the province and should not be propagated or traded to other areas, while it is listed as a Category 1 in the rest of South Africa, specifying for the complete restriction of trade and for the species to be removed and destroyed (Shackleton *et al.*, 2015; NEM:BA, 2004; Heystek, 2014).

4.4 Profile of the Northern Cape province and its economy

The Northern Cape was founded in 1994 through the separation of the land mass colony which covered the Eastern Cape, Western Cape and the Northern Cape (Alexander, 2018). The province covers a land area of 372 889 km² of South Africa's total land area and is the largest province out of the nine provinces of South Africa (South African History Online, 2011; World Travel Information, 2018). The Northern Cape's economy is sustained by the mining sector, agriculture, manufacturing, and construction (Trade & Industrial Policies Strategies, 2016). Diamonds were discovered in 1867 with the first diamond mined in Hopetown and the 'diamond rush' spread to the province's capital, Kimberley, before it ended in 1914,

leaving only the Big Hole as evidence of its once thriving diamond mining sector (South African History Online, 2011; World Travel Information, 2018). The Big Hole has become a tourist attraction with a museum dedicated to displaying replicas of the diamonds that were mined from the area, which account for nearly 95 percent of South Africa's produce of diamonds from the mining industry (World Travel Information, 2018). Mining in the province nowadays consists of iron ores and manganese ores which supply countries like Norway, China, India and Japan, placing South Africa amongst the leading markets in the mining of these natural resources, especially in the production of Manganese (Basson *et al.*, 2007; Steenkamp and Basson, 2013; Trade & Industrial Policies Strategies, 2016; Northern Cape Mining Community, 2020).

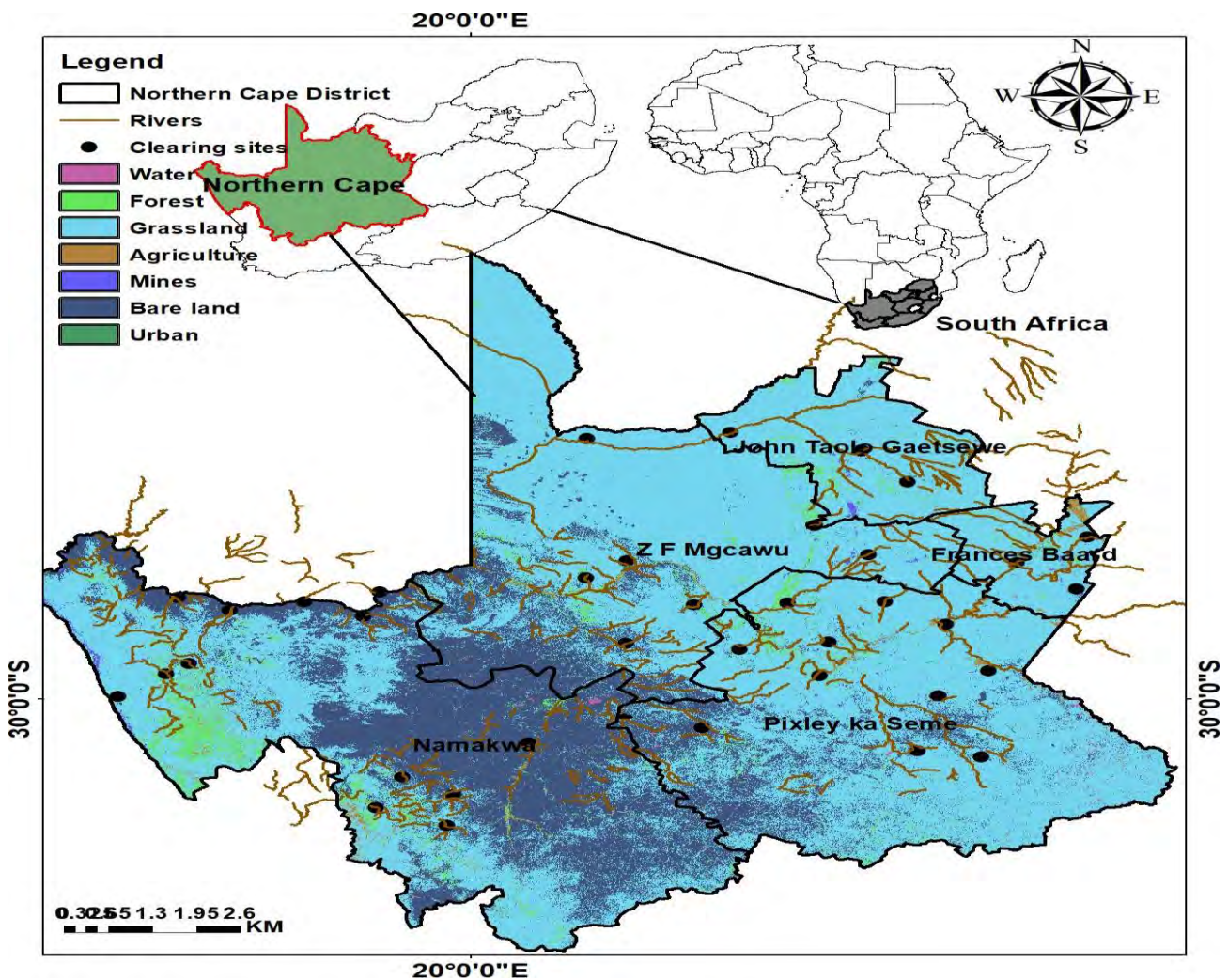


Figure 4.4: Map of study site showing the five district municipalities in which the clearing of the *Prosopis mesquite* takes place as well as the different features of the land and its uses.

The Northern Cape's economy contributed about 2.1 percent (R91 billion) to South Africa's Gross Domestic Product (GDP) in 2016, despite it being the largest province in terms of geographical area. Although the Northern Cape is a semi-arid part of the country, the province has a thriving agricultural sector which contributes 6.8 percent of South Africa's total agricultural production (Global Africa Network, 2020). The

agricultural products that are produced in the region include Rooibos tea, citrus and other fruits, dried fruit, alfalfa, pecan nuts, table grapes and wine grapes, cotton, olives and other cereal crops (Maisela, 2007; Dlodla, 2014; Global Africa Network, 2020). The province's agricultural sector is supported by the Vaalharts Irrigation Scheme and some agricultural activity occurs in towns that lie in the Orange River Valley and along the Orange and Vaal Rivers (Maisela, 2007; Global Africa Network, 2020). The Vaalharts Irrigation Scheme is the largest in the country and services nearly 32 000 hectares of agricultural land through the diversion of water from the Vaal River which is the other river that flows through the province (Maisela, 2007; Küsel, 2015; Global Africa Network, 2020). Livestock farming is also other successful agricultural activity in the province. Livestock farming produces meat products and animal by-products such as Karoo lamb, Ostrich meat, Karakul pelt, leather, mohair and wool in the north-eastern and south-eastern parts (Maisela, 2007; Global Africa Network, 2020). There is also game farming which takes place across the central parts of the province (Maisela, 2007; Botes, 2013; Dlodla, 2014). The sector exports some of its produce to countries like China, which receives about 30 000 tons of beef imports from slaughterhouses in Kimberley and Karakul pelts which are exported to countries which include Denmark (Global Africa Network, 2020). The province's agricultural sector creates an average of 45 000 jobs, which accounts for 16 percent of employment in the province, which is significantly higher than the 5.5 percent national figure of people employed in agriculture (Global Africa Network, 2020).

Another industry that contributes to the Northern Cape's economy is the construction sector. Compared to the other sectors which contribute 22 percent (mining), 3 percent (manufacturing) and 7 percent (agriculture) to the provincial economy, respectively, the construction industry contributes 2 percent to the Northern Cape's economy (Trade & Industrial Policies Strategies, 2016). The construction projects in the Northern Cape are closely aligned with the infrastructure component of the EPWP through a collaborative effort between the province's Department of Roads and Public works and the South African National Roads Agency (SANRAL, 2018). Infrastructure construction included the Square Kilometre Array (SKA) project, renewable energy projects, broadband technologies to disadvantaged areas and rail lines to assist in the transportation of mined ferro alloys and iron ores for beneficiation and exports (Trade & Industrial Policies Strategies, 2016). Some of the infrastructure projects that have been undertaken include the construction and upgrading of national and regional roads around the province (SANRAL, 2018). Other projects include the building of hospitals and rehabilitation centres by local construction companies which are required to adhere to the specifications of the Master Builders Association (MBA) Northern Cape (South African Builder, 2017). The construction sector in the province is also committed to empowering women contractors with the goal of promoting the elimination of gender discrimination and promoting the equal participation of women in an industry that was previously male dominated (Sokatsha, 2010; UN Women, 2010; Sustainable Development Goals, 2016).

4.4.1 Demographics of the Northern Cape province

The population size of the Northern Cape does not align with its status as the largest province in South Africa. According to Census 2011, compared with the rest of the country, the province is the most sparsely populated, with a total population of only 2.2 percent as a proportion of South Africa's population (StatsSA, 2011). This percentage did not change as the StatsSA (2019) mid-year population estimates report estimated the province's population to be 1.26 million, which translated to 2.2 percent.

The population distribution survey of the Northern Cape revealed that the largest population group was Black African (50.4 percent), while Coloured people accounted for 40.3 percent, White (7.1 percent) and Indian/Asian accounted for only 0.7 percent of the province's population (StatsSA, 2011). The percentage share of the population by district municipality revealed that the most populated were Namakwa, Pixley ka Seme, Siyanda, Francis Baard and John Taolo Gaetsewe municipalities (StatsSA, 2011). These are the most economically active municipalities; boasting mining, livestock and game farming, agricultural activity, mohair and wool manufacturing activity (StatsSA, 2011; National Treasury, 2011; Department of Agriculture, Land Reform and Rural Development, 2013; Namakwa District Municipality IDP, 2017). As such, people are attracted into these municipalities for economic reasons (National Treasury, 2011). According to a recent report by StatsSA (2019) the Northern Cape's GDP increased by 2.8 percent in 2017, making it the highest increase compared to the other provinces. This generally translates to a high GDP per capita in comparison to other provinces, more so since the population numbers are already lower in comparison to the other provinces in South Africa (StatsSA, 2019).

A comparison of the Census (2011) and Community Survey (2016) age distributions for the Northern Cape revealed that there was an increase in the number of people in the 15 to 34 age group, which are classified as youth (StatsSA, 2016). The Community Survey is a large-scale survey that is carried out provincially and is used to provide municipal level population and household statistical information to national government between census periods (StatsSA, 2016). The increase in the youth age category also implies that there was an increase in those who qualified to be in the labour force. However, this did not mean that the industries in the province were able to absorb all those who were looking for employment. For instance, the unemployment rate in the Northern Cape at the time of the 2011 Census was conducted was 130 396 and 175 895 economically inactive men and women, respectively (StatsSA, 2011). These numbers translated to total unemployment rates of 12.7 percent and 14.7 percent for males and females, respectively, in 2011 (StatsSA, 2011). This pattern of a greater incidence of unemployment in the female population group was also observable in earlier censuses, where in the 1996 and 2001 censuses the number of unemployed females was 158 074 and 168 500, respectively, compared to only 85 839 and 106 266 for males (StatsSA, 2011). The 1996 Census reported unemployment rates as 14.2 percent (males) and 18.2 percent (females),

while in the 2001 census unemployment rates were 16.8 percent for males and 18.8 percent for females (StatsSA,2011). Prevailing cultural and social norms have an influence on the unemployment numbers being higher amongst the female population. According to a report by StatsSA (2018), the national percentage of women in unpaid work was 55.2 percent, while the rest were men. Activities which are categorised as unpaid work are those for which individuals do not receive direct remuneration and include the care work of the elderly, children, the sick, and disabled and the upkeep of a household (Hirway, 2015). This phenomenon was reflected in the difference in the unemployment rates between males and females, which was 42.4 percent in the fourth quarter of 2019 for females, compared to 35.5 percent for males in the same quarter (StatsSA, 2019). The same trend could be observed in the third quarter, with unemployment amongst females at 41.6 percent and 35.9 percent for males (StatsSA, 2019).

However, since the unemployment statistics only reflect the number of people who are not employed in the formal economy, the stated unemployment rate amongst women could be less than the stated percentage due to informal employment. The ILO (2018) recognised the tendency of women to be subjected to vulnerable forms of employment which are unregulated, not secured through contractual agreements and with no labour unions in place. Women usually work under these conditions as a result of several factors such as age, low education levels, prolonged spells of unemployment, low job market skills and having to divide their time between unpaid and paid work activities (Hoyman, 1987; Omari, 1995; Chant and Pedwell, 2008; Ramani, 2013; Mabilo, 2018). The latter is often cited in the literature as one of the justifications for the importance of informal markets. Hoyman (1987) explained why the concept of greater flexibility of working hours is often appealing to some women by stating that most informal markets tend to be household-based, which means the women can still be able to fulfil their household duties while simultaneously being able to supplement their household incomes. In cases where a woman is in the position of the principal breadwinner in the household, informal work presents as a viable safety net since there are usually no stringent barriers to entry into informal markets, which is often the case in the formal sector (Omari, 1995; Chant and Pedwell, 2008; Mabilo, 2018). Moreover, work in the informal sector usually draws from and relies on skills that women already perform in the household at no charge (Hoyman, 1987). Despite all the reasons given for why women participate disproportionately more than men in the informal market, the overarching reason is survival in the face of chronic unemployment, inadequate household income, being too old to work in the formal sector, low absorption rate of the labour market of new entrants and low skills and level of education to meet the requirements for employment in the formal sector. Since women are often largely represented in informal markets, this validates the policy objective of the EPWP in focusing on recruiting more women into its public works projects.

The Northern Cape has a thriving informal economy which has been identified and adopted as one of the

South African government's key strategies to addressing development objectives of ensuring the sustainability of livelihoods, creating and curbing inequalities (Department of Economic Development and Tourism, 2015). To enhance the effectiveness of the informal sector's role, the National Informal Business Upliftment Strategy (henceforth, NIBUS) was established by the Enterprise Development Unit of the Broadening Participation Division within the Department of Trade and Industry (DTI) in 2012 with the specific mandate of addressing the lack of development opportunities amongst the lower base of the Small, Medium and Micro Enterprise spectrum (Department of Economic Development and Tourism, 2015). To carry out the objectives of the NIBUS, the Informal Business Upliftment Facility (IBUF) has been proposed and its targeted recipients for business, technical and computer skills development, marketing, technology support and compliance training with various accreditation institutions are youth, women and people with disabilities who own small businesses in rural and other marginalised areas in the cities (Department of Economic Development and Tourism, 2015). However, since data on the informal sector is generally lacking due to the lack of record keeping, this poses a limitation on the effectiveness of the proposed policy strategies, unless some linkages to the formal sector are identified and the process proceeds from there.

4.4.2 Poverty distribution by demographics

Despite being the third richest province in South Africa based on per capita income which is third after Gauteng and the Western Cape, the Northern Cape had 64.1 percent of households receiving the state child support grants and 94.7 percent recipients of the state old age grant (Ndabeni *et al.*, 2013; Beangstrom, 2017; StatsSA, 2017). The percentages of social grant recipients displayed a skewed distribution when analysed by gender. Women-headed households were more largely represented compared to households that were headed by men. Like the profile of social grant recipients, women-headed households were also more largely represented in the group that fell under the Lower Bound Poverty Line (LBPL), which, compared to the Upper Bound Poverty Line (UBPL), is more 'survivalist' since individuals in the LBPL category would have to give up some food items to afford non-food items (StatsSA, 2015; Pretorius, 2019). Measuring poverty in the region based on its intensity or severity, the percentage of the Northern Cape is amongst the highest in the country with 42.5 percent of households in abject poverty in 2018 (Alexander, 2018). The intensity of poverty or the poverty gap is an indicator measuring the extent to which poor people's standard of living, using mean income, falls below the poverty line (Institut National de la Statistique, 2016; Organisation for Economic Co-operation and Development, 2019). This measurement expresses the average income of households that fall below the poverty line as a percentage of the amount of the poverty line threshold (South African Reserve Bank, 2015; Organisation for Economic Co-Operation and Development, 2019). Poverty measurements most commonly employed in South Africa are the Food Poverty Line (FPL), the Lower-Bound Poverty Line (LBPL) and Upper-Bound Poverty Line (UBPL) which in 2019 were R561, R810 and R1 227, respectively (StatsSA, 2019) The Food Poverty Line estimates the

amount that an individual would need to purchase their daily food requirement of at least 2 100 calories, while the LBPL and the UBPL measurements incorporate non-food basic items (StatsSA, 2019). The distribution of poverty amongst the different population groups, namely, black Africans, coloureds, Indian/Asian and white, showed askewness towards black Africans in both the social grants and poverty line categories for both sexes (StatsSA, 2015). The household income distribution in the Northern Cape province revealed that female-headed households had a lower average annual household income (StatsSA, 2011; StatsSA, 2015). This was more so the case in the case of Black African and Coloured households, with White households having the highest average of household income (Punt *et al.*, 2005; StatsSA, 2011; Stats SA, 2017). However, despite this disparity in household income, the Northern Cape still ranked third amongst provinces with the highest average annual household income (StatsSA, 2011; Community Survey, 2016). The major contributor to household income was agricultural activity, which was carried out either on private farmland, from backyard gardens, communal land or on church and school grounds (Community Survey, 2016). These household socioeconomic dynamics inform the targeting strategy of the Expanded Public Works Programme (EPWP). The EPWP mainly targets and recruits unemployed youth (55 percent), women (55 percent) and people with disabilities (2 percent) (Department of Public Works, 2018). These targets are informed by the three challenges of unemployment, poverty and inequality which affect the country.

4.5 Conclusion

This chapter first presented the impact of invasive alien species to lay the groundwork for the discussion on the *Prosopis mesquite* clearing project which was introduced to control the *Prosopis mesquite* in the Northern Cape. In relation to the EPWP and Working for Water programme's socioeconomic interventions carried out through the temporary jobs and training provided to beneficiaries, the socioeconomic context of the Northern Cape was presented to justify the need and viability of such a project in contributing towards reducing poverty and unemployment amongst the targeted groups people it recruits as beneficiaries.

CHAPTER 5: The Program Logic Model - linking inputs to outputs and outcomes

5.1 Introduction

This chapter discusses the basic tenets of program logic models, specifically those pertaining to the performance of evaluations of programs or projects. In evaluation, the purpose of Program Logic Models (PLMs) is to identify the variables involved and to draw attention to any gaps that may exist between a project's underlying assumptions, its choice of resource inputs, the deliverables derived from those inputs and the outcomes the program anticipates given the assumptions and resource inputs (Newton *et al.*, 2012; NHS, 2016). The chapter discusses the purpose for PLMs and narrows on their use specifically in evaluating a program's impact. A schematic representation of the structure of a typical Program Logic Model is presented to aid with the explanation with a description of each segment of the model. The chapter concludes with a discussion of the model's suitability to the case study of an environmental public works project's social development interventions, such as the *Prosopis mesquite* clearing project, as a tool for evaluating the project's impact or overall outcomes.

5.2 The purpose of a Program Logic Model and its practical applications

Stuart (2016) defined Program Logic Models (henceforth, PLMs) as roadmaps that practitioners can use to illustrate how a program will work towards achieving the desired results from the given resources and specific activities that will be undertaken. They are also an evaluative tool that depicts the relationships among a program's resources, activities, and its intended outcomes (McLaughlin and Jordan, 1999; Newton *et al.*, 2013; CDC, 2018). The purpose of Program Logic Models is to create a forecast map of what a program aims to achieve and the resources and sequence of activities that are required to achieve those outcomes, including each activity's specific outcomes which may or may not enhance the intended outcomes (McLaughlin and Jordan, 1999; Kaplan and Garrett, 2005; Newton *et al.*, 2013; Centre for Epidemiology and Evidence, 2017; CDC, 2018). Program logic models can be used for any of the functions of planning and implementing programs, as a management tool for monitoring, evaluating and reporting on a program's activities (Knowlton and Phillips, 2012). These functions can be performed on both new and existing programs by separating the different components into inputs, activities, outputs, and outcomes and using a set of indicators under each component for measurement of progress (McLaughlin and Jordan, 1999; Knowlton and Phillips, 2012; Newton *et al.*, 2013). This study sought to develop a framework for the evaluation of environmental public works projects and demonstrating its application by testing it on the *Prosopis mesquite* clearing project.

The PLM provides program managers with a logically consistent mapping tool for presenting the

performance story of their program (McLaughlin and Jordan, 1999; Newton *et al.*, 2013). One of the beneficial aspects of the PLM is that it goes beyond merely reporting on the outputs of a program, which express the achievement of program objectives numerically or as a percentage, but also assist in enabling program managers to track the steps that it took to get to outcomes (McLaughlin and Jordan, 1999; Common Ground, 2003; Magadlela and Mdzeke, 2004). Assessing the success of programs through quantifying outputs often hides the parts of a program's design that may require modifications that would improve its overall quality and impact. The PLM includes an "outcomes" component, which consists of a sequence of sub-categories of short, medium, and long-term impacts of a program on the intended beneficiaries (McLaughlin and Jordan, 1999). Specifying the outcomes or lasting impact that a program aims to achieve early on allows for reflexivity during the program's implementation, since managers can repeatedly go back and forth to check if they are using the appropriate input amounts for the outcomes they are seeking to achieve (Newcomer *et al.*, 2015). This not only has the potential to ensure a more targeted approach towards program implementation and reduced wastage of resources, but also increases accountability on the part of the managers since it ensures that the identified problems or outcomes remain at the centre of the program activities.

In programs that do not utilise PLMs for any of the uses mentioned above, management accountability is reduced to the collection of information detailing the program's accomplishments in terms of the extent to which the identified problems were solved (McLaughlin and Jordan, 1999; Frechtling, 2007; Newton *et al.*, 2013). This is often the case with public works programmes which seek to address an infrastructural, environmental, or other problem linked to service delivery in society and seek to target certain groups of individuals in society to carry out the necessary manual work required to address the issue. For instance, the Working for Water programme sets targets to recruit 60 percent women for temporary jobs, 20 percent youth and 2 percent of people with disabilities (Magadlela, 2001; Department of Environment, Forestry and Fisheries, 2019). These percentage figures of the beneficiaries' demographics are used as one of the measures of the EPWP project successes in their socioeconomic interventions alongside the number of workdays and training opportunities created. However, despite the EPWP having output indicators to quantify the number of people recruited, the number of workdays created using the FTE Target of 230 person days of employment, and the number of training days created which differ based on the training provided, the outcomes stemming from the work experience and training opportunities following the beneficiaries' participation in its projects, including Working for Water, are often unaccounted for. This is where a Program Logic Model would be useful in evaluating the processes involved from resource inputs to outcomes to ensure that the EPWP is really meeting its social development objective of assisting beneficiaries' transition from chronic unemployment to finding jobs in the labour market using the work experience and skills training they received. To determine the true impact of a program, its outcomes to

the beneficiaries and society at large need to be considered, and that is what the PLM was used for in this research study. Furthermore, the theoretical frameworks discussed in the literature review, namely, the Capabilities Approach and the Sustainable Livelihoods Approach, will be used to analyse the public works project's impacts on the livelihoods of the beneficiaries in terms of how it impacted their livelihood capital asset as set out in the sustainable livelihoods approach and how each of those livelihood assets were supported by each individual beneficiaries' capability endowments,

5.3 The utilisation and structure of a typical Program Logic Model (PLM)

The schematic structure of a PLM can differ from one program to another, depending on what the program is about and on the preferences of the practitioners seeking to create a graphic representation or storyboard that best portrays how the unique elements of their program connect (McLaughlin and Jordan, 1999; University of Wisconsin-extension, 2003). However, regardless of whether the PLM is used for either program design, monitoring of a project or the evaluation of its components, the key headings of inputs, outputs and outcomes remain the same and only the indicators under each heading differ based on the specific project. Figure 4.1 below illustrates the basic structure of a PLM.

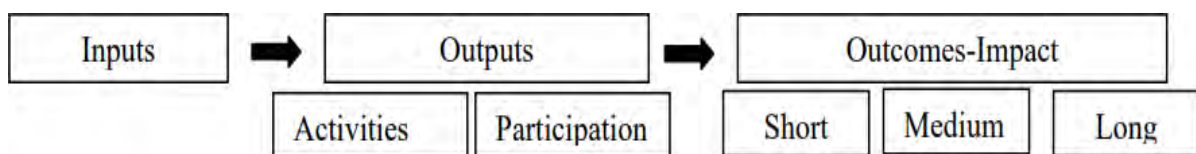


Figure 5.3: Simple Program Logic Model

Source: Powell and Henert (2008)

Prior to the formulation of a PLM, a situation is identified which prompts the formulation of a logic model as a tool to assist in formulating a solution. It is important for practitioners developing a PLM to thoroughly investigate the social, political, economic, and environmental circumstances within which the situation exists, to ensure a proper diagnosis of the problem, that suitable indicators are selected, and the intended outcomes are feasible (University of Wisconsin-extension, 2003; Taylor- Powell and Henert, 2008). There are a couple of questions that a practitioner may ask in the process of attempting to understand and carefully define the situation requiring intervention via the implementation of a proposed program. These questions include first defining what the problem is, why it is a problem or what causes it, identifying for whom the problem exists, who will benefit from the solution to the problem, collating the baseline knowledge about the problem itself, the conditions within which the problem sits, the people who are affected by it, and other relevant information pertaining to previous experiences with the problem (McLaughlin and Jordan, 1999; University of Wisconsin-extension, 2003).

After the situation requiring intervention has been identified, decisions are made about the inputs required

to address it. The category of inputs includes non-tangible and material contributions that would be required to address the problem such as the knowledge and expertise of the practitioners, financial contributions, equipment and technological know-how, physical workspace, planning and staff time and other relevant key stakeholders (University of Wisconsin-extension, 2003; Chen, 2015; Friedman, 2018). The activities section consists of the actions, such as the administrative and logistical processes carried out by the program managers to deliver the best outputs and outcomes from the inputs (McLaughlin and Jordan, 1999; Innovation Network, n.d.; Knowlton and Phillips, 2012; Robinson, 2018). The outputs section encompasses the goods and services which result from the input resources and the activities carried out in the process of utilising those resources (University of Wisconsin-extension, 2003). These outputs are often in the form of quantitative data collected on the program and compiled in policy documents, like the number of goods produced, activities performed, and participation rates and these activities are sometimes grouped under the subcategories of activities and participation (Figure 4.1) (McLaughlin and Jordan, 1999; University of Wisconsin-extension, 2003; Powell and Henert, 2008; Roth, 2014; Chen, 2015).

The last category, which is usually placed on the far right (Figure 4.1), describes the outcomes or impact of the program along a continuum of short, medium, and long-term results (McLaughlin and Jordan, 1999; University of Wisconsin-extension, 2003). The outcomes category can be described as the broader impact of a program which can be expressed through changes in skills, social action, status of those impacted, aspirations and attitudes of program participants (McLaughlin and Jordan, 1999; Roth, 2014; Chen, 2015; Friedman, 2018). After a program has been implemented, these outcomes are captured under either short-term, medium term or long-term outcomes as the results from follow-up or monitoring exercises to ensure that the intended outcomes or impacts of the program are being realised (Kellogg Foundation, 2001). This step in the PLM allows managers to identify any deviations from the initial plan and if there are any additional benefits that may have not been intended (McLaughlin and Jordan, 1999; Powell and Henert, 2008; Ormand, 2020). The intermediate and long-term impacts categories fall under summative evaluation, while the sections from inputs to short-term outcomes constitute the formative evaluation. Summative evaluation seeks to determine whether the program achieved what was intended through its application, to answer questions related to community-wide impact of the program, and the lessons gleaned by management from carrying out a program in a particular context (Kellogg Foundation, 2001). The formative evaluation relates to improvements to the program by identifying the factors that may have hindered or assisted the implementation of the program and what was accomplished in the process (Kellogg Foundation, 2001). Figure 4.2 below illustrates what each type of evaluation entails. Both types of evaluations are necessary, but the focus of this research study was more on the summative evaluation since EPWP projects, including the *Prosopis mesquite* clearing project, do not have indicators to measure outcomes after the beneficiaries have exited the projects. In instances where the intended outcomes were

compromised as per the responses from the key stakeholder interviews and the online beneficiary survey which were used to corroborate the secondary data, the external factors that contributed to this were included in the framework.

Table 5.1: Types of evaluation carried out through a Program Logic Model

Formative Evaluation – Improve	Summative Evaluation – Prove
Provides information that helps you improve your program. Generates periodic reports. Information can be shared quickly.	Generates information that can be used to demonstrate the results of your program to funders and your community.
Focuses most on program activities, outputs, and short-term outcomes for the purpose of monitoring progress and making mid-course corrections when needed.	Focuses most on program’s intermediate-term outcomes and impact. Although data may be collected throughout the program, the purpose is to determine the value and worth of a program based on results.
Helpful in bringing suggestions for improvement to the attention of staff.	Helpful in describing the quality and effectiveness of your program by documenting its impact on participants and the community.

Source: Kellogg Foundation, 2001 (*Using Your Logic Model to Plan for Evaluation*)

5.4 The benefits to using a Program Logic Model

McLaughlin and Jordan (1999) identified four benefits of the PLM. The first benefit was that it creates an awareness and common understanding of what the program is aiming to achieve, the resources that will be required and the number of intended targets to be reached by the program. Therefore, the sharing of ideas contributes towards cohesion amongst the managers in the pursuit of a program’s objectives. The second benefit stems from the reflexivity that is inherent in the model, which allows for constant improvements to the program’s design even while it is in operation. This process of reflexivity is crucial to ensuring that resources are not wasted as redundant or irrelevant relationships between elements within the program can be identified early and eliminated. The other benefit is that being clear about the outcomes of the program assists in distinguishing it from other similar programs being run in parallel within the same department. The fourth benefit is that a PLM helps to refine the methods of data collection, since keeping in mind the overall outcomes ensures that program managers can focus on identifying and selecting key measures of performance and attempting to foresee challenges that may be encountered in the process of program implementation. In terms of evaluating impact or outcomes using a PLM, the preceding categories of inputs and outputs provide a researcher seeking to assess the impacts of a program with a roadmap which will enable them to ascertain, through interactions with those on the receiving end of the

outputs, a program's outcomes including those that may have not been intended.

5.5 Limitations of Program Logic Models

Despite all these benefits, the PLM has some limitations. The University of Wisconsin-extension (2003) identified six limitations that a practitioner may need to take note of when using the PLM. Firstly, the PLM only expresses the intentions of a program and not the reality of how things will actually work out. Second, the model can result in a narrow focus on only the intended positive outcomes that the program aims to achieve, without accounting for possible unintended outcomes that may enhance or diminish the targeted outcomes (Newton *et al.*, 2013). The third limitation, which is linked to the previous, is that the PLM has the tendency to adopt a narrow focus on only the positive outcomes without making provision for negative impacts that may result from the implementation of a program. The fourth limitation is that the model may be overly simplistic and blind to other indirect factors that may have an influence on the causal relationships between elements of a program and its outcomes. Since the intention behind formulating a PLM is to address an identified problem, the solution proposed through a PLM is usually only one of many possible solutions, practitioners may not be aware whether the solution they are articulating through their PLM is even the most suitable for the problem they are trying to solve (Knowlton and Phillips, 2012; Newton *et al.*, 2013). Lastly, although the PLM does offer a level of flexibility since it is ultimately at the discretion of the practitioner which indicators are included under each heading, the outputs and outcomes still need to relate back to the solution that was decided on prior to the formulation of the PLM. This can reduce spontaneity and creativity since the model dictates for a specific process to be followed for certain outcomes to be achieved.

Although deemed unsuitable for this research study, another alternative method that could have been used other than the Program Logic Model is the Social Framework. The Social Framework's complementarity to the theoretical framework used in this research study is such that it is comparable to a certain extent to the Capabilities Approach due to its focus on the direct and indirect impacts of a project on individual wellbeing through various channels, namely culture, environment, infrastructure, livelihoods, housing, community, land, and other people (Smyth and Vanclay, 2017). The channels provided by the Social Framework through which one's capabilities and the resulting functionings can be assessed provide some structure to the abstract nature of the capabilities approach. However, on the other hand, the 'packaging' of capabilities into a definitive list or categories goes against Sen's (1990) recommendation of an *ad hoc* selection of capabilities by practitioners according to the research context or adopting participatory approaches which allow the poor to identify their own capabilities. Drawing similarities between the social framework and the Sustainable Livelihoods Approach for the purpose of merging them would also present some difficulties. Due to the Social Framework's focus on understanding, managing,

assessing and planning around social issues associated with big projects along the channels outlined (Smyth and Vanclay, 2017), the Social Framework seems to only focus on the Social Capital livelihood asset. Therefore, considering the objectives of this study, although adopting the approach of the Social Framework of looking at the social impacts on the beneficiaries would have been useful for drafting the outcomes indicators, it would not have provided sufficient details to draft indicators for the inputs, activities, and output sections. In addition to this, the advantage that the Program Logic Model has over the Social Framework is its structure, which was appropriate for what this research study sought to achieve, which was to ultimately develop an evaluation framework which would cover the entire lifecycle of an environmental public works project like the *Prosopis mesquite* clearing project. Overall, the Social Framework would not have been able to outline the criteria in the simplified way that the Program Logic Model was able to through its generic structure of inputs, activities, outputs, and outcomes columns.

5.6 Evaluating environmental public works projects using a Program Logic Model

The two types of evaluation approaches, namely the formative evaluation to improve the way a program functions, and the summative evaluation to prove that the program worked as intended, were used in this research study to analyse the impact of the *Prosopis mesquite* clearing project's socioeconomic interventions. A formative evaluation takes place before a program begins or during its implementation as a strategy for identifying any early warning signals of possible limitations and failures that could hinder the achievement of the outputs (The Evaluation Toolbox, 2010). The summative evaluation that follows it assesses whether a program reached its goals and its impact on the targeted groups of people it was intended to benefit (The Evaluation Toolbox, 2010). Although it is often carried out at the end of a program, a summative evaluation can also be carried out while the program is being implemented which makes it useful for evaluating EPWP projects which report outputs at the end of each year in the five-year Phases. The environmental public works projects under the Working for Water programme, including the *Prosopis mesquite* clearing project, do not capture outcomes after beneficiaries have exited its projects, and this was the basis for the summative evaluation that was carried in this research study. To do this, outcome indicators were developed mainly from the primary data that was collected through an online survey with the beneficiaries of the *Prosopis mesquite* clearing project and other sources of data that were utilised achieving the objectives of this study. A formative evaluation was conducted from the information that was sourced from online EPWP reports and from the secondary data records that were obtained from the Working for Water offices in the Northern Cape province. The relationship between the two types of evaluation is that the formative evaluation assists in improving on the identified limitations and potential failures of a program, while the summative evaluation proves that the program intervention functioned as it was intended (Figure 4.2) (Kellogg Foundation, 2001; The Evaluation Toolbox, 2010).

Auriacombe (2011) stated that the importance of evaluating government policy interventions is useful in

determining if insights gained into the identified problem and the actions taken thus far to address it have resulted in the desired changes. If not, evaluating how the strategies employed in achieving the outputs by the relevant government departments can be improved to be more effective in addressing the problem. The importance of systematically evaluating policy interventions contributes towards good governance, which The World Bank (2020) has identified as being at the core of the development agenda for developing countries. The United Nations Office on Drugs and Crime (UNODC) (2019), quoting Johnston (2002: 2), defined good governance as the “legitimate, accountable, and effective ways of obtaining and using public power and resources in the pursuit of widely accepted social goals”. The widely accepted social goals that the EPWP, and by extension Working for Water’s social development initiative aim to achieve are to provide beneficiaries with work experience through temporary employment, and training opportunities to improve their future employment prospects (Phillips, 2004; Department of Public Works, 2010). To ensure that these government social development objectives are being met through the annual funding allocated and that they result in the desired outcomes or impact, systematic evaluations such as the one performed in this research study using the developed evaluation framework are necessary. Auriacombe (2011) stated that the most important factors to consider in the evaluation of a public policy programme are its relevance to society, its effectiveness in addressing the identified problem, efficiency in its implementation, and its impact and sustainability in the long-term. In this research study, each of these factors were extracted from the different data sources that were used. Using the Capability Approach and the Sustainable Livelihoods Approach, the outcome indicators were formulated through a livelihood lens since the long-term aim of the EPWP’s social development intervention is to assist the beneficiaries to transition onto better forms of employment.

5.7 Conclusion

This chapter discussed the idea of Program Logic Models, their purpose and how they are utilised especially in formative and summative evaluations of project processes and outcomes, respectively. The benefits to using Program Logic Models and their limitations were discussed as well as different components of the model and what they entail. The discussion laid the groundwork for how the evaluation framework that this research study aimed to develop will be applied to the Prosopis mesquite clearing project for demonstrative purposes. The suitability of the PLM for the evaluation of a public works policy initiative was outlined and linked to how it can contribute positively to the broader objective of good governance. The next chapter discusses the research methodology, research design and the techniques that were used in the process of data collection and analysis.

CHAPTER 6: Methodology and research procedures

6.1 Introduction

This chapter outlines the research paradigm that this study followed. The research study followed a mixed methods approach, which consisted of a largely qualitative approach and a quantitative aspect which was integrated into the qualitative approach. The choice to use a mixed methods approach was based on the structure of the secondary data which contained demographic information, data on the annual budgets allocated to the Northern Cape's *Prosopis mesquite* clearing project, workdays and the training days created. This data warranted statistical analyses and it was supplemented by the qualitative section from the key stakeholder interviews and the results from the online survey that was conducted with the beneficiaries. This chapter also discusses the data collection tools and procedures and the methods that were used to analyse the data. The choice of analysis was dependent on the nature of the primary data and is justified, and the sampling procedure that was used is also described. The potential weaknesses of the mixed methods approach are discussed, and the limitations of the research study are also outlined.

6.2 Research design

This research study made use of the postpositivist paradigm which Henderson (2011) defined as a research paradigm which emphasises meanings by merging theory with practice. Kivunja and Kuyini (2017) defined a research paradigm as the lens through which a researcher views the world which guides the investigation process of the research. As a research paradigm, post-positivism retains the first assumption of positivism, which is that knowledge can be gained through an exploration of cause-and-effect relationships amongst phenomena and the irregularities inherent within those relationships (Miller, 2011). The post-positivism paradigm was introduced to advance the narrow perspective of the positivist approach (Henderson, 2011) and amends the positivist approach by arguing that knowledge is subjective and cannot merely be deduced through scientific means. Although both have an appreciation for empiricism, post-positivism emphasises multiple realities that are socially constructed collectively by individuals through interaction with their environment (Ryan, 2006; Henderson, 2011; Panhwar, *et al.*, 2020). These multiple realities assist in the creation of new knowledge which can be used to build on already existing perspectives, or challenge those ideas (Ryan, 2006). On the contrary, positivism advocates for the logical inference of relationships between different variables in a scientific experiment to derive empirical evidence (Panhwar, *et al.*, 2020).

This research study used a mixed methods approach which describes the use of both qualitative and quantitative research approaches. Although research approaches conventionally fall into either quantitative or qualitative research (Guba and Lincoln, 1994; Guba and Lincoln, 2000), the mixed methods approach merges the two to formulate a richer analysis of data by combining the strengths of each

approach, while allowing each one to cancel out the limitations of the other (Creswell, 2015). Since post-positivism combines both theory and practice by immersing the research study within the society that is being researched to glean new insights into the topic being researched, this study found the post-positivist approach as the most suitable approach as it is also accommodating to the quantitative components of the data.

In the mixed methods research types, this study employed the triangulation design which Creswell (2015: 62) described as a mixed methods approach which is used “when a researcher wants to directly compare and contrast quantitative statistical results with qualitative findings or to validate or expand quantitative results with qualitative data”. The type of triangulation used was the convergent triangulation model which was used to expand on and corroborate the quantitative results. Consistent with the nature of convergent triangulation, the qualitative and quantitative data were gathered and analysed separately, and then the results from the two analyses were brought together in the interpretation and discussion (Creswell and Plano Clark, 2007). One of the benefits to using this type of triangulation method is that it ensures that the results are well-substantiated, since it employs the strengths of the qualitative and quantitative approaches to validate and corroborate the findings of each. Through using both approaches simultaneously in this way, the researcher is also able to make sense of the quantitative findings (Creswell and Plano Clark, 2007; Creswell, 2015).

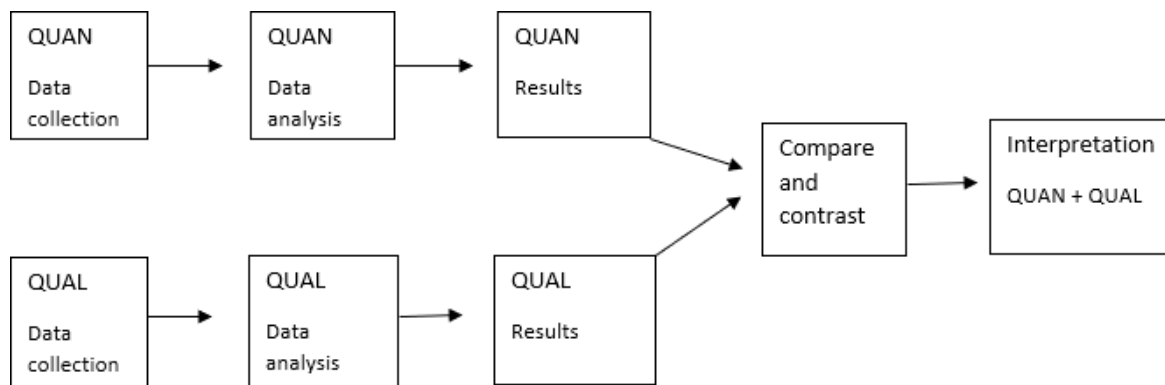


Figure 6.2: The triangulation design (convergence model)

Source: Creswell and Plano Clark (2007)

Furthermore, this study used qualitative thematic data analysis to “identify, analyse, organise, describe and report themes that were found within the data set” (Nowell *et al.*, 2017: 2). The advantages to using thematic analysis is that it assists the researcher in being able to extract the mainpoints from a data set and organise them into the relevant themes that will serve to answer the research questions in a well-structured manner that avoids focusing too much on details that are not central to achieving the research

objectives (Alhojailan, 2012; Nowell *et al.*, 2017; Mortensen, 2020). Thematic analysis looks for patterns in the data, such as transcripts from interviews and focus groups and classifies them into themes (Mortensen, 2020; Warren and Rautenbach, 2020). Taken together, the themes assist the researcher in constructing a story through deriving meaning from the themes in the context of the research question under consideration (Nowell *et al.*, 2017; Warren and Rautenbach, 2020). Thematic analysis was appropriate for this study because it assisted in organising the data into the themes observed in the secondary data records with those that emerged from the key stakeholder interviews to tell a coherent story of the dynamics within the *Prosopis mesquite* clearing project in the Northern Cape.

The secondary data was obtained from the Working for Water offices in the Northern Cape province while the primary data was collected separately through key stakeholder interviews with the managers who oversee the functions of the *Prosopis mesquite* clearing project in the Northern Cape. An online survey was conducted with the beneficiaries. The aim of this study was to determine whether the *Prosopis mesquite* clearing project, as an environmental public works project under Working for Water, has been successful in its social development initiatives, the interpretation and discussion which flowed from the analysis of the qualitative and quantitative data fed into the design of the evaluation framework discussed in Chapter 8, which encapsulates the criteria important to the *Prosopis mesquite* clearing project's success as well as those that could be useful in improving on the shortcomings of this and other environmental public works programmes similar to it.

6.3 Sampling procedure

The key stakeholders were located and recruited for participation in the study through other professional contacts and the beneficiaries who participated in the online survey were drawn from the secondary data records of beneficiaries that had been with the *Prosopis mesquite* clearing project during all or some of the project phases under review. The six key stakeholders were selected from Working for Water programme managers based on their proximity to the *Prosopis mesquite* clearing project and their in-depth knowledge about the dynamics of said project.

For the primary data collection from the beneficiaries, this research study employed stratified sampling which Migori and Magangi (2011: 3761) described as a sampling approach that “divides the sampling frame into subsections comprising groups that are relatively homogeneous with respect to one or more characteristics and a random sample from each stratum is selected”. Research participants were selected randomly from each of the clearing sites or strata, and the random selection ensured that there was no discrimination against any of the potential research participants, but that each one was selected entirely by chance to participate in this research study (Sharma, 2016). The choice of sampling procedure to use was based on the distribution of the *Prosopis mesquite* clearing sites around the Northern Cape province. The homogeneity of the beneficiaries who were targeted and recruited to take part in the programme was

guided by the national objectives of Working for Water which are to give 60 percent of the temporary jobs to women, 20 percent to youths (preferably those under the age of 23) and 2 percent to be given to people with disabilities (Magadlela, 2001; Department of Environment, Forestry and Fisheries, 2019). Prior to the introduction of the COVID-19 pandemic lockdown restrictions, focus group discussions with the *Prosopis mesquite* clearing project beneficiaries and face-to-face in-depth interviews with the project managers were planned, but due to the restrictions, video interviews were conducted with the key stakeholders, and an online survey was conducted with the beneficiaries. To adapt the stratified sampling to the current pandemic restrictions, instead of randomly selecting them from each clearing site as they would have been for the focus groups, the beneficiaries who participated in the online survey were randomly selected from the secondary data records of the beneficiaries which were listed according to the clearing site that they worked at. This would still allow for variation in the responses of their experiences in the *Prosopis mesquite* clearing project, since there were some clearing sites that had existed longer than others. For the online survey, 40 invitations were sent out to the beneficiaries that were selected from the secondary data to participate in the online survey. However, due to lack of data to access the online form via the internet, some of the beneficiaries not having the appropriate devices to access the online form, and the lack of interest to participate by some beneficiaries who were no longer a part of the *Prosopis mesquite* clearing project, only 33 responses were obtained from the online survey. Therefore, since the results were too few to run statistical analyses that would yield reliable results, the data was used qualitatively as mainly direct quotations, as discussed in Chapter 6 later in the thesis.

Although having a large sample size is important to ensure that the portion of research participants in the sample sufficiently represent the rest of the population and that the data is rich enough to accurately describe the phenomenon under study, it should also be large enough to reveal different perspectives without being redundant (Marshall *et al.*, 2013; Shetty, 2018). Therefore, although it has not been set in stone the number of participants that should be included in a qualitative study, a sample size of 30 is appropriate for saturation to be reached, which is at the discretion of the researcher after determining that a discernible pattern has emerged from the data and meaning and validity have been developed (Marshall *et al.*, 2013). The principle of saturation states that for a relatively homogeneous sample, continuing to collect more data gets to a point where it does not yield any new insights into the data but instead becomes redundant (Vasileiou *et al.*, 2018; Hennink *et al.*, 2019). Therefore, the important components to consider when attempting to determine the point of data saturation is sample size and composition (Vasileiou *et al.*, 2018). These two components determine the adequacy of the sample to yield results that are rich enough to support existing ideas or challenge them (Hennink *et al.*, 2019). The sample of key stakeholders which consisted of individuals at different levels of management with different years of experience working for the Working for Water programme and in the *Prosopis mesquite* clearing project contributed to the richness of the data. Likewise, since the sample of beneficiaries who took part in the survey was drawn from

the secondary records, the sample consisted of people who had been in the *Prosopis mesquite* clearing project for different numbers of years and had worked at different clearing sites around the Northern Cape. The key stakeholder interviews were conducted first since communication had already been established during the process of requesting for the secondary data records. The video interviews with the key stakeholders were conducted one-on-one with each of the managers at a time they indicated their availability. The key stakeholder interviews were recorded after receiving consent to do so, and they were later transcribed. The key stakeholder interviews were conducted between 10 May 2021 and 26 May 2021, while the online survey with the beneficiaries was between 10 August 2021 and 10 September 2021.

6.4 Data collection tools and methods

The six interviews with the key stakeholders were conducted using six different questionnaires with questions tailor-made for each manager's roles and responsibilities in the Working for Water programme and *Prosopis mesquite* clearing project (see Appendix 1 for the key stakeholder interview questions). The questions in the beneficiary's online survey were framed around filling the gaps in understanding of the secondary data records and determining the impact of the *Prosopis mesquite* clearing project's work opportunities and training on their livelihoods. Both the key stakeholder interviews and the online survey were conducted in English. Some of the beneficiaries were native Afrikaans or Sesotho speakers, but they were able to understand the questions in the survey. In cases where there were some difficulties, there was a group chat created for the beneficiaries to message the researcher for clarification. The key stakeholder interviews were conducted with the help of a research assistant.

6.4.1 Key stakeholder interviews and beneficiary online survey questionnaires

The six virtual interviews that were conducted with the key stakeholders were in-depth and semi-structured. DeJonckheere and Vaughn (2019: 1) described semi-structured in-depth interviews as a qualitative interview method which is flexible in its approach to allow for the collection of open-ended data since the interviewees are given the space to express their "thoughts, feelings, and beliefs about a particular topic and to delve deeply into personal and sometimes sensitive issues". This approach to the interviews and the questionnaires that were drafted to guide them allowed the key stakeholders to volunteer their own personal insights on the dynamics of the *Prosopis mesquite* clearing from the perspective of their respective roles through an iterative process which consisted of follow-up questions and comments (DeJonckheere and Vaughn, 2019). The guiding questions consisted of questions related to the Working for Water programme and devolved to questions that were more specific to the *Prosopis mesquite* clearing project, according to each key stakeholder's roles and responsibilities. The interview questions were sent to the key stakeholders prior to the commencement of the interviews and follow-up emails were sent to communicate the times for the interviews. The online survey questionnaire consisted of closed-ended questions which included information on the beneficiaries' ages which was presented

through predetermined age ranges that the beneficiaries could select from, gender, household income information, number of household members including children, position in the household, education level, length of time and role in the *Prosopis mesquite* clearing project, training received, their levels of satisfaction with work and training, the ways in which they have used the work experience and skills outside the *Prosopis mesquite* clearing project and their beneficiary roles in the *Prosopis mesquite* clearing project. Some of the questions were a mixture of both closed and open ended as they included spaces for the beneficiaries to elaborate on their response as well as standalone questions which required the beneficiaries to give their perspective on the importance of the stipends from the *Prosopis mesquite* clearing project to their households. The beneficiaries were also asked to provide their perspectives on any changes to the project they would recommend. Regmi *et al.* (2016) stated that some of the advantages to online surveys is that they reduce the amount of time it takes to collect data from large groups of participants, are effective in collecting sensitive information and can also allow the researcher to collect information from populations that would otherwise be hard to reach. These advantages were also noted in this study in that since the beneficiaries were not working due to the pandemic restrictions during the time the survey was conducted, locating them to participate in the focus group discussions that were initially planned would have posed some difficulties. Online surveys, much like telephone interviews, may also allow research participants to volunteer information on sensitive questions with less awkwardness due to the social distancing afforded by the survey (Carr and Worth, 2001; Oltmann, 2016). However, like video interviews, surveys also sacrifice the portion of qualitative primary data collection which comes from observations.

6.4.2 Virtual interviews with key stakeholders

Video interviews were possible with the key stakeholders because they had internet access which would allow them to participate. These virtual interviews were an alternative to the face-to-face interviews that would have taken place had it not been for the COVID-19 pandemic restrictions. Although virtual interviews are time and cost-effective since no travel is required on the part of the researcher to conduct face-to-face interviews and that they also allowed managers who were not based in the Northern Cape to also participate, some necessary aspects of the data collection process were lost (Oltmann, 2016; Saarijarvi and Bratt, 2021). A downside to conducting in-depth interviews online, including video interviews where the interviewee can choose to turn off their camera, is that they are not like face-to-face in-depth interviews which allow the researcher the opportunity to gauge the interviewees' non-verbal cues such as body language and gestures which are especially useful when accompanied by the interviewees' intonation and choice of language (Oltmann, 2016; Maurer, 2021; Saarijarvi and Bratt, 2021). Although video interviews can enable this to a certain extent, the interviewees can request to not show their faces on camera, which could reduce the effectiveness of video interviews as an alternative to face-to-face interviews and subject them to similar limitations as telephone interviews (Oltmann, 2016).

Prior to commencing the video interviews, consent was asked from the key stakeholders to record the interviews, as attempting to manually take notes of what was being said would have had the potential of causing the researcher to miss important points that were made (Oltmann, 2016), and ensured that the interviews did not go beyond the time specified, which was a maximum of one hour each. The benefits to recording interviews are that it affords the researcher the opportunity to access the interviews at a later stage in much more detail than would be provided by field notes alone and assists in the storing of information that would not easily be accessed through memory recollection (Palmerino, 2006; Tessier, 2012).

6.4.3 Online survey questionnaire with beneficiaries

An online survey was used to collect the primary data from beneficiaries in place of the face-to-face focus group discussions that were initially planned prior to the pandemic. The beneficiaries were selected from each of the 38 clearing sites distributed around the five district municipalities in the Northern Cape (ZF Mgcawu, Namakwa, Frances Baard, John Taolo Gaetsewe and Pixley ka Seme) which were indicated in the secondary data records, as mentioned previously. An invitation message which included the link to the survey and the consent form was sent to them via email and messaging service for those whose email addresses were not included in the secondary data. After a day or two of no response or if the individual declined to participate, the process was repeated with other beneficiaries until the sample was complete. Although the method of collecting data was strictly online, there was a group chat in which the beneficiaries could ask the researcher clarifying questions and discuss the questions amongst themselves as some beneficiaries would provide clarity based on their understanding. This was the same group chat that was used to send the invitations for participations in the study. Although the group chat where the beneficiaries could get responses in real time may make this approach somewhat comparable with online focus groups, the structure of the survey questionnaire and the lack of face-to-face interaction via virtual meetings maintains its status as an online survey questionnaire. Compared to face-to-face focus group discussions, an online survey is both cost-effective and timesaving for similar reasons stated for the virtual in-depth interviews with the key stakeholders. Perhaps an advantage that online questionnaire surveys have over focus group discussions that are conducted face-to-face is that each beneficiary answered the questions individually and could choose to personally contact the researcher instead of on the group chat or in the presence of the other beneficiaries where they would perhaps feel pressured to match their responses to those of the other focus group participants. This addressed the issue of confidentiality which is often lacking in focus group discussions since in these sessions the research participants share their responses in the presence of the other research participants which, as Sim and Waterfield (2019) stated, could be compounded if there are participants in the group who are oversharing, thus increasing pressure on the others to do the same. Sim and Waterfield (2019) also stated that at times group discussions may take an

unanticipated turn when dominant group members lead the discussion. The online survey questionnaire avoided these pitfalls.

The in-depth key stakeholder interviews and online survey provided more insight into the secondary data by corroborating the findings in the secondary data and giving it a “voice”. The key stakeholder interviews also provided new perspectives through the personal accounts of each respondent’s experience being in the position of overseeing the functions of the *Prosopis mesquite* clearing project in their respective managerial positions. The beneficiaries’ survey sought to achieve something that is often missing in data on public works, which is to gather the perspectives of the beneficiaries who participate in the temporary work opportunities and are the recipients of the training received both of which are meant to improve their livelihoods beyond the programme.

6.4.4 Ethical considerations

Ethical clearance was applied for and obtained through the Rhodes University online ethics application system (ethics application review reference: 2019-0673-2095). Kapp (2006) stated five broad considerations when using human participants as a source of data. These were ensuring non-maleficence, beneficence, creating trust between the researcher and participants, giving informed consent so that participants know they can withdraw their participation anytime, and ensuring that their personal information is kept private (Kapp, 2006). All these factors related to ethics were observed throughout the process of conducting this research project. The participants were emailed the informed consent forms concerning the research project prior to requesting their consent to begin the in-depth key stakeholder interviews and online survey with the beneficiaries. The expectations of the researcher as it pertains to the role of the participants were also clarified prior to obtaining their informed consent. The data was kept confidential throughout the data collection process and afterwards. The key stakeholders were made aware that the video interviews were being recorded for the purposes of the current research only and they were asked for permission to record the audio of their responses (as majority of them had their videos off). At the end of each key stakeholder interview and online survey, the participants were assured that the results from this research would be sent to them for their own interest or to verify their accuracy.

6.4.5 Analysis of National Resource Management and Working for Water reports

National and provincial reports of the Working for Water programme were consulted including journal publications, book chapters and other online documents from government and organisations which were involved in the environmental public works programme space and Natural Resource Management. The consultation of the documents provided the researcher with the information that was necessary to approach the primary data collection process in terms of the formulation of the questions, identifying the individuals to recruit for participation in this study and identifying the gaps in understanding the topic at hand.

6.5 Data analysis

Since this research study employed a mixed methods approach, both qualitative and quantitative techniques were used to analyse the data. These techniques were chosen based on their complementarity in the way they each address the qualitative and the quantitative aspects of this research study, as well their complementarity with the mixed methods approach. A combination of the Sustainable Livelihoods Approach (SLA) and the Capability Approach (CA) were used in the analysis of the qualitative component of the data, and a Shapiro-Wilks Test for normality, one-way Analysis of Variance (ANOVA) and Kruskal-Wallis Test were conducted in RStudio for the quantitative component of the data, namely on the independent variable (annual budget) and the two dependent variables which were the workdays and training days, to show the effect that the changes in the annual budget had on each of the variables in terms of the number of annual workdays and training days that the *Prosopis mesquite* clearing project was able to create each year. The other part of the quantitative data was the statistical analysis of the demographic data which was presented in the form of descriptive statistical techniques like graphs and tables. Since EPWP projects seek to recruit 60 percent women, 20 percent youth and 2 percent of people with disabilities, this was the first point of analysis of the demographic data. The demographic data was sourced from the secondary data records that were obtained from the Northern Cape's Working for Water offices. The One-Way ANOVA Test, as a parametric test, is useful in determining the statistical differences in the means of several interventions (Kent State University, 2022). According to the assumptions of the One-Way ANOVA, the independent variable must be categorical, with two or more groups, while the dependent variables must be continuous (Mackenzie, 2021). In the data that is presented in Chapter 6, the budget is the independent variable which is categorised into years, while the workdays and training days are the dependent variables which are continuous. The study drew from information in EPWP reports and specifically those of the Working for Water programme environmental project reports on what the major input and outputs are from the socioeconomic interventions of the various projects launched under these programmes.

The qualitative component of the data was presented in the form of direct quotes from the key stakeholder interviews and from the beneficiary survey to gauge each side's perceptions of the dynamics within the *Prosopis mesquite* clearing project and to close gaps in understanding in the secondary data as well as to corroborate the patterns displayed in this data. Ruark and Fielding-Miller (2016) argued the importance of triangulating research findings obtained from different sources in validating the findings.

The key stakeholders were asked for their insights on the dynamics involved in the implementation of the *Prosopis mesquite* clearing project, the budgeting process and the system of allocating workdays and training days to each beneficiary, and the beneficiaries who were on the receiving end or were the participants to the outputs resulting from the processes at the managerial level were surveyed on the livelihood impacts or outcomes. The beneficiaries' perceptions of the impact on their livelihoods were

meant to give an indication of whether the *Prosopis mesquite* clearing project is achieving its overall objective of ensuring that the work experience and skills training was at least making a dent in the structural unemployment in the Northern Cape, which would in turn reduce poverty amongst the targeted groups which are the most susceptible to unemployment-induced poverty. The EPWP and Working for Water reports, which comprised the desktop research portion, were consulted in the process of generating the different elements (inputs, activities, and outputs) of the evaluation framework presented in Chapter 7. The responses obtained through the key stakeholder interviews were used to corroborate the information in the reports and served to provide a different perspective to the responses from the beneficiaries which were obtained through the online survey. This approach was in keeping with the qualitative data analysis part of the convergence triangulation design, where the quantitative and qualitative data are analysed separately and then brought together or converged to be compared and contrasted to build a coherent understanding of the phenomenon being studied (Creswell and Plano Clark, 2007). The descriptive statistics graphs generated from the demographic information were formulated in Microsoft Excel, while GraphPad Prism 9 was used to generate the graphs for the workdays and training days, while RStudio was used to perform the Shapiro-Wilk Test, Kruskal-Wallis Test, and the One-Way ANOVA. After the Shapiro-Wilk Test was performed to test for the normality of the yearly budget, workday and training days data distribution, the One-way ANOVA was performed to test the relationship between the normally distributed variables, namely the annual budget and the workdays. The training days data was non-normal and so the Kruskal-Wallis Test was used to test the relationship between the budget and the training days. The annual budget amounts were inflation adjusted into real terms.

Regarding the presentation of the qualitative data from the key stakeholder interviews and the beneficiary survey through direct quotes, prior to its convergence with the quantitative data, Corden and Sainsbury (2006) stated that direct quotations can be used to deepen readers' understanding, act as evidence for assertions made, be presented as a matter of inquiry, as an illustration and to give voice to research participants. The data for this research were aligned with several of these listed uses for direct quotations. The direct quotations from the interviews with the *Prosopis mesquite* clearing project key stakeholders or managers were used to explain how the quantitative data came about, to deepen readers' understanding of the statistical analyses presented, and to explain why certain decisions were made in the face of uncertainties and challenges and ultimately influenced the yearly data on budgets, workdays, and training days. The direct quotations from the online survey with the beneficiaries helped to give the beneficiaries a voice on their experiences on the *Prosopis mesquite* clearing project, and to explain from their perspective the processes that influenced the statistical data on the workdays and the training days. The perspectives of the beneficiaries were in addition to the budgetary and administrative challenges that were mentioned by the key stakeholders. The act of collecting this type of data from both those at the managerial level and

those on the receiving end of the implementation of the socio-economic interventions was to assist in forming a coherent story about the dynamics of the *Prosopis mesquite* clearing project's impact on beneficiaries' livelihoods. Furthermore, both the direct quotations from the key stakeholders and the beneficiaries provided support for and corroborated the quantitative data presented through the statistical analyses. This was the point of convergence of the quantitative and qualitative aspects of the data, which occurred in the discussion.

6.6 Combining the strengths of the Sustainable Livelihoods Approach (SLA) and Capability Approach (CA) to analyse the factors affecting the achievement of desired livelihood outcomes

The Sustainable Development Approach and the Capability Approach are two of the leading theoretical frameworks in the academic development discourse. Ought and Wheelock (2003) identified the complementary relationship between the two approaches, by stating that one's capabilities are what enable them to access opportunities for the achievement of wellbeing. The asset endowments of each household, which inform the structure of the Sustainable Livelihoods Approach directly reflect or are the outward expression of the innate capabilities of each individual member of a household. These livelihood assets are neatly illustrated in the Sustainable Livelihoods Framework as human capital, physical capital, natural capital, financial capital and social capital (Serrat, 2008; Morse *et al.*, 2009). The usefulness of the combined theoretical frameworks in the analysis of the qualitative data is that it assisted in highlighting how the innate capabilities of the beneficiaries were enhanced through the work experience and training provided through the *Prosopis mesquite* project in Phase II and Phase III and how this manifested through improvements to their various livelihood assets towards the improvement of their overall individual wellbeing. This informed the outcomes section of the evaluation framework. The impact of the training on their capabilities was assessed through questions that aimed to investigate how beneficial the additional work experience and training were in assisting them to gain access to opportunities outside the *Prosopis mesquite* clearing project for the expansion of their individual livelihood asset endowments. This qualitative information was captured through questions that were aligned with each of the five livelihood assets to identify if there have been any improvements due to the beneficiaries' participation in the *Prosopis mesquite* clearing project. Oughton and Wheelock (2003) stated that combining the two theoretical approaches in this manner adds to the advancement of the Capability Approach, as the Sustainable Livelihoods Approach provides the necessary outlet for it to be applied to real life scenarios. On the other hand, the philosophical approach of the Capability Approach allows for the exploration of the institutional elements, indicated by the policies and institutions section in Figure 5.3 below, which are inherent in socio-cultural environments and which impact on individuals' ability to achieve their desired livelihood outcomes (Oughton and Wheelock, 2003; Robeyns, 2003; Harcourt, 2017). These socio-cultural factors within these environments include gender disparities which often affect women's ability to take advantage of education

and economic opportunities, racial issues within society and other socio-political issues which are inherent within certain societies dictating individual household dynamics (Dreze and Sen, 1995; Robeyns, 2003; Chant, 2004; Harcourt, 2017). The flexible nature of the Capability Approach leaves it to the discretion of the practitioner to specify what the capabilities and functionings (outward expression of the capabilities) are in the context that is being studied (Sen, 1990; Robeyns, 2003; Nussbaum, 2011).

Merging the two development approaches helps to overcome one of the shortcomings of the Sustainable Livelihoods Approach, which is its tendency to take on a top-down approach, prescribing the development outcomes based on a prescribed list of poverty indicators and how they ought to be addressed, instead of fully accounting for the uniqueness of each context and heeding the research participants' suggestions (Kleine, 2008). Therefore, the Capability Approach brings the focus back on the concept of human agency, which is people's ability to choose for themselves their 'valuable beings and doings' which will ultimately yield their desired livelihood outcomes (Sen, 1990; Kleine, 2008). In turn, these context-specific capabilities and functionings are packaged under each of the livelihood assets specified in the Sustainable Livelihoods Framework. The EPWP and its various programmes, in this case the Working for Water programme, targets people from poor communities who, according to Kleine (2008), might not have been in a position in their lives to choose the livelihood outcomes they desire because they were hindered by a lack of certain capabilities. Accordingly, these capabilities are those which underlie chronic unemployment and poverty which ultimately contribute to inequality within the country. Therefore, using the Capabilities Approach and the Sustainable Livelihoods Approach in this way to analyse the qualitative data component of this research study assisted in determining the perceptions of the beneficiaries in terms of how the *Prosopis mesquite* clearing project impacted their livelihoods, unpacking the state of their individual and collective livelihood assets as a consequence of their engagement in the *Prosopis mesquite* clearing project, and how more livelihood outcomes can be achieved from improvements to the sequential process of interactions between the inputs, activities and outputs. This was pursued through the online survey which sought to unpack the impact that the *Prosopis mesquite* project has had on their livelihoods through temporary employment contracts and training opportunities.

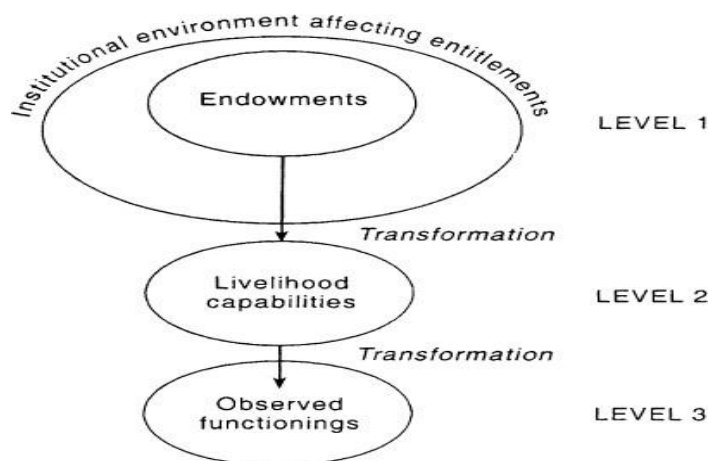


Figure 6.6.1: Adaptation of Sen’s framework as a model to assess household wellbeing.

Source: Oughton and Wheelock (2003)

Oughton and Wheelock (2003) formulated the above framework (Figure 6.6.1) as a practical guide for applying Sen’s Capability Approach to real world scenarios, particularly to highlight the relationship between individual wellbeing and household livelihood. The endowments in Level 1 of Figure 5.2 refer to the tangible and intangible asset endowments owned by individuals which are those they already possess, which they use to make claims to other resources using the channels afforded to them by the socio-political environment and market exchanges (SOAS, 2011). The ability to convert the asset endowments into livelihood capabilities (Level 2) is an exercise of ‘entitlements’ as Sen (1981) argued that each person has a level of entitlement to goods and services which they can access with their present asset endowments. This exercise of entitlements occurs within an enabling social, political and economic environment (Oughton and Wheelock, 2003; SOAS, 2011). Since it is the institutional environment that is responsible for mediating the transformation of asset endowments into livelihood capabilities (Level 2), an entitlement failure can be manifest when individuals fail to transform their asset endowments into capabilities due to lack of institutional support for people to access the opportunities that they need to achieve their capabilities (Sen, 1981; Oughton and Wheelock, 2003; Lienert and Burger, 2015). This consideration of providing people with access to opportunities for capabilities achievement is in contrast with the usual approach to poverty interventions of merely providing the means to cope with covariate or idiosyncratic shocks or to compensate for the capabilities that are missing instead of seeking to make the connection between the asset endowments that individuals have and the institutional environment that would need to be cultivated to enable people to achieve the missing capabilities (Lienert and Burger, 2015). Level 3 in Figure 6.6.1 refers to the observed functionings which result from the conversion of capabilities into functionings, again with the help of an enabling institutional environment (Ought and Wheelock, 2003). The relationship between capabilities and functionings is that the latter is an outward expression of what can be achieved through the capabilities of the individual or household within an institutional environment which imposes both various levels of opportunities and constraints (Oughton and Wheelock, 2003; SOAS,

2011). In the case of the *Prosopis mesquite* clearing project's socioeconomic interventions which are implemented through the temporary jobs and training opportunities to the targeted groups of beneficiaries, the asset endowments (Level 1 in Figure 6.6.1) were those that the beneficiaries possessed prior to joining the *Prosopis mesquite* clearing project.

Since the asset endowments are both tangible and intangible, they can be classified into the five livelihood asset classes outlined in the Sustainable Livelihoods Approach, namely, human capital, social capital, financial capital, physical capital and natural capital (Figure 6.6.2 below) (DFID, 1999). The EPWP (and by extension, the Workingfor Water programme) aims to improve the employment prospects of youth, women, and disabled people through providing work experience and training and these are meant to directly enhance the human capital endowments of the beneficiaries such as their education levels and skills before the *Prosopis mesquite* clearing project. Information on the other livelihood asset endowments were obtained through the online survey that was conducted as part of the primary data collection. Proceeding from that point of the livelihood assets that the beneficiaries already possessed prior to participation in the *Prosopis mesquite* clearing project, the institutional environment created and provided by the EPWP is what is meant to enable the conversion or transformation of these asset endowments into capabilities (Level 2 in Figure 6.6.1). If the institutional environment governing the *Prosopis mesquite* clearing project does not enable the proper mediation of the process of transformation of asset endowments into livelihood capabilities due perhaps to administrative challenges in the implementation stages, an entitlement failure could happen which would manifest as beneficiaries not being able to secure employment opportunities in the labour market after receiving work experience and training from the *Prosopis mesquite* clearing project. The failure to properly transform beneficiaries' pre-existing livelihood assets into capabilities in a way that matches with the skills needs of the labour market could result in the beneficiaries returning to the *Prosopis mesquite* clearing project a couple of times, thus threatening to turn this project into a typical poverty intervention which only seeks to assist those on the receiving end of the socioeconomic intervention to cope with covariate or idiosyncratic shocks or to compensate for the capabilities that are missing, in this case financial capital, which would be compensated for through the wages beneficiaries receive through participation. The impact of this on the next stage, depicted by Level 3 in Figure 6.6.1, would be a lack of observable outcomes which would be the short and long-term impacts of the *Prosopis mesquite* clearing project on the beneficiaries' livelihoods. Since the components of the Capabilities Approach leave themselves open to the interpretation of the practitioner according to the context being considered, the embeddedness of the capabilities and functionings within the five livelihood assets in the Sustainable Livelihoods Framework (Figure 6.6.2) allows for those capabilities and the functionings flowing from them to be investigated and identified. The relevance of the framework presented in Figure 6.6.1 by Oughton and Wheelock (2003) to this research study is that it highlights one of the ways by which the Capability Approach and the Sustainable Livelihoods Approach (Figure 6.6.2

below) can be combined to make the former more useful to utilise in real life examples.

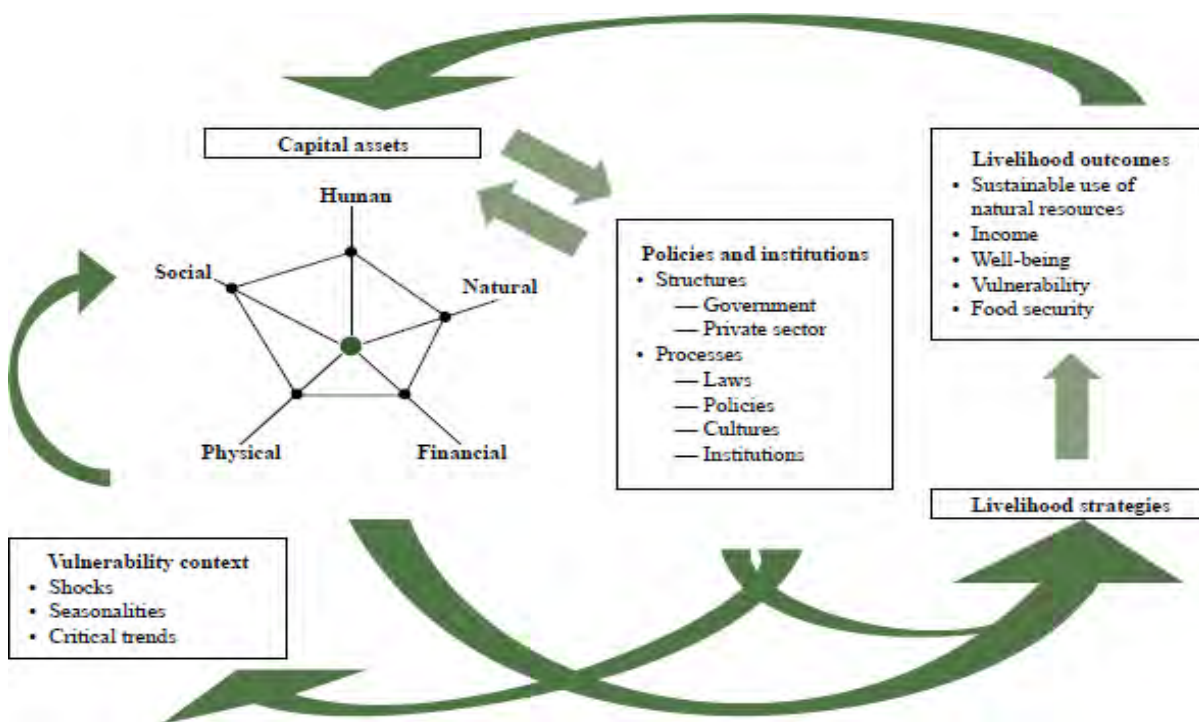


Figure 6.6.2: The Sustainable Livelihoods Framework

Source: Serrat (2008)

6.7 Reliability and validity of the data analysis methods

Since this research study employed a mixed methods approach, the reliability and validity of the results is determined by whether the appropriate mixed method approach was used to combine the qualitative and quantitative data (Creswell and Plano Clark, 2007; Creswell, 2015). The researcher must select the type of mixed methods based on the aims and purpose of the study they are undertaking (Creswell, 2015). The qualitative and quantitative approaches also have their own respective limitations. For instance, the quantitative approach is often criticised for being devoid of any real meaning to society and the complexities inherent thereof (Daniel, 2016). In this case, the role of the qualitative approach is to introduce a human face to the often-clinical approach of the quantitative approach (Ryan, 2006; Daniel, 2016). Moreover, the uniqueness of qualitative findings assists in shedding light on the context in which a study is being conducted. Although one of the criticisms of the qualitative approach is that it does not possess enough scientific rigour to be reliable (Daniel, 2016), the outcomes from qualitative studies are often highly reliable since the results cannot be seen as mere coincidence due to their regard for context (Lichtman, 2013; Daniel, 2016). The concept of mixed methods builds on these and other limitations of the qualitative and quantitative data collection and analysis methods. The reliability and validity of data from a mixed methods study is enhanced by employing the strengths of each approach and offsetting the

limitations of the one with the other. This research study employed a convergent triangulation design to achieve this. The data were obtained through in-depth interviews with key stakeholders and through an online survey with beneficiaries and voice recordings were taken with the permission of the research participants. A reflexive approach was adopted throughout the sampling, data collection and data analysis to ensure that the execution adhered to and was coherent with how each method was supposed to be carried out. Upon completion of the research study, the results were made available to the participants on request. Reflexivity can be defined as a process where the researcher displays a certain level of self-awareness as it relates to how their personal assumptions from their own background influenced the research process and outcomes (Palaganas *et al.*, 2017). If the researcher does not pay attention to this, it has the potential to deviate them from the chosen research methods and could ultimately compromise the results. To remedy this, reflexivity needs to be embedded within each step of the research process (van de Riet, 2012; Palaganas *et al.*, 2017).

6.8 Conclusion

This chapter discussed the sampling, data collection and data analysis methods that were used in carrying out this research study. This study was largely qualitative in its approach and incorporated quantitative elements to perform summary and other statistical analyses on annual project funding, number of workdays and training days allocated to each beneficiary. This research study used the case study of the Northern Cape's Prosopis mesquite clearing project, although the evaluation framework which is the product of this research study can be broadly applied to other environmental public works programmes of a similar design. Due to the COVID-19 restrictions currently in place, the interviews were conducted via online channels. Despite this being a drawback since face-to-face interviews were preferred for this type of study, the benefits to conducting interviews via videos have been highlighted in this chapter. The study employed a mixed methods approach for the analysis of the data; using the Capabilities Approach and the Sustainable Livelihoods Approach for the qualitative components, and various statistical tests to determine the effect that changes in the annual budget were having on the workdays and training days that the Prosopis mesquite clearing project was able to create each year. The research findings obtained through the methods discussed in this chapter are outlined in the following next three chapters.

CHAPTER 7: The key stakeholders' perspectives of the success of the *Prosopis mesquite* clearing project's social development initiative in achieving its objectives and the beneficiaries' perceptions of the subsequent impact on their livelihoods.

7.1 Introduction

This chapter presents an analysis of data from three sources, namely, the records that were obtained from the Working for Water programme managers, the key stakeholder interviews with the managers of the Working for Water programme and by extension the *Prosopis mesquite* clearing project, and the online survey that was conducted with the people who were participating in the *Prosopis mesquite* project as beneficiaries. This chapter presents results which answer the first two research questions outlined in chapter 1. As already discussed in Chapter 6, the online survey was conducted in place of the focus group discussions which could not be conducted due to the COVID-19 travel restrictions at the time of the scheduling of the focus groups. The different perspectives from the key stakeholders and the in-field workers (or beneficiaries) on the impact of the *Prosopis mesquite* clearing project's socioeconomic intervention on the beneficiaries' livelihoods provided rich insights both from the planning side and from the side of those who were on the receiving end of the job creation and training interventions administered through the *Prosopis mesquite* clearing project. The analyses are presented in two sections. The first section discusses the key stakeholders' responses, delving into the planning process and the selection of the inputs and outputs for projects which are carried out by the Working for Water programme, which include the *Prosopis mesquite* project. The second section presents the analysis and discussion of the online survey which was conducted with the beneficiaries of the Northern Cape's *Prosopis mesquite* clearing project. The beneficiaries' perspectives on how the project has impacted their livelihoods provided another layer of insight into the impact of the *Prosopis mesquite* clearing project's socioeconomic interventions in addition to that expressed by the key stakeholders. The combined theoretical foundation of the Sustainable Livelihoods Framework and Capabilities Approach was the lens through which the online survey questions were framed as well as the discussion of the results in light of the research questions. The responses from the key stakeholder interviews and the in-field workers not only provided rich insights into the dynamics of the Northern Cape's *Prosopis mesquite* clearing project, but they also assisted in corroborating the secondary data records which were obtained from the Working for Water offices. The chapter concludes with an overall view of what the two perspectives presented on the *Prosopis mesquite* clearing project's impact on livelihoods convey in terms of how successful the project has been in mitigating poverty

through creating employment for the targeted groups and preparing them for permanent employment through the work experience and training it provides.

7.2 The targeting objectives of the *Prosopis mesquite* clearing project in Phases I, II and III

This section identifies the beneficiaries that participated in the *Prosopis mesquite* clearing project in the project phases under review by way of presenting the demographic information from the secondary data records. The EPWP sets targets at the national level, which its smaller projects are tasked to follow to meet the overall objectives of the Working for Water programme and the EPWP, which are to target marginalised people in impoverished communities. The recruitment targets set by the EPWP are 60 percent women, 2 percent of people with disabilities and 20 percent youth. The remaining 18 percent of recruits can be anyone who is willing to work and is recruited onto the projects after the specific targets have been met. Table 7.2.1 below shows the overall numbers of people that the *Prosopis mesquite* clearing project in the Northern Cape managed to recruit in the pursuit of these targeting objectives in the three phases under review, while Table 7.2.2 disaggregates the numbers by the specific targeted groups.

Table 7.2.1 Total beneficiaries divided into the *Prosopis mesquite* clearing project phases

Five-year project phase	Total beneficiaries
Phase I (2004 – 2008)	2 421
Phase II (2009 – 2013)	2 861
Phase III (2014 – 2018)	3 756

Source: *Prosopis mesquite* project Northern Cape; author's own analysis)

Table 7.2.2: Percentages of women, youth and disabled people recruited into the *Prosopis mesquite* clearing project in Phases I, II and III

Project phases	Disabled people	% Disabled	Women	% Women	Youth	% Youth
Phase I	57	2.4%	1 230	51%	506	21%
Phase II	13	0.45%	1 256	44%	1 317	46%
Phase III	16	0.41%	1 779	46%	2 364	61%

Source: *Prosopis mesquite* project Northern Cape; author's own analysis)

Beginning with the analysis of the percentage of disabled people, the types of disabilities that were disclosed by the beneficiaries in this category were amputee, asthma, hearing impaired, intellectual disability, unspecified physical disability, epileptic, undisclosed medical condition, sight impaired. It was necessary for the beneficiaries to disclose the types of disabilities so that the necessary accommodations can be made at the clearing sites and since the type of disability could potentially impact on the beneficiaries' ability to perform the required tasks involved in the clearing of *Prosopis mesquite* trees. In Phase I there were 57 beneficiaries who had disabilities (Table 7.2.2). Two percent of 2 421, which is the total number of beneficiaries in Phase I, is 48, which means the target was not only met but also exceeded

by nine more people. In Phase II, the objective of recruiting 2 percent of people with disabilities was not met. The project only managed to recruit 13 people with disabilities, when 2 percent of 2861 is 57. This meant that there was a shortfall of 44 people to achieve the 2 percent target. In Phase III, the 2 percent of people with disabilities target was also not met as there were only 16 people with disabilities, whereas 2 percent of 3 756 is 75 people. There were 59 people less than the targeted percentage.

Turning to the numbers of women beneficiaries, the target of recruiting 60 percent was not achieved in any of the three project phases under review (Table 7.2.2). The *Prosopis mesquite* project's inability to meet the 60 percent target for women could be due to socio-cultural factors which influence whether women can participate in paid work outside the home, including in public works programmes (Beneria *et al.*, 2015). Some of the sociocultural factors that have been noted in the literature as hindrances to women's participation in paid work outside the home are caring for children, the elderly and ill family members in the home and being the homemaker (Datta, 2018; International Labour Organisation, 2018). Although the household dynamics of the women beneficiaries were not included in the data, one of the things that often result from these factors is that they often result in women having lower levels of education compared to men, which was a factor which was reflected in the data analysed in this research study (Figure 7.2.2) (SIDA, 2017; Bertocchi and Bozzano, 2019). The gender-focus of the EPWP, which is evidenced by the programme's stated objective of hiring more women, suggests this awareness of women's often disadvantageous position when it comes to economic considerations. This practice of preferential targeting in the EPWP projects is instrumental in not only promoting equality in permanent work settings once the women beneficiaries move on to better forms of employment after their participation in public works programmes, but also to ensuring that women also partake in the direct employment benefits in the EPWP projects alongside the male beneficiaries (Dejardin, 1996; FAO, 2018). This mandate of recruiting more women was instituted as one of the EPWP's national objectives back in 2004 when the scope of South Africa's public works programmes was expanded at the Growth and Development Summit (Phillips, 2004). This was mandated despite the programme managers' awareness that some of the manual labour may not be suitable to be carried out by women due to issues of safety, as stated by one of the key stakeholders later in this chapter. This highlights the EPWP's commitment to uplifting women from impoverished areas.

To counteract the tendency of these sociocultural factors to restrict and interfere with women's participation in paid work (Sharma *et al.*, 2016; Ruiz and Nicolas, 2018), public works programmes sometimes make special provisions for women. For instance, a public works programme which operates in India, the Maharashtra Employment Guarantee Scheme (Maharashtra EGS), made special provisions for women by ensuring that the sites where the work was being conducted were within walking distance, provided childcare facilities, offered maternity benefits, and paid women equal wages to men (Chari, 2006).

The EPWP, on the other hand, seems to have embraced the care economy into its four sectors. Accommodations for women beneficiaries in the EPWP are provided through the Home Community Based Care (HCBC) and the Early Childhood Development (ECD) components of the Social Sector. The HCBC employs beneficiaries as formal and informal caregivers to provide health services to people in their homes or in places that community members can easily access near their homes (Department of Public Works and Infrastructure, 2018). The Early Childhood Development (ECD) component is there to provide education, nutrition, health services and psychosocial needs within the home or community in the temporary absence of their parents or caregivers (Department of Public Works and Infrastructure, 2018). Although these services are not designed specifically and exclusively for the benefit of women beneficiaries in the EPWP, they can also benefit from them, provided the Social Sector is being implemented in the region alongside the EPWP project which is the primary focus, which in this case is the *Prosopis mesquite* clearing project.

The result of the EPWP objective of targeting 20 percent youth in the case of the *Prosopis mesquite* clearing project is presented in Table 7.2.2, which shows the numbers of youths that were recruited in the project phases under review. The youth age range that was used in the analysis was the nationally defined range of 15 to 34 years of age, which encompasses those who qualify to be in the labour force. Using this youth age range, the 20 percent target was met and exceeded in all the phases. As shown in Table 7.2.2, there were 506 youths recruited to participate in the *Prosopis mesquite* project in Phase I. There was an excess of 22 more youth beneficiaries over the 20 percent target, which would have been 484 beneficiaries (20 percent of 2 421). In Phase II, the target was exceeded by 745 more youths on top of the 572 or the 20 percent of the 2 861 beneficiaries, bringing the total number of beneficiaries in the youth category in Phase II to 1 317. In Phase III, 20 percent of the total number of beneficiaries was 780, whereas the actual number of youths recruited was 2 364, which meant that the target was exceeded by 1 584 youths. The calculations show that the objectives of setting specific targets for the recruitment of youth were not necessarily adhered to. However, the prevalence of youth in the *Prosopis mesquite* project, where there were more temporary jobs and training opportunities given to youth above the set targets, reflects the persistent national problem of high youth unemployment in South Africa (StatsSA, 2020; Maluleke, 2021; Mlatsheni and Graham, 2021). Phases II and III show that the number of youths that were recruited were more than double the numbers that would amount to the 20 percent target in each phase. Phase II (2009 to 2013) coincides with the period of the global financial crisis which began in 2008 and resulted in South Africa being plunged into a recession (Steytler and Powell, 2010). One of the impacts of the recession which would have affected the rates of employment would have been the employment decisions of firms, as Brothwell (2020) stated that the 2008 global financial crisis resulted in a loss of a total of 1 million jobs in South Africa. This impact could reflect firms' decisions to retrench some workers while retaining more experienced workers to continue production and avoiding training costs which they would incur if they hired youth with little to no work

experience (Eichhorst *et al.*, 2014; Kasriel, 2018; Grabmeier, 2021). As a result, more youths would have been overlooked for employment in the mainstream labour market. This provides grounds for explaining why the 20 percent target for youth beneficiaries was exceeded not only in Phase II, but in all the three phases. It could be reasoned that more youth turned to the EPWP for temporary jobs and training opportunities to support themselves considering the lack of employment prospects in the labour market. Moreover, they would have done so to improve their chances of finding more sustainable employment in the future as the EPWP work experience and training would improve their human capital. This demonstrates the EPWP's important role as one of the South African government's Active Labour Market Policies (ALMPs), which Meth (2011) termed the 'employer of last resort'.

Distilling the analysis to the Northern Cape province where the *Prosopis mesquite* clearing project operates shows a similar trend of high unemployment. In 2009, at the start of Phase II of the *Prosopismesquite* clearing project, unemployment in the Northern Cape was 26.6 percent compared to 23.7 percent for the rest of South Africa (Provincial Treasury, 2018). Breaking down the unemployment in the Northern Cape further by youth (15 to 34) and adult (35 to 64) labour market participants showed that the labour market participation of youth was lower compared to the adult cohort (Northern Cape Provincial Treasury, 2018). An Economic Intelligence Report by the Northern Cape's provincial DEDEAT (2014) diagnosed the high levels of unemployment levels as emanating from poor quality of education and a mismatch in skills between those required by the province's job market, and those possessed by those in the labour force. Furthermore, the report stated that the reasons for the chronic unemployment problem in the Northern Cape was due to the South African economy transitioning to focusing more on the tertiary sector even though the country remains in a competitively advantageous position in mining and agriculture, which are two of the major sectors in the Northern Cape province (DEDEAT, 2014). Therefore, with these sectors not absorbing the required numbers of job seekers to reduce the unemployment levels, the rates increase. Moreover, the age structure and gender distribution in the Northern Cape showed a tendency to having more youth and women within the population, which translates to these groups being the ones who are more represented in the unemployment statistics (DEDEAT, 2014; DEDEAT, 2015). This highlights the importance of the *Prosopis mesquite* clearing project which, like other EPWP projects, focuses on employing majority women and youth. The *Prosopis mesquite* clearing project exceeding the recruitment targets in Phase I (2004/5 to 2008) and in Phase II (2009 to 2013), which are covered in the DEDEAT (2014) report discussing the reasons for the chronic unemployment amongst many in South Africa, highlights the importance of the *Prosopis mesquite* clearing project in absorbing and providing the necessary skills and work experience to those who need it and are willing to temporarily work for a below labour market wage.

7.3 Age categories by gender in the three project phases

This section presents the data on the beneficiaries' age distributions in Phases I, II and III of the *Prosopis mesquite* clearing project. The ages are disaggregated into different age categories to bring into more focus the age profiles considering labour market considerations in each of the phases under review. The disaggregation of the age distribution allowed for the analysis of the data in the context of the national and provincial issue of high unemployment, which affects certain age groups more than others. With this contextual understanding, the meeting of the EPWP targets by the *Prosopis mesquite* clearing project reflects the project's role as an Active Labour Market Policy and its impact would be reflected by the number of beneficiaries that were absorbed into the *Prosopis mesquite* clearing project, especially during times of economic disruption such as during the 2008 global financial crisis which also affected the South African economy. However, the *Prosopis mesquite* clearing project's impact in reducing unemployment in the Northern Cape may be difficult to determine due to the temporary nature of EPWP employment. Furthermore, the absorption of those who were previously in the *Prosopis mesquite* clearing project into the Northern Cape's labour market may also be difficult to quantify since there is currently no system in place to monitor the progress of the beneficiaries in the different categories after they have exited the Working for Water projects. This lack of outcome tracking complicates the process of attempting to determine the *Prosopis mesquite* clearing project's impact on unemployment in the Northern Cape province. Therefore, the observable impact of the *Prosopis mesquite* clearing project may be limited to short-lived stipend payments that the beneficiaries receive while employed on the project either once-off or for repeated cycles. Tables 7.3.1 to 7.3.3 below show the age distribution in the *Prosopis mesquite* project for the three phases.

Table 7.3.1: Age categories in Phase I (2004 - 2008)

Age category	Male	Female	Total in age category	% Total
16 - 35	294	214	508	21.1%
36 - 64	842	978	1 820	75.5%
>64	54	29	83	3.4%
*Total beneficiaries in Phase I			2 411	

*There were beneficiaries' ages that were unspecified; hence the total here is 2 411 instead of 2 421

Source: *Prosopis mesquite* project Northern Cape; author's own analysis)

Table 7.3.2: Age categories in Phase II (2009 – 2013)

Age category	Male	Female	Total in age category	% Total
22 - 35	671	442	1 113	38.9%
36 - 64	365	1 337	1 702	59.5%
>64	38	8	46	1.6%
Total beneficiaries in Phase II			2 861	

Source: *Prosopis mesquite* project Northern Cape; author's own analysis)

Table 7.3.3: Age categories in Phase III (2014 – 2018)

Age category	Male	Female	Total in age category	% Total
18 – 35	1 152	990	2 142	57%
36 – 64	871	714	1 585	42%
>64	27	2	29	1%
Total beneficiaries in Phase III			3 756	

Source: *Prosopis mesquite* project Northern Cape; author’s own analysis)

Tables 7.3.1 to 7.3.3 show the effectiveness of the *Prosopis mesquite* project in absorbing people who are within the working age range of 15 to 64 years, which is considered the age category of those who are of working age. The working age population is defined as the proportion of people out of a region’s population who are active or would be expected to be active participants in the economy or labour force (International Labour Organisation, 2022; OECD, 2022). Working from this definition, the people who were participating in the *Prosopis mesquite* clearing project during these phases were not able to participate in the labour force due to not being able to find jobs mainly because of a mismatch in skills. Therefore, the *Prosopis mesquite* clearing project was functioning as an employer of last resort (Meth, 2011).

Although no beneficiaries under the age of 18 years were selected to participate in the online survey for this research study, there were indications in the Working for Water secondary data records that there were some beneficiaries who were under 18 years (see Table 7.3.1). Although for ethical reasons beneficiaries who were under the age of 18 were excluded from participating in the online survey, this research study employed the South African National Youth Policy’s (2014) definition of youth which it describes as those in the age categories from 14 to 35 years of age. However, even though they were excluded from the analysis, they were still included in the age categories presented in the tables above which were generated from the secondary data records. The inclusion of beneficiaries under 18 years following this guideline by the National Youth Policy (2014) assisted in highlighting the role of the *Prosopis mesquite* clearing project in providing employment and training opportunities to youth in the Northern Cape province. As such, the percentages of youths in the 14 to 35 age categories across the three project phases showed a gradual increase from 21.1 percent in Phase I, 38.9 percent in Phase II and 57 percent in Phase III (Tables 7.3.1 to 7.3.3). The percentage point increase of 17.8 percent of youth involvement in the *Prosopis mesquite* clearing project between Phases I and II coincided with the recession period that was caused by the 2008 global financial crisis, which negatively affected economic growth and job creation in South Africa and affected inexperienced and unskilled youths more disproportionately (Steytler and Powell, 2010; Selassie, 2011; Brothwell, 2020). Looking at the overall percentages of beneficiaries in the working age population category (15 to 64 years) in Tables 7.3.1 to 7.3.3 shows that the *Prosopis mesquite* clearing project was also absorbing a significant number of those who were willing and available to work

but were hindered by a lack of skills or unavailability of jobs in the Northern Cape. Adding to the definition of working age population, the International Labour Organisation (2022) described the categories of people who were of working age as those who are either active in the labour market, those who are still looking for jobs, discouraged people, and others who are engaging in other activities and others who do not have an interest in being a part of the labour market. The beneficiaries in the *Prosopis mesquite* clearing project, or any EPWP project for that matter, could be characterised as those who are perhaps straddling the two categories of both engaging in other activities, since the EPWP pays below market wages since it functions as a bridge between unemployment and the job market (Altman & Hemson, 2007; South African Cities Network, 2017), while also actively looking for employment. The EPWP wages are purposely set below the labour market minimum wage to prevent the leakage of EPWP benefits to the non-poor and to ensure self-targeting amongst the poor who would otherwise not have other options to earn an income (McCord, 2003). The age categories also show that there were beneficiaries who were past their years of being active in the labour market and in their retirement ages, but were nonetheless still participating in the *Prosopis mesquite* clearing project. Although the manual intensive-labour work carried out in EPWP projects may not be suitable for elderly people, which would explain their low percentages in comparison to the youth and work age population percentages (Tables 7.3.1 to 7.3.3), their inclusion is for the purpose of fulfilling the overall function of EPWP projects which is to also facilitate income transfers to poor households through the short- and medium-term jobs it provides (South African Government, 2022). As such, although their participation may not be motivated by a desire to find a job afterwards, the income from the EPWP assists in supplementing their government old age grants if they are also a recipient of the grant (Martins, 2015).

Table 7.3.4: Different government social grants received by beneficiaries' households

Government social grant received	Number of <i>P. mesquite</i> beneficiaries
Old age grant	2
Disability grant	2
Child support grant	39
Not a recipient of social grant	241

Source: *Prosopis mesquite* project Northern Cape; author's own analysis)

Women were overall highly represented across the age categories due to the 60 percent target set by the EPWP. However, in terms of the age categories, in Phase I and Phase II, the majority of the women were between the 36 to 64 age category (Table 7.3.1 and 7.3.2). Hochfeld *et al.* (2017) stated that such patterns reflect the disadvantageous position that women are often placed in the labour market, hence the EPWP's specific focus on targeting more women for its projects in addition to the Programme's purpose of

responding to the needs of people of working age who are not eligible for any of the government social grants. Perhaps consistent with cultural demands on women's time was their low participation in the age category of older than 64 years across all the three project phases. Ntsomi (2016) investigated the role of grandmothers as the primary caregivers in the lives of their grandchildren in a township in King Williams Town and found that the limitations due to their old age and the overwhelming demands of having to take on the parental role posed significant limitations on the grandmothers' ability to participate in other activities outside the home. An indication of the possibility of this was the presence of school going children in the beneficiary data that was provided by the Working for Water offices for the purposes of this research study (Table 7.3.4 below). The income from the government child support grants, which were a more stable source of income for the families as well as other grants, sustained some of the receiving beneficiaries' families in the absence of the forgone *Prosopis mesquite* clearing project stipends in case of those with lower participation rates in the project. There was a total of 469 children of school going age that were declared by the beneficiaries, but only 39 were receiving the child support grant. Likewise for the old age and disability grants, which may suggest that either they chose to not disclose this information, or they were not recipients of the respective government social grants.

Although this scenario may seem like it is suggesting that these two sources of social intervention, namely government social grants and the EPWP stipends, are substitutes of each other for low-income households, especially considering the assertions made in the report by the Education and Training Unit (2011) which stated that one of the conditions for potential EPWP participants was that they should not be recipients of government social grants. However, this does not seem to be a stringent rule since in the data records analysed in this chapter which were provided by the Northern Cape Working for Water offices, there were beneficiaries who indicated being recipients of at least one government grant (Table 7.3.4). Although this is perhaps an area for further research, the two sources of social intervention can logically be thought of as enhancing one another's impact on mitigating the effects of household poverty (Dicks *et al.*, 2011).

7.4 The education levels of the *Prosopis mesquite* project beneficiaries and the job positions and training received

This section discusses the links between beneficiaries' education levels and their job position in the *Prosopis mesquite* clearing project. Since the premise of the EPWP is to equip chronically unemployed people with low education and skills levels with work experience and training, analysing the relationship between the education levels they came on the project with and the work they are assigned as beneficiaries are important to ensure that their human capital is being improved. Embarking on this exercise is important for tracking the longer-term impacts of a project using the Program Logic Model. The analysis was conducted to observe whether a beneficiary's level of education influenced the job category they were

ultimately assigned to in the Northern Cape’s *Prosopis mesquite* clearing project. This analysis is viewed through the lens of the theoretical framework of the combined Sustainability Approach and the Capabilities Approach. As one of the ways by which the Human Capital livelihood asset can be enhanced, education and training are thus important considerations in ensuring that the beneficiaries are able to achieve their desired livelihood outcomes and the lives they have reason to value (Garrett, 2003). In this case, education and training would enhance their innate capabilities of knowledge and skills, which would act as vectors of functionings that are carried out to achieve the desired livelihood outcomes and assets. In the case of the beneficiaries of the *Prosopis mesquite* clearing project, the desired outcomes and livelihood assets are the jobs they would be able to get after their participation in the project and the livelihood assets they would potentially have access to. The relationship between gender and education is explored within the context of whether the different genders’ education levels impacted their job title in the *Prosopis mesquite* clearing project. These data records were obtained from the demographic information that was provided by the Working for Water programme managers who were also involved in the management of the *Prosopis mesquite* clearing project.

Table 7.4.1: Gender distribution in each of the *Prosopis mesquite* clearing project job categories across Phases I, II and III.

Job title	Phase I		Phase II		Phase III	
	Male	Female	Male	Female	Male	Female
Herbicide Applicator	13.96% (338)	11.03% (267)	8.3% (237)	11% (327)	7% (271)	7% (267)
Chainsaw Operator	7.22% (175)	1.49% (36)	3.6% (102)	0.03% (1)	1.9% (70)	0.1% (3)
General Labourer	17.96% (435)	18.59% (450)	32.9% (942)	20% (580)	33% (1233)	24% (910)
Contractor	3.43% (83)	4.92% (119)	0.9% (26)	0.9% (27)	0.5% (19)	0.3% (10)
Site Supervisor	0.62% (15)	0.78% (19)	0.4% (12)	0.1% (4)	0.6% (21)	0.2% (9)
General Worker	1.12% (27)	0.78% (19)	1% (30)	0.8% (23)	3% (115)	3% (105)
Peer Educator	3.35% (81)	2.31% (56)	4% (122)	4% (104)	4% (145)	3% (121)
1 st Aid Officer	1.53% (37)	3.14% (76)	2% (64)	4% (105)	3% (96)	4% (154)
Health & Safety Worker	2.11% (51)	2.19% (53)	2% (57)	1% (41)	2% (88)	3% (116)
Driver	0.45% (11)	0.04% (1)	0.5% (14)	0.03% (1)	0.1% (2)	0% (0)
Safety Officer/Representative	0.54% (13)	0.37% (9)	0.8% (24)	0.6% (17)	0% (0)	0.03% (1)
Brush cutter Operator	-	-	0.03% (1)	0 (0%)	-	-
	Total = 2 421		Total = 2 861		Total = 3 756	

Source: *Prosopis mesquite* project Northern Cape; author’s own analysis)

Table 7.4.1 shows the distribution of male and female beneficiaries in each job category across the three project phases under review. There were more female contractors participating in the *Prosopismesquite* clearing project in Phases I and II compared to Phase III and this could have been a consequence of the preference targeting that EPWP projects practice of targeting 60 percent of women. However, the chainsaw operator, general worker, general labourer activity categories, which involve the operation of the equipment that is used in the clearing of *Prosopis mesquite* trees, had fewer women. One of the key stakeholders who was involved in the training component of the Working for Water programme (discussed in the next section) mentioned that in addition to the beneficiaries' education levels, their physical build was also an important consideration in deciding which project activities to assign them to. Therefore, some project activities were unsuitable to be carried out by women. Although this finding seems to deviate from the preferential targeting of women beneficiaries dominating in EPWP projects, this could have been something that occurred only in the project phases under review and perhaps improved in subsequent phases, since it would seem the demographics in the project are also influenced by the individuals' self-selection during the recruitment stages.

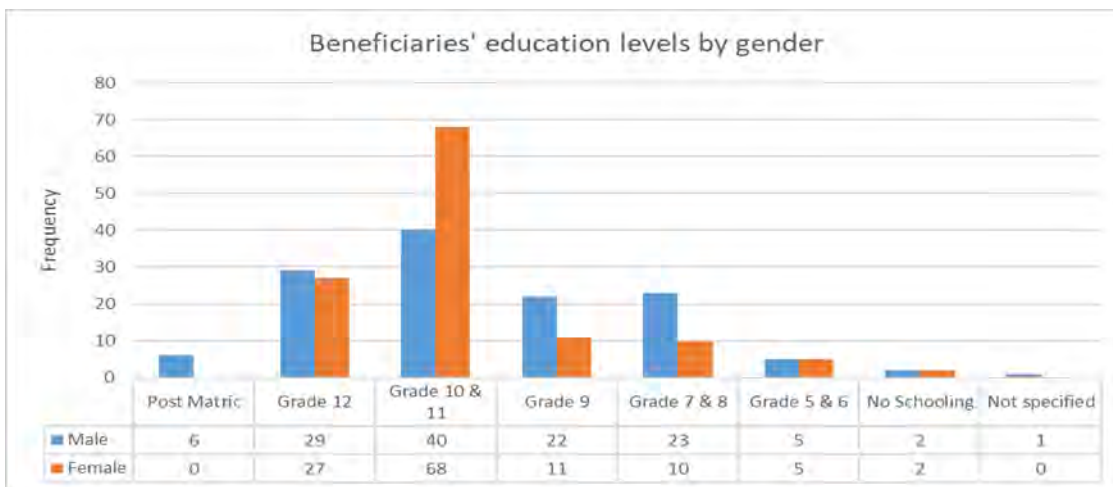


Figure 7.4.1: The pre-project education levels of *Prosopis mesquite* clearing project beneficiaries by gender.

The education outcomes between males and females had a distribution that was skewed to the right. This positive skewness was influenced by the few numbers of beneficiaries clustered around the peak of the graph in Figure 7.4.1. The graph illustrates that there was a substantial number of beneficiaries from both genders in the grades 10, 11, 12 education level categories, but there were more males in the grade 12 (or 'matric') education category and no female beneficiaries were represented beyond the grade 12 category for a post-matric qualification. Looking at the overall gender distribution in Figure 7.4.1, the educational levels between males and female beneficiaries in the *Prosopis mesquite* clearing project revealed that males were relatively more educated. This is hardly surprising since literature on the education outcomes globally

between males and females have shown that males are usually more educated than females owing to various sociocultural factors (Karam, 2014; Swedish International Development Cooperation Agency, 2017; Akala, 2019). Perhaps an interesting aspect of this data is that it displays a trend that has been observed in the gender and education dynamics literature, whereby females are beginning to catch up to males in education outcomes. This can be seen in the grades 10 and 11 education category as well as the one for those with grade 12, which showed that in some categories, the females exceeded the male beneficiaries in terms of education outcomes or the difference between male and female's educational outcomes was small. Since the EPWP projects aim to address gender gaps and inequalities in the workforce through facilitating the entry of women into labour markets by providing them with work experience and training, the 60 percent preferential targeting is meant to ensure that more women benefit from the types of training provided. The data records on the education levels of the beneficiaries were captured and stored separately from the rest of the data which was used to generate Table 7.4.1 so that there was no continuity in the data, hence there were fewer observations, and the data were not divided by project phase. This was due to the poor record keeping in the Working for Water programme which was noted by Woodworth (2006) and Coetzer and Louw (2012) as something that can be traced back to the early days of Working for Water where the managers were still learning in a climate of uncertainty at the dawn of South Africa's democracy. However, there is still some consistent pattern that can be observed between Table 7.4.1 and Figure 7.4.1 which both show that there were generally few women beneficiaries in the positions that required a higher level of skill or education such as site supervisor and contractor, and the numbers of women decreased across the project phases (Table 7.4.1).

There were typically fewer people with a Post Matric qualification because the EPWP generally targets people with low skills and low education levels. However, the programme does not discriminate against those who are seeking to enhance their employability, and this would include those who possess more than a primary and secondary school education, as evidenced by the category of people with a post matric qualification. Overall, looking at Table 7.4.1, there did not seem to be much of a relationship between a beneficiary's level of education and the position they occupied in the *Prosopis mesquite* project. For instance, even though the number of male beneficiaries was higher in some categories, their position in the *Prosopis mesquite* clearing project was determined by the activities that needed to be carried out in relation to the control and eradication of the *Prosopis mesquite* species. Likewise, even though women's education outcomes were not too low compared to the male beneficiaries, some of the roles they could occupy in the *Prosopis mesquite* clearing project were determined by the perceived ability that they are not suitable to be carried out by women. However, this is not an issue since they were going to be trained anyway as part of the stated objective of the EPWP to provide short-term employment and training to people from marginalised communities (Department of Public Works, 2005). In the case of the contractors

who are affiliated with the EPWP based on being in a commercial contractual agreement to complete projects related to the sector of the EPWP they are working under, they also receive training on the activities that the workers they hire will be expected to carry out (Coetzer and Louw, 2012). The training received by contractors prior to the commencement of a project includes the use of brush cutters and chainsaws and the application of herbicide, which are all implements and processes that are used in the clearing of invasive alien plants (Coetzer and Louw, 2012).

7.5 Results from key stakeholder interviews: Working for Water managers' perceptions of the Northern Cape's *Prosopis mesquite* clearing project

This section first presents a table listing the different key stakeholders who were interviewed for this research study to provide clarity on their role in relation to their knowledge about the dynamics of the *Prosopis Mesquite* clearing project. The responses from the key stakeholder interviews are presented alongside statistical results from the analysis of the secondary data which was obtained from the Working for Water programme. As discussed in chapter 6, the data obtained through the interviews with the key stakeholders was used to corroborate the quantitative data and vice versa. The key stakeholders' responses provided clarity on the secondary data as well as more insight on how the *Prosopis mesquite* clearing project's socioeconomic interventions are administered and monitored to ensure their success and efficiency in the use of Working for Water resources that are committed to the project. The first section presents the statistical analysis of the secondary data of the funding that was allocated towards the Northern Cape's *Prosopis mesquite* clearing project over the years and weaves in the key stakeholders' responses in the discussion of the data that is presented to provide a rich analysis. The discussion continues by presenting the number of workdays and training days that were created from the respective yearly budget amounts, utilising the perspectives from the key stakeholder interviews to explore the nuances emerging from the data. Weaved into the discussion is the theoretical framework of the combined Capabilities Approach and the Sustainable Livelihoods Approach to highlight the role of the social development component in attempting to improve the livelihoods of the beneficiaries. This section concludes with a summary of the meaning of the results in terms of the continuity and longevity of the *Prosopis mesquite* clearing project. Moreover, the conclusion situates the discussion within the context of the current pandemic climate and provides a basis for comparison and critique against the beneficiaries' responses obtained through the online survey which are discussed later in this chapter.

7.5.1 The key stakeholders in the *Prosopis mesquite* clearing project

The table below, Table 7.5.1, outlines the respective roles and terminology that will be used to identify the key stakeholders who were interviewed in their capacity as managers of the *Prosopis mesquite* clearing project.

Table 7.5.1: The list of key stakeholders that were interviewed

Key stakeholder identification	Role
1. Key Stakeholder A	Managing the implementation of project
2. Key Stakeholder B	Project management & funding allocation
3. Key Stakeholder C	Managing and coordinating training
4. Key Stakeholder D	Senior project management
5. Key Stakeholder E	Managing and coordinating training

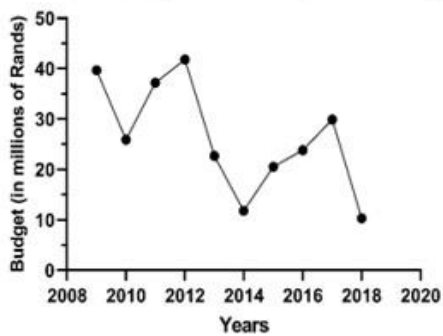
Source: Prosopis mesquite project Northern Cape; author's own analysis)

7.5.1 Workdays created from the yearly budgets

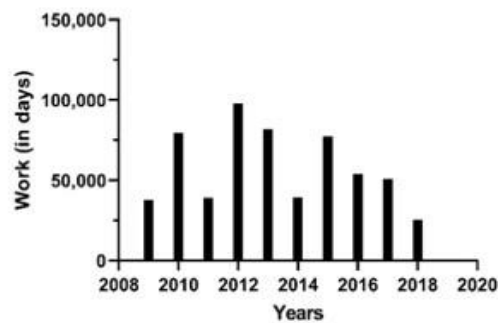
The analysis of the number of workdays that were created was crucial in answering research questions three and four outlined in chapter 1, which respectively ask about the factors used by *Prosopis mesquite* project managers to measure its success and the effectiveness of these factors. Furthermore, another point of importance for providing an analysis of the workdays created is that as a government-funded project, it assists in shedding light on how public funds are used in public works projects. Subject to the numerous channels involved in the budgetary process of securing EPWP Poverty Relief Funding and its challenges discussed earlier in Chapter 3, there were some missing values in the secondary data on the yearly budget data. As such, the analysis for Phase I (2004 to 2008) was omitted because there were no records of the budgets that were allocated for that period of the *Prosopis mesquite* clearing project. The missing budget data for Phase I (2004 to 2008) meant that although there was a record of the number of workdays and training days that were created over that period, the lack of budget data meant that an analysis of the budget's influence on the workdays and training days that were created in Phase I would not have been possible. Therefore, only the analysis of phase II and Phase III data is provided. To recap on the mechanisms involved in the budgeting process, the budgeting decisions for EPWP projects are determined at the national level, since the EPWP is a collective government effort which operates under the four sectors of Infrastructure, Environment and Culture, Social and Non-State to accommodate the socially focused policy objectives of different government departments. The functions of each of these EPWP sectors are administered under the Department of Public Works. Since it is a collaborative effort between different government departments, the EPWP projects are funded through government departments' baseline budgets and through intra-governmental transfers or the Integrated Grant. The Integrated Grant is issued to municipal and provincial governments as a reward for reaching a specified minimum employment target in EPWP projects funded through baseline budgets and is issued based on a project's annual performance (National Department of Public Works and Infrastructure, 2012; National Department of Public Works and Infrastructure, 2020). The second condition that specified for the issuing of the integrated grant is that the grant should target areas or communities where it can make the most impact, which are areas with high incidences of poverty, high unemployment, and public service backlogs (Department of Public

Works and Infrastructure, 2012). After this process of budgeting decisions has been carried out, the EPWP tallies the number of jobs that should be created and sustained throughout all EPWP projects from each tranche payment of the baseline budget and conditional grant. This FTE Target is set to 230 person days of employment in the EPWP during one financial year for both the baseline budget and the conditional grant. The annual real budget amounts used in this analysis of the data were determined through this process and the case study of the *Prosopis mesquite* clearing project illustrates or provides a snapshot of the dynamics involved at the project level which may not necessarily be captured at the national level through performance reports for EPWP projects.

P.mesquite project real budget over the years



Workdays created over the years



Figures 7.5.1 and 7.5.2: The real annual budgets over the years and the creation of workdays across Phase II (2009 – 2013) and Phase III (2014 – 2018) of the *Prosopis mesquite* clearing project, respectively.

Source: *Prosopis mesquite* project Northern Cape; author’s own analysis)

Figures 7.5.1 and Figure 7.5.2 above provide a visual representation of the relationship between the annual real budget¹ amounts and the respective workdays that were created from each yearly budget in Phase II (2009 to 2013) and Phase III (2014 to 2018). The data was graphed separately, instead of layered because the variables were measured using different units. The work variable data was in days, while the real budget¹ was in millions of South African Rands and the real budget amounts encompassed all the *Prosopis* tree clearing and social development intervention activities of the *Prosopis mesquite* clearing project, of which the focus here is the latter and is the focus of this research study. Figure 7.5.2 illustrates the fluctuations in the annual real budget amounts across Phase II and Phase III and shows that although there were instances where the budget increased, the pattern showed a general decrease over time. On the right side, Figure 7.5.2 shows the distribution of the workdays across Phase II and Phase III. Looking at the two figures together, there does not seem to be a clearly discernible relationship between the changes in the real annual budgets and how the workdays responded to the budgetary changes. The tables below, Tables

¹ The nominal budget amounts were deflated using the annual CPI amounts, using 2010 as the base year, to yield the real budget amounts used in the analysis.

7.5.2 and 7.5.3 show the actual numbers corresponding to each of the points in the graphs and are followed by a discussion which explains the dynamics that took place during the project phases under review. The ratio of the number of workdays to the real budget amounts indicated a level of efficiency in the sense that there was not much of a directly proportional relationship in the way that the number of workdays created changed in relation to fluctuations in the budget. This indicated that there were other expenditures that affected the allocation of the real budget towards the creation of workdays which could not be discerned from the data.

Table 7.5.2: Average number of accumulated person days of employment for each year in Phase II (2009 – 2013), in relation to the EPWP’s FTE target of 230 person days of employment

Five-year period	Total number of workdays created	Number of beneficiaries per year	Average number of workdays per beneficiary in relation to the FTE target	Real budget allocated in millions of 2010 Rands: 2010 = 100	Ratio of budget to total workdays
2009	38 122	202	189	R39 720 982,83	R1 042.00/workday
2010	79 642	548	145	R25 930 826,36	R325.59/workday
2011	39 239	301	130	R37 255 440,97	R949.45/workday
2012	97 796	831	118	R41 876 127,95	R428.00/workday
2013	82 081	979	84	R22 749 616,84	R277.16/workday

* The annual budget amounts were adjusted for inflation by dividing the nominal budget amounts given in the secondary data by the CPI of each year, using 2010 as the base year

Table 7.5.3: Average number of accumulated person days of employment for each year in Phase III (2014 – 2018), in relation to the EPWP’s FTE target of 230 person days of employment

Five-year period	Total number of workdays created	Number of beneficiaries per year	Average number of workdays per beneficiary in relation to the FTE target	Real budget allocated in millions of 2010 Rands: 2010 = 100	Ratio number of workdays to budget
2014	39 513	540	73	R11 826 235,63	R299.29/workday
2015	77 389	1 159	67	R20 594 017,21	R266.11/workday
2016	54 158	917	59	R23 890 272,42	R441.12/workday
2017	50 867	587	87	R29 976 784,02	R589.32/workday
2018	25 555	553	46	R10 332 209,65	R404.31/workday

Tables 7.5.2 and 7.5.3 show the average number of workdays that were created in each of the years under Phase II and Phase III, respectively, the numbers of beneficiaries that were recruited and the real annual

budgets that were allocated to cover the overall activities of the *Prosopis mesquite* clearing project. The annual budget amounts are quoted in real terms as they were adjusted for inflation using 2010 as the base year. The tables show the changes in the number of the yearly average workdays in response to changes to the annual real budget amounts. The column to the far right shows the average amounts from the total budgets that were channelled towards generating the total number of workdays created. In Table 7.5.2 the budget decreased from R39 720 982,83 to R25 930 826,36 between 2009 and 2010. This decrease in the real budget was accompanied by an increase in the number of beneficiaries that were recruited into the *Prosopis mesquite* clearing project from 202 to 548, respectively. The ratio of the budget to the total workdays followed the direction of the budget as it also decreased from R1 042 to R325,59 per workday. Logically, one would perhaps expect that the *Prosopis mesquite* clearing project would have reduced the number of beneficiaries in response to the reduction in the real budget, perhaps to avoid having to possibly compromise on meeting its temporary job and training targets, even if it meant fewer people would be targeted and trained in that year. However, looking at the column on the number of workdays per beneficiary in relation to the FTE target, the number of average workdays per beneficiary fell even though more beneficiaries were recruited. This suggests that the *Prosopis mesquite* clearing project may have prioritised temporary poverty alleviation through wage payments over the longer-term objective of ensuring that the beneficiaries received the work experience they needed which they would have obtained by working for the required period of 230 person days of employment specified by the FTE Target. This speaks to Key Stakeholder E's revelation that the *Prosopis mesquite* clearing project had adjusted the person days of employment to 100 days. The possible impacts of this adjustment on the beneficiaries are discussed in the section below on the beneficiaries' online survey responses. The number of workdays continued to decrease from 2010 to 2011 from 145 to 130, and then to 118 in 2012 and eventually to 84 average workdays per beneficiary in 2013, at the end of Phase II. The number of beneficiaries per year in Phase II continued to not follow a logically predictable pattern in relation to the real annual budget amounts, because although the number of beneficiaries fell between 2010 and 2011, the budget increased from R25 930 826,36 to R37 255 440,97. Perhaps this could be explained by the increase in the per workday amount channelled towards the creation of workdays which went from R325,59 to R949,45 per workday between 2010 and 2011. A factor that could explain the increase in per workday amount could be the economic climate at the time, which was around the time of the 2008 global financial crisis which caused a recession in South Africa (The National Treasury, 2009; Steytler and Powell, 2010). Therefore, it would have caused an increase in the prices of various inputs into the *Prosopis mesquite* clearing project. As a result, some of the allocated budget might have been channelled towards the purchasing of new capital equipment, such that the increase in the real budget allocated did not necessarily translate into more workdays. This meant that although the numbers of beneficiaries sometimes increased with the budget from one year to the next, like

from 2011 to 2012, the average workdays per beneficiary fell. This trend, which suggests that an increase in the budget for the programme did not necessarily translate into creating more workdays for the beneficiaries of the *Prosopis mesquite* clearing project to ensure that the FTE targets are met. This finding, if it persists, could threaten to turn it into a 'make work' project wherein the activities carried out are menial and are performed to merely satisfy the work conditionality of public works (McCord and Slater, 2009).

The same analysis can be applied to Table 7.5.3. The real annual budget increased from R11 826 235,63 to R20 594 017,21 between 2014 and 2015 while the average number of workdays per beneficiary fell from 73 to 67. This was also the case for the subsequent years. The budget amount increased between 2015 and 2016 and the increase in the budget was accompanied by an increase in the per workday amount from R266,11 to R441,12 which could explain the reduction in the beneficiary numbers. Similar to the case in Phase II (2009 to 2013), the budget increase did not lead to more beneficiaries being recruited because the majority of the budget was perhaps also being channelled towards offsetting the per unit costs of clearing which fluctuated over the years (see columns in the far right in Tables 7.5.2 and 7.5.3 for reference). The per unit costs of clearing may have increased in cases where a new clearing site had been established which may not be easily accessible, thereby necessitating an increase in costs related to transport costs, the type of equipment to use especially if the clearing is taking place in steep areas. Therefore, in light of these considerations, although the budget fluctuated over the years, an increase in the real annual budget did not necessarily translate into more workdays since the total real budget amounts were for all the *Prosopis mesquite* clearing project activities and not only for the social development component of creating temporary jobs and training opportunities. Therefore, there were other hidden factors which were not accounted for in the data presented in this research study, but which nonetheless seemed to influence the number of workdays that the *Prosopis mesquite* clearing project could create. To lend credence to the possible effect of these other hidden factors, the budget increased from 2010 to 2011 but the number of workdays created between those years fell. Similarly, this trend can be observed from 2015 to 2016.

The observed relationship between the real budget and workdays depicted by the data may also be suggesting an opportunity for efficiency gains not only in the *Prosopis mesquite* clearing project, but in the EPWP. For instance, it would seem that in some years, they were able to carry on with the clearing activities with lesser workdays allocated, and in some years increase the number of workdays despite reductions in the budget. Efficiency gains result from a program's ability to use fewer resource inputs to achieve a desired outcome (Chalmers and Davis, 2001). Therefore, even though adjusting the FTE Target to 100 instead of 230 person days of employment could be perceived as a failure in terms of the long-term impacts on the beneficiaries whose human capital is meant to be enriched through the work experience and training

gained through their participation, being able to still carry out the activities with fewer resources could be suggesting a level of efficiency. Another reason outside the control of the managers which could explain why some of the beneficiaries did not work for 230 person days could be due to influences of the weather such that the beneficiaries were not able to work under bad weather conditions. The positive but statistically insignificant relationship between the real yearly budgets and workdays could perhaps also be explained by that the *Prosopis mesquite* clearing project had channelled some of the budget that would have been spent on the beneficiary stipends towards purchasing new capital equipment, such as vehicles to transport the infield workers to the clearing sites located around the Northern Cape, and new equipment used in the clearing of the *Prosopis mesquite* trees.

The five key stakeholders agreed overall that the budget cuts limited the scope of what could be achieved by the *Prosopis mesquite* clearing project in terms of its contribution to the social development objectives of the EPWP through creating employment and training opportunities for the targeted groups of vulnerable members of society. One of the key stakeholders closely involved in the budgetary process, Key Stakeholder B, commented:

"I think everyone is aware that over the period of 3 to 5 years, government has been cutting budget all over the government departments. Even us, it has also affected us...the budget percentage that has been allocated in the last 3, 4, 5 years has been cut...as a result, our targets are also affected...if the budget is reduced by 5% or 10%, then your targets are also reduced by the same amounts".

In addition to the reduction in the workday and training deliverables of the *Prosopis mesquite* clearing project due to the budget cuts, Key Stakeholder B also explained the subsequent impacts on the beneficiaries, some of whom do not have alternative ways of earning a living:

"In this programme in particular [referring to the Working for Water programme as a whole], once you start cutting the deliverables...you are talking about cutting job opportunities for the people who are really looking forward to getting something to eat from this programme...when you get them in a position where they are able to put food on the table and pay school fees for their children, they say to us 'we need to work to pay our children's school fees', but we try our best to align our targets with the budget available".

In addition to Key Stakeholder B's comment on the impacts of the budget reductions on the beneficiaries, Key Stakeholder E echoed the findings of the National Treasury (2020) report on the effects of the pandemic on the funding priorities of national government departments, stating:

"Last year we had a certain amount of money budgeted for training, then the Covid thing came up and

then the budget had to be cut. We are giving training now but not covering the main needs. Now we would resort to only covering functional training [project-specific skills training]. But then we are not serving justice to the other training. Meaning that not everybody in the team will be trained which is also a risk”

Based on these direct quotes from the key stakeholders, it seems at times the managers of the Northern Cape’s *Prosopis mesquite* clearing project allowed beneficiaries to return onto the project as beneficiaries when they fail to secure employment in the labour market. Perhaps the benefit to the *Prosopis mesquite* project could be that these returners do not need to be trained again on how to perform the clearing activities. Therefore, since the beneficiaries are hired through the contractors, the effects of the budget cuts on the number of contractors that can compete for the Working for Water programme tenders would mean that contractors with people on their team of beneficiaries who already know how to perform the project tasks would be preferred. This would perhaps be the case since beneficiaries with prior knowledge of how to perform the *Prosopis mesquite* clearing activities would assist the project in cutting on training costs which would be incurred through the process of hiring service providers who provide the training. Furthermore, the *Prosopis mesquite* clearing project could fulfil its safety net role of mitigating short-term poverty through the cash transfers to the beneficiaries which are issued as payment for their participation.

7.5.1 Service providers and the types of training they are contracted to provide

The training provided by the EPWP is largely outsourced to and administered by service providers who are tasked with the design, implementation and supervision of the training needs of its projects. In addition to enlisting the assistance of the service providers, some courses and training programs listed in Table 7.5.4 are offered in-house by professionals who are government employees in the different line departments involved in the EPWP (Department of Public Works, 2018). The longer-term training programs are outsourced to service providers, while the short-term and project-specific ones including workshops are often handled in-house. Although the overall aim of the training is to ensure that the beneficiaries are trained in industry-relevant skills so that they can move on to better forms of employment, the skills-training must still be aligned with the project activities of the *Prosopis mesquite* project, even if they may not be listed in the South African Qualification Authority (SAQA).

The number of training days generated depend on the type of training program on offer and its specifications, which are selected according to the skills shortages in the country. The country’s skills requirements are identified by the Department of Higher Education and Training (DHET) and are intertwined with the goals of the Growth and Development Summit (GDS) agreement which was responsible for the expansion of the scope of public works in South Africa (Phillips, 2004). The GDS goal, which is most aligned with the EPWP, emphasises skills development, promoting equality, and creating

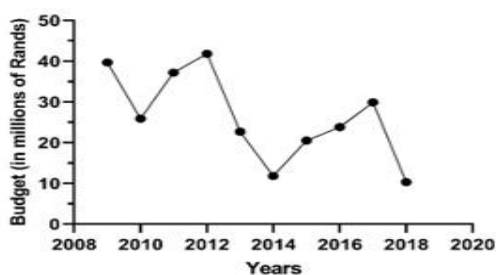
economic opportunities for everyone through the avenue of extending public services (Parliamentary Monitoring Group, 2003). This approach to training adopted by the EPWP aims to ensure that the beneficiaries are equipped with the marketable skills that are relevant to the jobs available in the mainstream labour market (Department of Public Works, 2010). Table 7.5.4 shows the training opportunities that were offered through the *Prosopis mesquite* project in Phase II (2009 to 2013) and Phase III (2014 to 2018).

The Adult Basic Education and Training (ABET) program is listed as one of the exit opportunities offered by the EPWP alongside vocational learning and occupational programmes, and artisan development programmes, and apprenticeships (Department of Public Works, 2012; South African Cities Network, 2016). The service providers for these exit opportunities are various higher education institutions such as FET colleges and other fully accredited learnership providers (Department of Public Works, 2012; South African Cities Network, 2016). The aim of the exit strategies is to ensure longevity of the project's outcomes, which are ideally to improve the employability of the beneficiaries or steer them towards self-employment (South African Cities Network, 2016; Dladla and Mutambara, 2018). The ABET training is offered to beneficiaries who are over the age of 21 years through providing them with basic numeracy and literacy skills or providing them with the opportunity to obtain their matric (or Grade 12) certificate and integrating on-the-job training with the learning to ensure the relevancy of the learning and skills to the mainstream labour market (Department of Social Development, 2015; Adult Basic Education and Training, 2021).

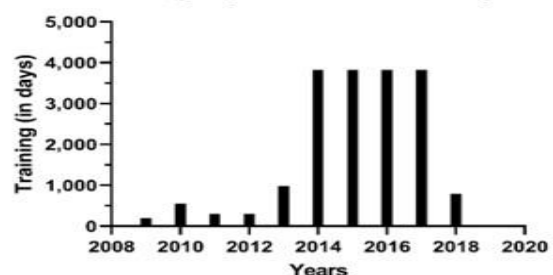
7.5.2 Training days created from the yearly budgets

This section presents the analysis of the training days against the annual real budget amounts and the responses of the former to fluctuations in the yearly budgets. The figures below, Figure 7.5.3 and 7.5.4 illustrate the training days that were created in Phase II (2009 to 2013) and Phase III (2014 to 2018) from the annual real budgets that were allocated in the same periods. Similar to the workdays against the budget graphs discussed previously, the real annual budget and training variables were also graphed separately due to having different units of measurement, which were millions of South African Rands and number of days, respectively.

P.mesquite project real budget over the years



Training days created over the years



Figures 7.5.3 and 7.5.4: The real annual budgets over the years and the creation of training days across Phase II (2009 – 2013) and Phase III (2014 – 2018) of the *Prosopis mesquite* clearing project, respectively.

Despite the budget being high in 2009, 2011 and 2012, the training days did not increase, and in 2014 the training days increased against a fall in the budget. The only year that seemed to display a logical relationship between the budget and training days was in 2018 where the training days fell in response to a fall in the real budget that year. Also, in the same year the number of beneficiaries was the lowest. As one of the key social development interventions of the EPWP projects, which include the *Prosopis mesquite* clearing project, the perceived lack of focus on ensuring that the beneficiaries receive training alongside the work experience to allow them to move on to better forms of employment could contribute to the perception of the *Prosopis mesquite* clearing project being another ‘make work’ project. Linking this analysis with the previous one which discussed the responses of the workdays to the volatility of the annual real budgets, since training is provided through service providers which consist of organisations that provide various types of training both directly related to the specific activities of the *Prosopis mesquite* clearing project and other labour market relevant skills, as shown below in Table 7.5.4, perhaps in the years where training days did not follow the direction of the budgetary fluctuations, the beneficiaries participating in that period were repeat participants such that the training they needed was refresher training, which perhaps would have been short-term and cheaper than training beneficiaries who were new to the *Prosopis mesquite* clearing project.

Table 7.5.4: Types of training offered by the Northern Cape’s *Prosopis mesquite* clearing project and the number of people in each one in Phases II and III

Type of training administered	Phase II	Phase III
ABET (Level 1,2 and 4)	5	26
Chainsaw Operator	57	33
Health and Safety Awareness (phase 1 & 2/refresher)/COIDA	49	122
Peer Education Workshops	11	33
Fire Fighting	17	7
Herbicide Applicator & refresher course	65	114
First Aid (Level 1 and 2)	65	150
Brush cutter Operator	13	0
Induction	72	179
Diversity (Race and Gender)	3	0
Contractor Development (phase 1)	3	6
Computer Literacy	2	0
Personal Finance	8	9
Map Awareness	0	2
Team Building	0	9
Herbicide Applicator (refresher)	65	114
Other (substance abuse, TB, HIV/AIDS, First Aid Level 3)	63	0
Total accumulated training days in each project phase	498	804

Figure 7.5.3 and Figure 7.5.4 show that in some years (2015, 2016 and 2017), there was a direct positive relationship between the annual budgets and the number of training days created as increases in the budget coincided with increases in the number of training days generated. However, the figures also show that in some years, despite the budget increasing, the number of training days did not increase. This could

have been because of lack of consistent record keeping, which was the case with Phase I (2004 to 2008) data hence it has been left out of this analysis. Woodworth (2006) stated that the issue of poor record management is one that has plagued the Working for Water programme since its early days in the mid-1990s, which was a time when the new incoming government was preoccupied with a multitude of issues that had to be considered to usher in the new era of democracy. Coetzer and Louw (2012) corroborated Woodworth's (2006) statement, arguing that there were still omissions in the new record keeping system that Working for Water was using (the Water Information Management System, or WIMS) due to poor record keeping of data which had been collected on each of the EPWP projects that were in operation at the time. One of the key stakeholders that were interviewed, Key Stakeholder D, even stated that this was the premise for the introduction of the WIMS:

"It was quite challenging because there were no set rules or ways we had to go about it. We had to go and work out norms and standards to get measured on. Then eventually it came to a point where we saw that we [were] doing all this hard work but nothing is being recorded. There was a slack in reporting what we were doing. So, they started looking at different programmes, how to capture the information. I think it was around 2002 or 2000, they started looking at systems and the WIMS system was introduced. It wasn't called WIMS, it was something else but similar to the WIMS system that we [are] using today, was introduced for us to capture all the information we gather."

In response to this, Van Wilgen and Wannenburg (2016) stated that the Working for Water programme was targeting too many species and had too many projects in operation, which posed challenges for the proper allocation of funding to cover all its operations, which included project planning, monitoring and evaluation and its overall control operations. Another reason for the training days not responding in the same direction to real budget changes could be due to perhaps other activities taking priority in the *Prosopis mesquite* clearing project, as discussed previously in the case of the relationship between workdays and the yearly real budget changes. It could also be that the *Prosopis mesquite* clearing project was creating and allocating the required number of training days to accompany the workdays, but the beneficiaries were not staying for the full duration of each training program listed in Table 7.5.4 above. This would mean that the data captured and presented in Table 7.5.4 was of the beneficiaries who finished their respective training that they were assigned to. This reflects the incongruency between plans and their implementation, highlighting the unforeseen factors which often arise and limit the impact that a program or project would have had. Relating the training days created to the FTE target of 230 person-days of employment which the *Prosopis mesquite* clearing project was not achieving (Tables 7.5.2 and 7.5.3), it could be that when the beneficiaries left the *Prosopis mesquite* clearing project prematurely, they also exited the training programs. The South African Cities Network (2016) defined the FTE target's usefulness

to the EPWP as it being an indicator of the sustainability of the work opportunities created, as well as how they contribute to the creation of training opportunities in the year or project phase under consideration since it is assumed that each person employed temporarily in the EPWP is given training.

7.5.3 Contractor Development

As the people who are tasked with recruiting the beneficiaries who work on Working for Water projects (Coetzer and Louw, 2012; Sykes and Jooste, 2014), in this case the *Prosopis mesquite* clearing project, the training of the contractors is crucial in ensuring that the project activities proceed. Coetzer and Louw (2012) describe a contractor as a small business owner who is in a commercial contract with the EPWP to conduct work related to any of its programmes, in this case the clearing of invasive alien species under the WfW. Following the contractor training, the contractors are tasked with hiring the beneficiaries who will clear the *Prosopis mesquite* at the different sites. The number of people that each contractor can hire depends on the funding amount they are awarded through the EPWP SMME contractor tender process for labour intensive projects (Department of Public Works, 2012). In Table 7.5.5 below, the numbers of people who were trained as contractors were 3 and 6 in Phase II and Phase III, respectively. Perhaps these were only additions to the contractors who were already on the *Prosopis mesquite* clearing project hence the number of contractors trained in Phase II (2009 to 2013) did not reflect the high real budget values. Nevertheless, since each project phase spans five years, these numbers seem small.

The number of training days created each year were also subject to the demographics of the beneficiaries in each year, their physical build, their skills and education levels as Key Stakeholder C stated:

“These participants have different education levels and the requirements for what they should be trained in depends on the operational requirements. So, if operations require chainsaw operators, then, in that group, we must train chainsaw operators. This is quite a challenge sometimes because we have such a diverse group of people in terms of their education levels [for example] you can have people who don’t know how to read or write or have people who have matric. So, the educational level is important, because it would be a risk to nominate a person who doesn’t qualify in terms of educational level to go on a certain course, because if there is an incident in field and there’s an investigation, then it’ll be revealed that the person shouldn’t have been on the training and it’s risky. So, we don’t first look at the educational level, we first look at what training is needed, and then who in the group will qualify to go on that training. For chainsaw operators, we don’t only look at the educational level, we also look at their physical build, if the person will be able to start that chainsaw and to handle it to cut a tree down. So, sometimes a person will not be nominated based on their [perceived] ability to perform certain tasks.

Relating Key Stakeholder C’s comment to the relationship between the yearly real budgets and the number

of training days, perhaps in the years where the budgets increased without a corresponding increase in training days, there were many beneficiaries with at least a high school education and prior skills which determined the type of training that would be administered to them. Therefore, any if the beneficiaries' skills and education levels were high enough, perhaps short-term training was more likely to be conducted to accommodate the budget, but this is not something that can be observed from the data. This short-term training would have consisted of daily or week-long workshops such as the ones listed in Table 7.5.4. This would not only have resulted in the lack of correlation in the budget changes and the training days observed in Figures 6.11 and 6.13, but it would have also allowed the *Prosopis mesquite* clearing project to still carry on its clearing activities while also alleviating poverty in the short-term as the stipends would be ensuring that the beneficiaries were able to put food on the table, as Key Stakeholder B emphasised as the one of the goals of the *Prosopis mesquite* project in the communities it operates in.

Key Stakeholder C mentioned one of the incentives that these beneficiaries with at least a high school education and other skills could look forward to in a public works project like the *Prosopis mesquite* clearing project:

"We're trying learnerships now for the first time, and I'm telling you, it's difficult, but it's working so well and people will be qualified at the end of the day. We are targeting people that aren't actively working in the field at the moment because the learnership is a long duration and requires people to attend full time".

Key Stakeholder C mentioned that the purpose for introducing learnerships is because some of the training and jobs offered through the EPWP projects are not recognised under the South African Qualification Authority (SAQA), which is the registration authority for qualifications that fall under the National Qualifications Framework (NQF) (National Government of South Africa, 2021; Department of Public Works, 2007). The learnerships are offered throughout all four sectors of the EPWP and are designed to accompany long-term or ongoing projects which have a duration of one to three years (Department of Public Works, 2007; National Department of Public Works, 2013). Ebrahim (2020) elaborated on the dynamics of the Learnership Programme offered through the EPWP. The Learnership Programme is carried out through a partnership between firms and the national governments responsible for the implementation of the EPWP, whereby firms are given a tax subsidy incentive to provide on-the-job training to previously unemployed people who qualify to be part of the EPWP (Ebrahim, 2020). These findings resonate with what was stated by Key Stakeholder C that the learnerships specifically target unemployed people.

Echoing the sentiments of Key Stakeholder B on the negative impacts of the fluctuating yearly budgets on deliverable targets and on the ability of Working for Water to plan effectively and to ensure longevity in the Working for Water projects' role of ensuring that the projects successfully fulfil their role as the bridge

to better employment in the labour market for the beneficiaries, Key Stakeholder C stated:

“We failed on the exit programme for the participants...participants should have worked at least for 3 years. In those 3 years they should have gone through a lot of training that propelled them to exit in terms of the training they gained in the programme [Working for Water]. Now on that aspect we failed but there were reasons for that, we had a lot of challenges in terms of budget cuts. Some of them survived on their own with what they had learned from the programme. Some of them have not. But I think a review in terms of exit strategies will help a lot”.

And further stated:

“One of the things we constantly discuss and try to negotiate is longer duration contracts, because in terms of development of people, it is so difficult if you see potential in your participants, but you sadly cannot plan a longer development plan for that person [due to the temporary nature of the employment contracts]. Longer term contracts will enable us and give us more time to map out a learning path at least for this person... the current occupations we have within WfW i.e. chainsaw operators, aren't registered occupations, it's not found anywhere in the Organising Framework for Occupations, and that is something that I would like to see us achieve, so that our people who perform functions out in the field are within an occupation that is recognised in the framework. That would mean a lot, that would mean that someone can go out there and identify the occupation they fit in. Now, if someone goes out there, they can't say “I want to apply for a Chainsaw Operator job”, there is no such thing. If those occupations don't exist, we can create them, we have enough capacity to create new occupations that align with WfW as well as with the mainstream labour market”.

The results show that the yearly fluctuations in the real budgets were not the main determinant for the number of workdays and training days that the *Prosopis mesquite* clearing project created in Phase II and III, but there were also other factors that were not immediately observable in the data without the supplementary perspectives of the Key Stakeholders and general reports providing knowledge on the dynamics of the Working for Water projects. A consensus that emerged from the five key stakeholder interviews was the inconsistency in the amount of funding for the *Prosopis mesquite* clearing project they were receiving as the project was susceptible to frequent budget cuts, which disturbed their operations. Other than this being due to the reprioritisation of funds within government, it was also because of poor performance. Furthermore, since the EPWP operates within a government environment which is impacted by international events, it is affected by the reprioritisation of funds to other government activities in response to shifts in the global economy.

As such, the low numbers of training days created in Phase II (2009 to 2013) (see Figure 6.13), could have

been as a result of the 2008 global financial crisis which resulted in the South African economy going into a recession in that period, thereby forcing the government to select priority funding areas (The National Treasury, 2009; Steytler and Powell, 2010). Applying this point to the analysis of workdays created in Phases II and III, the *Prosopis mesquite* clearing project absorbed more beneficiaries in Phase II (2009 to 2013) compared to Phase III (2014 to 2018). Steytler and Powell (2010) corroborated this finding by stating that as one of the main labour market policy responses of the South African government during the 2008 crisis, the EPWP achieved 97 percent of its target of creating half a million temporary job opportunities. Steytler and Powell (2010) argued the impacts of the 2008 global financial crisis in South Africa stating that not only did it cause a recession, but it exacerbated the racially skewed longstanding problems of high unemployment, inequality, and poverty, against a fiscus which was already under pressure and contracting because of the recession. Relating this to the discussion in this chapter on the higher number of workdays which were not accompanied by more training days, perhaps this reflects key stakeholder B's sentiments that in the face of budget reductions, the *Prosopis mesquite* clearing project at least tries to mitigate poverty in the short term by taking on more people, which suggests that the project may have been struggling to achieve its longer-term goals of ensuring the beneficiaries were adequately trained and armed with sufficient work experience to improve their labour market prospects. Indeed, since the demographics of the EPWP beneficiaries reflect those of the marginalised people in South Africa (Altman *et al.*, 2004), the EPWP was the most suitable policy response considering the socioeconomic issues that were exacerbated by the Great Recession of 2008.

Key stakeholders claim that the achievement of the social development objectives in the *Prosopis mesquite* project is mainly compromised by modifications to the annual budget amounts allocated to the different departments responsible for the implementation of the projects. Revisiting the earlier argument in Chapter 3 on the reasons for the reprioritisation of funding away from EPWP projects due to underperformance or their functions simply not being viewed as a priority in light of other more pressing matters, the current COVID-19 pandemic which has resulted in increased government spending on direct relief programs (The National Treasury, 2020; Parliamentary Monitoring Group, 2020), has resulted in reductions in EPWP funding since the beneficiaries could not go out to the field due to social distancing protocols. Relating it directly to the *Prosopis mesquite* clearing project, the issues raised in this chapter suggest agreement with some of the key stakeholders' claims of poor performance which often resulted in more budget cuts and to the project forfeiting the conditional grant which, as discussed in chapter 4, is allocated in addition to the baseline grant based on an EPWP project's annual performance.

7.5.5 Statistical Analysis of the Budget, Work and Training variables

This section presents the statistical analyses that were performed on the three variables of interest,

namely, the budget, work and training variables to test how the last two responded to fluctuations in the yearly real budgets in Phase II and Phase III. The statistical analyses are presented to further enrich the analysis already provided on the response of the workdays and training days to changes in the real budget. The summary statistics are presented followed by the Shapiro-Wilk Test for normality to determine the suitable statistical test for each of the variables. Accordingly, based on the outcomes of the Shapiro-Wilk Test, a One-way ANOVA was conducted on the Work variable as a function of the Budget variable, and a Kruskal-Wallis Test for the Training variable against the Budget variable. The results are presented below and are also supported by comments from some of the key stakeholders that were interviewed.

Table 7.5.5: Summary statistics for the Budget, Work and Training variables

Summary statistics			
	<i>Budget</i>	<i>Work</i>	<i>Training</i>
<i>N</i>	10	10	10
<i>Mean</i>	26415251	58436	1839.9
<i>Standard deviation</i>	10912342	24067.55	1719.578
<i>Median</i>	24910549	52513	884.0
<i>Minimum</i>	10332210	25555	202.0
<i>1st Quantile</i>	21132917	39308	362.8
<i>3rd Quantile</i>	35435777	79079	3819.0
<i>Maximum</i>	41876128	97796	3822.0

Table 7.5.5 displays the descriptive statistical analysis for the annual budget, work, and training variables. The number of observations was 10 for the two five-year project phases under review, namely Phase II and Phase III. The mean and the median for the Budget and Work variables, respectively, are close to each other which suggests that the distribution of the respective datasets tends toward normality. On the other hand, the mean and the median are not close to each other, the value of the mean is almost double the size of the median, which suggests that the training data is non-normal.

A Shapiro-Wilk Test of normality was conducted using the Budget, Work and Training data as shown below in Table 7.5.6. Following this, a One-way ANOVA test and a Kruskal-Wallis Test were conducted, respectively, for the Work and Training variables against the Budget variable. The standard deviations for the Work and Training variables suggest high dispersion of the data around the means of these variables, which could have been an effect of the outliers which could have also affected the mean as well. The Budget variable consisted of the yearly budget amounts in real terms, in South African Rands, for the two *Prosopis mesquite* clearing project phases under review, namely, Phase II (2009 – 2013) and Phase III (2014 – 2018). The Work and Training variables were measured, respectively, in terms of the number of days that

were worked by each of the beneficiaries and the number of training days that were received by each beneficiary.

Table 7.5.6: The Shapiro-Wilk Test for normality for the Budget, Work and Training variable

Shapiro-Wilk Test of normality			
Variables	<i>Budget</i>	<i>Work</i>	<i>Training</i>
P-value	0.8924	0.3787	0.001854
W test statistic	0.97016	0.92254	0.72663

The data analysis above shows that in terms of the Shapiro-Wilk Test of normality for the budget, work and training variables, the p-values revealed that the data which informed the first two variables were normally distributed, while the training variable was not normally distributed at a p-value threshold of 0.05. The Shapiro-Wilk Test for the budget variable yielded a p-value of 0.8924 and the p-value was 0.3787 for the work variable. The non-normal training variable had a p-value of 0.001854. The importance of the Shapiro-Wilk Test as a goodness of fit test is that it allows the researcher to determine the distribution of a continuous variable, using the null hypothesis that the data are normally distributed (Anon. 2022; King & Eckersley, 2019). The Shapiro-Wilk Test was used in this analysis because the number of observations was less than 50 ($n < 50$) (Mishra *et al.*, 2019). The Wilk(*w*) test statistic ranges between 0 and 1 and the closer it is to 1, the more normally distributed the continuous variable data is (King and Eckersley, 2019). The *w* test statistic serves as an indication of the orderliness of the normal quantile to quantile plot (National Council for the Social Studies, n.d.). These patterns are illustrated in Figures 6.11 to 6.13 below.

Following the Shapiro-Wilk Test, a one-way Analysis of Variance (ANOVA) test and a Kruskal-Wallis Test were conducted to test for the relationship between the budget and work variables, and the budget and training variables, respectively. The one-way ANOVA is used when there is one independent variable and tests whether the independent variable has any significant impact on the dependent variables, which are continuous in nature (Anon. 2022). This study sought to ascertain the level of impact of the fluctuations in the *Prosopis mesquite* clearing project's yearly budgets on the number of workdays and training days created each year under Phases II (2009 to 2013) and Phase III (2014 to 2018).

Table 7.5.7: One-way ANOVA for budget and work variables

<i>One-way ANOVA for the Work variable as a function of the Budget variable</i>	
<i>Degrees of freedom (d.f.)</i>	1
<i>Sum of squares</i>	4.411e+08
<i>Mean squares</i>	441092614
<i>F-value</i>	0.739

<i>P-value</i>	0.415
<i>Residuals</i>	84.772e+09 596516024

The one-way ANOVA showed that the relationship between the real yearly budgets and the number of workdays created was not statistically significant ($p > 0.05$), even though it was positive. This suggests that it was unlikely that the changes to the yearly budgets had any significant effect on the number of workdays generated in each year. The reason for this less than significant result could be due to the adjustment of the FTE target from 230 person days of employment to at least 100 days of employment per person per year, since the *Prosopis mesquite* clearing project was having difficulties retaining beneficiaries in the project for the required length of time. Therefore, any changes to the budget on a yearly basis did not lead to a significant reduction in the number of workdays being created since the FTE target of 230 person days of employment was already not being met. In other words, since the *Prosopis mesquite* clearing project was already utilising the adjusted target of 100 person days of employment, instead of the nationally determined FTE Target of 230 person days of employment, where the effects of budget fluctuations would have perhaps shown significant reductions in workdays, measured against the adjusted 100 person days, the effects appear to be minimal. This adjustment was commented on by Key Stakeholder E:

“If we are able to keep the people in the field for quite a number of days, more than 100 days that is quite an achievement in Working for Water...because in terms of the EPWP standard, we have to keep the people in skill [training] for more than 100 days because EPWP believe that we would have contributed in terms of poverty alleviation”

Since the FTE target of 230 person days of employment was set by the EPWP at the commencement of Phase II (South African Cities Network, 2021), perhaps not meeting the target and eventually adjusting it to 100 person days of employment could be taken as a reflection of failure on the part of the *Prosopis mesquite* project. These perceived failures could merely be an adaptation strategy in response to issues outside the *Prosopis mesquite* clearing project managers’ control, such as beneficiaries not staying on the project long enough to fulfil the mandate of 230 person days of employment, thereby prompting the managers to adjust the number of days to 100 person days of employment. This was alluded to by Key Stakeholder B who stated (also in reference to training, which will be discussed shortly in this chapter):

“Some matriculants that worked in the programme just left without benefiting completely...they left because of inconsistent work. They will work for 2 months and then sit at home for a month or 3 months...the long wait for the next job made them look for other avenues for work. Some became very frustrated and left unnoticed and not even to go to another job or other opportunities.”

Table 7.5.8 below on the Kruskal-Wallis Test gives more insight into the effects that the budget had on the training targets of the *Prosopis mesquite* clearing project. To Key Stakeholder B's comment above, the short employment periods and the inconsistency in the provision of the workdays which are mandated to be accompanied by training would suggest that any training that would have been provided would have been short-term or they would receive none.

Table 7.5.8: Kruskal-Wallis Test for Budget and Training

Kruskal-Wallis rank sum test on training as a function of the budget	
Chi-squared (χ^2)	33.089
Degrees of freedom (<i>d.f.</i>)	3
<i>P</i> -value	3.085e-07

The Kruskal-Wallis Test was conducted on the non-normal Training variable. The Kruskal-Wallis Test is a non-parametric alternative to the ANOVA test and is used when the assumptions of normality required for a test like the one-way ANOVA are not met ((Lalanne and Mesbah, 2016). The Kruskal-Wallis Test was conducted to examine whether the changes in the yearly *Prosopis mesquite* clearing project budgets had any measurable impact on the number of training days that were created across the two project phases under review. The findings from the Kruskal-Wallis Test showed that there was strong evidence ($p < 0.05$) that in some years the budget fluctuations significantly affected the number of training days that were created each year ($\chi^2 = 33.089$, $p = 3.085e-07$, $d.f. = 3$). The Kruskal-Wallis Test results provide the grounds for concluding that the differences in training days over the years were not random. The statistical findings from the One-way ANOVA and the Kruskal-Wallis test corroborate the findings presented in the tables and figures discussed previously on the interactions between the annual real budget amounts, workdays and training that the Northern Cape's *Prosopis mesquite* clearing project managed to create in Phase II and Phase III, given the changes to the budget. Essentially, the results show that the budget is positively, but not statistically significantly related to the number of workdays but is positively and statistically significantly related to training. The results suggest that there were many factors which affected the number of workdays that could be created from the annual budgets, some of which were not directly related to the budget, as discussed earlier. Furthermore, although the positively and statistically significantly relationship between the budget and training days suggested that training was being prioritised, looking at the data like the one presented in Table 7.5.4 shows that this may not necessarily be the type of training that is needed for the short and long-term impact on the livelihoods of the beneficiaries.

7.5.6 Summary

This section of the chapter provided the quantitative and qualitative analysis of the secondary data. It also explored the responses of the key stakeholders of the Northern Cape's *Prosopis mesquite* project in relation

to the relevant sections in the secondary data that were obtained from the Working for Water offices in the Northern Cape. The key stakeholders' responses corroborated and added more meaning to the secondary data records and provided more revelatory insights on the dynamics of the *Prosopis mesquite* project and how these dynamics were affected by social and political issues. The following section presents the responses from the beneficiaries, also relating their responses to secondary data records that were provided. The key stakeholders' responses and those from the survey that was administered to the beneficiaries are synthesised to provide a coherent picture of the *Prosopis mesquite* clearing project which informs the components of the assessment framework that this research study sought to develop.

7.6 Results from the online survey with the Northern Cape's *Prosopis mesquite* clearing project beneficiaries

This section aims to address the second research question outlined in chapter 1, which asks about the beneficiaries' perceptions of the socio-economic intervention of the *Prosopis mesquite* clearing project in terms of its impact on their livelihoods. The beneficiaries' responses will highlight how they perceived the benefits of the *Prosopis mesquite* clearing project to be in their lives. The expression of these benefits will in turn speak to the capabilities and livelihood assets that were impacted by the work experience and training received. In this section the analysis of the secondary data records pertaining to the beneficiaries and the primary data in the form of findings from the survey that was carried out are presented. The results from the online survey were used to corroborate the secondary data records of the *Prosopis mesquite* clearing project beneficiary information obtained from the Working for Water offices in the Northern Cape. The online survey results provide the beneficiaries' much needed voice which has been missing from these sorts of analyses on the impact of the EPWP's socio-economic interventions. The effects of the COVID-19 pandemic on the activities of the *Prosopis mesquite* project added more nuance to the analysis in the sense that it added more detail to the analysis for why workday and training targets may not be met when such situations, which affect budget allocations, present themselves. The analysis in this section is compared and contrasted with the responses of the key stakeholders in the previous section to paint a coherent picture of the project's socio-economic impact from both sides of the camp, namely, from the side of those in management and from the perspective of the beneficiaries. Although, due to the constraints discussed in the methods chapter (Chapter 5), there were only 33 responses obtained from the beneficiaries, their perceptions and comments on the impact of the *Prosopis mesquite* clearing project on their livelihoods still offered invaluable insights on their perceptions of the project.

7.6.1 The beneficiaries' perceptions of the *Prosopis mesquite* clearing project

The beneficiaries in the *Prosopis mesquite* clearing project expressed different perspectives of what their experiences were in the *Prosopis mesquite* clearing project across the two project Phases under review. Figure 7.6.1 below shows that most of the beneficiaries rated their experience as good, while the second

largest group were those who expressed that they were just happy to have a job.

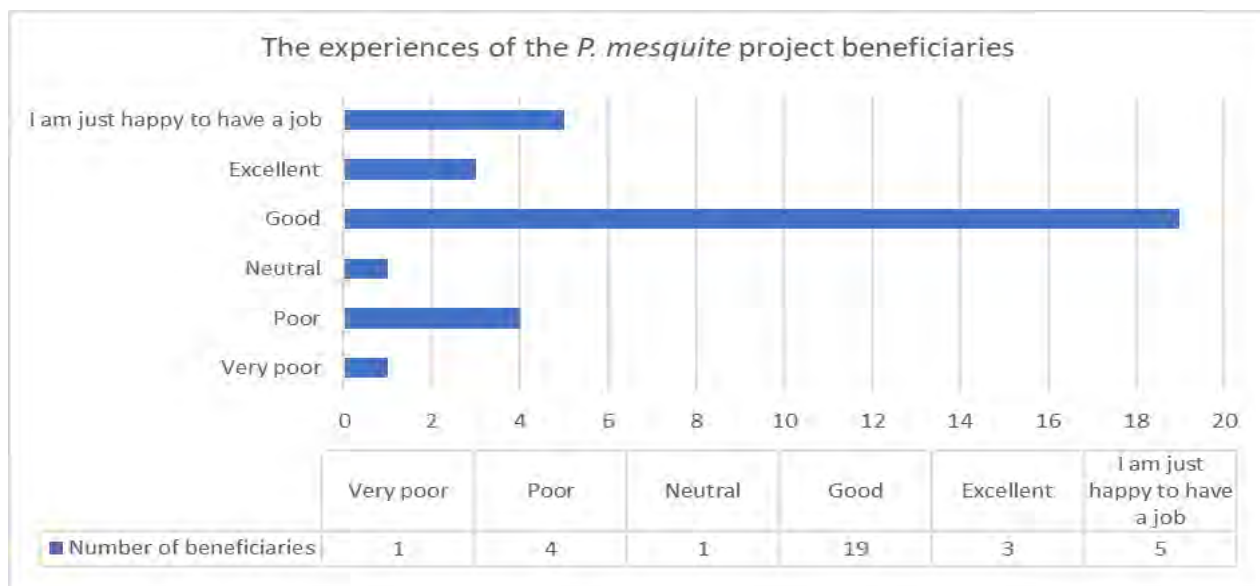


Figure 7.6.1: *Prosopis mesquite* clearing project beneficiaries’ general perceptions about the project

The beneficiaries expressed that the reason they rated their experience as ‘good’ was due to the importance of the income to their households. Some comments that were given by the beneficiaries on how important the wages from the *Prosopis mesquite* clearing project were to their household income portfolios were:

“It’s very important because I used it to buy groceries, toiletries and electricity”

“I pay for my young brother’s school fees and pay for my [monthly] instalments”

“Very important!...because I provide food, clothes [etc.] for my family”

“For buying food and other needs because I’m a widow”

“To [buy] groceries and [pay for] insurance”

The importance of the wages towards contributing to groceries was a common thread in the beneficiaries’ responses, despite the wages being low compared to those received through conventional employment. Since the EPWP targets women, youth and disabled people from low-income communities, these responses were consistent with findings from other studies on the contribution that income transfers facilitated through public works programmes have on poor households in developing countries. For instance, Chirwa *et al.* (2002) discussed the contribution that the Malawi Social Action Fund (MASAF) was making to rural livelihoods through its wage transfer and food-for-work safety net programme package. In this case as well, although the wages were set below the minimum wages for rural agricultural work in Malawi to induce self-targeting amongst the poor, their contribution towards those

who were experiencing prolonged food insecurity caused by structural unemployment was notable. Moreover, even though the wages were low, Chirwa *et al.* (2002) stated that the cash incomes were preferred to the food-for-work scheme since the former allowed the beneficiaries more freedom to spend the income on the household needs that were personal to them. This finding resonated with Hlatshwayo's (2017) argument on the importance of EPWP wages in enabling beneficiaries to afford groceries and electricity. One of the EPWP beneficiaries who was a street sweeper in Johannesburg that Hlatshwayo (2017) interviewed also emphasised the importance of the wages from public works as the beneficiary mentioned that they were no longer reliant on loan sharks to contribute to their household.

The beneficiaries who rated their experience on the *Prosopis mesquite* clearing project as either 'very poor', 'poor' or 'neutral' expressed their reasons via the following comments:

"I just want to see some of other things change because the project runs only 3 to 6 months sometimes in a year, and that stratagem of working 3 months in the year it kills workers' and directors' [contractors] morale. At least if we can get a 12 months straight contract to work nonstop."

"The waiting period for work resumption is too long for me because I'm the head of my family"

"More training in different categories, not just herbicides [and] brush cutter operator"

"Late payment"

"They must bring more trainings, educating people why it's important for them to cut Prosopis/why it [has to be] removed"

"They must create permanent jobs for us..."

"More opportunity and growth, more courses for self-improvement"

"Expand the project in unknown/uncleared dense areas"

The comments from the beneficiaries reveal their frustration as a result of the *Prosopis mesquite* clearing project not providing the adequate work experience and training that they were promised when they made the decision to participate in the project. Underlying these comments is the dissatisfaction with being in a public works that seems precarious and unsustainable in the long term due to lack of a concerted effort in ensuring that the beneficiaries can have better employment chances in the long term. The dissatisfaction of the beneficiaries of the *Prosopis mesquite* clearing project were mainly due to issues that have already been identified in the literature as common to public works projects in developing countries. Moreover, the discussion in the previous section also reveals some awareness by the key stakeholders of some of these issues. These issues can be summarised as short employment periods, late payment of wages,

training in non-transferrable skills that are only relevant to the activities of the public works project concerned, and long waiting periods before the resumption of the next work period. The Department of Planning, Monitoring and Evaluation (2015) identified the same issues in its analysis of the Social Sector, where it was reported that in all the provinces and programmes that were sampled the payment of stipends to beneficiaries was often late by a couple of months. The report also revealed that the Social Sector was inconsistent in fulfilling its promise of providing the beneficiaries with the accredited training necessary to help them move on to more sustainable forms of employment (Department of Planning, Monitoring and Evaluation, 2015). There seems to be some consensus among researchers on public works programmes, such as Zimmermann (2014), who stressed the delayed stipend payments to beneficiaries as one of the institutional constraints that limit the impact of the EPWP as a safety net for households experiencing chronic food insecurity. Hlatshwayo's (2017) interviews with EPWP beneficiaries across South Africa revealed that, although the short-term employment periods were by design because the purpose of public works employment is to prepare beneficiaries for the work force, some of the beneficiaries revealed that the precariousness of the jobs and the low wages meant that they could not apply for credit. This was the case with the beneficiaries of the *Prosopis mesquite* clearing project as well, as they either expressed it indirectly that they would like longer contracts or expressed explicitly that they desire permanent employment. Despite their discontentment with some aspects of the *Prosopis mesquite* clearing project, the socio-economic circumstances of the beneficiaries and their revelation on what the income from the stipends was being used for meant that the income was helping to supplement other sources of household income.

7.6.1 Perception of work experience received through the *Prosopis mesquite* clearing project

The sample of beneficiaries that were selected to participate in the online survey was drawn from the secondary data records for the project phases under review. Even so, those who participated in the online survey expressed that they were still actively participating in the Northern Cape's *Prosopis mesquite* clearing project. This suggested that the beneficiaries had not been able to find employment in the labour market following their first engagement in the *Prosopis mesquite* clearing project (see Figure 7.6.2 below). Out of the small sample of 33 respondents that could be located, 12 had been in the *Prosopis mesquite* clearing project for more than 24 months, but despite this lengthy amount of time on the project, the training they claimed to have received was more specific to the *Prosopis* clearing project than to labour market relevant skills as the skills-training they mentioned were - Occupational Health and Safety, First Aid, Covid-19 training, chainsaw operator, herbicide training, First aid level 1 and 2, brush cutter, computer training and fire fighter. Some respondents mentioned not having received any sort of training.

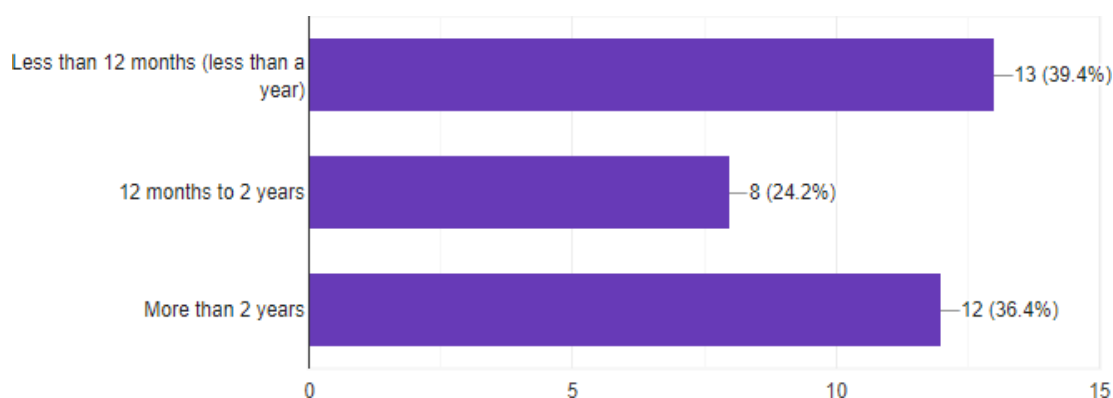


Figure 7.6.2: Beneficiary responses to how long they had been in the *Prosopis mesquite* clearing project

Their inability to move on to more stable forms of employment after participating in the *Prosopis mesquite* clearing project corroborates their comments that they were unhappy with the training they were receiving, which the beneficiaries felt was inadequate and mismatched with skills requirements of the workforce. Revisiting the data in Table 7.5.4 on the types of training programs that were offered in Phase II and Phase III of the *Prosopis mesquite* clearing project, the types of training offered were mainly project-specific, which would explain the beneficiaries' inability to secure employment in the labour market afterwards. Therefore, considering that the purpose of EPWP projects is to act as a bridge between beneficiaries' position of structural unemployment and them eventually finding a job after receiving work experience and training, the beneficiaries being unable to find employment highlights a level of disconnect between the skills-training relevant to the labour market and those specific to the *Prosopis mesquite* clearing project. In other words, as Table 7.5.4 showed, there was not much variation in the skills-training programs on offer across the projects phases under review as many were project specific. Moreover, this reveals the extent to which the hidden factors discussed in the previous section were affecting the beneficiaries' enthusiasm to engage meaningfully in the project. This could explain the reason for the *Prosopis mesquite* clearing project not meeting its FTE target of creating 230 person days of employment in both phases (Tables 7.5.2 and Table 7.5.3), that perhaps the beneficiaries were showing up just enough times to receive income. Based on their statements expressing their level of satisfaction with the *Prosopis mesquite* clearing project, the beneficiaries that participated in the online survey and described their experience as 'very poor', 'poor' or 'neutral' may be feeling discouraged about the seemingly dead-end trajectory that they perceive the *Prosopis mesquite* clearing project going in if what they have expressed is not addressed. Therefore, they may have resigned themselves to enjoying the immediate benefits of being able to put food on the table, as Key Stakeholder B remarked. Understandably, without knowledge about the budgeting reductions and *ad hoc* adjustments to the workday and training day deliverables that take place in response, it would seem like the *Prosopis mesquite* clearing project is merely a 'make work' project.

The long waiting periods before the resumption of their work contracts also had an impact on the number of workdays committed by each beneficiary. For instance, as Key Stakeholder B stated, some beneficiaries felt discouraged and left due to the uncertain nature of the jobs which meant that they had to sometimes wait for an indefinite amount of time to be called back for the next clearing job. Therefore, some beneficiaries, especially those who had a matric qualification, would often look for jobs elsewhere. Their ability to find jobs afterwards could be attributed to the education they already possessed prior to joining the *Prosopis mesquite* clearing project, since the longer training periods are arguably the only ones with the most impact on the beneficiaries' human capital. Since Key Stakeholder B stated that the beneficiaries would have worked for only about 2 months before deciding to leave, this length of time would not be considered sufficient for job readiness training. This is especially the case since EPWP projects fall under either short-term (less than 12 months), medium-term (12 months to two years), and long-term or on-going projects (two to three years) and in cases where there is limited funding and capacity to sustain these projects, beneficiaries are usually given short-term contracts which mainly focus on soft skills training (Henderson, 2013; Department of Public Works and Infrastructure, 2019). Furthermore, as Key Stakeholder E revealed that it was considered an achievement if the *Prosopis mesquite* clearing project was able to retain beneficiaries for at least 100 days (approximately 3 months) including skills training, this suggests some misalignment between training days and the workdays they are meant to accompany, as illustrated in the previous section.

Discussing the precarity of the employment in public works and the challenges that beneficiaries are faced with which have sometimes caused them to leave such projects prematurely, (Odhiambo *et al.*, 2015) assessed the opportunity cost of participating in public works in Namibia. Although the wages offered in public works projects are low compared to labour market wages, the promise of training accompanied by on-the-job work experience reduce the opportunity cost of forgone income that the beneficiaries would be receiving if they had opted for casual wage employment such as domestic work, gardening or offering their labour in the local farms (Odhiambo *et al.*, 2015; Ismail, 2018). However, when public works projects renege on this promise, beneficiaries no longer have an incentive to endure the indefinite waiting periods for the sake of a promise of more stable employment in the future resulting from enhanced human capital from the training. Based on the evidence presented, the beneficiaries of the *Prosopis mesquite* clearing project were also faced with this opportunity cost and while some stayed despite the late wage payments, the uncertainty of the resumption of work, the clearing-focused training offered and the short employment periods which were largely determined by the budget, for some beneficiaries who could find employment elsewhere, these challenges made other forms of employment outside the project more attractive.

Looking at the beneficiaries' perspectives through the lens of the Capabilities Approach, which Alkire (2005)

described as a morally centred human development framework, there seemed to be an awareness on the beneficiaries' part on what skills training and length of time required in employment they perhaps needed to improve their labour market prospects. This was suggested by their frustration at only being retained for 3 to 6 months. One of the beneficiaries referred to the effect of this practice being that of 'killing the morale' of the workers and directors. Reflecting on (Formosa and Mackenzie, 2014) identification of the two types of human dignity, namely, status dignity and achievement dignity, where the former refers to the common respect-worthy status or inherent dignity of all human beings, while the latter references their status owing to the degree of their beings and doings, a person's status dignity often depends on their achievement dignity. Therefore, having a low level of achievement dignity, which is often the case among those who are poor, can also determine how an individual is treated by society as well as affect their prospects of accessing certain spaces that would contribute to elevating their status. Being in a position where the beneficiaries felt their livelihoods were not improving in substantial ways that would increase their achievement dignity affected their self-confidence negatively. Although self-confidence or morale is an intangible factor when considering those factors which are thought to contribute positively to one's livelihood, having confidence in one's agency to choose particular valuable beings and doings which one may deem necessary for the achievement of their desired livelihood outcomes is important since it will reflect the longer-term outcomes of the project. These longer-term outcomes will be reflected through the beneficiaries moving on to more sustainable forms of employment which they will have had the confidence to choose and pursue due to knowing that they had the required work experience and skills to do so. Conversely, when EPWP projects such as the *Prosopis mesquite* clearing project do not keep to their end of the deal which is that of ensuring that the beneficiaries are retained per the specifications of the FTE Target of 230 person days of employment, or at least for the 100 person day on average, the beneficiaries are discouraged from participating. One of the effects of this was that the beneficiaries continued to cycle through the *Prosopis mesquite* clearing project or left the project before they had completed their allocated workdays. The longer-term impact of this is when viewed from a livelihood perspective is that their household incomes, or financial asset endowments, would only increase temporarily while they are still actively participating, but in the long-term the restrictions to their ability to choose more sustainable employment would possibly still be there. This would be the case if they left the project without an alternative plan for employment, or they only received the training that was related to the activities of the *Prosopis mesquite* clearing project and could not find permanent employment with those skills. Although their social capital would have improved through their interactions with others in the *Prosopis mesquite* clearing project, especially the managers and service providers that they could network with for employment referrals, if the human capital asset endowment is not enhanced as the one which underpins access to the other livelihood assets, the *Prosopis mesquite* clearing project managers will face challenges.

These challenges will be met in attempting to capture and quantify the longer-term outcomes of the project beyond just the outputs of the workdays and training days outputs.

Adding in the perspectives of the beneficiaries to the analysis of the key stakeholder interviews suggests that although Tables 7.5.2 and 7.5.3 showed that the *Prosopis mesquite* clearing project created 336 880 total workdays across the five years in Phase II and 247 482 workdays in Phase III, taking these workday outputs at face value leaves out crucial details about the usefulness of the data to the real issue of structural unemployment and the poverty it brings. Therefore, based on the analysis of this research study of the *Prosopis mesquite* clearing project, quantitative measures which use numbers of workdays and training days as proxies for how successful the socio-economic interventions of EPWP projects are, can be misleading. It gives the impression that the project was running as successfully as it should, since numbers do not reveal whether from a socioeconomic standpoint, the project would still be considered successful.

7.6.2 Beneficiaries' views of the training opportunities received through the *Prosopis mesquite* project

The beneficiaries were given training ranging from short to long-term based on the training needs of the *Prosopis mesquite* clearing project, the budget amounts available each year and the education levels of the beneficiaries who self-selected in the five-year period under each phase. Most of the training in Phase II was focused on refresher courses and short-term courses, namely First Aid and Health and Safety training which take one to two days each of classroom time depending on the service provider (National Occupational Safety Association, 2020; STRAT training, 2020). The focus on refresher courses in Phase III suggests that those beneficiaries were returning workers rather than new recruits into the *Prosopis mesquite* clearing project, as previous beneficiaries would be expected to have moved on to more stable forms of employment since public works are meant to improve the employment outcomes of beneficiaries.

This lack of follow through in public works programmes to deliver on their promises of providing skills-training resonates with McCord's (2009) analysis of public works programmes as social protection tools, where it was noted that the on-the-job training that is received by beneficiaries is low-skilled and does not align with the skills-needs of the mainstream labour market. Therefore, since there is limited demand for the skills specific to the activities of EPWP projects as Key Stakeholder C also stated, that skills such as chainsaw operation do not exist in the Organising Framework for Occupations, the impact of the EPWP in the short and medium term will be negligible (McCord, 2009). Although these skills may not be considered mainstream in the labour market, some of the beneficiaries were able to find employment clearing invasive alien plants on government-owned lands such as around the power generating State-Owned Enterprise Eskom. In the long-term the benefits of the EPWP may be noticeable, especially if the management of the EPWP follow through with the plan to popularise learnerships in Working for Water projects, as Key

Stakeholder C mentioned.

Taking into consideration the analysis of the data provided in the context of the Capabilities Approach and the Sustainable Livelihoods Approach, the purpose of providing work experience and training to people from low-income communities through recruiting them to be beneficiaries in the EPWP projects is to enhance their human capital. Underlying the broad concept of a person's human capital are what Nussbaum (2011) termed one's innate capabilities, and these consist of one's bodily health and integrity, sense, imagination and thought, affiliation, control over one's environment, emotions, practical reason, and life in general. Unless these innate capabilities are enhanced through education and skills training, they can restrict a person from achieving 'substantial freedoms', which are the opportunities available to choose certain livelihood outcomes (Sen, 1990). This restriction is observed through the functionings that people can carry out which are a reflection of the innate capabilities they possess since these capabilities serve as vectors for the functionings (Alkire, 2005). Therefore, the interaction between one's capabilities and functionings mediates access to the different livelihood assets set out in the sustainable livelihoods approach. Since one of the five livelihood assets outlined in the sustainable livelihoods approach is human capital, the innate capabilities of the individual allow them to choose functionings that afford them access to resources that will further improve those capabilities. Applying this to the beneficiaries, their prior knowledge, education, and skills enabled them to make the choice to self-select onto the *Prosopis mesquite* clearing project and the work experience and skills training served to enhance those capabilities they came on the project with, which needed to be improved upon to allow them better access to labour market jobs. The wages the beneficiaries were receiving from the *Prosopis mesquite* clearing project enhanced their financial asset endowments, albeit temporarily. The items, which fell under each of the other livelihood asset categories, that they were able to access as a result of the increase to their financial asset endowments highlighted the spill overs that improvements to one's financial position can have on their overall wellbeing. To ensure longer term improvements to the livelihoods of the beneficiaries, EPWP projects, the *Prosopis mesquite* clearing project included, provide skills training and work experiences to beneficiaries which improve on their individual innate capabilities and enhance their respective human capital asset endowments. Once this is achieved, the beneficiaries' labour market prospects are assumed to have improved, which suggests that they will be able to find higher paying forms of employment in the labour market after they have exited the EPWP projects. The ability of the beneficiaries to find employment elsewhere after their participation is the overall outcome that EPWP projects seek to achieve in terms of their social development interventions. However, the extent to which the *Prosopis mesquite* clearing project was able to achieve these outcomes depends on the factors and challenges revealed by both the key stakeholders and the beneficiaries, which are discussed in this chapter, as well as other impacts which may not be easily observable or are unique to each EPWP project.

7.6.1 Summary

This section of the chapter added the often-missing voice of the beneficiaries to the analysis of the data related to the socio-economic interventions of the *Prosopis mesquite* clearing project. The responses of the beneficiaries highlighted the inadequacies of the current quantitative measures being used to determine the success of the socio-economic interventions of the *Prosopis mesquite* clearing project and other EPWP projects. The primary data from the online survey with the beneficiaries provided a different lens through which to view the data related to the socio-economic interventions of the *Prosopis mesquite* clearing project, a view which allows for a closer scrutiny of these secondary data records and the key stakeholders' responses. The following chapter presents the assessment framework which is the point of this entire research study. The analysis of the secondary data, the key stakeholders' responses and those of the beneficiaries, being guided by the research objectives, provided the necessary information to formulate the indicators which will inform the framework which can be used to assess the success of environmental public works projects from a livelihoods-based perspective. The framework will be applied to the case study of the *Prosopis mesquite* clearing project, since it is informed by data from the project, but it can be applied to other environmental public works projects of a similar design.

7.7 Conclusion

This chapter analysed the secondary data records from the Working for Water offices which manage the *Prosopis mesquite* clearing project in the Northern Cape, as well the key stakeholder interviews and the online survey which was conducted with the beneficiaries that were working as in-field workers in Phases II and III. The statistical results revealed important nuances in the dynamics between the real budgets over the years and the workdays and training days created which were not apparent in the secondary data records. Furthermore, the results showed that although the challenges expressed by the key stakeholders and corroborated by the beneficiaries were impacting the *Prosopis mesquite* project's ability to meet its deliverable targets, exposing them as well as their effects on the beneficiaries provide a way forward for how they could be addressed. The results from the analysis of the secondary data, key stakeholder interviews and beneficiaries' online survey showed that there was a difference in what the managers of the *Prosopis mesquite* clearing project claimed and how the beneficiary targeting objectives, workday and training targets translated in practice. The beneficiary targeting objective of 60 percent women beneficiaries was not met in all the three phases that were under review (Phase I, II and III). Furthermore, the target of recruiting beneficiaries with disabilities was only met in Phase I, and the target for youth beneficiaries was exceeded in all three of the project phases. The meeting of the average number of workdays per beneficiary in relation to the FTE target was affected by other factors which were outside the control of the *Prosopis mesquite* clearing project managers and consequently the FTE Target of 230 person days of employment was adjusted to 100 workdays. The budget allocated annually was affected by the

project's performance in the previous years, which in turn affected the number of workdays and training days that could be created. In the years when the real budget was reduced, the *Prosopis mesquite* clearing project seemed to prioritise temporary poverty alleviation through hiring more beneficiaries and allocating them fewer workdays so that in those years the beneficiaries would still benefit financially through the wages. This reduction in the average number of workday and allocation of fewer workdays per beneficiary could threaten to turn the *Prosopis mesquite* clearing project into a 'make work' project since some of the workdays were too few to count as work experience. Other factors which affected the number of workdays and training days were other input costs such as new capital equipment, which would have limited the amounts allocated to the creation of workdays and training days. The relationship between the training days and the annual real budgets also did not display a directly proportional relationship and the majority of the training offered in the three phases which were under review was short term. Since the key stakeholders had mentioned that some beneficiaries had cycled through the *Prosopis mesquite* clearing project several times due to being unable to find jobs following their participation on the project, the training consisted of refresher courses which were short term and cheaper to administer. Overall, the results showed that although the *Prosopis mesquite* clearing project was not meeting some of its targets, there were indications of efficiency gains as it was still able to carry out its activities with fewer resources such as being able to carry on with the clearing activities with lesser workdays allocated, and in some years increase the number of workdays despite reductions in the budget. The results presented in this chapter have laid the groundwork for the developed of the evaluation framework in the following chapter, which utilises the theoretical frameworks, namely, the capabilities approach and the sustainable livelihoods approach, to situate these findings within the scope of environmental public works projects as tools for the improvement of the livelihoods of the beneficiaries.

CHAPTER 8: Development and application of the evaluation framework to the Northern Cape's *Prosopis mesquite* clearing project

8.1 Introduction

This chapter presents the evaluation framework that has been developed from the data presented and analysed in the previous chapter (Chapter 7). The framework follows the traditional sequence of Program Logic Models which consist of inputs, activities, outputs, and outcomes. Reflecting on the keystakeholders' responses, it seems the evaluation of EPWP projects, including the *Prosopis mesquite* clearing project, so far has only consisted of tracking the outputs which are the number of workdays and training opportunities that were created each year or during the entire five-year phase cycle. This meant that although the end goal of the EPWP is to ensure that the work experience and training it provides to beneficiaries will assist them in being able to find employment after participation in the projects, the programme does not seem to have the proper indicators in place to track whether this is happening and if so, to what extent. Therefore, devising outcome indicators to capture the short and long-term outcomes is important to ensure that the temporary employment and skills training are having the intended impact on the beneficiaries. To account for the outcomes, the evaluation framework presented in this chapter uses the Sustainable Livelihoods Approach and the Capability Approach theories to formulate the outcomes indicators since the temporary wages, the workdays, and training received can and do affect different individuals' livelihood asset endowments. Viewing these impacts through the lens of these two theories, the impact of the *Prosopis mesquite* clearing project's social development intervention were on the beneficiaries' financial, human, social, physical, and natural capital endowments (Serrat, 2008). The importance of including the beneficiaries' voices in the conversation on the socioeconomic impacts of the EPWP echoes Martin's (2019) argument that the usefulness of a framework as a tool for communication is predicated on its ability to adequately address end-users, which in this case would be the beneficiaries who are on the receiving end of these socio-economic interventions. As such, their contribution to the analysis and to the formulation of the outcome indicators is important as this could assist the managers of the *Prosopis mesquite* clearing project on improving future implementation of the project. These improvements could be in the form of making the necessary adjustments that would yield the desired outcomes, also factoring in the perspectives of the beneficiaries on the changes they would like to see implemented. Dorn (2016) emphasised the importance of case-based storage of knowledge and reasoning gained from the application of projects which can serve as useful lessons in the application of future projects. In terms of EPWP environmental public works projects which, as Key Stakeholder C stated,

do not have mechanisms in place to track outcomes or beneficiaries' development beyond the project, the case-based storage is limited only to the national reports on what activities were performed in each year or five-year cycle and on reporting on the number of workdays, training days and hectares of land cleared as the outputs of each project. However, to also account for outcomes and thus add more richness to the existing data, the framework presented in this chapter contains indicators that could be useful in tracking short and possibly long-term outcomes of environmental public works projects, including the *Prosopis mesquite* clearing project, in terms of their impact on the beneficiaries' livelihoods.

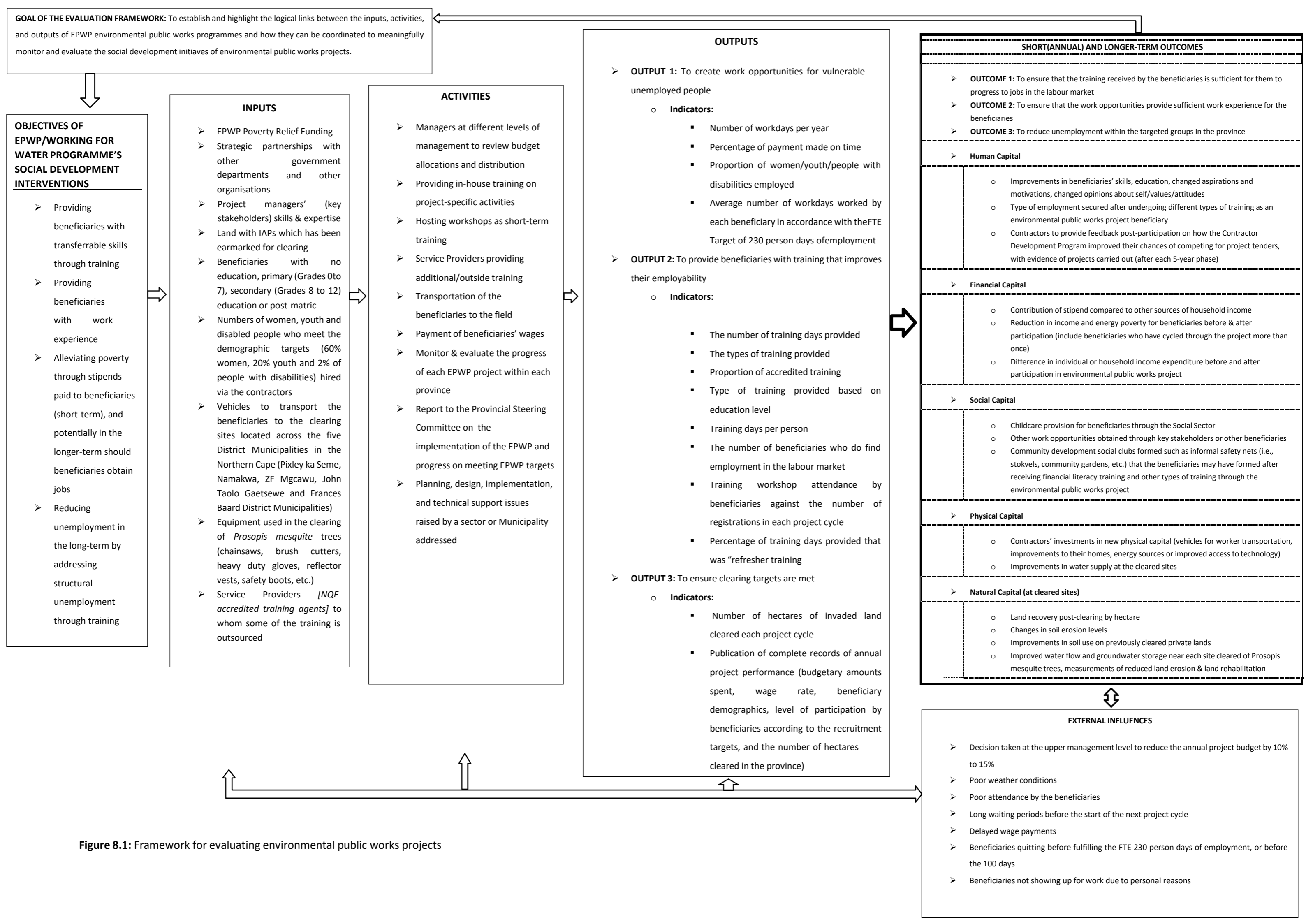


Figure 8.1: Framework for evaluating environmental public works projects

8.2 The structure of the evaluation framework for environmental public works projects

Recapping on chapter 5 which presented the concept of program logic models, Knowlton and Philipps (2012) stated that the first consideration in reading a Program Logic Model is for the reader to be aware of the overall aim of the program, as this will allow for an understanding of the ‘if this, then that’ logic followed by these models. Understanding the aims of a program acts as a guide to its successful implementation as it sheds light on the resource inputs that are required that will facilitate the necessary activities that will then enable the production of the desired outputs from which the outcomes will be derived (Knowlton and Philipps, 2012; Newton, 2013). Therefore, the first column on the far left of Figure 8.1 above indicates that the overall objectives of the poverty relief goal of Working for Water’s social development initiative is to provide beneficiaries with transferable skills through training, work experience, alleviating poverty both in the short-term through the stipends paid to the beneficiaries and potentially in the long-term should they secure better jobs in the labour market, as well as reducing unemployment in the longer-term. The meeting of these objectives is measured through outcomes, which are listed in ‘outputs’ column, which lists the proportion of women, youth and disabled people (60, 20 and 2 percent, respectively) that the Working for Water programme projects should recruit. As already discussed, that at face value, the individuals that are being targeted by these projects are considered as marginalised in society, the outputs do not adequately capture how these outputs translate to poverty relief for these beneficiaries, which is where the framework developed through this study comes in. The discussion of these general objectives is intertwined with the relevant discussion points from chapter 7 and the sections that follow on the interactions between the other components, namely, the input indicators, the activities, outputs and eventually the proposed outcome indicators, describe how the different components of the evaluation framework impact each other. Since the *Prosopis mesquite* clearing project is used as a case study to model how the evaluation framework ought to be operationalised by similar environmental public works projects, the description of how the different components are linked draws from the data analysis in chapter 7.

8.2.1 The objectives of the EPWP and Working for Water programme’s social development evaluations

The evaluation framework first outlines the objectives of the Working for Water programme’s social development interventions which were extracted from the official website of the Department of Forestry, Fisheries and the Environment (2022). The first two points on the recruitment goals in terms of beneficiary demographics and the FTE Target of 230 person days of employment were discussed at length in the previous chapter (Chapter 7) together with the responses from the key stakeholder interviews and those from the beneficiaries’ online survey. However, recapping on why it is important for the EPWP and Working for Water projects to adhere to them is crucial to the construction of the evaluation framework. The FTE Target of requiring that beneficiaries be retained for 230 days is determined at the national level for all EPWP projects. However, as discussed in Chapter 7, in the Northern Cape’s *Prosopis mesquite* clearing project, this FTE target

had been adjusted to at least 100 person days of employment due to the challenges described in the analysis. The demographic targets give preference to certain groups of people in society which are identified as being the most vulnerable to poverty. These targets are aligned with national trends, which often reveal that the youth are often affected disproportionately by unemployment, that women are the most vulnerable to unemployment and poverty due to having low skills, and the exclusion or discrimination against disabled people from economic activity. Furthermore, since the social grant system has specific criteria for those who can benefit from it, it only caters to certain types of disabilities and specific age groups among the elderly, most people who are poor often do not qualify to be social grant recipients. Therefore, these EPWP demographic targets cater to those who fall in between the cracks of government's social protection efforts by providing them with work experience and training that will allow them to be economically productive members of society. However, considering the disabilities that were outlined in chapter 7 which were disclosed by the beneficiaries who fell in this category, which training and clearing activities to assign these beneficiaries poses some challenges. Drawing from Key Stakeholder C's comment on the dangers that could arise from assigning beneficiaries to operate certain equipment without first assessing their physical ability, the type of disability could hinder the carrying out of some project activities. Furthermore, considering that Working for Water aims to target 60 percent of women beneficiaries, since men are generally considered to be physically stronger than women, having more women could also be a determining factor on the types of equipment that can be used carry out clearing activities. Furthermore, although these demographic targets are well-meaning, they do not sufficiently capture the dynamics within the project after the demographics are recruited, whether they actually do receive the training and sufficient work experience they were promised.

The third point on ensuring that the beneficiaries receive an average of two days of training at minimum was not mentioned by the key stakeholders during the interviews. Instead, Key Stakeholder E stated that the EPWP standard that they were adhering to as the managers of the *Prosopis mesquite* clearing project was that of ensuring that the beneficiaries were retained for a minimum of 100 days, both in the temporary employment and in skills training as that signified that the EPWP had contributed to poverty alleviation since by so doing they were aligning the work experience with skill training. However, the analysis of the data in the previous chapter painted a different story as the training days did not show a clear correlation with the real budget as the budget changed over the years across Phase II and Phase III. As discussed in chapter 7, the length of EPWP projects ranges from short (less than 12 months), medium (12 months to two years), to long-term or ongoing projects (two to three years) and since training is implemented alongside the number of workdays of temporary employment, the length of the project determines the training that will be provided, whether short or long-term training. Therefore, the adjusted person days of work to 100 person days of work, which is approximately three months, suggests that the *Prosopis mesquite* clearing project's activities in Phases II and III were mainly short-term. Table 7.5.5 with the list of training opportunities lends credence to this assertion as the majority of the types of training

that were offered were either short term or refresher courses. This indicates that only reporting on the number of training days is not a good indicator for the intended outcome of increasing the beneficiaries' human capital and ultimately their capabilities, since it is also important to consider the type of training that is being administered to the beneficiaries (see Table 7.5.4). To remedy this, the output indicators in Figure 8.1 (under 'output 2') on the types of training provided and the proportion of accredited training offered by service providers are crucial in communicating a path towards realising this goal of increasing the beneficiaries' human capital. Furthermore, the output indicator of training workshop attendance by beneficiaries against the number of registrations in each project cycle (Figure 8.1 under 'output 2') is also crucial since the short-term training workshops (see Table 7.5.4) are key to improving the soft skills and life skills of the beneficiaries, while also influencing their attitudes and opinions on issues that plague their communities like HIV/AIDS, substance abuse and tuberculosis (TB). While these many not necessarily be skills that may secure them employment, promoting health, which is an innate capability and a key ingredient to the beneficiaries' ability to pursue the functionings that will yield them the desired livelihood outcomes they would have reason to value is important to the overall goal of improving their human capital.

The importance of ensuring that every beneficiary receives HIV/AIDS awareness training is not only due to South Africa having the highest rates of infection which currently stands at 7.7 million people and ensuring that the effects on communities and households are addressed at the community level, but it is also to acknowledge the impact of the disease on the beneficiaries' human capital (Mokoena, 2015; Nuh, 2021). As part of the strategic partnerships between government departments under the EPWP which were discussed in chapter 4, the HIV/AIDS awareness training is facilitated by the Department of Health and the Department of Social Development with the purpose of promoting the quality of life of the people living in the communities in which the EPWP projects operate, especially those either at risk, infected or affected by HIV/AIDS (Phillips *et al.*, 2009; Mokoena, 2015; NICDAM, 2017). The training consists of workshops on HIV/AIDS Awareness, Public Awareness Promotion of Dread Diseases and HIV/AIDS, Provision of information about HIV/AIDS treatment and support options at the community level as well as the various impacts of the disease (NICDAM, 2017). Table 7.5.4 in Chapter 7 outlined the different types of training that were offered through the social development interventions of the *Prosopis mesquite* clearing project, which included short-term training and workshops around raising awareness about substance abuse, Tuberculosis, HIV/AIDS and providing First Aid Level 1, 2 and 3 training.

Childcare facilities such as day care centres have been integrated into EPWP projects to ensure that children are in safe environments while their parents are at work and to assist women with children who may be hindered by childcare responsibilities from participating in EPWP projects, which in this case would be the clearing activities for the *Prosopis mesquite* clearing project (Department of Forestry, Fisheries and the Environment 2022). The Department of Social Development is responsible for the provision of these childcare facilities as part of its Early

Childhood Development (ECD) initiatives which aim to promote improved child nutrition, health, children's psychosocial needs and learning (Department of Social Development, 2006). Given that the EPWP emphasises the recruitment of 60 percent women as part of its demographic targets for each project, the provision of childcare is important if the EPWP projects are to improve the plight of women from low-income communities.

8.2.2 The impact of the external influences on the input factors

The data analysis in the previous chapter highlighted a misalignment between the workdays generated and the training days that were created in the *Prosopis mesquite* clearing project in Phase II and Phase III. Some of the reasons for the misalignment between the training days and the workdays, since they are meant to be implemented in tandem, are summarised in the box in the bottom right corner outlining the external influences that affected both the implementation of the *Prosopis mesquite* clearing project activities at the managerial level and how those challenges affected the beneficiaries' ability to participate effectively in the project. Since these external influences or challenges were unique to the case study of the *Prosopis mesquite* clearing project, the bottom arrow from the external influences box points to the inputs, instead of the first box with the objectives of the EPWP, because the external influences affected the specific inputs that were used in the *Prosopis mesquite* clearing project's social development initiative as discussed in the previous chapter. Reductions in the EPWP Poverty Relief Funding was the main factor which affected the procurement of the inputs required for the *Prosopis mesquite* clearing project activities, including the numbers of beneficiaries that could be recruited each year as the real budget continued to change over the years. The long periods before the commencement of the next project cycle, delayed payment of the beneficiaries' wages, and poor weather conditions on some days affected the *Prosopis mesquite* clearing project's ability to retain some beneficiaries for the duration of the time specified by the FTE target of 230 person days of employment. The demographic targets were also not being strictly adhered to as the analysis in chapter 7 showed that they were sometimes exceeded. This could have been a result of what Key Stakeholder B stated, that since they were aware of the plight of those who self-selected into the *Prosopis mesquite* clearing project, they sometimes prioritised short-term poverty alleviation by employing the people who stated that they needed to put food on the table.

The data records on the education levels of the beneficiaries were incomplete, which could reflect the poor record keeping within the Working for Water programme that was lamented by Woodworth (2006) and Van Wilgen and Wannenburg's (2016). Other external factors other than the budget that were mentioned in the literature as determinants of a public works project's inputs' performance in yielding the desired outputs and outcomes were already incorporated into the design of the Maharashtra Employment Guarantee Scheme and included ensuring that the sites where the work was being conducted were within walking distance, provided childcare facilities, offered maternity benefits, and paid women equal wages to men (Chari, 2006).

A major determinant of a public works project's success in terms of its impact was identified by Zimmerman (2014)

as depending on how well the programme was designed and how well that design translates in practice. As such, the external influences can also arise from a mismatch between the public works project's design, as conceptualised by McCord and Slater (2009), and the context within which it is implemented. For instance, in the case of the *Prosopis mesquite* clearing project, which is the case study used in this research project to demonstrate how the evaluation framework can be used on environmental public works projects, the economy of the Northern Cape is characterised by a large presence of the mining, agricultural, manufacturing and construction sectors, which are not aligned with the types of training courses that were provided by the *Prosopis mesquite* clearing project in the three project phases reviewed in this research project (see Table 7.5.4). In addition to this, the external influences outlined in Figure 8.1 could mainly be attributed to a lack of capacity as Samson *et al.* (2010) cited government capacity as the major determinant of the level of success of a public works programme. The lack of capacity, which from the analysis of the responses from the key stakeholders seems to have been as a result of decisions taken at the national level, affected inputs and ultimately affected outputs and eventually compromised the materialisation of the outcomes. Therefore, this suggests that to be able to determine the source of some of the external factors influencing the meeting of an environmental public works project, looking at the design and context of the project are important steps towards determining the appropriate solution.

8.2.3 The relationship between the inputs and the activities

The effects on the inputs spilled over to the activities, which compromised the achievement of the desired outputs. Revisiting Key Stakeholder B's statement that whenever the budget was reduced by either 5 percent or 10 percent, their targets were also reduced by the same amounts, the budget reduction directive resulting from the reprioritisation of government expenditures at the national level will often result in a compromise on the number of training days and type of training that will be offered to the beneficiaries, which will often be short-term, and a reduction in the number of workdays, as already discussed in chapter 7. Another outcome of this that was highlighted in the data analysis was the rehiring, via the contractors, of beneficiaries who already had received training in conducting the clearing activities such that the training that they received was merely to refresh their knowledge. In the years that a reduction in the EPWP Poverty Relief budget was announced coincided with an increase in the ratio of budget to total workdays due to price increases of the equipment inputs, as seen in Tables 7.5.2 and 7.5.3, this further affected the average number of workdays that each beneficiary was allocated. Perhaps the issue of late payments of the beneficiaries' wages was tied to Van Wilgen and Wannenburg's (2016) argument that the Working for Water programme had too many projects in operation, and this was posing challenges to the proper allocation of funding to cover all its operations, which included project planning, monitoring and evaluation and its overall control operations. As such, perhaps the processing of the wages was taking longer on the administrative side due to the sheer number of projects and beneficiaries that the Working for Water programme was managing. This would have also compromised the Working for Water

programme's ability to monitor and evaluate the progress of each project since Van Wilgen and Wannenburg (2016) also stated that having too many projects in operation also posed challenges to its overall control operations. Perhaps because of these external influences which would have affected the *Prosopis mesquite* clearing project's chances of being rewarded the conditional grant for its annual performance in meeting the EPWP targets, the FTE Target was adjusted to the 100 person days of employment instead of 230. This issue would have been raised as one of the issues related to project planning, design, implementation, and technical support. In terms of the impact on the beneficiaries' capabilities and ultimately on their livelihoods, the reduced number of workdays which were further reduced by the external influences outlined in Figure 8.1, meant that the workdays were insufficient to count as work experience. This may have been the reason some of the beneficiaries continued to cycle through the *Prosopis mesquite* clearing project due to not being able to secure employment in the labour market.

8.2.4 Output indicators

The outputs from EPWP and Working for Water projects are usually reported in quantitative terms, as the total numbers of jobs that were created nationally or provincially, and the number of training days that were created on an annual basis or overall, during a project phase (Department of Public Works, 2010; Department of Public Works, 2012; South African Cities Network, 2015). As revealed by the data analysis in the previous chapter, taking the numbers recorded in national reports at face value conceals the challenges that project managers are faced with at the provincial level, which were discussed for the *Prosopis mesquite* clearing project. For instance, reporting on the aggregate number of workdays that were created by the Working for Water programme across the nine provinces, using the FTE Target of 230 person days of employment as a measure could be misleading since the *Prosopis mesquite* clearing project uses the adjusted 100 person days of employment. Furthermore, reporting on the training days using the Department of Forestry, Fisheries and the Environment's (2022) specification of an average of two days of training per month could also mask whether this training was specifically the training that is for the project's activities, which in this case would be chainsaw operator, brush cutter operator, herbicide applicator and any other training linked to the clearing of the *Prosopis mesquite* species, or there was additional training that was more aligned with ensuring better mainstream labour market outcomes for the beneficiaries after they exit the EPWP projects. Adding the challenges with record keeping that were mentioned by Woodworth (2006) which have plagued the Working for Water programme since its inception in 1995 and were apparently still plaguing the programme as there were no records for Phase I funding for the *Prosopis mesquite* clearing project, hence the analysis for Phase I was omitted and complicates the matter even further. This issue of poor record keeping could make it difficult for the programme to be able to quantify the longer term outcomes of environmental public works projects such as the *Prosopis mesquite* clearing project. This is more so the case since Working for Water is already facing challenges with monitoring the progress of its many project operations in general. Key Stakeholder C's comment attested to this by stating that the Working for Water programme, not

just the *Prosopis mesquite* clearing project, did not have strategies in place to facilitate and monitor beneficiaries' exit from the programme into the labour market in terms of the training they gained in the programme. Therefore, the evaluation framework presented in this chapter introduces this important component of outcomes indicators to enable the tracking and monitoring of the short or annual, and longer-term outcomes of environmental public works programmes such as the *Prosopis mesquite* clearing project. This will possibly assist the Working for Water programme in being able to materialise its overall objective of making sure that through the work experience and training administered to the beneficiaries, the beneficiaries are able to move on to more sustainable forms of employment. Being able to track the type of employment the beneficiaries were able to secure post-participation in Working for Water invasive species clearing projects would perhaps provide the managers of these projects with the necessary feedback on the types of skills training they should focus on in relation to each beneficiary's education and skill set which they already possessed prior to joining the project.

8.3 Selection of criteria for the measurement of outcome indicators

A Food and Agricultural Organisation (2016) report outlined five generic criteria which determine the suitability of environmental indicators which were relevance, methodological soundness, measurability, parsimony. In the report, relevance refers to the ability of the indicators to assist in the achievement of rural policy objectives, while the methodological soundness of environmental indicators speaks to the acceptableness of the indicators within the field of study as meaningful. Measurability and parsimony refer to the ability to straightforwardly quantify the indicators and to ensuring that they do not allow for multiple ways to quantify a single manifestation of the same process, respectively (Food and Agricultural Organisation, 2016). In terms of the indicators that will be used to measure the outcomes of environmental public works projects, using the case study of the *Prosopis mesquite* clearing project to model how this can be done, these generic criteria will be used to determine the suitability of each outcome indicator classified under each livelihood capital asset. Out of the possible sets of indicators that could be selected, the ones which are deemed to meet these criteria will be chosen and utilised and the ways in which they can be used will be modelled using the *Prosopis mesquite* clearing project case study.

8.3.1 Outcome indicators

The outcome indicators that are proposed by the framework are presented in the top right hand corner box in Figure 8.1. Also drawn from the data analysis in chapter 7, the outcomes and their respective indicators are drawn from the objectives of the Working for Water programme and located within the human, financial, social, physical, and natural capital livelihood asset categories, respectively, as specified by the sustainable livelihoods approach. The purpose for proposing these outcome indicators is to ensure that in the process of formulating the inputs, the managers of the *Prosopis mesquite* clearing project and those of similar environmental public works projects will already be thinking about the outcomes they want to derive from those inputs. This would introduce self-reflexivity into the project planning process and would reflect the 'if this, then that' logic which governs logic models (Knowlton and Philipps 2012). The introduction of self-reflexivity is in line with the Australian Institute of

Family Studies' (2022) argument that for one to be able to derive 'logic' from the framework, there must be evidence in the inputs, activities, and outputs that those could result in the outcomes the practitioners are considering. The overall objective of the EPWP, and by extension the Working for Water programme, of recruiting people with low skills to train them and provide them with the necessary work experience so that their chances of finding employment improve requires specific indicators attached to it so that the managers will have the means to measure the success for the respective environmental public works project. Such an indicator could be determining the type of training provided to each beneficiary based on their education level (Figure 8.1).

Human capital indicators

In the Sustainable Livelihoods Approach, human capital is defined as the education, skills, nutrition, health, knowledge, and a person's labour power (Adato and Meinzen-Dick, 2002). The human capital indicators should be aligned with the demographic targets as well as the respective education and skills levels of the beneficiaries. Referring back to Key Stakeholder C's comment about the dangers that could arise in-field if they assign beneficiaries without the appropriate level of education to operate certain equipment, although the demographic targets of the Working for Water programme are specifically for those with lower levels of education and skills, this poses a challenge in terms of deciding on the type of training that can be provided. Another consideration should be the skills that are required within the Northern Cape province's labour market, or the labour markets within which other environmental public works projects are implemented. A lack of research and consideration for the type of skills that are on demand in the province and perhaps even within the District Municipalities that the beneficiaries reside in prior to deciding on the training for each year or project phase, could only serve to perpetuate the trend of beneficiaries returning to the project since there would be no employment prospects for them elsewhere which require the skills that they would have received training in during their time as beneficiaries. Following from this, the managers should maintain up to date records of all the beneficiaries that enter and exit the project so that they will be able to conduct surveys or focus groups annually or after every five-year project phase to gauge the progress of the beneficiaries since exiting the environmental public works project. Some of the questions that could be included in the survey could be on any increases or improvements to the beneficiaries' human capital asset endowments. These could be to question the beneficiaries about any complementary skills training that they were able to enrol in after the training they received as part of the environmental public works project, which in this case would be the *Prosopis mesquite* clearing project. For instance, beneficiaries who were enrolled in the ABET (Adult Basic Education and Training) who perhaps could not enrol in certain training courses due to not having the required level of education, could be asked if they were now able to enrol in those courses. This would reflect an improvement in the capabilities of the beneficiaries shown by the action of choosing the functioning of enrolling in a course they previously could not access, which will steer them closer to achieving their desired livelihood outcomes. This inability of some beneficiaries to access certain courses due to having low education levels was mentioned by Key Stakeholder C

who, in addition to the physical build of the beneficiaries being important where heavy clearing machinery was involved, also stressed the importance of the beneficiaries' education levels in determining the type of training programme they would be assigned to avoid injuries in the field. The types of employment that the beneficiaries were able to secure being aided by the work experience and skills training that they received on the project would be another indicator for improvements to their human capital. Similar to beneficiaries' application to courses that they previously could not partake in, the ability to secure a job after participation in the *Prosopis mesquite* clearing project or any other environmental public works project would be another reflection of the effectiveness of the project as a bridge to facilitate the transition of low-skilled people from low-income communities from chronic unemployment into the labour market through the work experience and skills training it provides. Reflecting back on some of the beneficiaries' comments about the effect of the short workday periods on workers' morale, other questions in the survey would be to solicit information on the beneficiaries' perspectives of how they think the project has benefited them in terms of assisting them in the job market by improving not only their skills but also how it improved their motivation and aspirations as well as their attitudes about the state of their livelihoods improving. These could be captured through 1 – 10 rating scales which seek to capture the beneficiaries' satisfaction with the training they received and its alignment with job requirements in the labour market (refer back to Table 7.5.5 on some of the different training programmes that were offered in the *Prosopis mesquite* clearing project, for example). This would be especially useful where accredited training was provided in accordance with the level of education that the beneficiaries came with onto the environmental public works project (see Figure 8.1 for the indicator on the type of training provide based on education level, for example). Another consideration when it comes to human capital and meeting the outcomes of assisting the beneficiaries to move on to employment in the labour market, the managers could assess the skills needs of returning beneficiaries and then deciding, according to the budget, which relevant skills the project can provide to further enhance their skills and avoid them getting stuck in a cycle of returning to the project.

Going with the list of training programmes that were on offer in Phase II and Phase III, some indications of improvements in knowledge, aspirations, skills and motivations, the beneficiaries' aspirations were changing as they each expressed wanting to receive more industry-aligned training through the *Prosopis mesquite* clearing project. The changes in aspirations indicate increasing human agency where the beneficiaries were voicing the desire to be able to choose their desired livelihoods. Although the consensus among the beneficiaries' responses was to gain more from their participation in the *Prosopis mesquite* clearing project, there was some variation in the responses between those with higher secondary education and those with only a primary education. The former mostly spoke of more advanced training while the latter seemed to be more concerned with increasing the number of workdays they were given.

These human capital assessments should be carried out according to the demographic target categories. Since

the demographic targets are aligned with national unemployment and poverty incidence trends, which often reveal the burden of unemployment falling disproportionately on the youth, that women are the most vulnerable to unemployment and poverty due to having low skills, and the exclusion or discrimination against disabled people from economic activity, the indicators need to focus on making a dent in the lives of those specified in the demographic targets of the environmental public works project being evaluated and ultimately, with repeated applications of the project's social development interventions and as different beneficiaries enter and leave the project, to make a dent on the provincial and ultimately national unemployment percentages and in the numbers of people who are living below the poverty line. These reductions in the number of people living below the poverty lines would fall under each of the specified poverty lines which are the Food Poverty Line (FPL), the Lower-Bound Poverty Line (LBPL) and Upper-Bound Poverty Line (UBPL) (StatsSA, 2019). Since the amounts for each of the poverty lines change each year, if the survey is conducted annually, then the amounts for that year would have to be used, and if the survey is conducted at the end of each five-year project phase, the poverty line amounts in the year that the survey is undertaken should be used and the beneficiaries' incomes at the time of the survey to be compared to their individual and household incomes prior to them participating in the project and with the poverty line amounts in the year when they entered the environmental public works project. For instance, since there were beneficiaries who mentioned that they were either recipients of the government old age social grant, the disability grant or they were receiving the government child support grant for their children or that someone else in their household was a recipient, and this was one of the most stable sources of income, the survey could investigate any additions to individual and household income. The survey should include questions that investigate how those additional sources of income are linked to their previous participation and training in the *Prosopis mesquite* clearing project or other environmental public works project under evaluation. Following this, investigations of improvements in individual and household expenditure as a result of the improvements in income should be done by asking the beneficiaries questions related to big expenditures, they have been able to make since exiting the project.

Financial capital indicators

Financial capital refers to any form of income such as government social grant transfers, remittances, savings, and any form of informal or formal inflows (Adato and Meinzen-Dick, 2002). The immediate impact of the *Prosopis mesquite* clearing project's social development intervention on the livelihoods of the beneficiaries was through the wages that they receive from participating. The EPWP beneficiary wages are intentionally set below the labour market minimum wage to induce self-targeting among the poor and to avoid attracting people who would not be classified as the poorest since poverty incidence manifests at different depths even within communities that are overall classified as low-income (McCord, 2003). Even though this practice of intentionally setting beneficiaries' wages below market rates has been called into question because it may have negligible impacts in households with deeper levels of poverty and in regions where there is widespread unemployment

even amongst those who may be regarded as non-poor, the beneficiaries expressed the safety net function of the wages to their livelihoods. Based on the beneficiaries' responses on what they were spending the wages they were receiving from the *Prosopis mesquite* clearing project on, this was an indication that the income was important to their individual and household livelihoods. As such, the wages that the beneficiaries were receiving as participants in the *Prosopis mesquite* clearing project were the first source of improvement to their individual financial livelihood asset endowments. This reduced income and energy poverty for beneficiaries in the short-term as some of the beneficiaries mentioned that they spent the income on buying electricity and other household necessities. A measure for how individual and household expenditure improve as a result of the income would be to solicit information from the beneficiaries on how much their individual and household income and expenditure improved during and after participation. A proxy for this would be any changes to their individual or household basket of goods by asking the beneficiaries about what they previously could not afford that they can now afford. Perhaps the returning beneficiaries would provide more insights into this as their continued return to the project suggests that the income was in reducing some of the burden of poverty that was caused by being unemployed. The points made under human capital indicators on the assessment of the beneficiaries' position in the context of the different poverty line amounts post-participation in the project, the government social grants and any other identified additional sources of individual or household income that can be traced back to the work experience and skills training that they received in the environmental public works project are also linked with the financial indicators. Another source of income that was reported by the beneficiaries was receiving remittances. In cases where the remittances were another important source of income after the government social grants, the question would perhaps be whether the beneficiary's financial position had improved enough post-participation that they were now able to support themselves financially independent of the sender of the remittances. Investigating the type of employment they may have managed to secure post-participation in the EPWP environmental public works projects and which skills offered through the EPWP social development initiative may have been instrumental in them securing the job.

Social capital indicators

Social capital refers to the networks established between individuals which are fostered from working together, are built on trust and can improve individuals' access to opportunities and membership to other organisations (Krantz, 2001). A social capital indicator which is tied to the financial capital indicator would be to investigate whether there had been any formation of formal or informal saving schemes among the beneficiaries, community gardens, or any other community development social clubs that may have been formed after the beneficiaries received financial literacy training, team building and any other training that would have assisted them to begin their own personal development initiatives. There seemed to have been substantial social ties formed among the beneficiaries which were observed during the primary data collection, as they were assisting each other with the online survey via the online group chat that was created. Perhaps the information on the

social capital indicators could be collected with the information on the other indicators discussed here, either annually or after each five-year phase to assess if there have been any organisations formed amongst the beneficiaries which would indicate social trust, reciprocity and engagement within the community and society (Weaver, 2018). Another important consideration would be whether the beneficiaries' proximity to the different key stakeholders and service providers had any role to play in putting in place an exit strategy into the labour market, as it was mentioned that some of the beneficiaries has been able to find employment performing invasive alien plant clearing activities on government-owned land such as around power generation plants. Referring back to Farrington *et al.*'s (1999) documentation of Kenya's Butterfly Farming Project, the improvement in the social capital of the beneficiaries was stated as being through the farmers' increased direct access to other affiliated institutions like Kenya's Forest Department (currently known as Kenya Forestry Service). In Xweso's (2021) documentation of the struggles of skilled day labourers who wait by traffic lights in expectation of work opportunities, the improvement of the social capital of the day labourers came through community development initiatives which promoted the enhancement of human capital through skills development within communities in an environment that fosters the exchange of ideas.

Physical capital indicators

Physical capital asset endowments are defined as the equipment, vehicles, roads, buildings, water supply, transport, energy, technology, pesticides, and communications (Serrat, 2008). Beginning with the contractors who applied for Working for Water tenders and were tasked with hiring the beneficiaries, a survey should be conducted after a five-year project phase to find out if the contractors had invested in any new capital such as vehicles for worker transportation, improvements to their homes, or access to new energy sources especially in light of the current energy crisis. This would be possible since the contractors are small business owners who are given tenders to carry out the clearing activities of the environmental public works projects under Working for Water. Any improvements that are captured should be attributed not only to their involvement in the respective environmental public works project, but also to the Contractor Development Program (CDP) since their participation in the CDP is to improve their chances in competing for project tenders. Therefore, any observed improvements to their livelihoods will be as a result of having been able to secure additional projects post-participation.

Natural capital indicators

Natural capital endowments are defined as trees and their produce, land, wildlife, water, biodiversity, ecosystem services and aquatic resources (Serrat, 2008). The natural capital indicators are well documented in the literature as they speak to the main objective of environmental public works projects, which is that of clearing invasive alien plants and thereby protecting native biodiversity. Therefore, indicators of improvements in natural capital asset endowments would be the improvements in biodiversity in previously cleared sites, improvements in water flow and groundwater storage, reduced land erosion and land rehabilitation.

Performing an analysis perhaps after repeated treatments over a five-year phase would provide more timely data on the clearing work that the project is doing on *Prosopis mesquite* alongside all the other indicators included in the evaluation framework in Figure 8.1.

8.3.2 The suitability of the outcome indicators to the project typification of the *Prosopis mesquite* clearing project

In the literature review (Chapter 2), different public works programme designs were presented, which were defined as Type A to Type D projects. It was already established in Chapter 2 that the designs of EPWP projects display characteristics of more than one programme design. Based on the data that was collected and assessed for this research study on the *Prosopis mesquite* clearing project, as one of the oldest running projects spearheaded under the Working for Water programme which was established in 1995 at the dawn of South Africa's democracy, the *Prosopis mesquite* clearing project may have initially been a Type A project which are introduced with the purpose of acting as a safety net in the short-term during times of livelihood disturbances caused by idiosyncratic or covariate shocks (McCord and Slater, 2009). However, as Woodworth (2006) stated that the issue of poor record management is one that has plagued the Working for Water programme since its early days in the mid-1990s which was a time when the new incoming government was preoccupied with a multitude of issues that had to be considered to usher in the new era of democracy. Data on the *Prosopis mesquite* clearing project dating back to the early 1990s was not available. Perhaps more like the Type B programmes, the *Prosopis mesquite* clearing project provides temporary employment on a continuous basis to anyone who meets the criteria and who may be going through a period of livelihood loss (McCord and Slater, 2009). Both during the key stakeholder interviews and the beneficiary survey, it was revealed that there were beneficiaries who had cycled through the *Prosopis mesquite* clearing project for longer than the time specified for EPWP short-term projects, which are less than 12 months or for medium term projects, which run from 12 months to two years). From key stakeholder B's response that in the face of budget cuts where, as the managers of the *Prosopis mesquite* clearing project, they must compromise on the deliverables (workdays and training days) to match the budget. The focus sometimes becomes that of at least ensuring that the beneficiaries can still put food on the table. Therefore, the beneficiaries continue to return to the *Prosopis mesquite* clearing project, which has made it into a long-term or on-going project (two to three years). The only similarity to a Type C programme that the *Prosopis mesquite* clearing project has, is that it also provides short-term employment, even though in Type C programmes this is four months while in the *Prosopis mesquite* clearing project is approximately three months, or the 100 days of work that was revealed by the key stakeholders. Another similarity with Type C programmes is that the project in question is the contractor training which is included in the table with the types of training that was administered by the *Prosopis mesquite* clearing project in Phases II and III, which is termed Contractor Development (phase 1). The purpose for providing contractor training is to foster entrepreneurship in those who have been temporarily appointed as contractors so that in the future they

will be able to carry on and manage other projects of a similar nature. Looking at the *Prosopis mesquite* clearing project through the lens of a Type D programme, many similarities can be observed. For instance, Type D programmes seek to provide previously unemployed beneficiaries with work experience and skills training as a way of attempting to address the issue of structural unemployment which has the tendency to limit the supply of labour (McCord and Slater, 2009). According to McCord and Slater (2009) Type D programmes are more popular in developed countries, which could perhaps explain the reasons for the challenges discussed in the previous chapter (Chapter 6) that have been faced by the *Prosopis mesquite* clearing project and other EPWP projects operating in South Africa. Furthermore, the adoption of a public works design that is viewed as more suitable for developed country contexts in South Africa could be one of the reasons for the budget challenges in the *Prosopis mesquite* clearing project which were because of government national funds being stretched too thin, which meant that there had to be reprioritisation in the budgeting system. Like the goals of the EPWP, Type D programmes provide beneficiaries with work experience and training to improve people's prospects of finding jobs, thus alleviating pressure on government to provide unemployment social protection provisions. However, a challenge that could emerge in the process of attempting to achieve this outcome of improved labour market outcomes for beneficiaries in Type D programmes is labour substitution not taking place, as this could potentially reverse the positive impact on the employment rate and labour supply in the economy (McCord and Slater, 2009). From this analysis of the different types of programme designs, the *Prosopis mesquite* clearing project has some resemblance with each of the programme designs and this reflects the diversity of issues that the government is attempting to address through the EPWP. Although this is admirable from a policy standpoint as it suggests an awareness of some of the impediments to economic growth, as the key stakeholders also commented, there is no structure in place to track the progress of the beneficiaries after they have exited the EPWP projects. The tracking of short to long-term outcomes would be beneficial in highlighting that the investments made into EPWP projects' social development initiatives are having long lasting effects on the livelihoods of the beneficiaries. Without this, EPWP projects could be perceived as 'make work' projects.

8.3.3 Utilisation of the evaluation framework to the analysis of environmental public works projects' social development initiative

The evaluation framework adopted the sequential structure of the program logic model (PLM) which lays out the process from a project's implementation to its completion and intended outcomes. However, despite the benefits of the PLM in assisting with building a common understanding amongst project managers of the expected results and the ultimate goal of the processes being followed, the linearity of the model's outline could pose some limitations. As shown in Figure 8.1, external factors could result in unintended or unexpected outcomes, which may compromise the achievement of outputs and ultimately the outcomes of a project. In the case of the *Prosopis mesquite* clearing project, the external factors threatened to turn it into a 'make work'

project since they resulted in a reduction in the workdays per beneficiary as well as compromises in the types of training programs that were being provided. Therefore, taking into consideration some of these shortcomings of Program Logic Models, it is important to discuss the ways in which the evaluation framework presented here can be utilised to circumvent these limitations to ensure that the environmental public works project under review communicates the necessary details and delivers the required outcomes. Given that the *Prosopis mesquite* project was used as a case study to merely model how the evaluation framework can be used to assess the effectiveness of the social development role of environmental public works projects, the contents under each of the columns will vary depending on the inputs, activities, outputs and short- and long-term outcomes of the respective project under review. Furthermore, since the evaluation is designed to be reflexive in the sense that the managers of environmental public works projects should keep referring to the framework during the implementation of the project. This process of referring to the framework should be a continuous process, including after following up with the beneficiaries' post-participation to find out how the work experience and training have helped their prospects in the labour market. The post-participation follow-up would necessitate a backwards reading of the evaluation framework to trace the outputs, activities and inputs that may have resulted in whatever short- and long-term outcomes revealed by the beneficiaries. To highlight the policy relevance of this research study and the evaluation framework developed thereof, the outcome indicators were developed using the framework of the Sustainable Livelihoods Approach's livelihood asset classes, with each one indicating the type of capabilities that were possessed by the beneficiaries as indicated by the functionings that were carried out to obtain those livelihood assets. The achievement, or lack thereof, of short- and long-term outcomes to the livelihoods of beneficiaries will highlight the ability of these types of environmental public works projects to provide opportunity spaces for the targeted groups of individuals experiencing structural unemployment.

8.4 Conclusion

This chapter presented the framework developed for the evaluation of environmental public works projects. The evaluation framework was applied to the case study of the *Prosopis mesquite* clearing project and outcomes indicators were developed using the combined Sustainable Livelihoods Approach and the Capability Approach derived from the beneficiary survey. This livelihood approach was used since the stated overall objective of EPWP projects is to improve the labour market outcomes of the beneficiaries after they exit the EPWP projects. The evaluation highlighted that the challenges and limitations that were encountered in achieving not only the output targets, but also producing long-term outcomes from those outputs were mainly due to the reductions in budget. The proposed evaluation framework could be useful in introducing a bottom-up approach to evaluating environmental public works. This is opposite to the top-down approach resulting from the Working for Water programme's one-size-fits-all formulation of ways to measure employment and training targets using the FTE of 230 person days of work and inconsistencies in ensuring that

each beneficiary received the necessary training. The inadequacy of this blanket approach of issuing demographic targets, and workday and training targets without much consideration for the unique contexts in which its projects operate has been revealed by the *Prosopis mesquite* clearing project managers' adjustment of the FTE Target of 230 person days of employment to at least 100 days since they were not meeting this target for the reasons discussed. However, this is not captured in the national aggregated statistics of the number of workdays created overall by the Working for Water programme across the nine provinces. Therefore, the evaluation framework presented in this research study will allow practitioners of environmental public works programmes to assess the progress of the projects they oversee and plan for the outcomes since the evaluation framework also proposes outcome indicators.

CHAPTER 9: Concluding remarks and recommendations to Working for Water managers.

9.1 Recap of the impacts of invasive alien plants in South Africa

Invasive alien plants (IAPs) have adverse impacts on the environment and result in high economic costs which are incurred in the process of clearing (Marais *et al.*, 2004; O'Connor & van Wilgen, 2020; Eschen *et al.*, 2021). The impacts of IAPs in South Africa have been linked to biodiversity losses, which have often affected livelihoods in poor communities where households had some level of dependency on ecosystem services (Rai and Singh, 2020). In some cases, IAPs function as a livelihood resource, especially if the species has been in that environment for any significant length of time (Shackleton *et al.*, 2007; Shackleton *et al.*, 2011; Shackleton *et al.*, 2019). However, these benefits, which result in some IAPs being labelled as conflict species (Shackleton *et al.*, 2011; Shackleton *et al.*, 2015), are less in comparison to the havoc they wreck in natural environments. Some of the documented ways that IAPs have brought destruction to natural environments have been their ability to outcompete native plant species, affecting the availability and quality of water, reducing the economic productivity of lands through their propagation and removal of soil nutrients, and inducing soil erosion (Richardson *et al.*, 2000; Richardson & Van Wilgen, 2004; Chamier *et al.*, 2012; Cousins *et al.*, 2018). In light of this invasive alien plant problem which has plagued South Africa since such species were first reported in the mid-1800s (Visser *et al.*, 2017; Richardson *et al.*, 2020), and the ongoing problem of chronic unemployment, a cost-effective way for dealing with them had to be developed.

9.2 The nexus between public works and service delivery

Public works programmes are one of the forward-looking policy interventions by national governments to address the three issues of unemployment, poverty, and inequality. Their interest to environmental economists is that they have been used to address environmental issues such as alienplant invasions, which the *Prosopis mesquite* clearing project does. Furthermore, since environmental economics as a discipline is concerned with the economic, social and environmental spheres and how they interact, public works programmes and their accompanying socio-economic interventions are an area of interest that has not been explored exhaustively in the literature. Therefore, the point of interest for this research study in this regard was to refocus attention to the important role that the social development component plays or can play in the livelihoods of beneficiaries in the long-term through the work experience and training they receive. This was done through exploring the dynamics of the *Prosopis mesquite* clearing project which was used as the case study for this research project. As an environmental economics research project, this study focused on the *Prosopis mesquite* clearing project which operates in the Northern Cape. This project falls under the Working for Water programme, which is one of the Environment and Culture Sector programmes

(Department of Public Works, 2018). The *Prosopis mesquite* clearing project was chosen because it is one of the longest running projects of the Working for Water programme which was launched in the same year that Working for Water was launched in 1995. Due to the length of time that the *Prosopis mesquite* clearing project has been in operation, it provided a long-term view of how the socio-economic aspect of EPWP has fared and any changes that may have taken place especially after the scope of public works was expanded in 2004.

To address these issues, the service delivery objectives of public works projects are carried out through labour intensive methods to accommodate the creation of temporary jobs and training opportunities (Magadla & Mdzeke, 2004; Moretlwe, 2012). As a result of these different objectives, which in the case of environmental public works projects like the *Prosopis mesquite* project is to manage and clear invasive alien plants while also championing social development, the funding is coordinated by different government departments at different tiers of government to improve service delivery. Some examples of how Working for Water projects have improved service delivery are in Dzikiti *et al.*'s (2012) findings that clearing *Prosopis* trees in floodplains near seasonal rivers in the Northern Cape improved the levels of groundwater by yielding monthly groundwater savings of 70 m³ per hectare cleared. Adding to the point on the benefits of clearing invasive alien plants especially in arid regions like the Northern Cape province, Rebelo *et al.* (2022) stated that the benefits of clearing were more pronounced especially in dry seasons, which occur more frequently in regions that are already dry. In their findings on the benefits of clearing mature invasive alien trees to mitigate water shortages in major water catchments in Cape Town, Rebelo *et al.* (2022) also found that clearing in river catchments had a more significant impact compared to clearing on surrounding land, since in the former more water availability meant more water was being used by the invasive plants. The benefits to society of these clearing efforts were increased mean annual streamflow by approximately 4.1 million litres daily (Rebelo *et al.*, 2022). Dzikiti *et al.* (2012) found that in areas with *Prosopis* invasions the water table was consistently lower than in areas that were not invaded, and these findings provided more support for the necessity of clearing efforts as it pertains to invasive trees such as the *Prosopis*.

9.3 Overview of different public works designs and their similarities to the *Prosopis mesquite* clearing project

McCord and Slater (2009) provided a description of four different public works programme designs in Sub-Saharan Africa and the different objectives that each of these programmes have depending on the situation they were introduced to address. Type A programmes are often introduced as a temporary safety net or coping strategy during disruptions to people's livelihoods caused by drought spells or conflict. These types of programmes tend to be 'make work' programmes whereby the activities carried out are menial and are performed to merely satisfy the work conditionality of public works which is what differentiates them from other government-led cash transfer strategies for social protection. Type B programmes consist of employment that is directly provided by government or outsourced either to the private sector or other civil

society organisations through contracts that stipulate the provision of employment on an ongoing basis or periodically during times of livelihood disruption. Type C programmes are specifically geared towards the infrastructure sector and increase labour demand through their utilisation of labour-intensive techniques in the construction of public assets to accommodate the employment creation objective of public works. These Type C programmes also promote the development of small contractors to whom the contracts for the construction projects are given. Lastly, Type D programmes are those concerned with addressing the supply-side causes of unemployment by providing the people they recruit with work experience and skills training, and they operate in regions in which the issue is mainly structural unemployment rather than merely a lack of job opportunities. Even with variations in the way that these programmes are designed, their premise is the same, which is that of providing livelihood support to the economically vulnerable and chronically unemployed in society through providing them with work experience and sometimes with skills training so that they can ultimately find employment (Dejardin, 1996; (Phillips, 2004; Department of Public Works, 2008; Del Ninno *et al.*, 2009; Kelobang and Boon, 2018). However, since the design of each programme differs, assessing each one's effectiveness in addressing the issue it was introduced to address requires specific strategies that match with its design. McCord and Slater (2009) stressed the importance of considering the unique circumstances in the context in which a practitioner desires to implement a public works programme before they settle on a particular programme design. In the absence of the consideration of the context, a mismatch between the situation and solution provided through the programme and its implementation could result in a failure of the programme.

The findings of this research study showed that the *Prosopis mesquite* clearing project's design demonstrated characteristics of a Type D programme with its work experience and training provision to beneficiaries. However, the changes to the annual budget brought on challenges in terms of the workdays and training days that could be generated, and the beneficiaries expressed discouragement that the type of training was too specific to the activities of the *Prosopis mesquite* clearing project and thus did not allow them to gain sufficiently from it to be able to find employment elsewhere following their participation. This may have affected beneficiaries' participation rates, which compounded the reduction of the number of workdays instituted at the management level in response to changes to the budget. As such, the *Prosopis mesquite* clearing project seemed to have adopted some element of a Type A programme, which is that of being a temporary safety net since insufficient industry-relevant training meant that the cash transfers were the main way that the livelihoods of the beneficiaries were being positively impacted through the project. The extent to which the *Prosopis mesquite* clearing project's budget fluctuations were affecting the social development initiative of creating temporary jobs and training and its ultimate impact on the desired outcomes to beneficiaries' livelihoods was not being captured due to a lack of appropriate outcome indicators. The *Prosopis mesquite* clearing project also resembled Type C programmes, as it included training for small

contractors under the contractor development programme as shown in Table 7.5.5 with the list of the types of training programmes offered by the project.

Going back to the resemblance of the *Prosopis mesquite* clearing project with Type D programmes and how the challenges brought on by budget fluctuations were threatening to transform it into a Type A programme, the *Prosopis mesquite* clearing project was not measuring the livelihood outcomes derived from the work experience and training due to lacking the appropriate outcome indicators. Furthermore, the aggregate reporting of the outputs was concealing the local and provincial issues that were resulting in the FTE Target and other training targets not being met. This was the research gap that this study sought to fill – to develop an evaluation framework consisting of outcome indicators that can be used to measure the success of the social development aspect of environmental public works projects, using the *Prosopis mesquite* clearing project as a case study. To achieve this, the framework included all the sections from inputs to outputs, which precede the outcomes segment in the typical structure of a Program Logic Model. The inputs, activities and output indicators were largely drawn from national Working for Water and EPWP reports which also report on how each of these were quantified. A livelihoods lens was taken in the development of the outcome indicators by drawing from the Capabilities Approach and the Sustainable Livelihoods Approach. As discussed in the literature review (Chapter 2), the relationship between the two theoretical frameworks are their complementarities with each other. To reiterate, the Capability Approach introduces a more individualistic approach to livelihood assessment compared to the Sustainable Livelihoods Approach, which tends to be more prescriptive and provides an aggregate view of a particular group's livelihoods. The indicators for the outcomes accruing to the beneficiaries were formulated using the Sustainable Livelihoods Approach's five livelihood asset types as a guide, and the analysis of the results from the beneficiaries' survey drew from both theoretical approaches. The Capabilities Approach was especially instrumental in the in-depth analysis of the individual level data which was mostly demographic, such as the education levels and ages of the beneficiaries. While the Sustainable Livelihoods Approach provided the livelihood asset categories by which to organise the data, the more abstract approach of the Capabilities Approach also assisted in enriching the discussion following Oughton & Wheelock (2003) formulation in Figure 6.6.1. An example which demonstrates that the beneficiaries' individual characteristics had an influence on the activities and training programme to which they were assigned, some of the key stakeholders stated that the physical build of a beneficiary was an important consideration in whether they would be able to operate some of the equipment and perform certain activities related to clearing. Although this can be classified as human capital, it falls more in the realm of capabilities as it is linked to the gender and ages of the beneficiaries and the accompanying external societal beliefs and influences related to gender. Moreover, it was also stated by the key stakeholders that the training offered also depended on the education level and skills that each person had prior to joining the project, which makes tracing the livelihood outcomes post-participation, through

monitoring and obtaining feedback from the beneficiaries, important. If obtaining direct feedback is not possible, observing the functionings they are able to engage in post-participation in the *Prosopis mesquite* clearing project or another environmental public works project would give an indication of the livelihood impact or outcomes of the socioeconomic intervention. Essentially, the role of the Capabilities Approach in this is that it also assisted in capturing information that served to enrich the discussion but may not have necessarily fit neatly into the categories of the five livelihood assets. Since the main characteristic of EPWP projects which stands out is their socioeconomic intervention, which is there to provide temporary work and training, this classifies them mainly as Type D programmes. Therefore, a livelihood lens to the formulation of the outcome indicators was deemed the most appropriate.

9.4 Operationalising a livelihood lens to measuring outcomes of EPWP social development interventions

The sustainable livelihoods approach, which (Serrat, 2008:1) defined as a “way of thinking about the objectives, scope, and priorities for development” provided the appropriate theoretical grounding for the analysis of the impact of the social development interventions of the *Prosopis mesquite* clearing project on the livelihoods of the beneficiaries. Its components also provided the appropriate alignment with the ‘if this, then that’ logic behind program logic models. By arranging the required inputs, the resulting activities using those inputs, and the expected outputs prior to the implementation of a project, the program logic model provides practitioners with a way of thinking about the objectives, scope, and priorities of their program both before and during its implementation. Thinking through every step of a project draws attention to any gaps that may exist between a project’s underlying assumptions, its choice of resource inputs, the deliverables derived from those inputs and the outcomes the program anticipates given the assumptions and resource inputs (Newton *et al.*, 2013; NHS, 2016). With its five livelihood asset categories, the sustainable livelihoods approach outlines the key areas of a person’s livelihood that should be impacted by a development intervention.

In the sustainable livelihoods framework in Figure 6.2.2, the Policies and Institutions section with the structures (government and private sector) and processes (laws, institutions, policies and culture) as well as the Vulnerability Context (shocks, critical trends and seasonalities) both positively or negatively affect access to the five livelihoods assets that individuals can use to formulate their livelihood strategies or ways of being and doing, to ultimately achieve their desired livelihood outcomes (income, wellbeing, food security, sustainable use of natural resources). In the case of the *Prosopis mesquite* clearing project, the structures and processes which were represented by the different government departments involved in setting up the project, the service providers who were hired to offer skills training, and the policies which guided the implementation of the project had some positive effects in that they enhanced the livelihood assets

endowments of the beneficiaries in their respective capacities. The wages increased the financial capital asset of the beneficiaries, albeit temporarily; the work experience and skills training improved their human capital even though there was still room to do more, their social capital improved through proximity to other beneficiaries, the contractors who hired them, to the key stakeholders and the service providers who were providing them with the skills training. Suggestions on how to capture improvements to the beneficiaries' physical capital was to conduct a survey either a year after the beneficiaries have exited the project, or after a five-year project phase and solicit information on any large purchases that they may have made using the wages after exiting the project or large purchases that they could now afford after securing a job after receiving work experience and training. These large purchase items under the physical capital livelihood asset category would include any purchases of household furniture items, own transport, house renovations and purchases of vehicles. Since the purpose of Working for Water projects such as the *Prosopis mesquite* clearing project, is to clear invasive alien plants and improve water flows while protecting biodiversity, indicators of improvements to natural capital would include improved stream flows, groundwater storage, and improvements to land productivity and responses of the land to rehabilitation efforts. These would require continuous monitoring both after each year of clearing and after the five-year project cycles.

However, the challenges that were brought on by the factors under external influences in Figure 8.1 compromised the meeting of the targets, which ultimately compromised the achievement of these outcomes which would have begun with the beneficiaries moving on to better forms of employment after receiving work experience and training. These factors consisted of the Vulnerability Context (the environmental factor of poor weather on some days), but the factors which posed the most challenges were related to the Policies and Institutions and included the decision at the managerial level to reduce and reprioritise a portion of the *Prosopis mesquite* clearing project budget, long waiting periods before the start of the next project cycle and delays in wage payments. There was an awareness on the part of the key stakeholders who were the managers of Working for Water projects of the effects of these external influences on the beneficiaries. Key Stakeholder B stated that one of their responses was to prioritise mitigating immediate poverty by getting people into the project even if the budget was not enough to carry out the full scale of providing them with the required number of workdays and training. This suggested a lack of consideration for the outputs in relation not only to the 230 person days of employment FTE Target, but also for the 100 days person days of employment that they had adjusted the original FTE target to. The consequences of this over the long term was that the beneficiaries, who expressed their views via the online survey, felt the *Prosopis mesquite* clearing project was not keeping their promise of providing them with the adequate work experience that would give them the confidence to search for employment elsewhere.

This recruitment of beneficiaries to temporarily alleviate the effects of income poverty was illustrated by

the data presented in Tables 7.5.2 and 7.5.3, which showed an inconsistent relationship between the annual real budget and the workday deliverables. Although the other reason for the inconsistency was also due to increases in input costs, the increases in the numbers of the beneficiaries while the number of the average workdays fell in some years reflected what Key Stakeholder B stated. This introduced the element of a Type A program to the *Prosopis mesquite* clearing project. Moreover, the records showing fewer training days that were offered in Phase II and Phase III (Figures 7.5.3 and 7.5.4 and Table 7.5.5) also suggested a lack of focus on the longer-term outcome of ensuring that the beneficiaries would be able to move on to better employment opportunities with the help of the new skills that they would have acquired as beneficiaries on the project. During the interviews, the key stakeholders revealed that there were no strategies in place to facilitate the beneficiaries' exit from the Working for Water projects. In other words, the Working for Water programme did not have strategies in place to measure whether the work experience and skills training were doing what they were meant to do in the livelihoods of the beneficiaries. This was perhaps the reason that when they were faced with budget reductions, the key stakeholders would choose to increase the number of beneficiaries, which meant more wages to be paid, while reducing the average number of workdays, perhaps to offset the amount of the ratio number of workdays to budget. Due to there being no indicators to measure the desired outcomes, this meant that there were no criteria against which to check how the reductions in workdays and training days would possibly affect the beneficiaries' livelihoods in the long-term. In keeping with the terminology of the program logic models, due to the lack of the outcome indicators, the key stakeholders could not perform an 'if this, then that' analysis prior to making this decision. Due to the lack of outcome indicators, the objectives and priorities for development which the social development initiative was introduced for in the first place seem to have been lost in the process of attempting to work with a smaller budget. Therefore, the introduction of the outcome indicators presented in chapter 8 was to assist Working for Water with adopting a more strategic approach that ensures that the beneficiaries are not short changed and at the risk of turning the *Prosopis mesquite* clearing project into a 'make work' project.

9.5 Summary of research findings

The results showed that the effort that was being made toward delivering on the workdays and training outputs were not reflective of the desired outcome of producing beneficiaries with the right sets of skills for the labour market. The fluctuations in the real annual budgets in Phase II and Phase III, which were reviewed in this research study, were limiting the scope of what the *Prosopis mesquite* clearing project could achieve in terms of these deliverables. The tables with the data on the real annual budget amounts, the yearly number of beneficiaries and the average number of workdays that each of them worked as well as the ratio of the workdays to the budget, Tables 7.5.2 and 7.5.3, showed that even though perhaps logical the expectation would be for the numbers of the beneficiaries or the workdays to decrease when the annual real budget fell, the Working for Water managers' awareness of the plight of the beneficiaries compelled them to increase

the number of beneficiaries at the expense of the average number of workdays that each of them were allocated. The other factor which contributed to the reduction in the workdays were increases to the ratio of the workdays to the budget, which were offset when the managers reduced the numbers of workdays especially in the years when the budget was also reduced in that year. An example of this was in Table 7.5.2 which showed that the real annual budget fell between 2009 and 2010 from R39 720 982.83 to R25 930 826.36 but the number of beneficiaries increased from 202 to 548, while the average workdays that each beneficiary worked between those years fell from 189 to 145. This reflected the managers' decision to increase beneficiary numbers even during times of budget decreases as they felt compelled to assist the beneficiaries with at least putting food on the table even if they were not receiving the required number of workdays specified by the FTE target of 230 or 100 person days of employment. The accompanying decrease in the ratio of workdays to the budget from R1 042.00 in 2009 to R325.59 in 2010 was offset by the wages of the more beneficiaries that were recruited to work fewer days. Another trend that was observed in the data was between 2015 and 2016 where the budget increased from R20 594 017.21 to R23 890 272.42. This increase in the real annual budget was accompanied by an increase in the ratio of the budget to workdays from R266.11 to R441.12, a resulting fall in the average number of workdays from 67 to 59 and a decrease in the number of beneficiaries from 1 159 to 917. This was more the logical trend even though overall the relationship between the real annual budget and the workday and training variables was not easy to predict since there were other factors at play which were not easily observable in the quantitative data. Likewise with the training, even though in the objective set out in the Department of Forestry, Fisheries and the Environment (2022) was for the beneficiaries to receive training for an average of two days per month, even though the *Prosopis mesquite* clearing project managers stated that the beneficiaries would be allocated training days that were equivalent to the 100 person days of employment, the training days accumulated for each year that were offered in Phase II and Phase III still fell below 100 days (see Table 7.5.5). This was yet another reflection of a lack of focus on what the objectives and priorities for development were as far as the social development interventions of the Working for Water programme were concerned.

The quantitative data was supplemented and corroborated by the key stakeholder interviews that were conducted with the managers of the Working for Water and *Prosopis mesquite* clearing project, and by the online survey which was carried out with some of the beneficiaries. These were the sources of the primary data. The quantitative data analysis was conducted on some aspects of the secondary data records that were obtained from the Working for Water offices in the Northern Cape. A desktop review of EPWP reports and reports from other organisations affiliated with them were also consulted as part of the secondary data. As discussed above and in more detail in chapter 7, the key stakeholders provided more context and explanation for the secondary data. They also volunteered additional information on the dynamics of the project and expressed a desire for more alignment between the inputs to the Working for Water projects inclusive of the *Prosopis mesquite* clearing project and the overall aim of Working for Water of emancipating chronically

unemployed and poor people from poverty. This alignment between the inputs and outcomes would contribute towards the potential achievement of better results as far as the EPWP's objectives are concerned.

The findings of this research project revealed that the key stakeholders' and beneficiaries' perceptions of the *Prosopis mesquite* clearing project's impact corroborated each other. For instance, the beneficiaries' responses expressed a desire for the *Prosopis mesquite* clearing project to improve on its delivery of the workday and training targets that the beneficiaries were promised when they signed their temporary contracts. This was reflected in their responses on desiring more workday allocations, instead of working for only 3 to 6 months in the year. Another desire that was expressed by the beneficiaries was to receive more than just the training that was designed to prepare them for the clearing activities of the *Prosopis mesquite* project. The beneficiaries also expressed their frustrations with the long waiting periods before the resumption of the next work period and the late payments of the wages, which are points that seem contradictory to the goal of the wages which is to temporarily mitigate the effects of unemployment-induced poverty. Another factor which compromised the meeting of the workday targets were weather conditions which meant that on days when the weather was poor, the beneficiaries could not go to the different sites to carry out the *Prosopis mesquite* clearing activities. However, despite these challenges which mostly trickled down from administration issues at the managerial level, the beneficiaries expressed that the *Prosopis mesquite* clearing project was beneficial in terms of providing them with temporary income which smoothed their household expenditures on groceries, toiletries, electricity, buying clothes, settling monthly life insurance payments, and paying school fees.

In terms of meeting the demographic targets of recruiting 60 percent of women, 20 percent of youth and 2 percent of people with disabilities, the results were inconsistent across the three phases. For instance, the 20 percent youth recruitment target was met and exceeded across Phases I, II and III, which was a positive contribution by the *Prosopis mesquite* clearing project especially in light of the national statistics which depict consistently high levels of youth unemployment in the country which was 32.7 percent in 2008 at the end of Phase I (2004 to 2008), 63 percent in 2013 which was at the end of Phase II (2009 to 2013) and 38.2 percent in 2018 at the end of Phase III (Cassim and Oosthuizen, 2014; StatsSA, 2014; StatsSA, 2018). Provincially, youth unemployment in the Northern Cape was 30.4 percent in 2008, 39.4 percent in 2013, and 42.4 percent in 2018 (Department of Economic Development and Tourism, 2015; Northern Cape Provincial Treasury, 2018). However, with the lack of adequate work experience and skills training, it is doubtful what the effect of this youth absorption into one of the largest Working for Water projects, which is the *Prosopis mesquite* clearing project, would have been on the Northern Cape's youth unemployment rates or the national youth unemployment statistics. Likewise, although targeting 60 percent of women for an EPWP project like the one under study demonstrates an awareness of women's vulnerable position in the labour

market, the 60 percent target was not met in any of the three phases. This was attributed to some factors that have been identified as hindrances to women's participation in paid work outside the home, such as are caring for children, the elderly and ill family members in the home and being the homemaker (Datta, 2018; International Labour Organisation, 2018). Even though the household dynamics of the women beneficiaries were not part of the data analysis, the relatively lower education levels of the women suggested a similar trend to literature findings that as a result of these factors, is that women often have lower levels of education compared to men, which would explain the reason for the preferential targeting of higher percentages of women by the Working for Water programme as this was also reflected in the data analysed in this research study (Figure 7.4.2) (SIDA, 2017; Bertocchi & Bozzano, 2019). In the case of people with disabilities, the 2 percent target was met and exceeded in Phase I, but it was not met in Phase II and Phase III. It was necessary for the beneficiaries to disclose the type of disability they had as it had the potential to compromise their ability to perform the clearing activities of the *Prosopis mesquite* clearing project. Therefore, perhaps this is the reason the Working for Water programme sets the target to be lower than the others, also since there is the government disability social grant which those with disabilities can receive if they meet the criteria. A factor that could explain the reason some of the demographic targets were not met could be that in the years where the real annual budget fell and the managers' focus became more on ensuring that the *Prosopis mesquite* clearing project maintained its safety net function of mitigating the effects of income poverty, meeting the demographic targets was also abandoned or became a secondary consideration along with the training and workdays FTE targets. The overall impact of these challenges, mainly brought on by the fluctuations in the real annual budget, was that the beneficiaries did not benefit from the *Prosopis mesquite* clearing project in the way that they should have as stated in the objectives of both the Working for Water and EPWP. The lack of focus on ensuring that despite the changes to the real annual budget, the workday and skills training targets were still being adhered to, compromised the overall potential outcomes of the *Prosopis mesquite* clearing project of adequately preparing the beneficiaries for the labour market through providing them with work experience and skills training. There was an acknowledgment by the key stakeholders of the Working for Water programme that there were no strategies in place to track the effects of the work experience and skills training on the beneficiaries' livelihoods after their exit from the Working for Water programme. This was the premise for the introduction of the evaluation framework in chapter 8, which outlined the indicators or measures for inputs, activities, outputs, and the proposed indicators for the outcomes which were completely not being accounted for by Working for Water.

To be able to capture the outcomes, the online survey questions and the outcome indicators were formulated through the lens of the Sustainable Livelihoods Approach which classifies people's livelihoods into five livelihood asset categories. The online survey questions were formulated this way because, as Hlatshwayo (2017) argued, in studies of the effectiveness of public works programmes as a tool for social

protection, the voices of the beneficiaries who are on the receiving end of the work experience and skills training interventions are often missing from these analyses. Therefore, since the beneficiaries are the ones who are well placed to give feedback on how the work experience and training had possibly benefited them outside the project, their responses were important to the formulation of the outcomes. The beneficiaries' responses on how the *Prosopis mesquite* clearing project had impacted their lives or how they expected the project would impact them informed the formulation of the outcome indicators. As such, the outcome indicators presented in the evaluation framework were formulated in such a way that they can be used to gauge a beneficiary's access to any of the livelihood assets after they have exited the Working for Water projects.

In performing this analysis, the beneficiaries' access to these livelihood assets is to be compared to their access prior to joining the project. The post-participation beneficiary surveys that are recommended to perform this analysis of gauging the impact of the work experience and skills training should seek to establish links between the beneficiaries' livelihood asset endowments at the time of the survey and prior to them joining the project. The indicators for the financial capital livelihood asset included assessing whether income and energy poverty had fallen in the beneficiaries' households in the short-term as some of the beneficiaries mentioned that they spent the income on buying electricity and other household necessities. In the longer-term, the beneficiaries' financial capital assets would be more closely linked to their human capital which, as a result of the work experience and skills training, would be assumed to have improved to the point that they were able to secure employment in the labour market. Their increased incomes after their participation in the Working for Water projects would signal that their human capital increased since most of them would have not been able to find jobs prior to participating in the project, and their inability to find a job was the reason they had decided to join the environmental public works project in the first place.

Since it was stated by one of the key stakeholders (Key Stakeholder C) that the education levels of the beneficiaries had some level of influence over the training programme that they were assigned to, an indicator of improvements to their human capital would be investigated if they had been able to enrol in those courses or other complementary skills training after their participation in the Working for Water projects. Furthermore, the types of jobs that the beneficiaries were able to secure post- participation and the skills requirements of those jobs would be a proxy for how the Working for Water programme had improved the labour market prospects of the beneficiaries. In terms of enhancement of the beneficiaries' capabilities, the beneficiaries had complained that the short employment periods and the lack of industry-relevant training had affected their morale as workers. Although morale or dignity is not something that can be measured, it had an effect on the beneficiaries' motivation to continue participating in the project for the required number of days as well as on their motivation, aspirations and attitudes about improving the state of their livelihoods. To capture improvements on these intangible factors, it was recommended in chapter 8

that rating scales be utilised to capture the beneficiaries' levels of satisfaction with the training they received and its alignment with job requirements in the labour market (see Table 7.5.5 for the list of training programmes that were offered in Phase II and Phase III). In terms of the issue of beneficiaries who kept returning to the *Prosopis mesquite* clearing project, the Working for Water managers could assess the skills needs of returning beneficiaries and then decide, based on the movements of the budget in that year, which relevant skills the project can provide to further enhance their skills and avoid them getting stuck in a cycle of returning to the project. The social indicators that were proposed mainly focused on investigating whether there had been any social clubs, or informal or formal savings schemes (*stokvels*) formed amongst the beneficiaries, perhaps utilising the financial literacy training that they had received. Another social indicator which was proposed would be to solicit information from the beneficiaries on whether their proximity to the key stakeholders, service providers and other beneficiaries had improved their labour market prospects in any way and thus improved their livelihoods. The proposed physical capital indicators would focus on the beneficiaries' purchases of large purchases as well as any purchases that the contractors would have invested into for their businesses post-participation in the project and in the Contractor Development Programme (CDP). In the case of the contractors who are tasked with hiring the beneficiaries to perform the invasive alien clearing activities, their participation in the CDP is to improve their chances of competing for project tenders and any observed improvements to their livelihoods after Working for Water training would be interrogated in terms of their association with the project. Indicators of improvements in natural capital asset endowments would be measured through improvements in biodiversity in previously cleared sites, in ecosystem services provision especially on previously invaded agricultural lands, improvements in water flow and groundwater storage, reduced land erosion and land rehabilitation. Since some restoration to land usually takes a long time, the analysis would have to be conducted through a process of repeated treatments either after every of successful clearing year or after each five-year project phase.

9.6 Revisiting the research questions

The overall objective of this study was to develop a framework for assessing the success determinants of environmental public works projects, using the *Prosopis mesquite* clearing project which operates in the Northern Cape as a case study. Drawing from the empirical analysis of the project in chapters 6 and 7, the research questions presented in Chapter 1 are revisited.

a.) What are the Key Stakeholders' perceptions about the socio-economic aspect of the Working for Water programmes' Prosopis mesquite clearing project in light of its targeting objectives of creating employment and training opportunities?

The Key Stakeholders expressed a consensus that the national targeting objectives were not necessarily being adhered to due to the people that were self-targeting which determined the demographics each year.

The self-targeting strategy which was implemented through lowering the wages below labour market levels was used to ensure that only those who were poor would self-select into the program. However, in the case of the *Prosopis mesquite* clearing project it would seem that when the real annual budget fell, the demographic targets were no longer being strictly adhered to, such that the demographic targets were either met or missed because the focus was mainly on providing an income safety net to anyone who was willing to work. The real annual budget fluctuations affected the annual employment and training numbers, the beneficiaries' quitting before they have fulfilled the FTE target of 230 person days of employment, inability to align training with current skills demand in the mainstream labour market, poor performance levels which result in funding penalties, and poor planning for ensuring outcomes to beneficiaries beyond the outputs. This resonated with some authors' assertions that the effectiveness of public works programmes in developing countries is often limited by implementation flaws related to institutional constraints which delay implementation of processing of training contracts and implementation of training (Zimmermann, 2014; Nyoka, 2016; Hochfeld, 2018; Aghimien *et al.*, 2019). This was expressed by one of the Key Stakeholders who mentioned that sometimes beneficiaries became discouraged and quit working on the *Prosopis mesquite* project due to the long waiting periods in between signing the work contracts and the beginning of infield work. Moreover, Zimmermann (2014) also mentioned the lack of consideration of the specific context within which the programme operates as one of the hindrances for the effectiveness of public works programmes. A lack of context-specificity in planning and implementation limits their effectiveness since a top-down approach will seldom consider job opportunities available locally and the financial position of the beneficiaries (Zimmermann, 2014). This would call into question their role as a poverty eradication strategy, since such projects are meant to support the job readiness of the beneficiaries through training while simultaneously improving the financial position of beneficiaries, albeit temporarily.

Dejardin (1996) raised the point of the feminisation of poverty, which projects such as the EPWP's *Prosopis mesquite* clearing project claim to specifically address though the preferential targeting of 60 percent of women. The argument raised in Dejardin (1996) was on the effectiveness and viability of public works in the context of promoting gender equality, by exploring the extent to which the characteristics of women and other gender-specific constraints are accounted for in planning, how effective the gender-sensitive strategies are in increasing opportunities for women, the lessons that could be learned to influence future policy and further areas of research that emerge. The data revealed that the gender objective was not necessarily being strictly adhered to, nor were there any special provisions for women over and above giving the majority of jobs to them. Moreover, as Key Stakeholder C who is involved in training stated, they look at physical build to determine if a person will be able to operate a chainsaw in the cutting down of *Prosopis mesquite* trees and someone may not be selected based on their perceived ability to perform that task. This means that women will often be disqualified from performing certain tasks.

The Key Stakeholders provided the information required to clarify the gaps in the secondary data records. Their perception of the *Prosopis mesquite* clearing project revealed an awareness of what was working and what was not and the plans that were in the pipeline to rectify the issues that were identified. However, considering the current pandemic, the issue of budget cuts could continue to persist, with knock-on effects on the numbers of jobs and training opportunities created as discussed in the summary of the research findings. In terms of the budget cuts due to poor performance, perhaps the framework developed in this research study will be useful in assisting the managers to adopt a more strategic approach. The Key Stakeholders were of the view that despite the work opportunity and training targets being compromised by fluctuations in the budget, the temporary wages were at least contributing to livelihoods.

b.) What are the beneficiaries' perceptions of the socio-economic intervention of the Prosopis mesquite clearing project in terms of its impact on their livelihoods?

The consensus amongst the beneficiary responses was that the income from the *Prosopis mesquite* clearing project was useful to their households as it allowed them to afford household items like groceries, toiletries, electricity, buying clothes, settling monthly life insurance payments, and paying school fees. This finding resonates with Hlatshwayo (2017) findings which was collected through interviews with EPWP workers in the Gauteng region (Ekurhuleni, Johannesburg, Vanderbijlpark and Mangaung) and in Buffalo City. However, despite their satisfaction with the contribution of the income from the *Prosopis mesquite* clearing project, most beneficiaries indicated that they had not been able to use the skills gained through training anywhere else. This was due to the poor administering of training which was reflected as low attendance by beneficiaries in the secondary data records. Poor attendance by beneficiaries was also an issue as some did not complete the training due to personal reasons which were undisclosed. Overall, the beneficiaries rated their experience as 'good', while some were just happy to have a job, albeit temporarily. This finding fits into the criticisms which are often levelled against public works programmes in low-income countries (McCord, 2003; Samson *et al.*, 2010; Subbarao *et al.*, 2013; Theile, 2019). Such criticisms are often in reference to their tendency to suffer from the effects of misallocation and mismanagement of the annual budgets which sometimes were reduced as a result of poor performance in the previous year. Considering that South Africa's EPWP projects target specific marginalised groups in society to improve their chances of employment, any shortcomings in meeting the targets have negative impacts on local livelihoods in the case of local and community projects, and larger impacts nationally when aggregated with the outputs of other EPWP projects since these shortcomings represent a waste of public funds when they do not yield the desired results.

In the case of the experiences of the beneficiaries in the *Prosopis mesquite* clearing project in the Northern Cape province, the long waiting periods for work resumption was blamed as one of the major factors that were eroding the project's socio-economic intervention. The low wages offered by all EPWP projects coupled with late payments also meant that their role in the household was mostly supplementary. However, since the

main purpose of their involvement in the *Prosopis mesquite* clearing project was to receive training and work experience, the low wages were accepted by the beneficiaries as part of their temporary contractual agreement with Working for Water. The *Prosopis mesquite* clearing project has well established documentation of clearing successes of the species, but the socio-economic intervention side has been neglected. Therefore, this research study aimed to develop a framework that could assist the *Prosopis mesquite* clearing project and other similar environmental public works projects to evaluate the processes followed and resources used in achieving the outputs and the desired long-term outcomes.

c.) What are the factors used by Prosopis mesquite clearing project management to measure the success of the socio-economic aspect of the project?

EPWP projects mainly report on the yearly numbers of work and training opportunities created, the types of training that was administered and the demographic profile of the beneficiaries in line with the national stated objectives of the EPWP of targeting 60 percent women, 20 percent youth and 2 percent of disabled people. Hlatshwayo (2017) commented that this quantitative evaluation of the EPWP project data is limiting since it excludes the qualitative aspect, which is the voices of the infield workers. This approach has resulted in the socio-economic interventions being inadequately captured, which means that the outcomes of such programmes are also often not tracked since beneficiaries are the ones who would be well placed to give feedback on how the work experience and training has benefited them outside the projects. Moreover, through limiting the reporting of impacts to the quantitative reporting of numbers of workdays and training days, this approach only gives voice to the management of EPWP projects while also masking any inherent challenges that may be compromising the meeting of targets.

Through the provision of work opportunities and training, EPWP projects are meant to enhance the human capital of beneficiaries. However, since the training provided must be aligned with the main project activities which is the control and eradication of *Prosopis mesquite* trees through cutting using chainsaws and brush cutters and applying biological control agents and herbicides. As Key Stakeholder C commented that these skills are specific to EPWP environmental public works programmes and are not transferable to other jobs outside the programme, merely reporting on the number of people that were temporarily employed and trained on the *Prosopis mesquite* clearing project is not enough to reflect the project's impact on the livelihoods of the beneficiaries. Other ways that the *Prosopis mesquite* clearing project seeks to improve the human capital of beneficiaries is through the Adult Basic Education and Training (ABET) programme which provides literacy and numeracy skills, training them in firefighting, computer literacy, and health and safety awareness. Some beneficiaries expressed that the employment periods were too short to benefit them in terms of training, as one beneficiary remarked that the 3-to-6-month employment periods were detrimental to the morale of the workers which was not sufficient time for them to finish their training. However, the reports on the number of jobs and training created do not capture this, which gives a misguided sense of how successful the project has been. Moreover, the 'outcomes' factor

is often missing from Department of Public Works reports on the success of the socio-economic interventions of EPWP projects, since there are no follow-ups on the long-term benefits to the workers after participating on the projects and it is these longer-term goals that are perhaps most important in solving longer-term poverty through building capabilities and functionings.

The soft skills (team building, first aid and personal finance) may have had an indirect impact on the social capital of the beneficiaries, since some revealed that they have been able to start a project or business outside the project. These other businesses they were able to start, coupled with the income from working on the *Prosopis mesquite* clearing project, social grants and other sources of household income made up the financial capital part of their livelihoods. However, due to the lack of follow up on the outcomes of the projects, there were no records of how the work experience received through the project and the training had assisted the beneficiaries to further improve their household incomes. Any impacts on the physical and natural capitals were generally also uncaptured, save for the mention by some of the *Prosopis mesquite* clearing project beneficiaries that they were able to pay for household items such as groceries. This could be the result of the wages being too low to allow them to afford larger purchases such as land, which is often the main item that is considered when quantifying physical capital. This resonates with some authors' arguments that public works programmes have a tendency to avoid the issues of inequality and poverty as being rooted in the lack of access to assets such as land, especially in rural settings where people livelihoods depend on agricultural produce (Dejardin, 1996; Tanzarn and Gutierrez, 2015; Li, 2018). Instead, such programmes seem to focus their socio-economic interventions on providing rapid relief to poor households without much consideration for what the outcomes will be after they exit the programme. This further highlights the gap that exists in the planning of some of these programmes, that there indeed needed to be a method by which follow-up on how the work experience and training had assisted beneficiaries to secure the type of employment that would allow them to enhance their livelihood assets. Hence the evaluation framework that is introduced in chapter 8 of this research study.

d.) How effective are these measures considering the desired outcomes of the Prosopis mesquite clearing project?

The inputs and the linkages between them determine the outputs that will be achieved by a project. Therefore, careful consideration needs to be taken in deciding on the appropriate inputs and how they will be combined to yield the desired outputs and outcomes. Parsons (2013) stressed the importance of tracking the inputs and activities along the process of a project's implementation to ensure efficiency and that the project is being economical as well as to inform management on areas they may be required to cut back on and which steps to replicate and scale up to enhance the outputs. This was the purpose for which the evaluation framework presented in this research study was formulated in addition to also tracking how the resulting outputs continued to impact the beneficiaries' livelihoods after they have exited the programme. These impacts were tracked through the outcome indicators which were formulated using the Sustainable

Livelihoods Approach and the Capabilities Approach, which were in addition to the FTE target of 230 person days of employment created in a year, the number of training days created per person and the demographic targets expressed as percentages of 60 percent women, 20 percent youth and 2 percent disabled people. These FTE Target and demographic indicators were outlined in a Department of Public Works (2012) report which detailed the guidelines for all large projects carried out by the EPWP and these output indicators also included project wages, project budget and actual expenditure. According to the same report, these output indicators, which are overseen by the EPWP monitoring framework, are compiled into progress reports which are presented for each project and presented quarterly or monthly (Department of Public Works, 2012). These output indicators are evaluated throughout the results chain of a project's process and provide managers of EPWP projects with the information required to review how a particular project fared year by year over the five-year period.

However, with reference to the application of these EPWP output monitoring indicators to the Social Sector, the Department of Planning, Monitoring and Evaluation (2015) stated that they were inadequate for capturing the uniqueness of each of the projects which are housed under each of the four different sectors and their specific challenges which arise from the context in which they operate. The report lamented the narrow focus on achievements of the outputs in terms of jobs (measured through the FTE Target of 230 person days of employment) and training opportunities often resulted in a lack of accountability on the part of the managers and not enough information for evidence-based decision making which would highlight the challenges to avoid in the implementation of the relevant project in the years that follow (Department of Planning, Monitoring and Evaluation, 2015). This violates Dorn's (2016) argument on the importance of case-based storage of knowledge and reasoning gained from the application of projects which can serve as useful lessons in the application of future projects. Therefore, although these monitoring indicators may be providing management of EPWP projects with meaningful output targets to look at in terms of efficiency and cost-effectiveness of the projects, they fail to identify issues both from the management and beneficiary side that may be hindering a project from achieving its targets. In terms of ensuring that the long-term outcomes are reached, the findings of this research study echoed Hlatshwayo's (2017) argument that monitoring the success of the socio-economic interventions of EPWP projects often excludes the experiences and views of the in-field workers who are on the receiving end of these socio-economic interventions. It was against this background that the outcome indicators were formulated which incorporated the perspectives of the beneficiaries.

9.7 Conclusion

Measuring and capturing the socio-economic success of the socio-economic interventions requires managers of these projects to go beyond the quantitative measures of the outputs, namely, the number of jobs and training opportunities created. As Philip (2013) stated, the success of public works programmes relies on the three pillars of (1) how the income earned impacts on livelihoods in terms of poverty reduction; (2) the impact that participating in socially useful activities has on the individuals; and (3) the significance of the services or

assets created through the programmes. The results of this research study provide evidence that the current EPWP monitoring framework, which only focuses on quantifying the inputs, the allocation of those inputs in the implementation of the project, the outputs (temporary job and training days created), and demographic targets are not sufficient to capture the outcomes aspect of the socio-economic interventions of such projects. This is because they do not allow management to think beyond these indicators of the success of their socio-economic interventions at meeting the national targets. Therefore, not having a system of accounting for the long-term outcomes that public works projects are said to aspire to achieve through their provision of work experience and training to unemployed and low-skilled people. As a result, these projects could end up being viewed as ineffective and merely as 'make work' projects in the long-run due to not having the proper channels for receiving feedback from the beneficiaries on how the work experience and training may or may not have improved their livelihoods moving forward. Furthermore, using a one-size-fits-all approach to monitoring EPWP projects, which are under different sectors, instead of a system of smaller monitoring frameworks designated for each sector results in the inability to identify and extract the indicators that would ensure that managers know what success indicators to look for during a project's performance based on the EPWP project's design in each of the four sectors. A lack of consideration for the socio-economic context of the area in which a public works project operates also poses significant issues when bringing in the aspect of outcomes. For instance, while the training provided should be aligned with the respective public works project's activities, the skills the beneficiaries are being trained in should have some relevance and alignment with the industries that exist in the province to ensure that the beneficiaries are not being trained for jobs that do not exist where they are. Lastly, poor data recording of the budgets allocated annually and on the functions of the project is also an issue that could make it difficult to formulate comprehensive monthly or quarterly reports that truly reflect the effectiveness and impact of the public works project. This research study showed that these seemed to be the main problems plaguing the *Prosopis mesquite* clearing project and how the logic model can be employed to environmental public works projects as a formative and process evaluation tool, working backwards from the needs of the beneficiaries (which they expressed via the online survey) to inform how the work opportunities and training could be delivered to achieve the desired short and long term outcomes that the socio-economic interventions are meant to achieve.

9.8 Recommendations for Working for Water project management, monitoring and evaluation.

The research findings revealed that the planning and implementation of EPWP environmental projects' socio-economic interventions are seemingly a secondary consideration next to the primary objective of clearing invasive alien plants. This was evidenced by the myopic view on merely meeting the demographic targets and creating the required numbers of jobs and training opportunities. It is clear from the findings that perspectives from both the side of management and from the infield workers are important in ensuring the long-term success of environmental public works, which in the terminology of the logic evaluation model used here, are the short

to long term outcomes on unemployment, poverty and inequality accruing to the beneficiaries. Having presented the perspectives from both sides, a couple of policy recommendations can be proposed.

9.8.1 Recommendations for key stakeholders of the *Prosopis mesquite* clearing project and Working for Water management.

The research findings of this study highlighted that there needs to be a shift in the way management conceptualises the benefits to the people who work on the clearing of invasive alien plants in environmental public works projects. A focus on merely providing jobs and training as per the mandate of the EPWP without careful consideration for whether they will be of benefit to the specific group of beneficiaries in each sector and project diminishes the livelihood impact of environmental public works to merely 'make work' projects with no observable long-term livelihood benefits. Therefore, instead of adopting a top-down approach of aiming to achieve the nationally determined demographic, work, and training opportunity targets to projects in each province and region without consideration for the processes involved in realising those targets, the managers of the EPWP need to have smaller monitoring frameworks for each of its four sectors. The indicators which are the building blocks of these frameworks need to be better aligned with the real longer-term outcomes that these environmental public works projects aim to achieve, such as the ones proposed in the far-right hand column in Figure 8.1. These outcome indicators point back to the overall aim of poverty relief of the social development initiative of Working for Water. Once this is achieved, the managers of Working for Water projects (which include the *Prosopis mesquite* clearing project) need to establish a system where they can receive feedback from the beneficiaries on their experience, and for these insights to be included in the monthly and quarterly reports as part of the short and long-term outcomes section of the logic evaluation model, as demonstrated in this research study. This will require managers to adopt a practice of consistent record keeping of the demographic profiles of the beneficiaries recruited each year, the number of job and training opportunities created, the annual budgets allocated to each environmental public works project and how much of it was spent on what. The training provided, although largely determined by the main activities of the public works project in question, should be aligned with the industry jobs in the area and should be selected based on the education levels of the beneficiaries, since in the *Prosopis mesquite* clearing project data there were some beneficiaries whose education levels were post-matric or grade 12, which meant they would derive more benefit from slightly higher levels of training beyond the training necessary to operate brush cutters and chainsaws. Key Stakeholder C stated, in reference to the training, that they were in the process of establishing learnerships as part of the training. These recommendations should be implemented by the Working for Water managers at the different tiers of management, since the provincial managers are subject to directives issued at the national level. This would ensure that the managers keep the ultimate objective and mandate of the public works project at the forefront during the project planning stage, which is that of acting as a tool to assist the beneficiaries transition out of structural unemployment through the work experience and skills training into more sustainable forms of

employment in the labour market. In the absence of an understanding of how the budget fluctuations affect operations at the provincial level, which can be aided through clear channels of communication between managers at the national and provincial levels, the projects at the provincial level will continue functioning as 'make work' projects as shown in the data analysis. Therefore, a remedy to this would be to ensure that regardless of the amount by which the budget has been reduced, whether by 10 or 15 percent, the managers do not compromise on the number of workdays by reducing the FTE target of 230 person days of employment nor on the number of training days. As Key Stakeholder B stated, compromising on the workdays and training days in favour of the demographic targets allowed the beneficiaries to still continue benefiting, or putting food on the table, despite not receiving adequate workdays or training days that would allow them to move on to skilled jobs in the labour market. However, if the Working for Water programme aims to function as an active labour market policy which is meant to address the problem of structural unemployment, the managers will need to make adjustments to the demographic targets and operating costs that will allow them to still meet the FTE target and providing sufficient training days to the beneficiaries.

9.8.2 Recommendations for EPWP beneficiaries

As discussed in the data analysis and under the recommendations for key stakeholders, majority of the issues that were identified in the *Prosopis mesquite* clearing project had emanated from challenges faced by management. Since, as already discussed, the indicators used to monitor inputs, activities and outputs of the socio-economic interventions of public works projects are not able to capture outcomes, this means that their impact on the livelihoods of beneficiaries remain relatively unknown, save for the temporary impact of the wages on household income. This paints an incomplete picture of the impact that the EPWP is supposed to have on the livelihoods of the beneficiaries. However, to formulate indicators that can capture outcomes, the beneficiaries also have a role to play. For instance, the *Prosopis mesquite* clearing project data revealed that some beneficiaries did not attend training which was compulsory for all beneficiaries. Also, even though the FTE target of 230 person days of employment had been modified to at least 100 days, there were some beneficiaries who either had no record of workdays or had too few days for them to be able to receive any significant amount of training to accompany those workdays. The lack of records of workdays and training days could also have been as a result of the poor record keeping often observed in public works projects. If the lack of workdays and training day was due to the lack of attendance by the beneficiaries, the beneficiaries themselves need to take the necessary responsibility in ensuring that they derive the long-term benefits they are promised as participants in these projects by working for the required number of days and showing up for training as stipulated by the service providers. To achieve this, the administrative and managerial issues that have been identified will need to be rectified since the beneficiaries' participation or lack thereof is in response to these issues. Formulating a set of monitoring and evaluation indicators that also take into account the desired outcomes environmental public works projects seek to achieve, as the evaluation framework presented in this study sought to do, would also reduce the tendency of the beneficiaries becoming discouraged due to a lack of commitment by management to take a longer-term

livelihoods view in the implementation of environmental public works' socio-economic interventions.

9.9 Limitations of this research study

The main limitation of this research study was that it focused on only one of the provincial environmental public works projects under the Working for Water programme. Another limitation which was encountered was the unwillingness of the key stakeholders to provide the required secondary data records of the *Prosopis mesquite* clearing project for the project's phases that were analysed in this study. This momentarily slowed down and threatened to derail the progress of this study. In addition to this was the onset of the COVID-19 pandemic lockdown regulations which meant that the key stakeholders were mostly working from home and could not access the data files that were required for the study. The pandemic also affected the process of primary data collection. The method by which the primary data was to be collected was changed from the planned face to face in-depth interviews with the key stakeholders and focus groups beneficiaries, to online video call interviews and an online Google survey, respectively. Owing to the objective of this research study which is to delve into the dynamics of the *Prosopis mesquite* clearing project, some key stakeholders were reluctant to volunteer their time to be interviewed. In the case of gathering data from the beneficiaries of the *Prosopis mesquite* clearing project, the switch from originally planning to conducting face to face to an online survey affected the sampling frame in a number of ways. Firstly, the main constraint was the issue of cellphone data bundles. By virtue of their participation in a public works project, the beneficiaries were from low-income areas. Therefore, a small amount of data was provided to the beneficiaries who had responded agreeing to the call for voluntary participation in the study. Despite these efforts, there were some beneficiaries who did not fulfil their end of the bargain but instead pulled out as soon as they received the data bundles. Further attempts were made to recruit other beneficiaries, but the end result was a few responses which were not enough to run statistical regressions, but still provided invaluable insights on how the beneficiaries generally perceive the *Prosopis mesquite* clearing project's socio-economic intervention. This probably introduced some bias, even though the data bundles were only enough for them to access the consent form and the online survey via the link that was provided. The results of the analysis of the *Prosopis mesquite* clearing project's dynamics using the program logic model can be extrapolated to other environmental public works programmes operating under the EPWP. The distinct features of each project resulting from the unique context within which it operates would have to be taken into account. The periods of data collection from the key stakeholders and the beneficiaries were dictated by time constraints. Despite these challenges, the primary and secondary data obtained provided were useful in achieving the aims of this research study.

9.10 Further research

In light of the analyses and discussions presented in this research study, the areas requiring further investigation include:

- a. This research study focused on a project that is under the Environment and Culture sector of

the EPWP, which means that the framework developed cannot be used to analyse public works projects in other EPWP sectors (Social, Non-state and Infrastructure sectors). Moreover, for the framework to be used for analysing other environmental public works projects, the practitioner would have to consider the design of the public works project under review, using the classification presented in chapter 1 on the different types of public works designs.

- b. There is a need to review the current EPWP monitoring framework used to monitor the outputs of all its projects across the four different sectors. To ensure that the unique challenges encountered by managers of these projects are considered, this one size-fits-all approach to monitoring outputs needs to be reviewed and modified. Perhaps through the introduction of smaller monitoring and evaluation frameworks for each sector which will be nested within the larger EPWP monitoring framework, such as this one proposed in this research study.
- c. Adopting a EPWP sector-based approach to monitoring and evaluation would allow managers to take a more livelihood-based approach to defining the success of EPWP project socio-economic interventions.
- d. Since invasive alien plants are hard to completely eradicate, also especially if they yield some livelihood benefits to local communities (which is the case with the *Prosopis mesquite*), their continued existence in the natural environment contribute to the longevity of environmental public works projects, which emphasises the point of ensuring that as government-funded policy tools to fight unemployment, poverty and inequality, their functions need to be reviewed and amended to ensure economic efficiency.

This research study contributed to the larger body of literature on the livelihood impacts of environmental public works projects' socio-economic interventions in developing countries by developing a framework that is meant to inspire managers of such projects to rethink the way they define success. The study used two livelihood-based approaches, namely, the sustainable livelihoods approach and the capability approach, to analyse the data collected from the beneficiaries which were part of the outcomes section that has often been missing from evaluations of Working for Water projects' livelihood impacts. The two livelihood-based approaches mentioned allowed for the outcomes section of the framework to be generated from the primary data obtained through the online survey which was administered to the beneficiaries. Since the mandate across all four sectors of the EPWP projects is to contribute to the fight against unemployment, poverty and inequality through its specific targeting of marginalised groups in society, the framework presented in this research study is an attempt at influencing the way success is quantified and defined in the Environment and Culture sector of the EPWP. The key conclusion of this study is that merely focusing on defining success from the management perspective of achieving quantitative targets could end up in these projects being classified as

make work projects. Without the proper acknowledgement of the role that the beneficiaries play in informing the evaluative process and the 'successes' of the socio-economic interventions, public works projects will continue being ineffective, or at best, making only a small contribution to the national fight against unemployment, poverty and inequality.

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Appendix 1: Key stakeholder interview questions

KEY STAKEHOLDER A

1. What is your understanding of:
 - a. The objectives
 - b. Scope
 - c. Deliverables of the Working for Water programme, and by extension the *Prosopis mesquite* project?
2. What are some of the key inputs that ensure that are essential to getting the project off the ground? Do you think those resources are enough?
3. What would you say are the most important issues you would suggest changes, to in terms of how the Working for Water programme and its smaller projects, in this case the *Prosopis mesquite* project, function?
4. What criteria do you use to select the organisations to partner with to provide training?
5. What are the key indicators of project success that you report on? And how do these indicators fit in with the wider policies aiming to reduce unemployment, poverty and income inequality in the long-term?
6. How does the Working for Water programme support beneficiaries (women, youth, and those with disabilities) following the end of their temporary employment & training contracts? Are there any exit strategies in place?
7. What are the future plans or changes you plan to implement to address any challenges you may have identified?

KEY STAKEHOLDER B

1. Since Working for Water is one of the programmes being funded by the national government, in addition to other items, has the budget being channelled into Working for Water changed over the years? If so, how has this affected the meeting of the objectives and targets of the programme?
2. Over the years that you have been the Regional Programme Leader for the *Prosopis mesquite* project, which is one of the sub-projects of Working for Water, to what extent has the programme achieved its aims of feeding into the broader public policy space of Active Labour Market Policies (ALMPs) and the national development plan (NDP), in terms of its position as a social protection tool?
3. How has the current pandemic and its attendant lockdown regulations affected the programme's ability to meet its objectives?
4. One of the primary outputs of the Working for Water programme are creating temporary jobs and providing training opportunities to the marginalised unskilled, how has the programme, in this case the *Prosopis mesquite* project, fared in achieving these objectives over the years? What hindrances have you encountered along the way?
5. What would you say are the specific outcomes the programme aims for when considering which type of training to provide to the beneficiaries?
6. How does the Working for Water programme support beneficiaries (women, youth, and those with disabilities) following the end of their temporary employment & training contracts?
7. What are the future plans or changes you plan to implement to address any challenges you may have identified?

KEY STAKEHOLDER C

1. What is your role at WFW? How long have you been involved?
2. How would you explain the main economic, social and environmental aims or goals of the WfW programme? Have they changed over time? which ones have been the most challenging to achieve?
3. Could you take me through the process of planning and implementation of a project such as the *Prosopis mesquite*, what are the main things to incorporate to ensure “success”?
 - a. How does a project such as PM start? Who decides what to focus on, how big it will be, how much budget, how long it will be, what sort of training to do? (from planning to operationalisation)?
 - a.) Does the process differ by province and project?
4. What are the major outputs, things you can list resulting from the programme, that you would say or have identified as indicators of success?
5. How do you monitor and evaluate (M&E) the Working for Water programme and its smaller projects, in this case the *Prosopis mesquite* project, and how has that system been revised over time to ensure that it is adapted appropriately to prevailing circumstances, especially now during this pandemic period? Has it improved your ability to meet the programme objectives?
6. How does the Working for Water programme support beneficiaries (women, youth, and those with disabilities) following the end of their temporary employment & training contracts? Are there any exit strategies in place to ensure that the programme’s intended long-lasting effects actually materialise in the lives or livelihoods of those it targets? Could/should anything else be done?
7. What are the future plans or changes you plan to implement to address any challenges you may have identified?

KEY STAKEHOLDER D

1. What are the key inputs or 'ingredients' necessary for the *Prosopis mesquite* project to be executed?
2. How has the pandemic and its attendant lockdown regulations affected your ability coordinating the various inputs that go into planning and executing the project? Have you managed to find ways of adapting the way you work in order to still keep working during the lockdown?
3. Since one of the objectives is to give 60% of the temporary jobs to women, 20% and 2% to people with disabilities, what challenges have you encountered in meeting this objective? Does the *Prosopis mesquite* project make special provisions for people with disabilities and women who have to divide their time between the project and household duties?
4. What kinds of 'indicators' of project success do you report on?
5. Do you think the project fits into the broader goals of national policies (like the NDP)? How?
6. How does the Working for Water programme support beneficiaries (women, youth, and those with disabilities) following the end of their temporary employment & training contracts?
7. What are the future plans or changes you plan to implement to address any challenges you may have identified?

KEY STAKEHOLDER E

1. How do you determine the types of training opportunities to provide to the beneficiaries?
Does each person's level of education play a role in determining the type of training they will receive?
2. How are the training programmes organised and carried out to ensure that each person benefits from it, and that the training is executed successfully?
3. What resource inputs do you need to fully carry out the training programme?
4. Would you say the training programme has been successful? Do you think enough resources are being channelled into it?
5. What is the average number of people the programme trains each year? And how do you make sure the objectives of the training programme for each year are met?
6. How does the Working for Water programme support beneficiaries (women, youth, and those with disabilities) following the end of their temporary employment & training contracts?
7. What are the future plans or changes you plan to implement to address any challenges you may have identified?

****The key stakeholders' names have been redacted from the interview question documents****

Appendix 2: Informed consent form for beneficiary online survey



RHODES UNIVERSITY

INFORMED CONSENT FORM

Department of [Economics and Economic History]

Research Project Title:	Developing a framework for assessing the socioeconomic success of Expanded Public Works Programmes (EPWP): The case of the <i>Prosopis mesquite</i> Working for Water clearing project in the Northern Cape Province, South Africa.
Principal Investigator(s):	Sinazo Ntsonge

Participation Information	Initial
<p>I understand the purpose of the research study and my involvement in it</p> <p><small>Explain the reason for the research and what the participant will be expected to do as part of the study. Describe what the participant will be expected to do. Describe which part of the study is experimental. Describe all procedures using simple terms and explaining any technical terms.</small></p> <p>The purpose of this study is to ultimately develop a framework that can be applied widely to assessing the success of environmental public works programmes. This will be achieved through investigating the effectiveness of the socio-economic development aspect of the Working for Water programme, using the <i>Prosopis mesquite</i> project as a case study. Key stakeholder interviews and focus groups with the beneficiaries of the programme will be conducted to understand the different perspectives of how impactful the programme has been on livelihoods <i>i.e.</i> improvements in household income, the type of skills training received by beneficiaries, the level of transferability of those skills, the dynamics of the employment contracts, the number of employment ‘cycles’ they have been on (reasons for returning). Analysis of this data will assist in painting a picture of how successful Working for Water has been in terms of its social development goals. Thereafter, also taking lessons from similar public works programmes that have been successfully implemented in other African countries, as discussed in the literature review, a list of the indicators of success or criteria will be formulated in accordance with characteristics of the programme. The criteria will be categorized according to the broader objectives of the type of programme Working for Water is.</p>	<p>Choose an item.</p>

<p>I understand the risks of participating in this research study <small>Explain any possible risks to the participant using simple terms. If there are no known risks, state so.</small> Participants will be afforded the right to withdraw from the study should they feel threatened or at risk in any way (i.e. embarrassed or offended). However, there are no anticipated risks to taking part in the study.</p>	Choose an item.
<p>I understand the benefits of participating in this research study <small>Only describe known benefits to the subject. You may include any possible future benefits to others. If there are no known benefits, state so.</small> There are no direct benefits from participating in this study. The aim is to understand the experiences of the Working for Water employees in relation to the topic of the study, and the responses given by the participants will assist in achieving this objective.</p>	Choose an item.
<p>I understand that I may withdraw from the research study at any stage without any penalty <small>Let the participant know that he/she can stop being in the study at any time without getting in trouble.</small> Participants will be afforded the right to withdraw from the study at any point, even after they have already given consent to participate.</p>	Choose an item.
<p>I understand that participation in this study is done on a voluntary basis <small>Let the participant know that although he/she has been approached, they are not obliged to participate in this study.</small> Participation in the study is voluntary and participants have the right to refuse to answer some of the questions or to completely withdraw from the study should they feel the need to.</p>	Choose an item.
<p>I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential <small>Explain in simple terms that the participant's participation in the study will be kept confidential.</small> Codes will be generated to refer to the respondents who wish to remain anonymous. The data collected will be stored in a password protected personal computer by the principal researcher. Two copies will be stored; on my personal computer and a backup in Google Drive. The data will be stored in this way throughout the duration of the study. The anonymity of the participants will be ensured through the use of codes, as already mentioned, which will be generated to identify participants who wish to remain anonymous.</p>	Choose an item.
<p>I understand that I will receive no payment for participating in this study <small>Let the participant know that there is no monetary or payment in lieu thereof for participating in this study.</small> Participation in this study is completely voluntary and the participants will not be compensated for taking part in the study.</p>	Choose an item.

Information Explanation	Initial
The above information was explained to me by: [Sinazo Ntsonge]	Choose an item.
The above information was explained to me in: and I am in command of this language	Choose an item.

Appendix 3: Beneficiary online survey questions

Developing a framework for assessing the socioeconomic success of Expanded Public Works Programmes (EPWP): The case of the Prosopis mesquite Working for Water clearing project in the Northern Cape Province, South Africa

I have received permission from the Working for Water office in the Northern Cape to request your participation in this study. If you have agreed to participate via the consent form sent to you, please kindly answer the following questions.

* Required

Description of research purpose

Greetings! Thank you for your interest in our research. This survey is being run by myself, Sinazo Ntsonge, a PhD student from the Department of Economics and Economic History at Rhodes University, and applies to all beneficiaries of the Prosopis mesquite project which operates in the Northern Cape province.

The aim of this survey is to capture your responses to questions to how the social development component of the Working for Water programme has benefited you through the temporary employment and training opportunities it provides.

We would like to hear from beneficiaries of the beneficiaries (employees) of the Prosopis mesquite project who work in any of the clearing sites invaded by the Prosopis mesquite species located around the Northern Cape. This includes (as Working for Water's specified beneficiaries to target):

- Women
- People with disabilities
- Youth

The survey is voluntary and anonymous – none of the information you provide can be linked to you or any of the Working for Water offices.

You may leave out questions that you do not want to answer.

Results will be made available to the Department of Economics and Economic History, Rhodes University and the Centre of Excellence for Invasion Biology (who fund this study) and also posted on the Rhodes University theses and dissertation website.

The research has received ethical clearance from the Rhodes University Human Ethics Committee. Should you have any complaints or concerns, the contact person is Mr Siyanda Manqele (Ethics Coordinator: s.mankele@ru.ac.za).

Given this information, are you happy to proceed with the survey?

Description of research purpose

Greetings! Thank you for your interest in our research. This survey is being run by myself, Sinazo Ntsonge, a PhD student from the Department of Economics and Economic History at Rhodes University, and applies to all beneficiaries of the Prosopis mesquite project which operates in the Northern Cape province.

The aim of this survey is to capture your responses to questions to how the social development component of the Working for Water programme has benefited you through the temporary employment and training opportunities it provides.

We would like to hear from beneficiaries of the beneficiaries (employees) of the Prosopis mesquite project who work in any of the clearing sites invaded by the Prosopis mesquite species located around the Northern Cape. This includes (as Working for Water's specified beneficiaries to target):

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The research has received ethical clearance from the Rhodes University Human Ethics Committee. Should you have any complaints or concerns, the contact person is Mr Siyanda Manqele (Ethics Coordinator: s.manqele@ru.ac.za).

Given this information, are you happy to proceed with the survey?

1. 1. What is your age group? *

Check all that apply.

- 18 - 25
- 26 - 35
- 36 - 50
- 51 - 64
- 65 +

2. 2. What is your gender? *

Check all that apply.

- Male
 Female
 Prefer not to say

3. 3. What is your highest level of education? *

Check all that apply.

- Primary school
 High school
 Apprenticeship/Short course/Professional qualificationDiploma/Degree

4. 4. Are you the head of your household? How many adults and children in your household? *

Check all that apply.

- Yes. Number of adults: ; Number of children:
 No. Number of adults: ; Number of children:

5. 5. Are you the only one in your household who is part of Working for Water? *

Check all that apply.

- Yes
 No

6. 6. How long have you been a beneficiary of Prosopis mesquite project? *

Check all that apply.

- Less than 12 months (less than a year)
 12 months to 2 years
 More than 2 years

7. 7. What is your role in the Working for Water programme? *

Check all that apply.

- Herbicide applicator
- Biological controller
- Chainsaw operator
- Brushcutter operator
- Other. Please specify:

8. 8. Are you, or any of the members of your household, government social grant recipients? *

Check all that apply.

- Child support grant
- Old age grant
- Disability grant
- Other. Please specify:
- I do not receive a social grant

9. 9. Which of these describes your personal or household income? *

Check all that apply.

- Less than R1 000
- R1 001 - R1 500
- R1 501 - R2 000
- R2 001 - R3 000
- R3 001 - R3 500
- R3 501 - R4 000
- R4 001 - R4 500
- More than R5 000

10. 10. What other sources of income does your household receive? *

Check all that apply.

- Remittances (such as money from relatives working in other provinces/towns)
- Income from other jobs. Please specify other jobs:
- Other forms of income. Please specify:

11. 11. How important is the income from the Prosopis mesquite to you and your household (what do you use it for)? *

12. 12. What sort of training have you received through the Prosopis mesquite project? *

13. 13. How satisfied are you with the training you have received through the Prosopis mesquite project? *

Mark only one oval.

Yes

No

14. 14. Have you used the skills you have gained from the training you received, outside of the Prosopis mesquite project? *

Check all that apply.

If yes, please explain:

If no, please explain:

15. 15. How would you rate your overall experience as a beneficiary in the Prosopis * mesquite project?

Check all that apply.

- Very poor
 Poor
 Neutral
 Good
 Excellent
 I am happy I have a job

16. 16. Has being part of the Prosopis mesquite project led you to come together * with other beneficiaries to start a project of business i.e. starting a community garden, your own business as a Contractor, etc.?

Check all that apply.

- Yes,
 No
 Please mention the type of business you started:

17. 17. What would you say are the most important issues you would like to see * changed in terms of how the Prosopis mesquite project's social development initiatives (i.e. job creation and training) function?

18. 1. What is your age group? *

Check all that apply.

- 18 - 25
- 26 - 35
- 36 - 50
- 51 - 64
- 65 +

19. 2. What is your gender? *

Check all that apply.

- Male
- Female
- Prefer not to say

20. 3. What is your highest level of education? *

Check all that apply.

- Primary school
- High school
- Apprenticeship/Short course/Professional qualification
- Diploma/Degree

21. 4. Are you the head of your household? How many adults and children in your household? *

Check all that apply.

- Yes. Number of adults: ; Number of children:
- No. Number of adults: ; Number of children:

22. 5. Are you the only one in your household who is part of Working for Water? *

Check all that apply.

- Yes
- No

23. 6. How long have you been a beneficiary of Prosopis mesquite project? *

Check all that apply.

- Less than 12 months (less than a year)
- 12 months to 2 years
- More than 2 years

24. 7. What is your role in the Working for Water programme? *

Check all that apply.

- Herbicide applicator
- Biological controller
- Chainsaw operator
- Brushcutter operator
- Other. Please specify:

25. 8. Are you, or any of the members of your household, government social grant recipients? *

Check all that apply.

- Child support grant
- Old age grant
- Disability grant
- Other. Please specify:
- I do not receive a social grant

26. 9. Which of these describes your personal or household income? *

Check all that apply.

- Less than R1 000
- R1 001 - R1 500
- R1 501 - R2 000
- R2 001 - R3 000
- R3 001 - R3 500
- R3 501 - R4 000
- R4 001 - R4 500
- More than R5 000

27. 10. What other sources of income does your household receive? *

Check all that apply.

- Remittances (such as money from relatives working in other provinces/towns)
- Income from other jobs. Please specify other jobs:
- Other forms of income. Please specify:

28. 11. How important is the income from the Prosopis mesquite to you and your household (what do you use it for)? *

29. 12. What sort of training have you received through the Prosopis mesquite project? *

30. 13. How satisfied are you with the training you have received through the Prosopis mesquite project? *

Mark only one oval.

- Yes
- No

31. 14. Have you used the skills you have gained from the training you received, outside of the Prosopis mesquite project? *

Check all that apply.

- If yes, please explain:
 If no, please explain:

32. 15. How would you rate your overall experience as a beneficiary in the Prosopis mesquite project? *

Check all that apply.

- Very poor
 Poor
 Neutral
 Good
 Excellent
 I am happy I have a job

33. 16. Has being part of the Prosopis mesquite project led you to come together with other beneficiaries to start a project of business i.e. starting a community garden, your own business as a Contractor, etc.?

Check all that apply.

- Yes,
 No
 Please mention the type of business you started:

34. 17. What would you say are the most important issues you would like to see changed in terms of how the Prosopis mesquite project's social development initiatives (i.e. job creation and training) function? *

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