Exploring the project management monitoring and control process in the 'Working for Water Programme'

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DECLARATION

I, Samson Alex Mithileni, hereby declare that this mini-dissertation, submitted in partial fulfilment of the requirements for the degree Master of Business Administration at the North-West University Business School, is my original work and has not been submitted to any institution of Higher Education. All the sources used for this study are cited and referenced in the reference list.

Samson Alex Mithileni

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DEDICATION

This study is dedicated to my mother, Martha Mithileni, my late aunt Magdeline Moloele, and my late sister, Kedibone Malungani. Thank you for everything you have done for me. The three of you have a special place in my heart.

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First, I would like to thank the Almighty God for making my plans of studying MBA a success. Thank You for the strength, wisdom, and courage to complete this degree. The Bible says in Proverbs 19:21, “Many are the plans in a person's heart, but it is the Lord's purpose that prevails.” Indeed, the Lord’s purpose has prevailed.

To my mother, Martha Mithileni, you have been my fountain of wisdom, pillar of strength, and beacon of hope and positivity throughout my studies. Thank you!!

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ABSTRACT

Project management is widely used by the South African government for service delivery projects. The initiation of many projects has led to the development of government programmes. These programmes are implemented through these projects, using a variety of management methodologies. The methodology is often aligned to the department's objectives, which feed into the overall objectives of the government.

Project management is known to have five different phases, namely initiation, planning, execution, monitoring and control, and closure. The monitoring-and-control phase focuses on keeping the project on track and controlling for all the deviations that may arise during the execution phase. The monitoring-and-control phase ensures adherence to the project plan, and progress is monitored to ensure that project is completed on time and according to the plan, to deliver good quality within the set budget. This study focused on project monitoring and control — the fourth phase in the project management life cycle — in the public sector.

Problems arise when insufficient attention given to a phase of the project life cycle. In particular, the monitoring-and-control phase is often overlooked by programme managers. This then cascades to lower management levels, resulting in project failure, irregular expenditure, and poor service delivery, as these programmes are aimed at the provision of basic services. In project management, every phase is important and needs to be given much attention, due to the complementary nature of the phases in the project life cycle. The failure of many government projects emanates from a lack of monitoring and control, and project management professionals do not use lessons learned from the previous project to improve their project-management performance in subsequent projects. The management of projects in the public sector does not follow the methodologies used in the business environment, and there is a need to determine critical success criteria.

The primary objective of this study was to explore and address gaps in the monitoring-and-control process and related practices of the current project management contract model used in the *Working for Water* (*WfW*) programme of the Department of Environmental Affairs.

The study followed an exploratory case study design with a qualitative research approach, where data were collected from both primary and secondary sources. The population comprised project management personnel in the *WfW* programme from Gauteng, North West, Free State, Mpumalanga, and Limpopo provinces.

Primary data were collected using a questionnaire in place of face-to-face interviews, due to the COVID-19 regulations and the wide geographical dispersion of the participants. The questionnaires were emailed to purposively selected participants, of whom 20 voluntary participated. Participants had answered the questions in narrative form on the questionnaire. Data collection ceased when data saturation had been reached, and no further participants were sought. The narratives were analysed using the Atlas.ti software package.

Secondary data were gathered from organisational documents and analysed by comparing the *WfW* monitoring-and-control process with that of the Project Management Institute's *Project Management Body of Knowledge* (*PMBoK*). The aim was to identify gaps in the *WfW* monitoring-and-control process. The research findings were also triangulated with extant literature, to answer the research questions.

The study found that there are gaps in the current *WfW* project monitoring and control processes. The findings revealed a limited understanding of project monitoring and control, based on the views of the participants. The importance of monitoring and control in the programme was also highlighted, and that it should be the driving factor to ensure that the objectives of the *WfW* programme are achieved.

Managerial implications are indicated to inform decision-making in changing the current model and establishing a standardised approach to the execution of project management in all provinces where *WfW* projects are implemented. These changes should be informed by thorough stakeholder engagement processes and research to ensure the proper execution of *WfW* projects. Furthermore, the importance of having project management personnel with relevant qualifications is indicated, to ensure that the programme managers employ suitable professionals to ensure successful project implementation.

In conclusion, recommendations are made to management to improve the *WfW* programme, together with an outline of the limitations to the study and avenues for further research.

Keywords: project; project management; programme; project monitoring; control

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LIST OF ABBREVIATIONS AND ACRONYMS

APO	Annual Plan of Operation
CDM	Contractor Development Model
DEA	Department of Environmental Affairs
EPIP	Environmental Protection & Infrastructure Programmes
EPWP	Expanded Public Works Programme
GTAC	Government Technical Advisory Centre
IAPs	invasive alien plants
IMSC	Information Management and Sector Co-ordination
LUI	land use incentive
MTEF	Medium-term Expenditure Framework
MTSF	Medium-term Strategic Framework
NDP	National Development Plan
DPWI	Department of Public Works and Infrastructure
NRM	Natural Resource Management
PMBOK	Project Management Book of Knowledge
PMI	Project Management Institute
PPP	public–private partnership
SDGs	Sustainable Development Goals
WfW	*Working for Water*
WIMS	Working for Water Information Management System

CHAPTER 1. OVERVIEW OF THE STUDY

1.1 Introduction and Background

South Africa's *Working for Water* (*WfW*) programme was introduced as part of sustainable environmental management and community involvement. It is a multidisciplinary programme implemented through the Expanded Public Works Programme (EPWP) to empower previously disadvantaged communities through the creation of employment opportunities and capacity-building (Department of Environmental Affairs [DEA], 2020). It was initiated in 1995 under the Department of Water Affairs to address the problem of invasive alien plants in South Africa, as part of water resource conservation. The *WfW* programme boasts more than 300 projects in different provinces across the country and is now administered by the DEA.

These projects are implemented in both urban and rural areas, according to the level of alien plant invasion. The projects are implemented using a customised project model, whereby contractors are sourced from previously disadvantaged communities. These contractors are not employees of the programme; they have a commercial contract with the programme and are paid for the amount of work completed. The contractors are responsible for completing contracts, recruiting team members, and managing their teams and equipment. The team members recruited by the contractor enter into a contractual agreement with the contractor and are paid according to their specific positions and daily tasks (Coetzer and Louw, 2012:793). The following two figures (Figures 1.1 and 1.2) show how the Contractor Development Model (CDM) of the *WFW* programme was developed and the role players in the process of managing projects within the programme.

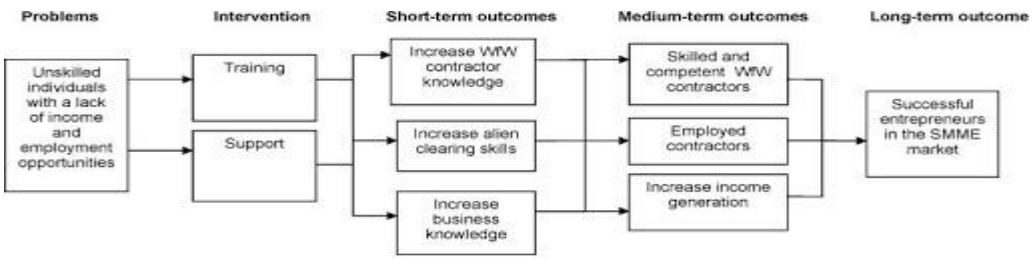


Figure 1
Simplified version of the CDM's impact theory

Figure 1.1. Contractor Development Model (CDM) in *WfW*

Source: Adapted from Coetzer and Louw (2012:1)

The CDM of the *WfW* programme is a guideline for upskilling contractors enable them to do the programme's work. In areas where projects are established, the model is used to capacitate local communities with skills and knowledge in business management and in the clearing of invasive alien plants (Coetzer and Louw, 2012:795). Luisi (2020:2) notes that the programme's overriding goal is to alleviate poverty by creating short- to medium-term job opportunities. Lubisi (2020:2) further explains that the programme uses a customised tender process to appoint teams to clear invasive alien plants in order to preserve water resources. Additionally, the programme uses a labour-intensive approach, and targets individuals of previously disadvantaged communities to empower them to become entrepreneurs. The selection of these communities is informed by the EPWP of the National Department of Public Works and Infrastructure (Lubisi, 2020:3).

Table 1
A summary of the CDM role players and their main functions

Role player	Function
Project managers	On-the-ground management of WfW projects Management of contractors and contracts Recruitment and selection of contractors
Contractors	Complete WfW contracts and manage WfW workers
Implementing agents	On the ground management of WfW projects Recruitment and management of contractors
Regional training coordinators	Responsible for scheduling and arranging functional and business training for contractors and workers
Regional social development coordinators	Responsible for scheduling and arranging social development training and initiatives for contractors and workers
Western Cape Assistant Director: Implementation	Oversees the implementation of contracts in the region Deals directly with project manager
Private service providers	Provides training to contractors

Figure 1.2. Role players in the CDM Model and their functions
Source: Adapted from Coetzer and Louw (2012:2)

The role players (indicated in Figure 1.2) ensure a smooth flow of work through implementation of the CDM Model.

The initiation of the *WfW* programme was guided by the following:

the Constitution of the Republic of South Africa (RSA) of 1996, in Section 24, stipulates that everyone has a right to an environment that is not harmful to their health or well-being, and to have the environment protected for the benefit of the present and future generations, through reasonable legislative and other measures. Such measures include prevention of pollution and ecological degradation, promotion of conservation,

and securing ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

- the National Environmental Management: Biodiversity Act (NEMBA), Act No. 10 of 2004; and
- the Conservation of Agricultural Resources Act (CARA), Act No. 43 of 1983.

1.2 Background

The *WfW* programme stretches across the entire country. However, the focus of this study was on inland provinces, i.e., North West, Free State, Mpumalanga, Limpopo, and Gauteng. The projects that form part of the programme are scattered across various areas of these provinces. The location of these projects is informed by the need for government intervention in addressing the environmental problem of invasive alien plants.

These projects are also aimed on improving biodiversity and ecological infrastructure invasive alien plants in river catchments. The focus is then widened to rivers and dams that are connected to the catchments. This is necessary due to the spread of invasive alien plants from the top of the catchment down to the lowest catchment point. In-between, some rivers and dams are also affected by the invasive plants. The flow of rivers and dams act as carriers of seeds of these plants, which is why the focus is on catchments. These water sources are prone to invasion by alien plants because of their high-water flow — seed banks are stored in and transported by the flowing of water.

Through engagements with different community stakeholders, invasive alien clearing projects were initiated in communities with high invasion levels. These communities report to the regional office in their respective provinces. *WfW* is aligned with the United Nations (UN) Agenda 2030's Sustainable Development Goal (SDG) 6, which is to "Ensure availability and sustainable management of water and sanitation for all", and with SDG 15, which focuses on protection, restoration, and promotion of sustainable use of terrestrial ecosystems, sustainable management of forests, combating desertification, and halting and reversal of land degradation and biodiversity loss (Juarez, 2020:51). In addition, the programme creates employment in these community (Juarez, 2020).

The aim is of the UN in ensuring that this is achieved is driven by the following targets (Juarez, 2020:52):

- Safe and affordable drinking water;
- End open defecation and provide access to sanitation and hygiene;
- Improve water quality, wastewater treatment, and safe reuse;
- Increase water use efficiency and ensure freshwater supplies;
- Implementation of integrated water resource management;
- Protect and restore water-related ecosystems;
- Expand water and sanitation support to developing countries; and
- Support local engagement in water and sanitation management.

1.3 Problem Statement

South Africa is a water-scarce country, with numerous environmental problems contributing to this scarcity (Mnisi, 2020). One problem, as mentioned earlier, is invasive alien plants that threaten the country's water resources and biodiversity. The prevalence of invasive alien plants has an adverse impact on the delivery of the basic service if water and sanitation (Jenkin and Mudombi, 2018:3). The adaptation and nature of these plants in foreign habitats entail vast consumption of water, which worsens the water-scarcity problem. The *WfW* programme was introduced to address these issues. The programme is a multidisciplinary solution to environmental and socio-economic problems, and improves basic service delivery by ensuring that citizens have access to clean and drinkable water and proper sanitation.

The inception of the programme was undertaken through the initiation of smaller projects in communities with high levels of invasion of alien plants. Project management was introduced to facilitate the execution of the smaller projects that form the overall programme. As the programme progressed, the level of project management also had to be improved in order to ensure the success of the programme. Management and co-ordination of these projects is done by project managers, per the CDM Model (Coetzer and Louw, 2012:795). Project managers' functions include ground-level management, management of contractors and contracts, and recruitment and selection of contractors responsible for clearing the invasive plants. The model does not explain in detail the functional duties of project

managers in terms of monitoring and controlling projects. The government's project management guidelines include monitoring and control and impact evaluation after completion of a project. The impact evaluation details the difference in outcomes with and without the introduction of a project (Louw, 2012:796).

Project management in the public sector has been used as a process for managing projects aimed at improving service delivery and sustainable management of state resources. Hence, there has been little focus on the monitoring and control of projects related to ecosystem (Darling and Whitty, 2016:287). Kivilä, Martinsuo, and Vuorinen (2017:1169) note that this often leads to the failure of state projects. Additionally, failure to monitor and control projects leads to resources being wasted and projects not achieving the intended goals.

Monitoring and control occur during the project implementation phase, to ensure that the project progress conforms to the project plans. It is also an important phase for bringing the project back on track in cases of deviation and shortcomings (Kivilä *et al*., 2017:1172). Brown (2021) explains that monitoring and control should be seen as two different aspects, not a singular concept. Monitoring consists of collecting data and sharing it with the responsible individuals, who should be able to understand, interpret, and use the data in decision-making. Control should be focused on ensuring deliverables by addressing mistakes during project execution (Brown, 2020). Brown (2020) further explains that, if monitoring and control are done right, it enables project managers to use the information obtained during monitoring to take the required actions in controlling the project's outcome, in order to ensure success.

Coetzer and Louw (2012:799), in their evaluation of the *WfW* CDM, note that no proper monitoring techniques were in place in the *WfW* programme. The authors also recommend outcome-based monitoring techniques to focus, not only on activities and inputs, but also on results (Coetzer and Louw, 2012:799). Van Wilgen and Wannenburg (2016:15) support the view that the *WfW* programme does not have suitable indicators with which to monitor the outcomes of the programme, and note that the programme does not have a suitable operating model for project implementation.

According to the website *Project Management Professional* (PMP) (2021), monitoring and control in project management help keep projects focused and on track. By applying different control measures, projects can be of a high quality and completed

within budget and on time. Furthermore, monitoring and control help project managers to gather data that enable them to make informed decisions that guarantee the success of projects through optimum execution of project tasks (PMP, 2018). However, since its inception, the *WfW* programme of the DEA has not had the necessary project management processes of monitoring and control in place, causing substandard project delivery and the wasting of resources

The study explored the current *WfW* programme CDM's monitoring and control processes and compare these to a recognised project management's monitoring and control processes, in order to make recommendations for improvements to the DEA.

1.4 Rationale and Significance of the Study

The study outcomes may contribute to the success of the *WfW* programme by yielding helpful recommendations to improve the project management's monitoring and control processes and practices. The aim of the study is aligned with the UN Agenda 2030's SDG 6, which is to ensure availability and sustainability water and sanitation, SDG 15, which focuses on protection, restoration, and promotion of sustainable use of terrestrial ecosystems, sustainable management of forests, combating desertification, and halting and reversal of land degradation and biodiversity loss (Juarez, 2020:51).

1.5 Research Questions

The main research question (RQ) of this study is:

What are the current gaps in the monitoring and control processes of the WfW programme, and how should these be addressed to improve the WfW programme?

The secondary research questions (SRQs) are:

SRQ1: What project management monitoring and control processes and measures should be used, according to the PMI's (2017) PMBoK, for effective project management?

SRQ2: What are the gaps in the project monitoring and control processes and practices in the current WfW programme based on the recommendations of the PMI's (2017) PMBoK?

SRQ3: Why are there project monitoring and control process and practices gaps in the current WfW programme when compared to the PMI's (2017) PMBoK?

SRQ4: How should the monitoring and control process and measures be addressed to ensure successful delivery of the WfW programme?

1.6 Objectives of the Study

The main objective of this study is:

To examine the monitoring and control process in the current project management contract model used in the WfW programme of the DEA to make recommendations for improvement of project management.

The secondary research objectives (SROs) are:

SRO1: To describe the monitoring and control processes and measures recommended by the Project Management Institute's (2017) PMBoK;

SRO2: To explore and compare the project monitoring and control processes and practices in the WfW programme with those in the PMI (2017) guidelines and identify gaps;

SRO3: To explore the reasons for the identified gaps; and

SRO4: To draft recommendations to the WfW programme's management for improved monitoring and control processes and measures.

1.7 Demarcation/Delimitations of the Study

The study will be a qualitative case study focused on the project monitoring and control processes and measures of the *WfW* programme in the public sector. Questionnaires will be distributed to all personnel involved in the *WfW* programme of the DEA in Limpopo, North West, Mpumalanga, Gauteng, and Free State provinces of South Africa.

1.8 Definitions of Key Constructs

Project: "A project a temporary endeavour undertaken to create a unique project service or result" (PMI, 2017:20).

Programme: "[A] collection of projects that are managed as a group in order to achieve efficiencies of scale" Burke (2012:344)

Project management: "[T]he application of knowledge, skills, tools and technique to project activities in order to meet stakeholders' needs and expectations from a project" (PMI, 2020).

Programme management: "[T]he coordinated management of projects and business-as-usual activities to achieve beneficial change" (APM, 2020).

Government: "[T]he system or group of people governing an organized community, often a state" (Wikipedia, 2020).

Public sector: Public sector is defined as spheres consists of governments and all publicly controlled or publicly funded agencies, enterprises, and other entities that deliver public programs, goods, or services (IIA, 2011:4).

Project monitoring and controlling: A process of observing project implementation with the aim of identifying potential problems and creating mitigation strategies timeously for such project problems (PMBOK, 2017:110).

1.9 Assumptions

Due to the fact that participants are experienced and skilled project management personnel and are involved in the day-to-day management of *WfW* projects, including monitoring and control, sufficient and reliable information will be collected for this study. Furthermore, the participants will be able to complete the questionnaires, as they have the required reading and writing skills, and have an understanding of the concept of project management.

1.10 Ethical Considerations

Research ethics are guiding principles for researchers to conduct and report research without harming the participants (intentionally or unintentionally) or society at large in the field of their research (Singh, 2019). Ethics are norms and standards that guide the researcher in determining what is wrong or right when conducting research (Pearson, 2016:79). Research ethics also play an important role in the reporting by the

researcher. A researcher is required to present an authentic and error-free report based on proven facts and information, backed up by relevant literature (Singh, 2019).

The ethical considerations of the present study are as follows:

• **Privacy and confidentiality:** The researcher will use both primary and secondary data. Personal details of the participants will remain confidential, per the Protection of Personal Information Act (No. 4 of 2013). Participants will remain anonymous.

• **Participation** in this study will be voluntarily.

• **Ethical clearance**: North-West University's EMS-Rec (Ethics Committee) approved ethical clearance for the study (Number: **NWU-00895-21-A4**) and granted permission to conduct the study.

• **Use of research findings**: The findings of this study will be used for purposes of research and academic publications only.

1.11 Layout of Chapters

This chapter provided an introduction and background to the research topic, which is the exploration of project monitoring and control processes in the *WfW* programme in the public sector.

The following chapters are outlined below.

Chapter 2: This chapter provides details of the organisational case study of the *WfW* programme and its project management practices.

Chapter 3: This chapter contains the literature review of the study.

Chapter 4: This chapter describes the research methodology and the methods used in conducting the research.

Chapter 5: This chapter reports on the data analysis and the findings of the study.

Chapter 6: This chapter concludes the study by offering managerial implications, indicating the limitations of the study, and providing recommendations based on the findings.

1.12 Chapter Summary

This chapter provided an introduction and background of the research topic, which is an exploration of the project monitoring and control processes of the DEA's *WfW* programme, in order to make recommendations for improvement.

The next chapter provides a case study background of the *WfW* programme.

CHAPTER 2. BACKGROUND TO THE *WfW* PROGRAMME

2.1 Introduction

This chapter provides a detailed background of the *WfW* programme. It also outlines the project management practices and features of the case study, and provides a summary of the institutional arrangements of the programme, its management, and criticism of the programme.

2.2 *WfW* Programme and Organisational Background

The *WfW* programme of the DEA started in 1995, after it was found that many plants that had been introduced in the country were invasive and were growing and spreading at an exponential rate. This was also found to be a threat to the country's economy, as it is costly to eradicate these plants. In addition, these plants are a threat to the ecological functioning of the country's natural systems, water security, and the productive use of land (DEA, 2021). To curb the spread of these plants, the then Department of Environmental Affairs and Tourism and other stakeholders came together to form projects in marginalised communities. The projects employed 60% women, 20% youths, and 5% people with disabilities in these previously disadvantaged communities (DEA, 2021).

The programme's inception was in 1995, in Villiersdorp, Western Cape province, whereafter it was extended to other parts of the country. Currently, the programme is being implemented in all the provinces (Macdonald, 2017:1). The figure below shows the location of *WfW* projects across South Africa.

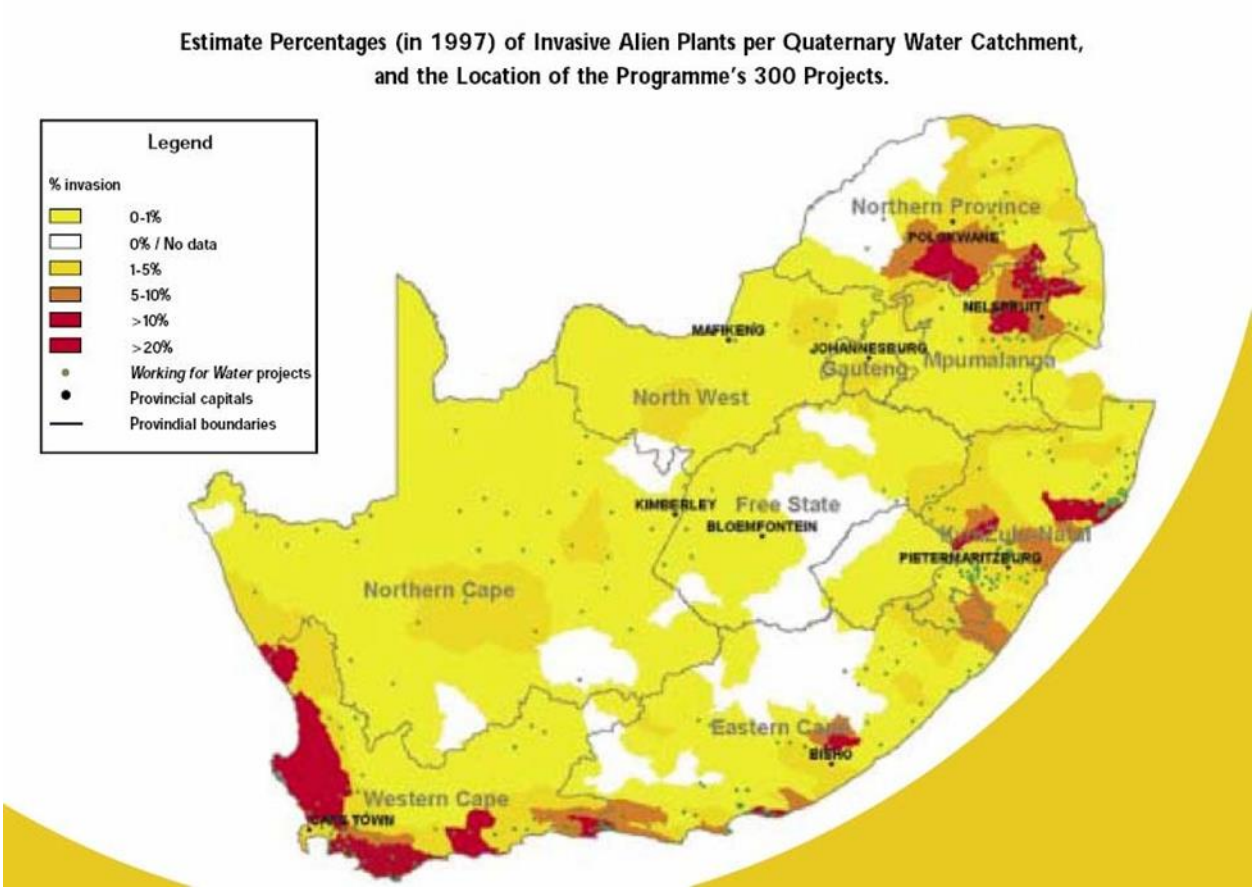


Figure 2.1. Location of *WfW* projects in South Africa
Source: MacDonald (2017:1)

The continuation of the programme was fuelled by research done by the Council of Scientific and Industrial Research, which found that 10.1 million hectares (6.8%) of South Africa and Lesotho were invaded by alien plants in 1997, reducing mean annual water flow by 3 300 million m^3 (Forsyth, O'Farrell, & Le Maitre, 2011:20). At a later stage, the programme was placed under the management of the Department of Water Affairs and Forestry, but was then transferred back to the DEA, where it resorted under Environmental Programmes (EP) branch. The branch has three Chief Directorates: Natural Resource Management (NRM), Environmental Protection and Infrastructure Programme (EPIP), and Information Management and Sector Co-ordination (IMSC). The *WfW* programme falls under the NRM.

The functions of programmes under the NRM are to ensure that the country addresses its responsibilities relating to water-resource management, biodiversity, and the functioning of natural systems. While addressing such responsibilities, the programme

also ensures a better livelihood for those who are employed in the programme's projects (DEA, 2021). The IMSC focuses on knowledge and information-management services for all activities, and also manages the co-ordination of socioeconomic interventions. The IMSC offers support functions to both NRM and EPIP (DEA, 2021).

2.3 *WfW* Programme's Organisational Structure

The three Chief Directors report to the Deputy Director General, who then reports to the Deputy Minister, who, in turn, reports to the Minister. The NRM has two Directors, one each for inland and coastal regions, covering all nine provinces. Within each province, there is one Regional Programme Leader (RPL) on Deputy Director level. Under the RPL, there are Area Managers (Assistant Directors), who are responsible for managing areas where the projects are implemented. Under the Assistant Directors, there are Project Co-ordinators, stationed in different project areas, who are responsible for co-ordinating the projects on the ground by managing contractors and appointing agents. Project Co-ordinators' duties include the monitoring and controlling of projects (DEA, 2021).

IMSC, as a supporting unit, also contributes to the *WfW* programme. Its role in the programme is to manage and co-ordinate knowledge and information. Its functions in the programme include deployment of Health and Safety Officers and Technical Advisors, development of norms and standards for the programme's operations, project compliance monitoring (ISO 9001, 14001; OSHAS 1800), monitoring and evaluation, and total quality management. In terms of monitoring and control, Health and Safety Officers' duties include conducting safety inspections, audits, and assessments; monitoring compliance and recommending corrective actions; completion of task- and risk assessments; and conducting incident investigations. Technical Advisors' duties in monitoring and control include conducting quality inspections, assessments, and audits; conducting quality verification to compare the quality of the project against specifications; liaising with relevant stakeholders on operational and other technical issues; and participating in development and review of project operational norms and standards (DEA, 2021).

The *WfW* programme receives its funds from the DEA, and the DEA receives its funds from the National Treasury. The funds are released per annum for a three-year plan,

in accordance with government's Medium-term Expenditure Framework (MTEF) (National Treasury, 2021). These funds are distributed according to the DEA's mandate to address environmental issues in the country, which mandate includes addressing invasive alien plants. The DEA allocates budget to its branches according to the needs of its different projects (DEA, 2021).

2.4 *WfW* Project Management

The *WfW* programme follows a five-phase project model. The phases are outlined below.

2.4.1 Initiation

The first phase of a project life cycle is usually initiation (Bisschoff, Govender & Oostheuizen, 2017:23; Eresia-Eke & Allen-Ile, 2019:72,88; Kara, 2017:87; Kerzner, 2013:78). The initiating phase starts with recognising a need, problem, or opportunity which the project could address. The project is identified and organised to address a particular need (Gido, Gido & Clements, 2018:22). It is important to define the right need, determine the project's requirements in some detail, and demonstrate the solution approaches and to justify the decision to proceed with the project (Fraser, 2017:87). In order to translate the entire project objectives into clearer terms, it was described in specific, measurable, agreed, realistic and time-bound (SMART) project characteristics (Van der Waldt, 2017:59). Other requirements in this phase that are met include a project schedule, the creation and management of a project deadline, the setting and achievement of milestones, project costs statement of work (SOW) (Fraser, 2017:99) and a work breakdown structure (WBS) (van der Waldt, 2016:96).

The initiation phase involves activities such identification of areas invaded by invasive alien plants in both urban and rural areas, per priority water catchments. An area has to be highly infested to justify initiation of a project. In the affected communities, the project management team, in conjunction with the Social Development and Training Unit, will then establish a steering committee consisting of the local community leaders, interested groups, the tribal authority, political leaders, and community organisations. The steering committee works hand in hand with the Project Co-ordinator and Social Development Officers to introduce the *WfW* programme to the community. Thereafter,

the community leaders will assist the project management team with a list of previously disadvantaged households with individuals aged between 18 and 35. The list is used to identify participants (team members) who could partake in the clearing work. Those members are then trained according to the skills they want to learn to progress in their career path. These members are taken for medical tests to determine if they are medically fit to perform their preferred tasks. Thereafter, the team members are offered training in the different skills that are required to perform the tasks on the clearing site. The accredited training includes contractor (supervisor), chainsaw operator, herbicide applicator, safety representative, first-aider, and peer educator. They are awarded training certificates (DEA, 2021). There will also be additional general workers who will not be trained, as they will perform general labour duties.

2.4.2 Planning

The second phase of a project life cycle is planning phase (Bisschoff, Govender & Oostheuizen, 2017:23; 2013:38; Horine, 2017:11; Larson & Gray, 2014:8; Nicholas & Steyn 2017:68).

The project plan is an essential part of the project management process as it marked the difference between success and failure (Bricknell, 2018:111). This phase (second phase) includes a detailed identification and assignment of each task until the end of the project (Kara, 2017:29). Planning starts after the initial commitment, included detailed planning, and ended when all stakeholders accepted the entire detailed plan.

The planning involves determining what needed to be done (scope, deliverables), how it was to be done (activities, sequence), who would do it (resources, responsibility), how long it would take (durations, schedule), how much it was going to cost (budget), and what the risks were (Gido et al., 2018:12). It includes the establishing project objective, defining the project scope, creating a work breakdown structure, subdividing the project scope into pieces or work packages, assigning responsibility, defining specific activities, sequencing activities, estimating activity resources, estimating activity durations, developing project schedules, estimating activity costs and determining budget (Gido et al., 2018:18-19).

The *WfW* programme uses a planning tool called the *Annual Plan of Operation* (APO), which is a yearly plan of all work to be done in a financial year. The identification of an

invaded area is followed by a collection of geographical or spatial data, which include the extent of the invasion, the area (in hectares), invasion density, geographical features, species type boundary, tree age and size, and the exact location. This information is handed to the Data Unit for population through a geo-code called a Natural Biology Alien (NBAL) identity, indicated by a polygon-shaped area earmarked for clearing. Every NBAL code/identity is unique. The NBAL IDs are put into the APO and sent to the Area Manager for approval. Thereafter, the Project Co-ordinator will forward the APO to the Data Unit for map generation (DEA, 2021).

A Project Co-ordinator initiates the tendering process with the Supply Chain Unit and the contractor, using the map as a guiding document. The map contains information such as the number of hectares and the days assigned to clear the area. This information is then used to compile a quotation for the total costs to clear site, equipment costs, personal protective equipment costs, transport costs, and administration fees. The quotation is handed to Supply Chain Unit for approval and, once it has been approved, is given to the Project Co-ordinator and contractor to initiate the implementation phase (DEA, 2021).

2.4.3 Implementation

The third phase of a project life cycle is the execution or implementation phase (Steyn, Carruthers, Dekker, du Plessis, Kruger, Kuschke, Sparrius, van Eck & Visser, 2016:23; Fox & van der Waldt, 2017:15; Gido, et al., 2018:11; Kerzner, 2019:78).

The executing process involves performing the work according to the plan, monitoring and controlling the work, and managing changes so that the project scope is achieved within the budget and schedule to the customer's satisfaction (Gido, et al., 2018:21). The project team, led by the project manager, executes the plan and performs the activities to produce all the deliverables which lead to the accomplishment of the project objective. The pace of project activity increases as more and various resources become involved in performing the project tasks.

The performance phase results in the accomplishment of project objective thus far, leaving stakeholders satisfied that the full scope of the work and deliverables are 17 completed according to specifications, within budget and on time. The steps involved

included Performance of the work, monitoring and controlling work progress and controlling changes (Gido et al., 2018:21).

While the project work is being performed, it is necessary to monitor and control the progress of the project work to ensure that everything went according to plan and the project objectives were accomplished (Johnson & Christensen, 2020:10; Rabie & Cloete, 2014:196, 8, 206, 210; Saunders, Lewis & Thornhill, 2019:176). This involves measuring actual progress and comparing it to planned progress according to the baseline plan (Gido et al., 2018:21)

The implementation phase is spearheaded by the Project Co-ordinator. The Project Co-ordinator, together with the contractor (Supervisor), will conduct hazard identification and risk assessment on site and compile a report. The Project Co-ordinator will then take the team through the site to indicate the species to be cleared, the boundaries of the area to be cleared, hazards, the herbicides to be applied, and the required clearing methods. The team members will conduct a daily 'toolbox talk' and then proceed with their respective duties. The implementation phase is executed on weekdays (DEA, 2021).

2.4.4 Monitoring and control

The executing process involves performing the work according to the plan, monitoring and controlling the work and managing changes so that the project scope is achieved within the budget and schedule to satisfaction of all stakeholders (Gido, et al., 2018:21).

During the course of implementation, Project Co-ordinators conduct site visits, audits, and assessments to monitor the project progress and report to the Area Manager. Additionally, Project Co-ordinators are tasked to correct any non-conformance encountered during site visits, site audits, and assessments. The standards include financial, operational, health and safety, quality management, transport, environmental safety, administration, and reporting standards.

During this phase, Project Co-ordinators also write project reports, attend various project meetings, engage with stakeholders, and work on continuous improvement of the overall operations. Area Managers conduct further visits, audits, and assessments

to improve the operation's quality and to ensure that projects are properly executed (DEA, 2021).

2.4.5 Closing

Once the clearing work has been completed, the Project Co-ordinator will conduct the final site inspection, to ensure that the quality of the work is satisfactorily. If not, the team will be instructed to return to the field to complete the work. If the work on site is done to 85% satisfaction level, the contractor will compile an invoice with attachments, including the invoice document, before-and-after photographs, the final inspection sheet, the pay-out sheet, and daily time sheets (DEA, 2021).

The invoice and attachments are signed by the Project Co-ordinator and sent to the Area Manager for perusal and signature. After the invoice has been signed off, it is sent to Supply Chain Management and Finance Department for payment. The cleared area is then handed over for maintenance. The Contractor and team then wait for the next contract map (DEA, 2021).

2.5 Private–Public Partnerships in the *WfW* Programme

The National Treasury of South Africa (2021:167) defines a private–public partnership as a contract between a public sector institution and a private party, which contract allows the private party to perform a function typically performed by the public sector. The purpose of public–private partnerships is to establish formal collaboration between a public and a private partner to complete a project or provide a service.

The growth of the *WfW* programme led to initiation of discussions around the project model. The use of contractors in project implementation within the programme seemed to no longer be an option, as the contractors were not direct employees of the DEA (Coetzer and Louw, 2012:793). Furthermore, the model was found to be inefficient because of delays and financial constraints. This led to the policy decision to phase out the management and control of invasive alien plants on private land by using incentives and disincentives to encourage landowners to manage these species on their land. The DEA introduced the Land User Incentive Programme with the aim of forming partnerships with private entities to improve the operations of the NRM

programmes, of which one is the control of invasive alien plants on stated-owned properties (DEA, 2013).

2.6 *WfW* Project Management Model Criticism

According to Levendal *et al*. (2008:6), there is a need for the *WfW* to develop and implement a monitoring and evaluation (M & E) system, for the following reasons:

- It is essential that public funds that are invested be accurately accounted for, especially with regard to the intended benefits of improved ecosystem services;
- There is a need to evaluate the extent to which the programme's goals are being met;
- In light of whether the stated goals have been achieved, it is necessary to evaluate priorities and approaches to management; and
- There is need to practise adaptive management that is in line with current management approaches, goals, and policies in response to improved understanding.

Levendal *et al*. (2008:6) found the M & E framework to be weak, as the data on expenses and areas cleared are only collected in the Working for Water Information Management System (WIMS). The WIMS contains information on clearing contracts, species information, and demographic information of the people employed in the programme (beneficiaries). Furthermore, this dataset is used to analyse progress according to the programme's key performance indicators. However, these datasets do not cater for the M & E needs of the programme. Levendal *et al*. (2008:6) note that the dataset does provide information with which to assess the effectiveness of control operations, which issue was addressed in the current study.

Another set of problems faced by the *WfW* programme was identified by Van Wilgen and Wannenburg (2016:15), note numerous challenges faced by the *WfW* since its inception. These issues are outlined in Figure 2.2, below.

Challenge	Description	Complicating elements	Current practice and challenges
Conflicts of interest	Finding ways to sustainably manage species that simultaneously provide benefits and do harm	Many alien plant species have commercial value (notably forest and fodder trees) but are simultaneously invasive. Those with commercial interests often cannot afford the costs of control. Many species also have amenity, aesthetic, cultural, and historical values, making control contentious among sectors of society	Invasive species regulations allow for the tolerance of conflict species, subject to permits and an obligation to control spread. However, controlling spread is often not carried out, and is difficult to enforce
Managing multiple goals	Goals include job creation, the provision of training and empowerment opportunities, biodiversity conservation, water conservation, rangeland conservation	Projects are often selected to meet one or the other goal, resulting in confusion about how to prioritise projects, as criteria are different. Compromises often result in projects not being selected optimally	The intention is to move the focus to priority water catchment areas, but once a project has been initiated, it is difficult to discontinue. The scope for achieving focus is thus severely constrained
Focussing scarce resources	Resources must be focussed on projects where the best returns on investment will be obtained	Focussing sufficient resources on priority projects will mean that others will have to be phased out, which is politically unattractive. The alternative, to continue spreading scarce funds across many projects, means that goals cannot be met	Currently there are too many projects, and so resources are thinly spread. Some do not see this as a problem, as long as there are employment benefits [45**]
Broadening the financial support base	Joint projects with private landowners ('land-user incentives')	Reluctance of some landowners to join the scheme	Scheme is being piloted in some areas, and available funding can reach about 20% more area if the land-user incentive agreements are in place. This is still insufficient to cover all areas though
Monitoring outcomes	Setting clear goals at appropriate spatial and time scales, developing suitable indicators, and collecting data on a regular basis	Monitoring is expensive, and will compromise the programme's ability to meet employment targets Monitoring is difficult, and suitable indicators are not available at appropriate scales	Currently, this aspect is neglected. It is thus difficult to judge whether and how much progress is being made, and this remains a major challenge
Making use of invasive species biomass	Utilization of biomass (mainly wood) from alien plant clearing operations for furniture construction, and biomass-to-energy schemes	It is unclear whether these approaches are feasible, as little or no research has been done Utilization schemes may create a	These approaches are being strongly promoted as they are politically attractive (processing of biomass creates additional

Figure 2.2. Challenges facing the *WfW* programme

Source: Van Wilgen and Wannenburg (2016:15)

One of the identified problems directly related to this study is monitoring outcomes. Van Wilgen and Wannenburg (2016:15) state that the challenge of monitoring outcomes is neglected, and remains a shortcoming of the programme. Coleman (1999:83), in a study conducted four years after the inception of the *WfW* programme, also identified business development limitations as one of the shortcomings of the programme. With regard to business development, the most notable limitation was found to be a lack of entrepreneurial spirit. *WfW* projects were found to be good projects; however, poor methods were used. Coleman (1999:83) suggested improvement in the areas of management, planning, and training.

2.7 Chapter Conclusion

This chapter detailed the origins of the *WfW* programme and how it has evolved over the years, and indicated problems that have not been addressed. The chapter also outlined how the programme is currently managed under the DEA, as well as its organisational structure. This was followed by view of some of the critics of the *WfW* programme and its implementation model.

The next chapter contains the extant literature on the topic under study.

CHAPTER 3. LITERATURE REVIEW

3.1 Introduction

This chapter discusses the literature on current practices in monitoring and control processes within the public sector, the techniques employed, the importance of monitoring and control, and how it fits into the bigger spectrum of government project management and the legislative framework. The chapter also outlines the importance of and the challenges in project monitoring and control.

3.2 Government Extension of the *PMBoK*

The Government Extension of the *PMBoK* provides information and knowledge, and details good practice in project management in the South African public sector. Good practice is an approach to project management that recognises the importance of applying skills, tools, and techniques to enhance project success. It can also be applied in many diverse application areas. There is broad consensus regarding the value and utility of most common practices, and these practices are generally applicable to most projects, most of the time (GTAC, 2020:8). As a general rule, projects undertaken by government organisations are primarily funded and executed for the benefit of citizens, rather than for financial gain.

Project governance is defined as a sphere of governance that adds value in ensuring the effectiveness of projects (Selepe, 2019:698). According to the Government Technical Advisory Centre (GTAC) (2020:8), the governance of projects of the state is affected by two factors:

- legislation that specifies the precise terms according to which fiduciary, managerial, and socio-political responsibilities must be executed and discharged; and
- project management teams are entrusted with the role of stewards of the public's interests.

Selepe (2020:699) also stresses the importance of project governance by the state in order to ensure that the right projects are done. This entails allocating resources to the right and most urgent projects for improved service delivery. Project governance is

aimed at implementing and maintaining structures and forums that ensure the proper governance of projects. Selepe (2020:699) notes that the main activities of project governance are:

- programme direction;
- project ownership and sponsorship; and
- ensuring the effectiveness of project management functions and reporting and disclosure, including consulting with stakeholders.

The application of project management in government projects has been done in many projects. While the arrangement thereof varies per project, most government projects have more or less the same arrangements. According to Van Der Walt (2020:4), government projects have the following characteristics:

- Government projects are focused on operationalising strategic objectives that are identified by a specific institution, and are limited to one host institution, such as a national department;
- Certain projects stem from sectoral clusters of government and are implemented across government spheres;
- The national department initiates the project, but leaves the rest up to the specialists, allowing the department to only provide oversight through contract performance, compliance reviews, and quality assurance;
- Projects are often initiated by national departments, but outsourced partly through public–private partnership (PPP) agreements.

In some cases, national departments develop programmes that are implemented by provincial or local governments. In these cases, the national department is responsible for defining the procedures, establishing the administrative infrastructure, hiring managers, and allocating resources.

3.3 Characteristics of Government Projects

Government projects are determined by policy statements such as the National Development Plan (NDP) of 2030, the Medium-term Strategic Framework (MTSF), the New Growth Path, and Economic Reconstruction Recovery Plan (GTAC, 2020:9). These policy statements were formulated to ensure that financial resources of the

government are well spent to better service delivery and accountability. In the national and provincial governments, government projects are grouped into programmes to enable easy management with regard to budgeting, accountability, and control. These programmes and their budgets are aligned with the government department's strategies. The grouping of projects is also informed by the project's and the stakeholders' interdependencies, such as politics, budget availability, the need for service delivery, prioritisation, and the department's mandate. Clarity of the relationships between these interdependencies is crucial before any project is initiated. This means there should be buy-in from all the stakeholders, and all dependencies should favour the conception of a particular project (GTAC, 2020:11).

From a management perspective, it is common for the stakeholders involved at each level in the hierarchy to act as representatives and draw authority from those at the top of the hierarchy. Practically, in the case of government agenda items requiring co-operation at programme level between two departments or agencies, each branch or division and all stakeholders in that department agency will be involved (GTAC, 2020:11).

3.4 Projects in the South African Expanded Public Works Programme

The Department of Public Works and Infrastructure (DPWI) is one of the main drivers of the EPWP. The EPWP was introduced by the government in 2004, with the aim of lowering unemployment and equipping people from previously disadvantaged communities with skills and capacity to earn decent wages. This programme was also aimed at developing communities and enhancing the employability of those who partake in its projects. One of the initiatives that emanated from EPWP was the incorporation of the *WfW* programme into the Environment and Culture sector of the Public Works(DPWI, 2019:10).

The DPWI is the body responsible for the monitoring and evaluation of the EPWP. The aim in monitoring and evaluation of the programme is to "efficiently gather information about the performance of the EPWP programmes/projects, to monitor and report the implementation progress and evaluate the impact of the programme on participants, household, and their communities". This is done by consolidating, validating, analysing, and reporting achievements against the set targets (DPWI, 2019:33). are

responsible for implementation, verification of project information, and reporting into the EPSP's reporting system (EPWP-RS). Such information includes project details, participants' information (name and surname, identity number, contact details), employment information (daily wages, number of days worked), training information, enterprise formation, financial information (project budget and expenditure), implementing body information, and project output information (DPWI, 2019:33).

The EPWP-RS is also used to conduct the EPWP's performance audits through the use of information such the sector to which the project belongs, the name of the project, a description of the project, the start and end dates of the project, the project budget, the project's planned job-creation outputs, estimated number of work opportunities, full-time equivalents, and training days (DPWI, 2019:33).

3.5 The Government Integrated Project Management Model

The GTAC incorporated *PMBoK* in formulating the guidelines of project management in the public sector. The guidelines are known as the *Government Extension to PMBOK*, and it builds on the Programme and Project Management Guides and Tools of the GTAC. The GTAC developed an integrated a project management model for managing projects in the public service (GTAC, 2020:4), shown in the figure below.

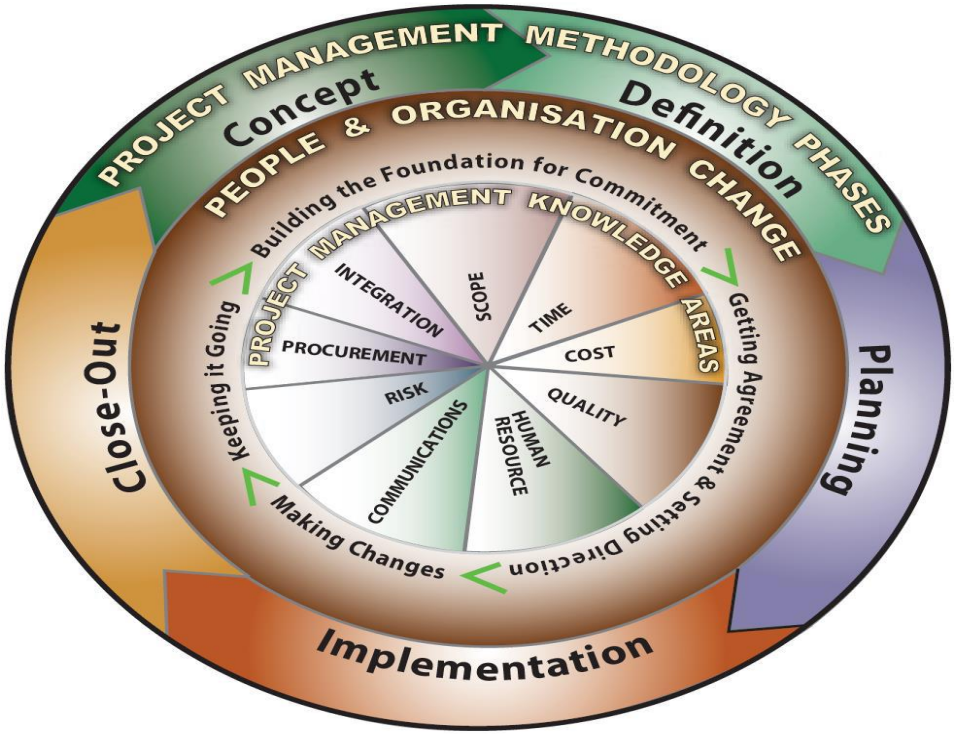


Figure 3.1. The GTAC's Integrated Project Management Model
Source: GTAC (2020:5)

The model consists of three components:

- **PMBOK's 9 Knowledge Areas**: The centre of the model is the PMBOK's nine Project Management Knowledge Areas, which cover various processes, tools, aspects, and results of projects that need to be considered in the life cycle of projects.
- **People & Organisation Change Management Principles**: These principles are in the middle ring, and are known as the Four Phases of Change Design Model. The phases are applied in managing the impact on the people and organisations during the project life cycle.
- **Five Phases of the Customised Public Service Integrated Programme and Project Methodology**: In this methodology, the two first rings are incorporated to form the five outer phases. The first two rings represent a step-by-step approach of which the end product will be the five phases in the outer ring of the model.

While the GTAC model contains nine project management knowledge areas, McManus Consulting (2020) argues that there are 10 knowledge areas:

1. Cost management
2. Scope management
3. Risk management
4. Time management
5. Quality management
6. Communication management
7. Integration management
8. Procurement management
9. Human resource management
10. Stakeholder management

According to the GTAC (2020:8), managers of public sector projects have to bear in mind that there are unusual and unique project management aspects that the project team has to take into account in order to efficiently and effectively manage a project.

The teams also have to be aware of common practices and knowledge that will contribute to the efficiency and effectiveness of projects.

3.6 Legislative Framework of Project Management

Many facets of responsibility and accountability in government projects are influenced by legislation (including the Constitution), policies and principles in the individual provinces and the public sector as a whole. In the public sector, monitoring and controlling tasks are solely concerned with the standard and quality of service delivery to citizens, as opposed to the private sector, which is evaluated according to turnover over a period. South Africa has been a democracy since the beginning of 1994, and the Constitution (RSA, 1996) is the supreme law of the country.

3.6.1 Constitution of the Republic of South Africa

The Constitution of the Republic of South Africa, Act 108 of 1996, as the supreme law of the country, mandates that South Africa should develop, implement, monitor, control, and evaluate in accordance with the Constitution. In the context of project governance, the Constitution promotes effective project governance through accountability, measurement, public participation, accountability, high performance, and public involvement. The aim of promoting public involvement is to ensure that the state is held accountable for its performance.

Chapter 10 of the Constitution (RSA, 1996) stipulates that the public services in South Africa must promote efficient, economic, and effective resource use while providing development-oriented services. The chapter further states that public administration should be governed by the democratic values and principles contained in the Constitution (RSA, 1996). These principles are as follows:

- A high standard of professional ethics must be promoted and maintained.
- Efficient, economic, and effective use of resources must be promoted.
- Public administration must be development-oriented.
- Services must be provided impartially, fairly, equitably, and without bias.
- People’s needs must be responded to, and the public must be encouraged to participate in policy-making.
- Public administration must be accountable.

- Transparency must be fostered by providing the public with timely, accessible, and accurate information.
- Good human resource management and career-development practices, to maximise human potential, must be cultivated.
- Public administration must be broadly representative of the South African people, with employment and personnel management practices based on ability, objectivity, fairness, and the need to redress the imbalances of the past, to achieve broad representation.

3.6.2 Public Finance Management Act

The overall aim of the Public Finance Management Act 1 of 1999 (PFMA) is to promote good financial management, in order to ensure bettering basic services delivery through the sustainable use of limited resources. The objectives of the Act are as follows:

- To modernise the public sector's financial management system;
- To support public-sector managers while also holding them accountable;
- To ensure that timely, high-quality information is provided; and
- To using public resources efficiently; and
- To avoid corruption.

The Act further stresses the importance of generating and using information to improve financial management in the government. According to the Act, financial management in the context of government encompasses activities such as financial planning, internal control, internal audits and audit committees, financial staff, and management information and -reporting.

The PFMA (RSA, 1999), in Section 38 (b), stipulates that accounting officers must ensure that financial resources of the government are used effectively, efficiently, economically, and transparently. The relationship between the PFMA and the Constitution of the Republic is explained in Section 216 (1) of the Constitution (RSA, 1996). This section of the Constitution states that the state must provide policies and procedures for establishing a national treasury and for ensuring transparency and spending controls within each sphere of government. This should be done by putting the following measures in place (RSA, 1996):

- generally accepted accounting practices;
- uniform classification of expenditures; and
- uniform treasury standards and norms.

Chapter 13 of the Constitution (RSA, 1996) makes provision for governments, both national and provincial, to regulate financial management. The management of the government's revenues, expenditures, assets, and liabilities should be efficient and effective, and those individuals charged with financial management are to be familiar with their responsibilities (RSA, 1999:22).

Chapter 13 of the Constitution (RSA, 1996) specifies proper practices of financial management in the public sector:

- **Section 213**: The National Revenue Fund may be excluded from and withdrawn from only by parliament. Additionally, the proportion of revenues raised by each province that is directly attributed to the National Revenue Fund is a direct charge.
- **Section 215**: This section promotes transparency, accountability, and effective financial management of the economy and debt as necessary components of national, provincial, and municipal budgets and budgetary processes.
- **Section 217:** A national, provincial, local, other public institutions, or any other institution whose function falls within national law must contract for goods or services in a fair, equitable, transparent, competitive, and cost-effective manner.
- **Section 218:** The guarantee of any loan can only be given by an entity at the national, provincial, or municipal level if it complies with conditions contained in national legislation.
- **Section 226:** A provincial revenue fund must be established for each province, into which all monies received by the provincial government must be deposited, except for monies that are reasonably excluded by law.

  Section 100: The section provides for government's intervention when an organ fails to perform a financial management function, as well as the circumstances under which funds may be withheld.

3.6.3 Draft Public Procurement Bill

This draft Bill provides for government taking steps to reduce procurement irregularities, address poor compliance that affects service delivery, and creating a strong oversight mechanism that prevents corruption and fraud related to procurement processes.

The draft Bill Procurement Bill is also aimed at resolving breach of a contract by an institution, and the Public Procurement Tribunal will be responsible for reviewing the decisions of the regulator and provincial treasurers. In summary, the draft Public Procurement Bill seeks to simplify processes, maximize value for money, and reduce corruption in public procurement.

3.6.4 Public Audit Act

Governments and other public sector entities have to audit public-sector entities with regard to providing public services to citizens and other service recipients, paid financial resources raised through taxation and other means. These audits assist in reaffirming public expectations of government entities and public servants to perform in an effective, efficient, ethical, and law-abiding manner. Auditing in the public sector provides legislators, oversight bodies, and those accountable for governance and the public with information and objective, independent assessments of how government policies, programmes, and operations are stewarded.

The purpose of the Public Audit Act No. 25 of 2004 is to give effect to the provisions of the Constitution (RSA, 1996) by providing for the appointment and functions of the Auditor-General of South Africa (AGSA), which include audits of public institutions, oversighting accountability arrangements of the AGSA, and repealing outdated legislation. According to the Public Audit Act (RSA, 2004), the AGSA must audit and report on the accounts, financial statements, and financial management of the following bodies (Independent Regulatory Board for Auditors [IRBA], 2019:8):

- departments and administrations of national and provincial governments;
- institutions of the Constitution;
- parliament and legislatures of each province; and
- all municipalities and their entities.

The above legislation framework plays an important role in the governance of government projects with regard to financial management, supply chain management, and auditing. The framework provides guiding principles to ensure accountability, openness and transparency, ethics and morals, and the public's involvement in the processes, including conceptualisation of government projects. Additionally, the legislation drives quality management to ensure good-quality work in government projects aimed at improving service delivery and performance management in all government departments.

3.7 Project Management: Process and Stages

The PMI (2017) provides guidance on the project-management processes and phases that make up a project lifecycle. ''Understanding the project phases and the elements of a project lifecycle assists with tracking progress throughout the project lifecycle (Eby, 2021). Eby (2021) states that a project has different phases, each consisting of distinctive activities and that each project has constraints in terms of cost, time, and resources. The following figure shows the project phases and descriptive elements as described by the Project Management Institute.

Figure 3.2. Project phases and descriptive elements

Source: Eby (2018)

The phases as explained by Eby (2021) indicate how the PMI (2017) defines the performance and control process. In the present study, the focus of monitoring and control in the context of *WfW* is on project objectives, quality, deliverables, tracking of efforts and cost, and project performance monitoring.

3.8 Project Management Phases

3.8.1 Project Initiation

The PMI (2017) states that project initiation defines the vision of what is expected to be accomplished. This is when the project is formally authorised by the sponsor, the scope is defined, and stakeholders are identified. These processes are crucial, as the wrong stakeholders could affect the project negatively, and managing stakeholders is critical to the success of a project. These processes also ensure that projects have the support of a sponsoring entity, and that the projects are aligned with the sponsoring entity's strategic objectives. Where these processes are not followed, projects may be started and carried out haphazardly, resulting in a loss of organisational effectiveness. the project manager is selected and authorised by management to perform the overseeing and decision-making of the project. It is crucial to authorise and establish the project manager early in the project; many organisations err by giving project managers many responsibilities and little authority (PMI, 2017:104).

3.8.2 Project planning

Planning is fundamental to establishing the overall project scope, and though the scope may appear to be well established in the initiation phase, the risks, milestones, summary, and budget are defined there at a high level. The PMI (2017) defines 24 different planning processes. Whether a team chooses to use one or all of these processes depends on the particular project. Too many organisations start a project without much planning at all (PMI, 2017).

The planning process is crucial, because the team can think through all aspects of a project in advance. Team members not only construct various plans, but they also think about what could go wrong and what they could do to mitigate risks. Additionally, the team has the time to look for opportunities that may benefit them that could be exploited. It is critical to have a good project management plan that serves as an overarching document of governance for the entire project. Such a document will comprise documents that bound the project's scope, detailed lists of requirements, estimates of cost and time, a work schedule, and documents that specify quality, communications, risk, and procurement. Furthermore, the project plan creates

baselines for scope, schedule, and cost against which the project's progress can be tracked. The team continues to plan how the important stakeholders will be engaged and managed throughout the project life cycle (PMI, 2017).

The above illustrates the role planning plays in the creation of a project's roadmap. At the end of this process, the team should know not only what they are tasked with and what is included and excluded in the scope of the project, but also what must be done to execute the project on time, on budget, and with good-quality work (PMI, 2017).

3.8.3 Project execution

During the execution phase, project team members create the deliverables while the project manager co-ordinates the resources. Project execution focuses strictly on executing the project plan. This is where the true work occurs. As the project team is crucial to the success of the project, it is presumed that developing the team will also be important to its success. There is an assumption that the project manager will not only acquire and manage the team, but also develop it through team-building exercises. A project manager manages not only communications, but also stakeholder engagement and product quality, and, when procurement is involved, the negotiation process for contracting with a vendor (PMI, 2017).

Executing is where the bulk of the project's budget will be spent, and the deliverables produced. It is likely here where we will begin seeing stakeholder requests for change. Although the project team can implement approved changes, only the control staff can make changes. The project execution can last a few days, a few weeks, a few months, or even a few years, depending on the life span of the project. However, executing the project is not enough; it must be maintained (PMI, 2017).

3.8.4 Project performance monitoring

Project performance or monitoring involves an assessment of the overall performance of the project by the project manager, and necessary changes are made to keep it on track or to get it back on track. Monitoring further involves tracking, reviewing, and regulating the performance of a project, identifying areas in which to adjust the plan and initiating changes as needed. The goal of monitoring and controlling is to get back

on track, to compare the plan with what actually took place, to evaluate variances and to correct them (PMI, 2017).

Areas of project management that require monitoring and control include the scope, cost, and schedule. These vary in terms of what tools and techniques are used to control them, but what they all have in common is that they have baselines that were defined during planning. Changes cannot be made lightly, as the tracking of progress is done against these baselines. Changes may be made, but these must be controlled and approved by the designated team. Assuming that the project is on track just because it was thoroughly planned is a recipe for failure. Only constant surveillance, monitoring and reporting will keep the project focused and result in the achievement of its goals (PMI, 2017).

3.8.5 Project closure

The project closure phase is the final phase, and involves formal completion of the project to the customer's satisfaction. Best project management practice dictates that the meticulous attention to detail applied to all other phases should also be applied in this phase. This is because failure to pay attention to certain closure processes leads to project failure and not achieving the intended objectives (PMI, 2017).

The project manager formally closes the project by archiving records, noting lessons learned, and informing the team about the highs and lows of the course of the project. The knowledge acquired is then archived together with additional information that could be used as a reference for future projects. This is to prevent previous mistakes from being repeated in future projects. The project manager then writes a detailed report on the project and hands it to the client for perusal. If the client is satisfied with the report, the client will sign it out and file the document. In cases where the client is not satisfied, the client will request additional information that the client feels may add value to the closure report. The project manager then has to add such information and resubmit the document for the client's signature. Only then is the project closed (PMI, 2017).

3.9 Project, Project Management, Programme, and Programme Management

3.9.1 Project definition

The PMI (2020) defines a project as a temporary endeavour undertaken to create a unique project service or result. A project begins with an end goal in mind. Once, results and deliverables are completed, definite outcomes are achieved. Deliverables are outcomes that satisfy the needs and expectations of both stakeholders and clients. Deliverables can take various forms in a project, and, in some cases, can lead to expanded projects for additional input (Kahaar, 2017:43). Kahaar (2017) emphasises that, traditionally, the public sector does not measure service standards by return on investment, but rather by monitoring and controlling its performance across objectives that are directly linked to the legislative mandate of the sector. Morphy (2020) affirms that projects are temporary operations that produce tangible products, services, or outcomes, and notes that a project could be a service, a product, or a way to accomplish an objective.

3.9.2 Definition of project management

The PMI (2017:25) defines project management as the process of applying knowledge, skills, tools, and techniques to project activities to satisfy the requirements of the project. The definition is affirmed by the Association for Project Management (2021), which defines it as a process that involves strategies, methods, skills, knowledge, and experience applied in accordance with the project acceptance criteria within specific parameters to achieve specific project objectives. A significant difference between project management and management is that the former has a defined result and a finite time span, whereas the latter is more a continuous process (Association for Project Management, 2021).

3.9.3 Programme and programme management

Programmes are defined as groups of projects managed in a co-ordinated manner to achieve benefits and controls not available through individual management. Projects may or may not be part of programmes, but programmes will always have projects (PMI, 2017:8). Programme management can be defined as the centralised co-

ordination and management of a programme, which helps achieve the programme's strategic targets and benefits. Projects within a programme are connected by the platform, common outcome, or collective capability of the programme (Kahaar, 2017:33).

3.10 Monitoring and Control Process and Techniques

The PMI (2017) proposes various techniques for controlling projects. Hassib (2018) explains that there are 10 processes or techniques for monitoring and control. These are as follows:

3.10.1 Monitoring and controlling project work

Monitoring and controlling project work is the process of measuring, monitoring, and disseminating information about project performance, as well as analysing trends and measures, to spot potential issues that require corrective action. Additionally, it involves project risk management, which requires that the project's risk plans are monitored and that the risks are managed accordingly. The outputs of monitoring and controlling project work include recommended corrective actions, recommended preventative actions, forecasts, recommended defect repair, and requesting changes.

3.10.2 Integrated change control

Integrated change control is implemented throughout the project lifecycle, from project initiation to project closure, to assure that changes brought about by corrective actions and other controlling factors are managed. Integrated change control has outputs such as approved and rejected change request, updates to the project plan, updates to the project scope statement, approved corrective and preventative actions, approved and validated defect repair, and deliverables.

3.10.3 Scope verification

Verifying the scope of a project includes reviewing deliverables to ensure that each has been completed to the stakeholders' satisfaction. Verifying the scope of a project involves obtaining stakeholders' formal acceptance of the completed scope and associated deliverables. The end results of scope verification are accepted deliverables, requested changes, and recommended corrective actions.

3.10.4 Scope control

Controlling scope involves maintaining the scope baseline throughout the project life cycle, monitoring the status of the scope baseline, and managing any changes to it. During this process, the project management plan, project documents, work performance data, and organisational process outputs are included as inputs. The outputs thereof include an updated project scope statement, updated work breakdown structure and work breakdown structure dictionary, requested changes, recommended corrective actions, updated organisational process assets, and an updated project management plan.

3.10.5 Schedule control

Monitoring the project progress and managing changes to the baseline schedule for achieving the project plan is the process of controlling the schedule. This process has the most significant benefit of enabling corrective and preventive actions to be taken when deviations from the plan are observed, thus minimising risks. The outputs of this process include updates to the schedule model data and baseline, performance measurements, requested changes, recommended corrective actions, updates to the organisational process assets, updates to the activity list and activity attribute, and updates to the project management plan.

3.10.6 Cost control

The process of cost control involves collecting and organising actual costs so that these can be compared to the project budget. Keeping a record of monetary expenditure is necessary for a variety of reasons, such as minimising costs whenever possible and identifying areas of overspending. The outputs include cost estimate updates, cost baseline updates, performance measurements, forecasted completion, requested changes, recommended corrective actions, updates to the organisational process assets, and updates to the project management plan.

3.10.7 Performing quality control

As part of the quality control process, activities are performed to evaluate whether the product or service meets the project's quality requirements. The process of monitoring

and control depends heavily on quality control, as it ensures everything is done within the project's scope. In quality control, inspections, measurements, and tests are carried out to ensure that project outputs meet the acceptance criteria laid out during quality planning. The goal is to prevent problems from being passed on to internal or external customers. The outputs of quality control are quality control measures, validated defect repair, updates to the quality baseline, recommended corrective and preventative measures, requested changes, recommended defect repair, updates to the organisational process assets, variables and updates to the project management plan.

3.10.8 Managing project team

Monitoring team performance involves providing feedback, resolving issues, and co-ordinating changes that are vital to maintaining and improving the performance of the project. Managing a project team requires tasks such as ensuring a balance between the team members, promoting transparency and honesty, ensuring effective communication among team members, promoting a culture of teamwork and collaboration, valuing each and every suggestion, discussing progress with teams, establishing success metrics, rewarding excelling members, delegating tasks, grooming future leaders through mentorship, managing internal conflicts, using available resources to facilitate teamwork, and participating in team-building activities.

The outputs of managing a project team include requested changes, recommended corrective and preventative actions, updates to organisational process assets, and updates to the project management plan.

3.10.9 Performance reporting

Performance reporting is a task that project management experts complete after analysis of a project's progress, in order to provide stakeholders with updates about the project's expectations and status. Performance reporting further involves collecting and analysing data about a project's entire production process. Project members and stakeholders typically create a communication management plan that specifies the number of reports they will produce during the project and the elements that will be contained in the reports. Performance reporting has outputs such as performance

reports, forecasts, requested changes, recommended corrective actions, and updates to organisational processes.

3.10.10 Managing stakeholders

The process of managing stakeholders is focused on managing stakeholder communications and proactively resolving issues. Managing stakeholders involves identifying stakeholders, analysing their expectations and influences, developing strategies to work with them, and implementing the strategies. Stakeholders must be communicated with frequently, and their expectations and needs should be understood by the project team. Additionally, a key component of managing conflicting interests is involving stakeholders in key decisions and activities. The outputs of managing stakeholders include resolved issues, approved change requests, approved corrective actions, updates to the organisational process assets, and updates to the project management plan.

The PMI (2021) states that, to set up a monitoring and control process for a project, one should establish the project's baselines, such as the project scope, schedule, and budget. This information can be used to assess the project's progress over its lifetime. Additionally, a work breakdown structure can be used to break down a project into smaller, more manageable units of work or sub-tasks. This allows for easier detection of issues, keeps the project under control, and helps to verify progress. The PMI (2021) further notes that the following are techniques of monitoring and controlling a project:

- **A requirements traceability matrix (RTM):** An analysis of this matrix links the project's requirements to the deliverables. It illustrates the relationship between two baseline documents, which helps make the project's tasks more visible. It also stops new requirements or tasks from being added to the project without approval.
- **A control chart:** Control charts are used to measure quality. Univariate control charts show one aspect of a project, while multivariate charts show multiple aspects.
- **Review and status meetings:** These meetings play an important role in establishing what has occurred and explaining why things happened. Inputs in these meetings could also highlight any problems that may arise in the future.

Sefhemo (2016:33) explains that three techniques are used for monitoring and control: meetings, schedule charts, and critical path analysis (CPA), the programme evaluation and review technique (PERT), the earned value technique (EVT), and the critical ratio (CR). The *PMBoK* (PMI, 2017) suggests the EVT as a technique for monitoring and control. Indicators of the EVT provide information on variability in cost and time, and allow estimation of the conclusion or end of a project, which are integral components of the monitoring process. Sefhemo (2016:33) suggests that regular meetings be held to discuss pertinent issues. Such meetings should be attended by clients, contractors, suppliers, and other stakeholders. Scheduled charts should be used to monitor the project's success, so that suitable control measures can be taken to keep the project on track. These charts include the Gant chart and the Milestone Objective Chart (Sefhemo, 2016:34). The *PMBoK* (PMI, 2017) notes that monitoring and control standards primarily focus on determining whether deliverables (scope), dates (schedule), and percentage of work completed (cost) have been achieved. Each parameter should be monitored using performance indicators.

The PMBoK (PMI, 2017) lists numerous techniques employed in monitoring and control. A monitoring-and-control process is an integral part of the overall approach. Monitoring, measuring, and controlling performance enable identification of issues changes in planning and production. Table 1, below, shows the monitoring and control techniques and tools of the *PMBoK* (PMU, 2017).

Table 1

PMBoK Techniques and Tools for Monitoring and Controlling in Projects

Assess and Review Technique	**Adjusting leads and lags**	**Statistical sampling**
Expert judgment	Schedule compression	Approved change requests review
Change control meetings	Scheduling tool	Communication methods
Inspection and audits	Earned value management	Reporting systems
Variance analysis	Forecasting	Risk reassessment
Performance reviews	To-complete performance index	Risk audits
Project management software	Cause-and-effect diagrams	Technical performance measurement
Resource levelling	Control charts	Reserve analysis
What-if scenario analysis	Flowcharting	Status meetings

Histogram	Pareto chart	Contract change control system
Run chart	Scatter diagram	Procurement performance reviews
Performance reporting	Payments systems	Claims administration
Records management system		

Source: PMI (2017)

According to the *PMBoK* (PMI, 2017), the central integration activity for managing and controlling a project identifies seven monitoring variables: work, scope, schedule, cost, quality, risk, and procurement. The data gathered from these seven categories are then compared to the management plan. The current project status is communicated through performance reports and by way of change requirements.

The techniques, as explained by Hassib (2018), ensure that the key outputs are: updates to the organisational process assets, updates to the project plan, requested changes, corrective actions, preventative actions, and defect repair, which are of utmost importance in monitoring and controlling projects. The *PMBoK* (PMI, 2017) also contains important techniques and tools for monitoring and control that play an integral part in ensuring the success of a project. Perrier, Benbrahim, and Pellerin's (2018:699) explanation of the processes is shown in Table 2.

Table 2

PMBoK Project Monitoring and Controlling Processes

Process	**Description**
Monitor and control project work	Track, review, and report the progress to meet the performance objectives defined in the project management plan
Perform integrated change control	Review all requests for changes or modifications to project documents, deliverables, baselines, or the project management plan, and approve or reject the changes

Validate scope	Formalise acceptance of the completed project deliverables
Control scope	Monitor the status of the project and product scope and manages changes to the scope baseline
Control schedule	Monitor the status of project activities to update project progress, and manage changes to the schedule baseline to achieve the plan
Control costs	Monitor the status of the project to update the project costs, and manage changes to the cost baseline
Control quality	Monitor and record results of executing the quality activities to assess performance and recommend necessary changes
Control communications	Monitor and control communications throughout the entire project life cycle, to ensure the information needs of the project stakeholders are met
Control risks	Implement risk response plans, track identified risks, monitor residual risks, identify new risks, and evaluate risk process effectiveness throughout the project
Control procurements	Manage procurement relationships, monitor contract performance, and make changes and corrections to contracts as appropriate
Control stakeholder engagement	Monitor overall project stakeholder relationships and adjust strategies and plans for engaging stakeholders

Source: Perrier, Benbrahim, and Pellerin (2018:699)

3.11 The Importance of Monitoring and Control in Project Management

The primary objective of monitoring and controlling activities is to avoid issues in the future and to take corrective action (Hassib, 2018). Monitoring and control are essential for keeping projects on track. With the right controls, projects can be completed on time. Data collected by monitoring and controls can be used by project managers to make informed decisions, to take advantage of opportunities, and to make changes to avoid crises (PMI, 2021). Controlling and monitoring are the most effective means of ensuring quality by measuring actual performance and making informed decisions.

According to Puntillo (2021), the importance of monitoring and control lies in the ability to determine performance on projects what changes are need at what time to keep the projects on track. Puntillo (2021) further explains that this process requires leadership skills, emotional intelligence, and data analytic tools, with which project managers can assess project performance variables such as the projected schedule, costs, and quality of the performance. Fontein (2021) argues that the importance of project monitoring is to ensure that project tasks are carried according to the project specification and requirements, that project deadlines are met, project changes are implemented in cases of problems, tracking of the project budget and ensuring financial adherence, and ensuring accountability from project team members and stakeholders. Monitoring is also important for keeping track of the progress of various project tasks, co-ordinating the work, and evaluating the results of collaborators while ensuring that the goals are being met and the team is effective (Audros, 2019). Audros (2019) notes that, by monitoring the progress of a project, it is also possible to calculate the budget at any time, based on the current state of the project.

Maimula (2017:17) stresses that monitoring and control are key components of good programme management at all levels, because the processes provide insight into project progress and the effectiveness of activities. Additionally, it improves project management and decision-making, and allows stakeholders to hold project managers accountable. Furthermore, monitoring and control provide useful data for policy-making and advocacy. Monitoring and control allow the project manager to determine whether the project has progressed, and if there are any obstacles that should be addressed (Maimula, 2017:17). In the context of community development projects, Muyuka (2015) explains that, for project executors, monitoring and control play an

important role in improving the management mechanisms. As progress is monitored against defined goals, a project manager is able to determine what is working and what is not. This information helps them decide what changes should be made to a project, which could lead to better efficiency and performance in the project organisation (Muyuka, 2015).

Organisation and companies that are implementing the project can use monitoring and control to document and demonstrate progress to internal and external stakeholders (Muyuka, 2015). Measurable results can clarify the return on investment of community development efforts and justify continued funding. Additionally, companies can demonstrate commitment and expertise in community development by using the results of their monitoring and control to make sound decisions about new major projects and where to invest (Muyuka, 2015).

Community members and other non-governmental organisations partaking in monitoring-and-control practices influence the initiation and implementation of development projects. Additionally, the process is also a powerful accountability mechanism, as it provides information on whether the programmes are being achieved in line with community's needs and desires (Muyuka, 2015).

3.12 Problems Faced in Monitoring and Controlling

Project management is a complex field with many phases, and challenges are bound to present in some phases. Monitoring and control as a phase often has complex challenges that may derail the project. When the project fails, attention is focused to this phase, as it is the most important process with which to determine the failure or success of a project. Hexagon AB (2021) explains the challenges faced in monitoring and control as follows:

- **Lack of commitment and support from senior management:** The idea of control does not solely refer to monitoring, as monitoring is passive, whereas control is about actively making decisions based on analysis and reporting. This cannot be accomplished without authority. When controllers lack autonomy and support, they cannot accomplish their objectives. Many project control teams are understaffed, or do not have the budget to invest in the right tools.

- **Perception of it being just another cost:** Generally, controls are considered an overhead expense, because they do not the focus until things go wrong. This is a misconception. Project teams and executives should be trained on the potential return on investment of control.
- **Confrontational dynamic:** By building partnerships, rather than a me-versus-you approach, it is possible to overcome the suspicion that people hold toward functions such as controls and audit. This role should also be integrated harmoniously into other aspects of project management. A project controller is not someone who visits once in a while with bad news. Rather, the controller should be seen as a key component of the overall process.
- **Manual and outdated processes:** While management may provide adequate support and teams may be aware of the importance of controls, actual implementation may be inadequate to deal with the difficult challenges in projects. Many organisations still rely on manual processes and spreadsheets to track and manage risk and change requests. These systems are often disconnected from each other and generate scattered data rather than holistic insights. In addition, they lack the required perspective on the bigger picture.

  Girard (2017) lists the following problems faced in project monitoring and control:

- **Change management:** Senior management should announce the project to all stakeholders, explain why it was launched, and describe how it will affect those affected. Getting the input of those affected will lower resistance to change.
- **Schedules:** Project management professionals should plan for the start of the project on time and make sure tasks are completed on time. The employment of the critical path method allows one to ensure that the project is completed by the planned completion date. The critical path determines which tasks are crucial to completing the project on schedule.
- **Costs:** Costs need to be broken into categories, so that they can be tracked easily. Additionally, project managers should keep track of costs immediately after these are incurred, so that they are aware of what has been paid and what

will become payable. Furthermore, project team members should be instructed to approve bills, otherwise costs may quickly spiral out of control.

- **Requirements:** Defining requirements in a structured way will ensure that the delivered project meets the expectations of stakeholders. Delivering interim deliverables ensures that stakeholders are stay informed of the progress of a project, ensuring ongoing support. It may be too late to share information with users when the end of the project approaches, as dissatisfaction with certain aspects may necessitate costly changes.
- **Communications:** Communication between the project team and stakeholders should be clear and understandable. Communication breakdowns can quickly ruin a project and negatively impact the morale of team members. Holding weekly meetings with project staff and stakeholders means the project manager can quickly address any issues.
- **Staffing:** The project should be staffed with people who possess the skill sets needed to achieve the objectives.
- **Checklists:** It is important to identify all areas that need monitoring and control and prepare a checklist. Additionally, it is further essential to establish what will be monitored and how often. Project managers should also be proactive in ensuring that issues do no remain unresolved.

3.13 Chapter Summary

This chapter emphasised the importance of monitoring and controlling projects and programmes. The processes of monitoring and control should be regularly performed to ensure better delivery of government projects. These projects should also be in line with the relevant government legislation, to avoid non-compliance. Additionally, the challenges experienced in monitoring and control should be used as guidance to inform better project planning for future government projects. Furthermore, the performance of government programmes should be consistently monitored to ensure that these are in line with the state’s objectives and mandates in terms of service delivery.

The next chapter discusses the research methodology and methods employed in the study.

CHAPTER 4. RESEARCH METHODOLOGY

4.1 Introduction

This chapter provides an overview of the research methodology and methods used in the study. It describes the paradigm, study design, sample population, sampling, data collection, data analysis, and ethical considerations.

4.2 Definition of Research

Research is a systematic process of collecting, analysing and interpreting information data in order to increase our understanding of a phenomenon about which we are interested or concerned. People often use a systematic approach when they collect and interpret information to solve the small problems of daily living (Leedy & Ormrod, 2021:24).

4.3 Research Paradigm

A study's research methodology is linked to a research paradigm. A research paradigm is defined as the shared views and agreements between scientists about how to approach problems in a reasonable and scientific manner. It is the pattern, model, or typical example encompassing cultural themes, world views, ideologies, and mindsets (Perera, 2018). Perera (2018) explains that research paradigms can be described in terms of how scientists respond to three types of questions: ontological, epistemological, and methodological questions.

According to Rashid, Rashid, Warraich, Sabir, and Ansar Waseem (2019:3), there are three different paradigms in business research, namely positivism, interpretivism, and critical theory. Rashid *et al*. (2019:4) explain these paradigms as follows:

- Positivism holds that observation and reason are the best ways to gain an understanding of human behaviour.
- Interpretivism holds that reality is complex and multi-layered, and even a single phenomenon can yield multiple interpretations.
- Critical theory holds that reality exists and is impacted by variables such as culture, politics, and gender, amongst other factors.

The paradigm applied in the present study was the interpretivist paradigm, as it allowed the researcher to gain multiple views on the research problem. An interpretivist seeks to gain a deep understanding of the phenomenon under study (Rashid *et al*., 2019). The present study was focused on exploring project monitoring and controlling processes within a programme. The aim was to gain a deep understanding on these processes, in order to establish what the issues around these processes were.

4.4 Research Approach and Design

Various researchers (e.g., Bazeley, 2018; Eller, Gerber & Robinson, 2018; Johnson & Christensen, 2020; Kekeya, 2019; Kumar, 2020; Linake, Maphosa & Mthethwa-Kunene, 2022; Maree, 2021; Masha & Eze, 2022; Saunders, Lewis & Thornhill, 2019; Sefotho, 2021) reveal how researchers usually adopt a qualitative, a quantitative or a mixed methods/multimethod mode of inquiry. In the present research, the qualitative approach was followed. Qualitative research methods assist the researcher in exploring a phenomenon within a particular context through various data sources. Furthermore, the exploration is conducted through different research lenses, revealing multiple dimensions of the phenomenon (Rashid *et al*., 2019:45).

The present study followed an exploratory qualitative case study design. A case study is a research method for exploring phenomena within a specific context using various data sources and undertaking the exploration through multiple lenses, to reveal multiple aspects of a phenomenon (Yin, 2018:50).

The present study's process consisted of three parts, illustrated below.

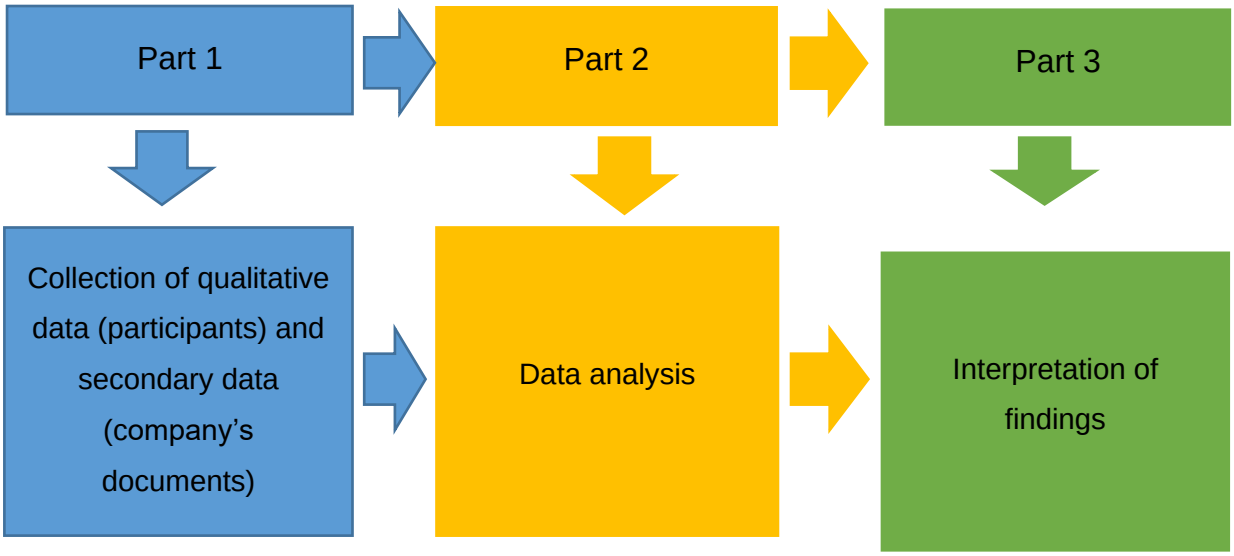


Figure 4.1. Case study processes flow (Researcher's own)

Part 1 was the collection of qualitative data through online questionnaires administered to project management personnel in the *WfW* programme. The distribution and collection of questionnaires was done online, due to COVID-19 regulations not allowing face-to-face interviews. The researcher also collected data from company documents. Part 2 was the analysis of the qualitative data and the organisation's documents, and Part was the interpretation of findings from the primary and secondary data.

The sections that follow describe the methods of data collection, analysis, and interpretation in detail, to enhance the trustworthiness of the study (Saura, Palos-Sánchez, and Cerdá Suárez, 2017:76).

4.5 Population and Sampling

4.5.1 Population

The target population comprises a group of individuals from whom the sample will be drawn (Dahabreh & Hernán, 2019:2). The target population for the present study was 80 employees working in *WfW* projects, including Project Co-ordinators, Area Managers, operational support staff, Planners, quality management staff, Technical Advisors, and Health and Safety Practitioners in the following provinces: Gauteng, North West, Limpopo, Free State, and Mpumalanga.

4.5.2 Sampling method and sample size

The present study was a qualitative study; therefore, the sample size was not determined beforehand, but depended on data saturation. The present researcher used non-probability sampling, which means everyone in the population was invited to participate (Etikan and Bala, 2017:216). This process continued until data saturation had been reached. According to Bryman, Bell, Hirschson, Dos Santos, Du Toit, Masenge, Van Aardt, and Wagner (2014:178), sending an invitation to participate to the entire population is also partially a convenience sampling technique. The present researcher sent the invitation to the entire population because the COVID-19 lockdown

regulations meant many potential participant were not at work or did not have access electronic communications.

4.6 Data collection

Data collection is a process of gathering and collecting research information that the researcher will use to draw conclusions regarding the research topic (Bryman *et al*., 2014:376). Data collection techniques include interviews, observations (direct and participants'), questionnaires, and studying relevant documents (Yin, 2018:45).

4.6.1 Data collection instrument and process

A research question and objectives determine the data collection methods used in a study (Bhandari, 2020). In the present study, both primary and secondary data were collected. The primary data were collected by means of qualitative questionnaire. Secondary data were collected from the organisation's project quality assessment reports and information system.

4.6.1.1 Qualitative data

The primary data were collected using a qualitative questionnaire that contained open-ended questions. The aim with such questionnaires is to generate long-form written or typed responses that reveal opinions, experiences, narratives, or accounts (cf. Deakin University, 2021).

The items in the questionnaire were derived from the present study's research questions. The questions were pilot-tested by five participants to ensure clarity, ease of use, and time used (discussed in more detail in Section 4.6.2.3). The questionnaire is attached as Annexure 4.

The questionnaire comprised three sections:

Section A: Demographic information of participants;

Section B: Processes of Monitoring and Control in the *WfW* Programme; and

Section C: Most Significant Monitoring and Control indicators in the *WfW* Programme.

4.6.1.2 Secondary data

Baškarada (2014:7) affirms that data for qualitative case studies can be collected from documents, archival records, interviews, direct observations, and physical artefacts. The present researcher sent an email, together with a consent letter, to the Chief Director of the programme for distribution to the various provincial heads, requesting the quality assessment reports for *WfW* projects. Yin (2018:156) argues that archival records are more reliable, as these are used for record-keeping and thus reflect the reality of past events.

4.6.2 Data analysis

Yin (2018:212) explains that data analysis involves examining, categorising, tabulating, and recombining both quantitative and qualitative data to address the research questions. Mihas (2019) describes it as a process that involves inspection, cleaning, transformation, and modelling data with the aim of discovering useful information to enable the researcher to draw an informed conclusion. The present researcher used the research questions as a guide in grouping and analysing the data.

4.6.2.1 Analysis of questionnaires

The qualitative data were analysed thematically using Atlas.ti (Version 8). The analysis process entailed transcribing participants' texts into word-processing documents. These transcripts were then analysed using computer software, i.e. Atlas.ti, which is a powerful qualitative data analysis tool, particularly for large sections of text and visual and audio data (Yin, 2017: 97). The present researcher analysed texts using coding and annotations. To analyse means to take apart words, sentences, and paragraphs to make sense of and interpret data and to theorise. This is done by organising, reducing, and describing the data (Schwandt,1997:4). Schwandt (1997:4) states that an analysis ought to be rigorous, systematic, disciplined, and carefully documented. According to Alasuutari (1995:7) data analysis in qualitative research also refers to "reasoning and argumentation that is not based simply on statistical relationships between variables by which certain objects or observation units are described". In other words, when using qualitative analysis as a means to explain or make sense of the data, the researcher does not use as evidence the frequencies with which or the quantities in which something occurs, but rather elicits meaning from the data in a systematic, comprehensive, and rigorous manner.

Thematic analysis was used to analyse the qualitative data. This entailed open coding which is the naming and categorising of phenomena that emerged from the data (Sekaran & Bougie, 2016:349). Categorising is the process of grouping concepts at a higher, more abstract level. In other words, open coding fractures data into concepts, which are then grouped into categories (Sekaran & Bougie, 2016:350)

During open coding, the data were broken down into discrete parts, compared, and questioned with *what*, *where*, *how*, and *when*. Each grouping was then given a conceptual label. Coding "represents the operations by which data are broken down, conceptualised, and put back together in new ways. It is the central process by which theories are built from data" (Strauss and Corbin, 1990:57). The products of labelling and categorising are concepts, which form the basic building blocks in grounded theory construction. Strauss and Corbin (1998:120-121) suggest that open coding can be done line by line, which is time-consuming, but also the most generative. This is the manner in which data were coded in the current study.

4.6.2.2 Analysis of company documents

Document analysis is defined as a procedure of reviewing and evaluating printed and electronic documents (Yin, 2018:111). In the present study, the quality assessment reports were analysed in terms of similarities and differences against the PMI (2017) project monitoring and control techniques.

4.6.2.3 Analysis of WIMS

WIMS is an information system that is also used as a monitoring tool in the *WfW* programme. WIMS data were analysed to identify gaps in monitoring and control with regard to the *WfW* project.

4.7 Pilot Study

A pilot study is a small-scale project to test the feasibility, duration, costs, and risks of the full-scale project (Blackburn *et al*., 2020:319). Pilot testing also enables the researcher to improve the larger study project. In the present study, a pilot study was

conducted to test the questionnaire, using five participants. The aim was to identify errors or issues in the questionnaire that may affect the larger study. Using the participants' feedback, the researcher could ensure that participants would understand the questionnaire and complete it correctly. The participants who took part in the pilot study were also counted in the final sample of the study.

4.8 Elimination of Bias

According to Borowska-Beszta (2017:56), research bias occurs when a systematic error is introduced into sampling or testing by encouraging one outcome over another. When data collection is biased, the researcher is either also influenced by the participants in the same manner, or is selecting data according to unconscious or conscious biases (Borowska-Beszta, 2017:57). In the present study, the quality of research was ensured by avoiding bias by the following means. The same questionnaire was administered to all the participants. Participation was voluntary and participants were in no way influenced to respond in a certain way. The researcher also remained vigilant against bias in all analyses and reporting.

4.9 Research Ethics

Research ethics are guiding principles that researchers follow in conducting and report on research. The aim is to prevent the harming the participants (intentionally or unintentionally) and society at large (Singh, 2019). Ethics also cover norms and standards to guide the researcher in terms of determining what is wrong or right when conducting research (Pearson, 2016:79). Research ethics require that a researcher present an authentic and error-free report, which reports is based on proven facts and information backed up by relevant literature (Singh, 2019).

The following research ethics were relevant in the present study:

For the primary data collection, the administering of the qualitative questionnaire to employees was approved by the Chief Director of Natural Resource Management (see Annexure 1). After permission had been granted, data were collected by distribution of the questionnaire to provincial heads via email. The provincial heads then distributed the questionnaire to their respective staff members for voluntary participation.

Participants who took part in the study sent their completed questionnaires to the researcher. Participants were in no way influenced or pressured.

Confidentiality and anonymity were ensured in this study by requesting participants to choose a personal code, for example Jacaranda, Queen of Sheba, and Drie Vyf. The participants were required to sign a consent form that contained information on the research.

Use of the sources of primary and secondary data was ethically cleared by the NWU Business School. The organisation also granted permission for the use of company documents. All data sources properly referenced. The findings of this study will be used for academic purposes only.

4.10 Chapter Summary

This chapter described the research methodologies and approach of the study. It described the design, including the population and sampling, as well as the research the strategies to ensure quality research, and detailed the ethical considerations. The following chapter, Chapter 4, reports on the analysis of the data and the findings.

CHAPTER 5. DATA ANALYSIS AND FINDINGS

4.11 Introduction

This chapter presents details of the data analysis and the findings. This chapter also provides insights from existing knowledge of project monitoring and control in the *WfW* programme.

The data were collected from 20 completed questionnaires, five quality assessment reports, and the WIMS system. Data saturation was reached after analysing 15 participants' data scripts. The researcher employed thematic analysis to analyse the data in alignment with the research questions. The sample's profile is detailed in the following sections.

4.12 Profile of Participants

The demographic information or the personal characteristics of the participants, such as years of experience and highest educational qualification, are presented in this phase.

Figure 5.1 illustrates the participants' levels of education.

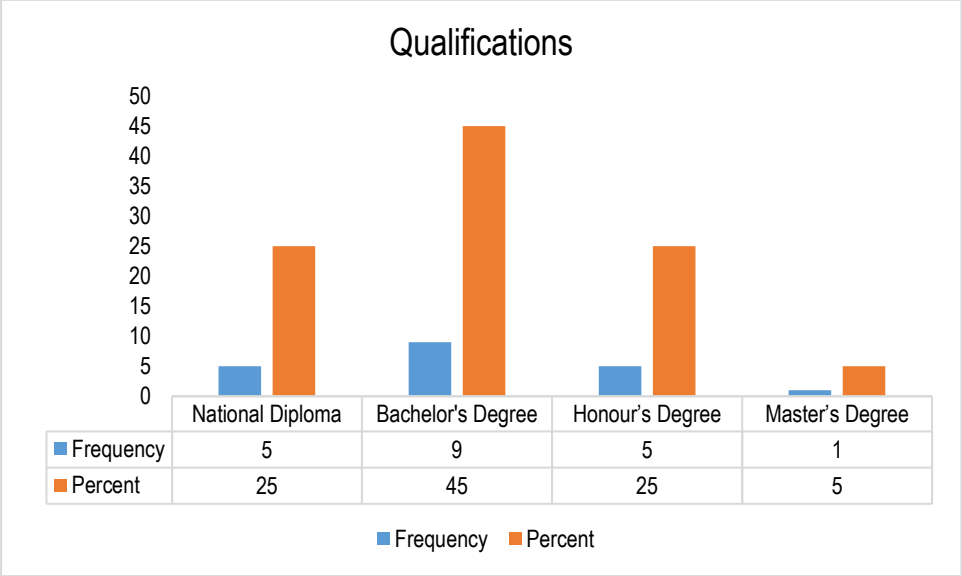


Figure 5.1. Participants' level of education

A majority (45%) of the study participants held a bachelor's degree, 25% held an honours degree, 25% held a National Diploma, and 5% held a Master's degree. The qualifications are an indication that the project personnel in the *WfW* programme are qualified to perform project management.

Figure 5.2 shows the designation of the study participants.

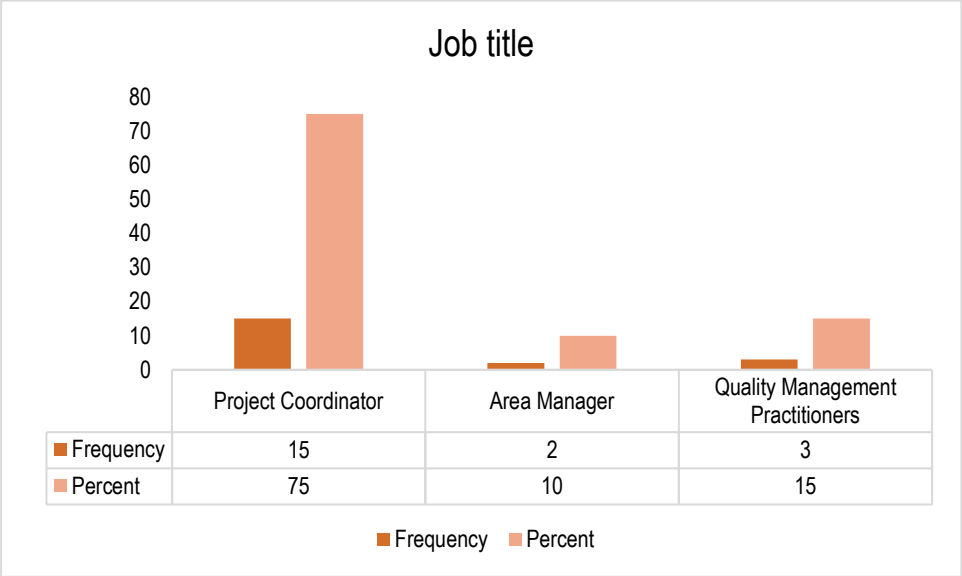


Figure 5.2. Job titles of participants

The majority (75%) of the participants were Project Co-ordinators, 15% were Quality Management Practitioners, and 10% were Area Managers.

Figure 5.3 present the participants' years of experience in project management.

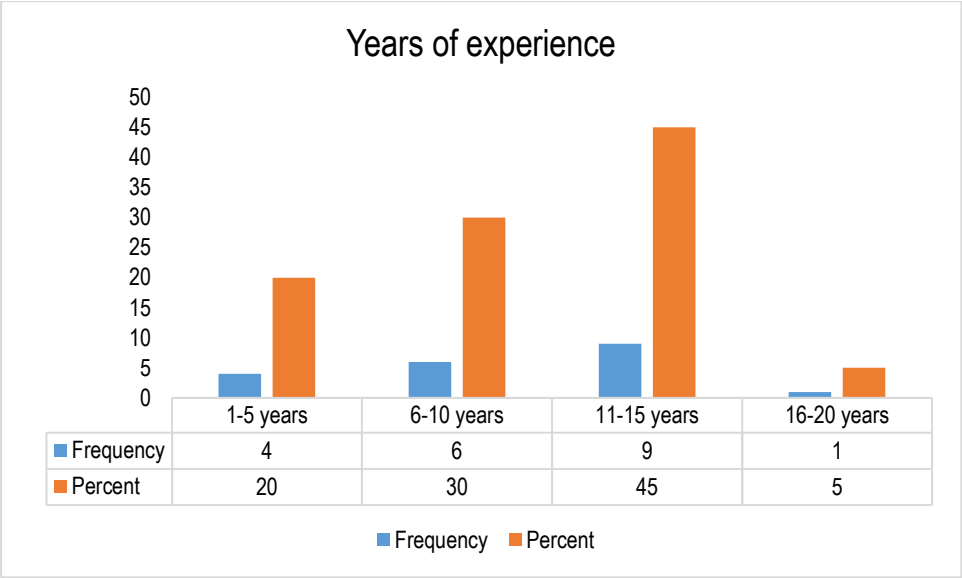


Figure 5.3. Participants years' experience in project management

The majority of the participants had 11–15 years' experience, followed by 30% who had 6–10 years' experience, 20% who had 1–5 years' experience, and 5% who had 16–20 years' project management experience.

Figure 5.4 shows in which province the study participants worked on the *WfW* programme.

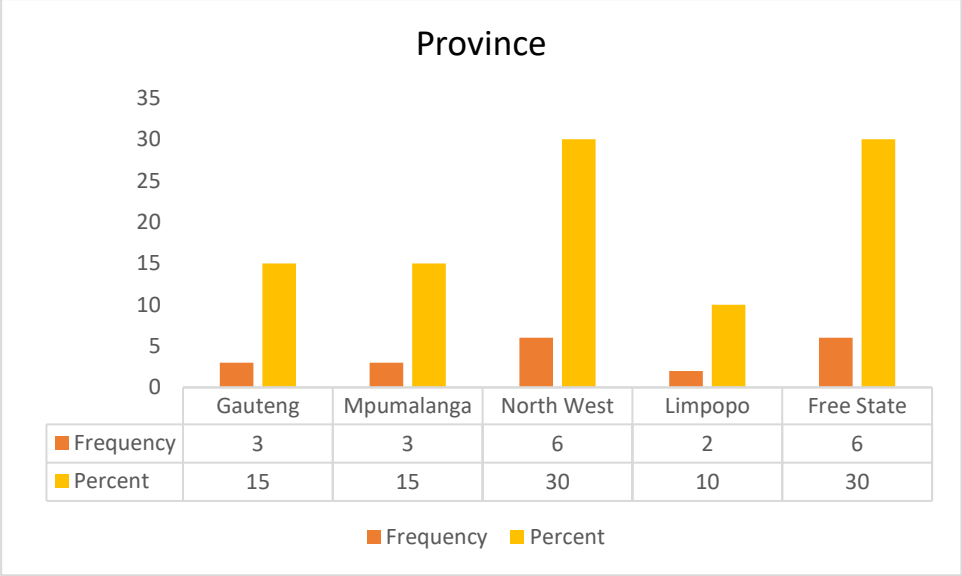


Figure 5.4. Participation by province

A total of 30% were working on the *WfW* programme in North West, 30% were in the Free State, 15% worked in Gauteng, 15% were stationed in Mpumalanga, and 10% worked in Limpopo.

Table 3 shows a cross-tabulation of work experience according to job title.

Table 3

Cross-tabulation of Experience and Job Title

Years of experience * Job tittle Crosstabulation					
		Job tittle			Total
		Project Coordinator	Area Manager	Quality Management Practitioners	
Years of experience	1-5 years	4	0	0	4
	6-10 years	6	0	0	6
	11-15 years	5	1	3	9
	16-20 years	0	1	0	1
Total		15	2	3	20

The table shows that both Area Managers had more than 10 years' project management experience. Most of the participants, irrespective of designation, had 11–15 years' experience.

4.13 Findings of Thematic Analysis

The qualitative data were analysed to address the research questions:

The main research question (RQ) of this study was:

What are the current gaps in the monitoring and control processes of the *WfW* programme, and how should these be addressed to improve the *WfW* programme?

The secondary research questions (SRQs) were:

SRQ1: What are the requisite project management monitoring and control processes and measures that should be used, according to the PMI's (2017) *PMBoK* for effective project management?

SRQ2: What are the gaps in the project monitoring and control processes and practices in the current *WfW* programme based on the recommendations of the PMI's (2017) *PMBoK*?

SRQ3: Why are there project monitoring and control process and practices gaps in the current *WfW* programme?

SRQ4: How should the monitoring and control process and measures be addressed to ensure a successful delivery of the *WfW* programme?

The themes that emerged from the data were grouped under three domains:

Domain 1: Monitoring and Control Process;

Domain 2: Practice Gaps in Monitoring and Control Process; and

Domain 3: Improving the monitoring and control of *WfW* projects.

Each domain, together with the related themes, is described below, accompanied by supportive verbatim quotes from the transcripts of the questionnaires.

4.13.1 Domain 1: Monitoring and Control Process

Three themes were aligned to RO1 under the Domain of Monitoring and Control process: To describe the monitoring and control process and mechanisms as recommended by the PMI (PMI, 2017). The related themes are:

Theme 1.1: *Understanding of monitoring and control process and mechanisms*;
Theme 1.2: *Best practices for monitoring and control*; and
Theme 1.3: *Key process steps in a WfW project*.

These themes are discussed below.

4.13.1.1 *Theme 1.1: Understanding of monitoring and control process and mechanisms*

Figure 5.5 depicts the network diagram of participants' responses related to this theme.

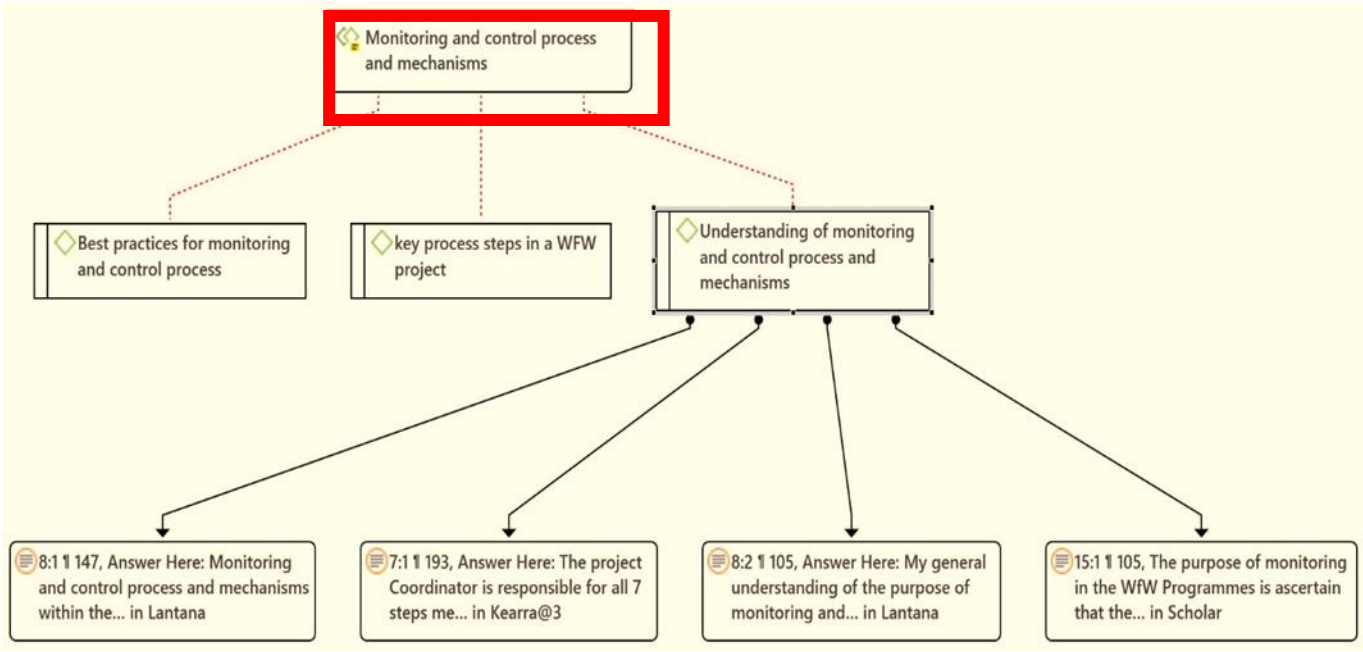


Figure 5.5. Network of Theme 1.1: *Understanding of monitoring and control process and mechanisms*

The participants showed limited understanding of the monitoring and control process and the mechanisms recommended by the PMI (2017). As seen from Figure 5.5, this theme had only four quotations coded under it. These four participants showed understanding of the monitoring and control process and mechanisms, and indicated that the work in *WfW* projects is done in compliance with the programme norms and standards. Participants also noted that the monitoring and control process and mechanisms ensure that work is done accordingly, and that the desired outcomes are achieved. The quotes from the participants that showed some understanding on monitoring and control process and mechanisms are shown below.

"Monitoring and control process and mechanisms within the WFW project have a positive impact because they help us to ensure that the objectives of WFW are achieved. It is because of these mechanisms that we are able to see if the work we are doing is giving us any positive results and we are also able to improve based on what we find when doing monitoring and control processes and mechanisms" [Lantana].

"The purpose of monitoring in the WfW programmes is ascertain that the work has been done in compliance to the programme Norms and standards. That is of acceptable quality and the programme's deliverables are achieved. Controlling has to do with implementing system to direct the programme to reach its goals and objectives. The Annual Plans of Operations (APOs)/Annual Performance Plans (APPs), monitoring tools such as inspection reports are used for controlling the project. The Working for Water Information Management System (WIMS) or EPMS are used for capturing the data and producing reports for decision making" [Scholar].

"My general understanding of the purpose of monitoring and controlling in the WfW project is to check if the way in which work is being done is giving us the desired outcomes so that if the way in which we are doing things is not giving us the desired outcomes we can then come up with ways in which we can improve in order achieve the WfW objectives" [Lantana]

4.13.1.2 *Theme 1.2: Best practices for monitoring and control*

Figure 5.6 is a network diagram showing participants' responses regarding the best practices in monitoring and control in the *WfW* programme.

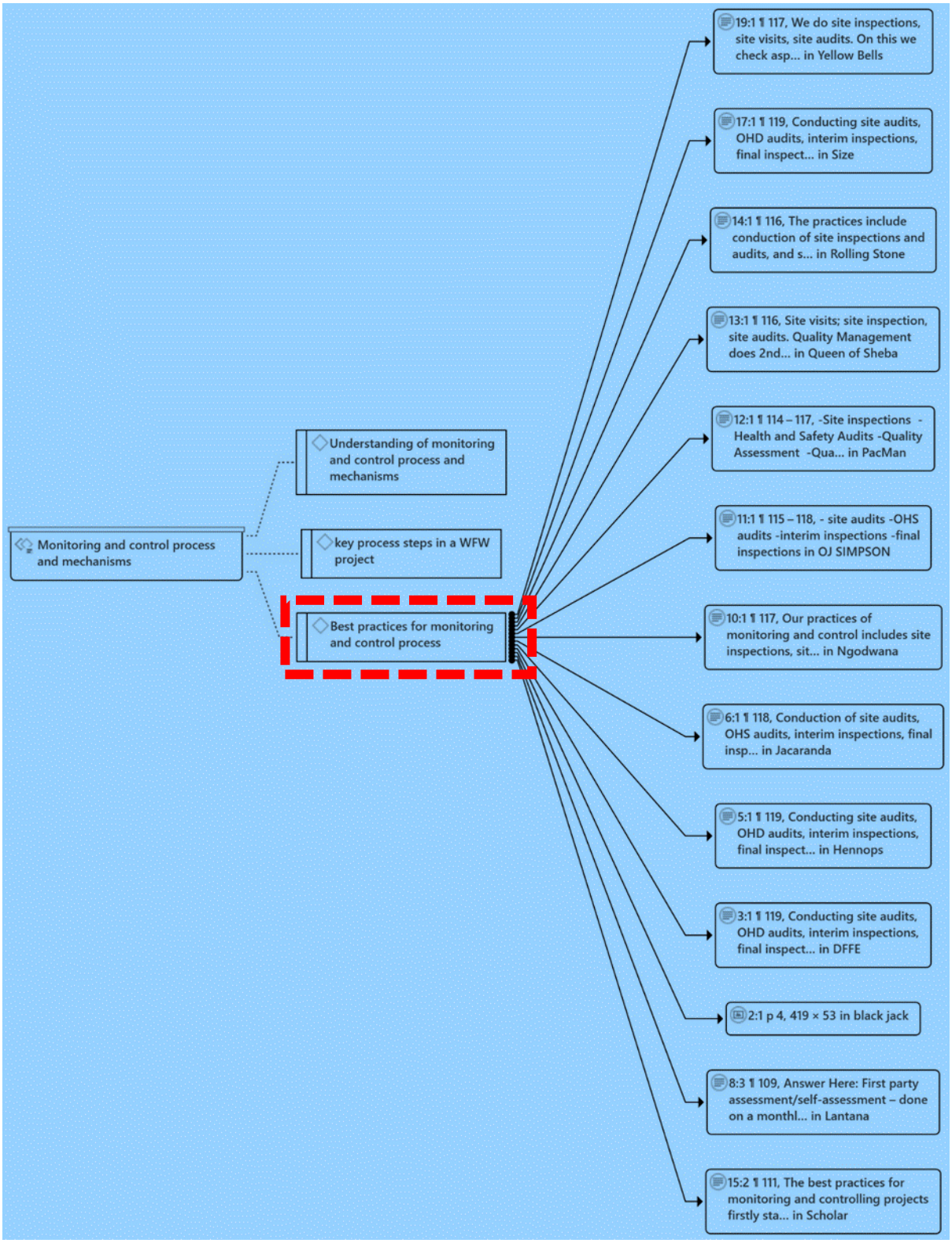


Figure 5.6. Network of Theme 1.2: *Best practices for monitoring and control process*

This study found that a common best practice among the participants in the *WfW* projects, as recommended by the PMI (2017), is site visits and -audits. Another best

practice found is conducting Occupational Health and Safety audits on all project sites. As seen from Figure 5.6, this theme had 13 quotations coded under it. The other best practices noted by the participants were: quality management, quality verification, and final inspection. The quotations below are some of the responses taken from the participant's transcripts.

> *"Conducting site audits, site inspections, final inspections, and self assessments. Also use of 2nd and 3rd party assessments"* [DFFE].
>
> *"Conducting site audits, OHS audits, interim inspections, final inspections and self-assessments and use of 2nd party assessments"* [Hennops].
>
> *"Conduction of site audits, OHS audits, interim inspections, final inspections and self assessments, and quality verifications"* [Jacaranda].
>
> *"Our practices of monitoring and control includes site inspections, site audits, and health and safety assessments"* [Ngodwana].

4.13.1.3 *Theme 1.3: Key process steps in a WfW project*

The key process steps in monitoring and control of a *WfW* project were also noted. Figure 5.7 depicts the network diagram of responses related to this theme.

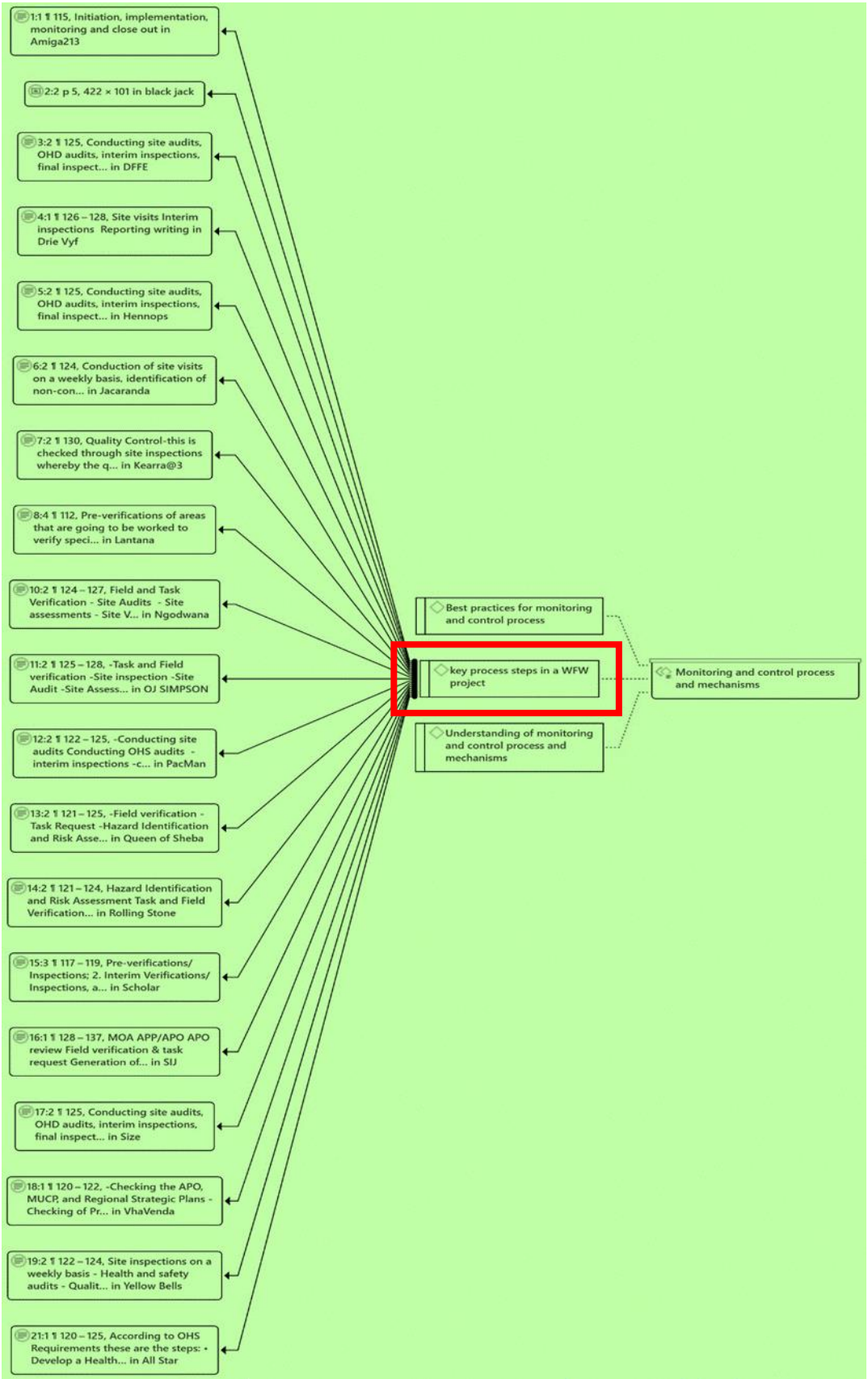


Figure 5.7. Network of Theme 1.3: *Key process steps in a WfW project*

According to the findings, site visits during which various activities are performed and assessments are conducted were viewed as one of the key process steps in *WFW* project by the participants. As seen from Figure 5.7, this theme had 19 quotations coded under it. The participants further mentioned developing an occupational health and safety (OHS) policy and writing reports with recommendations. However, the activities performed during the site visits by the participants differed, which could have been due to experience. The quotes below were taken from the participants' transcripts:

> *"Conducting site audits, OHS audits, interim inspections, final inspections and self assessments. Also use of 2nd and 3rd party assessments"* [Hennops].
>
> *"Conduction of site visits on a weekly basis, identification of non-conformance factors through conduction of inspections, advising the project team with corrective measures, recording of all the inspections and site visits, and writing reports"* [Jacaranda].
>
> *"According to OHS Requirements these are the steps; develop a Health and Safety Policy and design a Health and Safety Specification according to OHS requirements. The Contractor must develop and OHS Plan, stipulating how they will comply with the Health and Safety requirements. Assess and Monitor the project via Health and Safety Assessment and set out recommendations for all non-conformances and ensure that all recommendation have been implemented to ensure continual improvement"* [All Star].
>
> *"Checking the APO, MUCP, and Regional Strategic Plans. Checking of Project Reporting against WIMS Reporting Writing Reports with recommendations"* [VhaVenda].

4.13.2 Domain 2: Practice Gaps in Monitoring and Control Process

This domain was aligned with RO2, which was to determine gaps in the practice of project monitoring and control within the *WfW* programme when compared with the PMI (2017) guidelines. Four themes were derived at under 'Practice Gaps in Monitoring and Control Process':

Theme 2.1: *Project monitoring and control within the WfW programme*;
Theme 2.2: *Project monitoring and control guidelines in the WfW programme*;

Theme 2.3: *Mechanisms (tools and techniques) in the WfW programme*; and

Theme 2.4: *Challenges in the WfW programme*.

The findings are detailed in the following section.

4.13.2.1 *Theme 2.1: Project monitoring and control within the WfW programme*

Project monitoring and control in the *WfW* was studied to gather information on how it is conducted, with the aim of identifying any gaps. The network of this theme is shown in Figure 5.8.

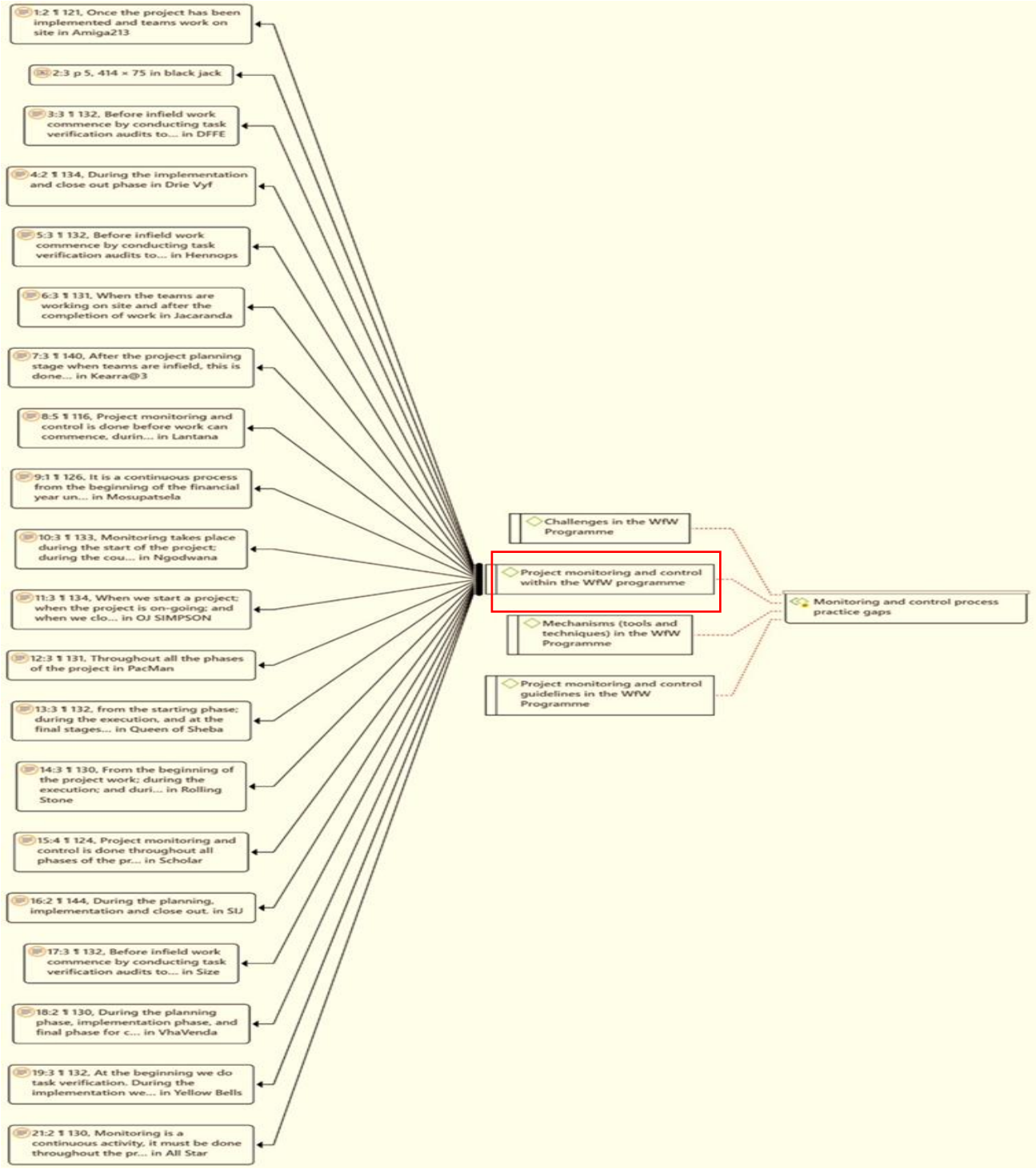


Figure 5.8. Network of quotations for Theme 2.1: *Project monitoring and control within the WfW programme*

This theme related to the project monitoring and control processes adhered to by the participants in the *WfW* programme. As seen from Figure 5.8, this theme had 13 quotations coded under it. It was found that project monitoring and control within the

WfW programme was a continuous process, and that it continued throughout a project. Participants indicated that project monitoring and control within the *WfW* programme should start before infield work commences, as well as during the implementation and closeout phases. Participants appeared to have a common understanding of project monitoring and control, especially with regard to how it should be done in a *WfW* project. These findings are supported by the quotes below.

> *"Before infield work commence by conducting task verification audits to ensure funds available will be sufficient to implement, when teams are infield and after task has been completed"* [DFFE].
>
> *"During the implementation and close out phase"* [Drie Vyf].
>
> *"After the project planning stage when teams are infield, this is done continuously until a project is closed out"* [Kearra@3].
>
> *"Monitoring takes place during the start of the project; during the course of implementation; and when closing the projects"* [Ngodwana].
>
> *"When we start a project; when the project is on-going; and when we close up a project"* [OJ SIMPSON].
>
> *"Throughout all the phases of the project"* [PacMan].
>
> *"From the starting phase; during the execution, and at the final stages of the project"* [Queen of Sheba].
>
> *"Monitoring is a continuous activity; it must be done throughout the project phases more especial at the implementation/execution phase till completion"* [All Star].

4.13.2.2 *Theme 2.2: Project monitoring and control guidelines in the WfW programme*

The monitoring and control guidelines of *WfW* programme were also analysed. Figure 5.9 shows the themes as derived from responses by the participants.

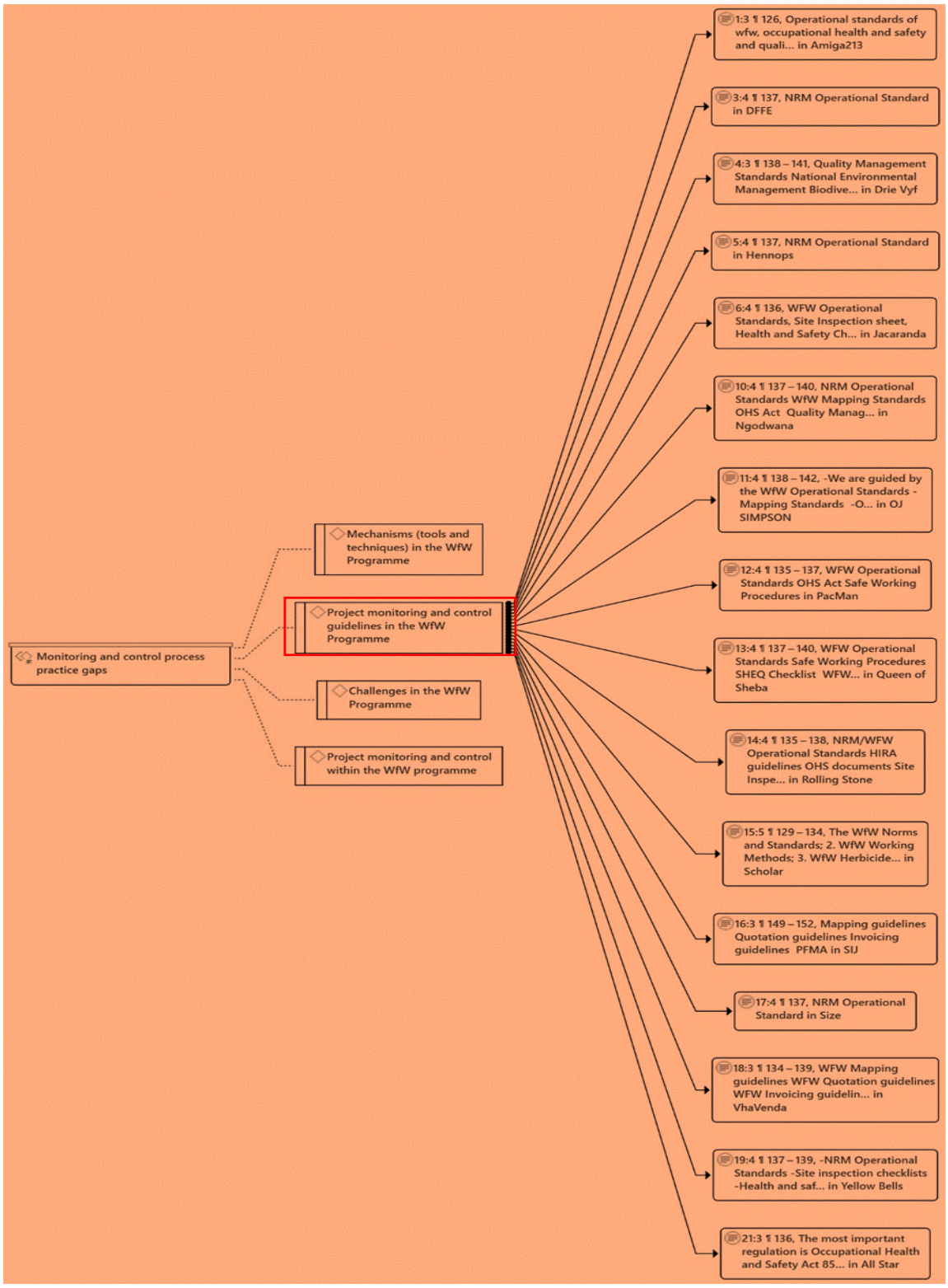


Figure 5.9. Network of quotations for Theme 2.2: *Project monitoring and control guidelines in the WfW programme*

Participants indicated that project monitoring and control guidelines are indeed used in their respective *WfW* projects. As seen from Figure 5.9, sub-theme had 16 quotations coded under it. The most common guidelines used by the study participants are those contained in the Occupational Health and Safety Act 85 of 1993. The other guidelines used are: *WfW* Norms and Standards, NRM Operational Standard, Quality Management Standards, and PFMA. The quotes below support the finding of the use of guidelines in the *WfW* programme.

"The most important regulation is Occupational Health and Safety Act 85 of 1993, with two main pillars" [All Star].

"Operational standards of WFW, occupational health and safety and quality compliance" [Amiga213].

"WFW Operational Standards, Site Inspection sheet, Health and Safety Checklists" [Jacaranda].

"NRM Operational Standards, WFW Mapping Standards, OHS Act and Quality Management Standards" [Ngodwana].

"We are guided by the WFW Operational Standards, mapping Standards, OHS Act and Quality Management Systems" [OJ SIMPSON].

"WFW Operational Standards, OHS Act and Safe Working Procedures" [PacMan].

"WFW Operational Standards, Safe Working Procedures and SHEQ Checklist" [Queen of Sheba].

"NRM/WFW Operational Standards, HIRA guidelines, OHS documents and Site Inspection Sheet" [Rolling Stone].

"The WW Norms and Standards; WFW Working Methods, WFW Herbicide Policy, Density Estimation/Classification, OHS Policies and APO/APP" [Scholar].

4.13.2.3 *Theme 2.3: Mechanisms (tools and techniques) used in the WfW programme*

This theme relates to findings regarding the application of tools and techniques used in the *WfW* programme.

Figure 5.10 depicts the participants' responses related to the to the tools and techniques they use for monitoring and control.

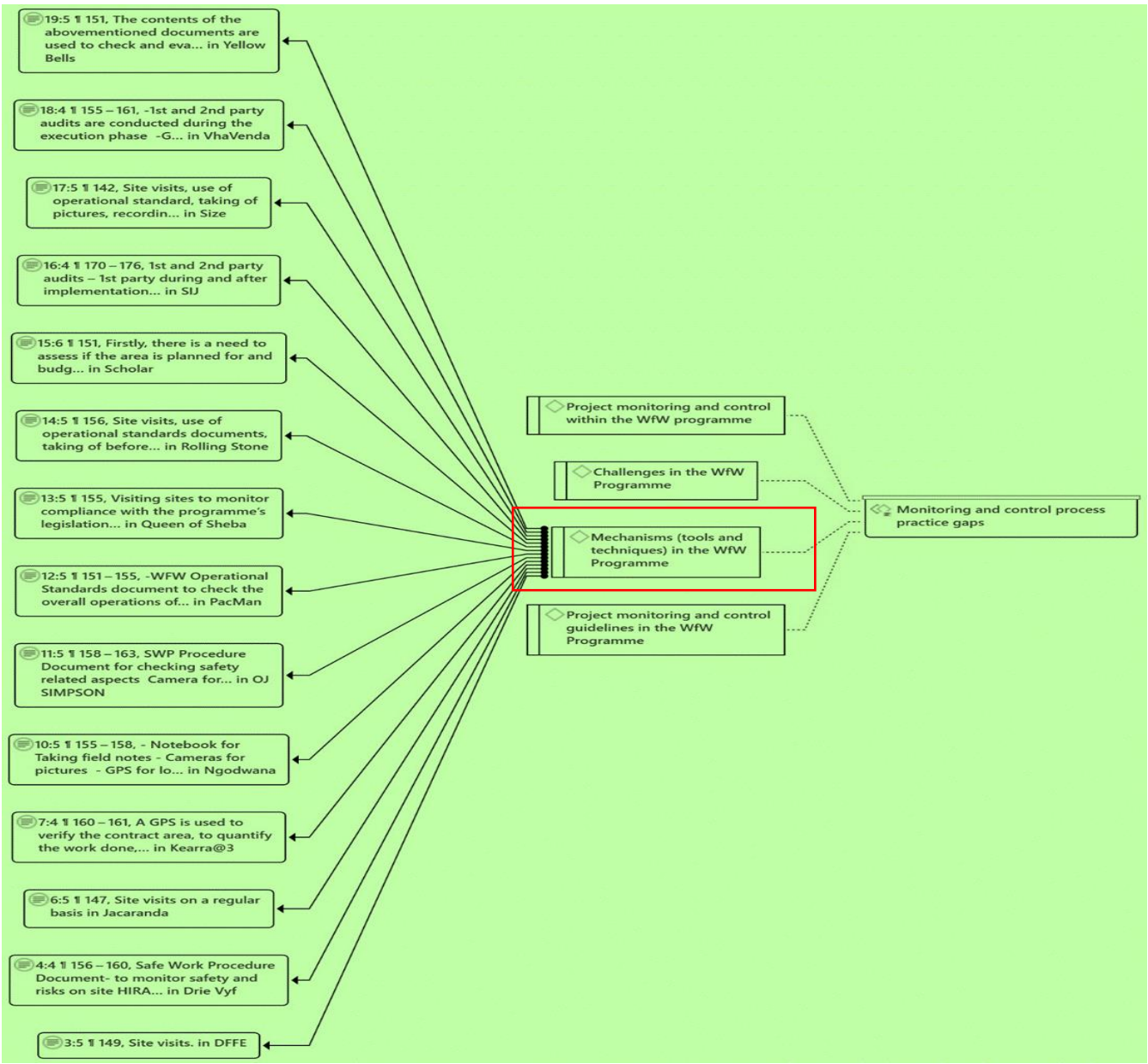


Figure 5.10. Network of quotations for Theme 2.3: *Mechanisms (tools and techniques) used in the WfW programme*

As seen from Figure 5.10, this theme had 14 quotations coded under it. The tools used by the study participants in their respective *WfW* projects are: a camera (used for taking pictures as part of evidence), a GPS device (for mapping), and a notebook (for taking field notes). Some participants noted making use of the WIMS to monitor financial and spatial reporting, first- and second-party audits during the execution phase, timesheets during and after implementation. The quotes below indicate some of the tools used by the study participants.

"A GPS is used to verify the contract area, to quantify the work done, to map the area and to track the area walked for inspection against the whole contract map. A weekly site inspection sheet is used by the project coordinator for infield inspection to monitor the work in progress, however this sheet is not detailed" [Kearra@3].

"Notebook for taking field notes, cameras for pictures, GPS for locating areas and field audit checklist for field auditing" [Ngodwana].

"SWP procedure document for checking safety related aspects, camera for capturing evidence in a form of pictures, GPS for track-logging, operational standards document for checking operations, site Inspection sheet for inspecting the site and note book for field notes" [OJ SIMPSON].

"WFW Operational Standards document to check the overall operations of the project. Camera is used to take before and after pictures of the areas worked by teams. GPS device to locate sites where teams are working. OHS Act to monitor compliance with health and safety legislation. Safe Working Procedures document to monitor safety on site" [PacMan].

"Site visits, use of operational standards documents, taking of before and after pictures, track logging of areas worked using GPS; Final inspections sheet for, timesheets, site audit forms and OHS audit form for OHS compliance" [Rolling Stone].

"1st and 2nd party audits wherein 1st party is during and after implementation. GPS before, during and after implementation. Contract maps before, during and after. Timesheets during and after implementation. Cameras before, during and after implementation. Mid and final inspections during and after implementation. WIMS before, during and after implementation" [SIJ].

4.13.2.4 *Theme 2.4: Challenges in the WfW programme*

The participants were asked to note the challenges they face in their projects. Figure 5.11 depicts their responses.

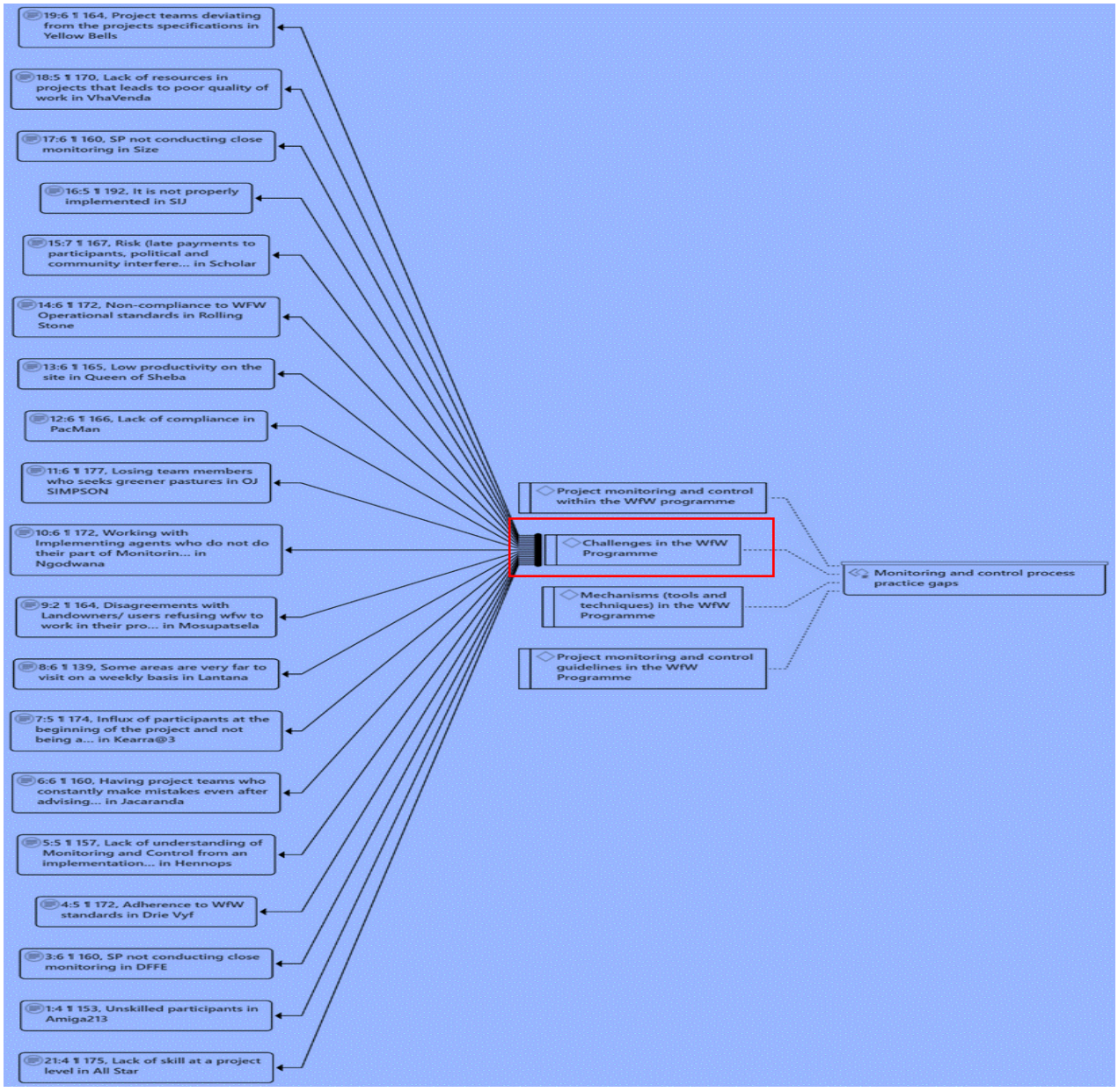


Figure 5.11. Network of quotations for Theme 2.4: *Challenges in the WfW programme*

As seen from Figure 5.11, this theme had 19 quotations coded under it. Participants noted experiencing different challenges in their respective *WfW* projects, including poor adherence to *WfW* standards, lack of compliance, deviation from project

specifications, and a lack of resources. Some participants noted challenges related to working with unskilled stakeholders, a lack of understanding for monitoring and control by project staff, the traveling distance between sites, poor retention of participants, and refusals by landowners to participate in the *WfW* programme. The quotes below support these findings.

"Influx of participants at the beginning of the project and not being able to retain participants for a longer period, this causes the project to spend more funds on training and development and also medical inspections" [Kearra@3].

"Disagreements with Landowners/users refusing WFW to work in their properties" [Mosupatsela].

"Non-compliance to WFW Operational standards" [Rolling Stone].

"Lack of skill at a project level" [All Star].

"Lack of understanding of Monitoring and Control from an implementation level to Quality Management" [Hennops].

"Some areas are very far to visit on a weekly basis" [Lantana].

"Having project teams who constantly make mistakes even after advising them on corrective measures" [Jacaranda].

4.13.3 Domain 3: Improving the Monitoring and Control of *WfW* projects

This domain is aligned with RO3, which was to make recommendations for improving the monitoring and control process and mechanisms of the *WfW* programme. Three themes are linked to Improving the Monitoring and Control of *WfW* projects.

4.13.3.1 *Theme 3.1: Effects of monitoring and control process and mechanism on WfW projects*

Figure 5.12 depicts the responses of the participants regarding the effects of the *WfW* programme's monitoring and control process and mechanisms.

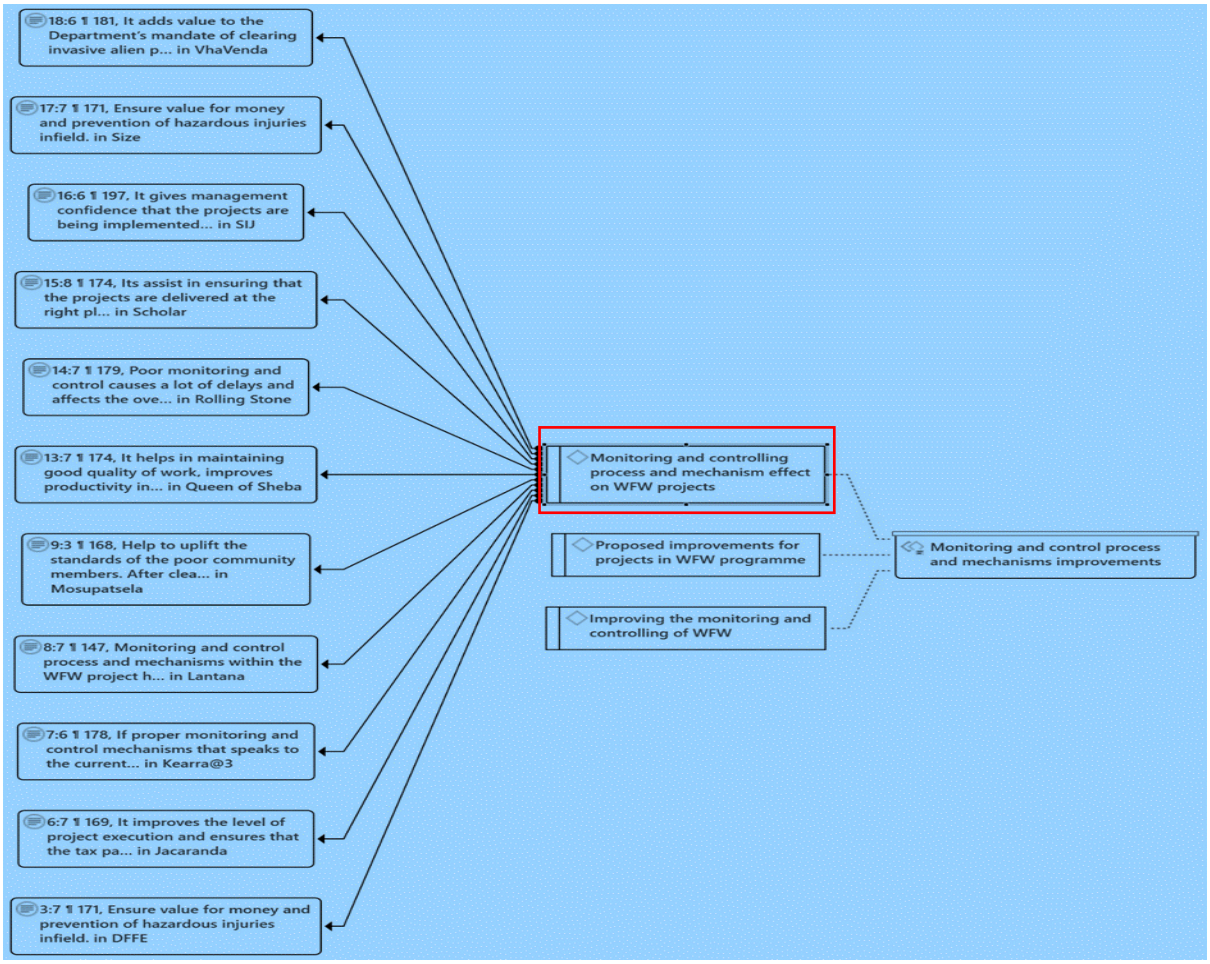


Figure 5.12. Network of quotations for Theme 3.1: *Effects of monitoring and control process and mechanisms on WfW projects*

As seen from Figure 5.12, this theme had 11 quotations coded under it. It was found that the monitoring and control process and mechanisms have different effects on different *WfW* projects. Participants indicated that the effects include ensuring that: *WfW* projects are value for money, fruitless expenditure is avoided, projects deliverables are met, and minimising costs. The quotes below indicate these effects.

"If proper monitoring and control mechanisms that speaks to the current contracting model being the LUI system can be put in place then the project will meet its intended deliverables at little cost to the tax payer but as there are no clear processes the project acquires a lot of irregular and fruitless expenditure at the plight of the tax payer" [Kearra@3].

"Monitoring and control process and mechanisms within the WFW project have a positive impact because they help us to ensure that the objectives of WFW are achieved. It is because of these mechanisms that we are able to see if the work we are doing is giving us any positive results and we are also able to improve based on what we find when doing monitoring and control processes and mechanisms" [Lantana].

"It helps in maintaining good quality of work, improves productivity in a project, and ensures that deadlines and time frames are met as per the project plan" [Queen of Sheba].

"It adds value to the Department's mandate of clearing invasive alien plants" [VhaVenda].

"Ensure value for money and prevention of hazardous injuries infield" [DFFE].

"It improves the level of project execution and ensures that the tax payers money is well invested in improving service delivery" [Jacaranda].

4.13.3.2 *Theme 3.2: Proposed improvements to WfW programme*

Participants indicated improvements that they thought should be implemented to improve the programme. Figure 5.13 shows the network of responses related to this theme.

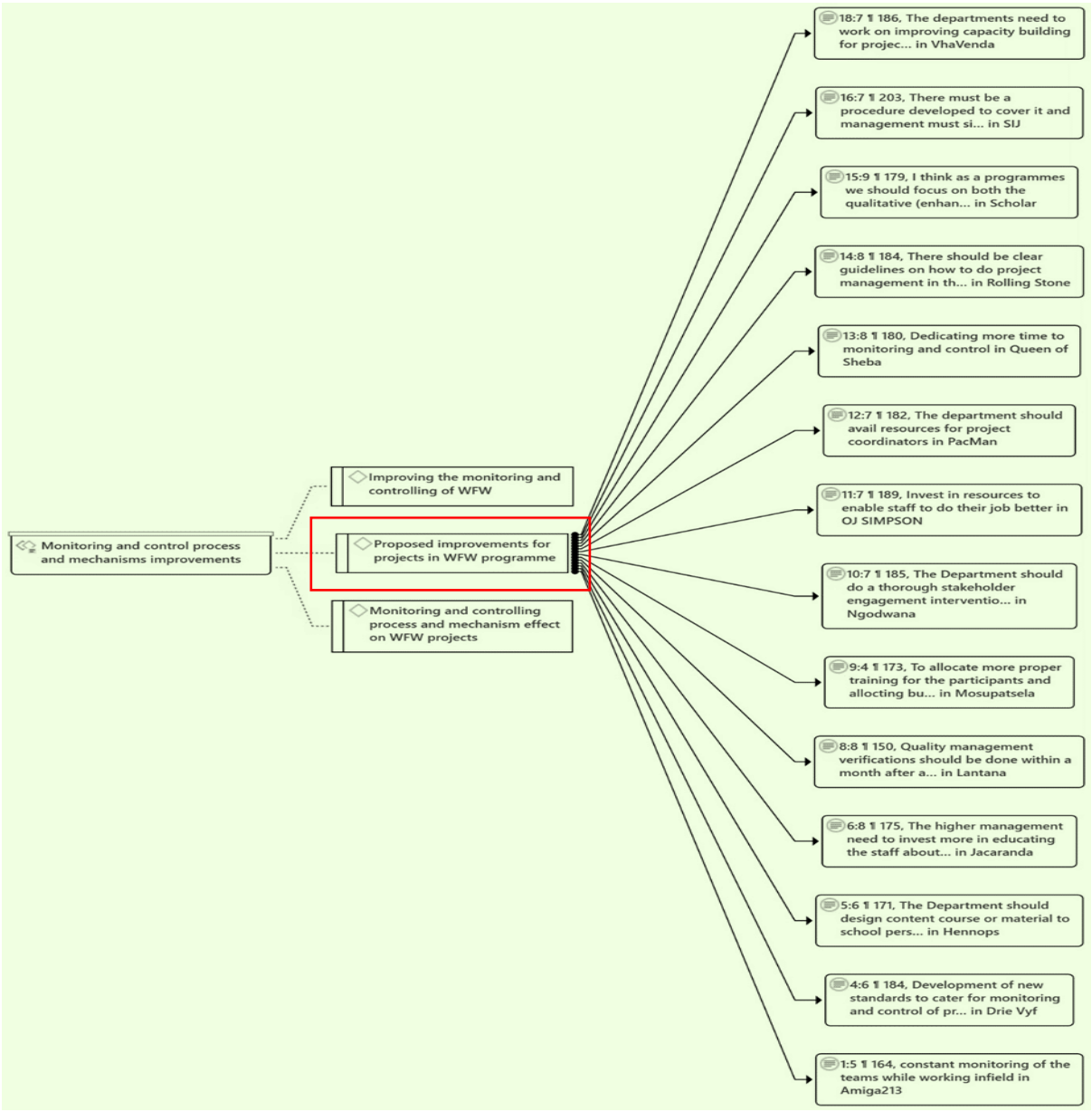


Figure 5.13. Network of quotations related to Theme 3.2: *Proposed improvements to WfW programme*

As seen from Figure 5.13, this theme had 14 quotations coded under it. The improvements recommended by the participants were: capacity-building for project management personnel, development of new standards, constant monitoring of the team, and conducting quality management verifications. The most commonly suggested improvement was the education of staff and stakeholders on the *WfW* programme. The quotes below indicate some of the proposed improvements.

"Development of new standards to cater for monitoring and control of projects from the onset" [Drie Vyf].

"The Department should design content course or material to school personnel in the implementation and project teams about the ins and outs of Monitoring WFW projects" [Hennops].

"The higher management need to invest more in educating the staff about the project management mechanisms as the WFW project is a self-designed model" [Jacaranda].

"Quality management verifications should be done within a month after an area has been worked because verifications that are done after a month or so does not give a true reflection of the quality of work that was done as the environment is always changing based on how the weather is like at that particular moment" [Lantana].

"The Department should do a thorough stakeholder engagement intervention where the implementing agents are taught about the WFW project management. Project Coordinators should also work on perfecting the craft of monitoring and control to improve their knowledge in monitoring and control" [Ngodwana].

"There should be clear guidelines on how to do project management in the context of WFW. Such guidelines should be informed by established project management practices such as PRINCE2 and PMBOK" [Rolling Stone].

"The departments need to work on improving capacity building for project management personnel in the programme" [VhaVenda].

4.13.3.3 *Theme 3.3: Suggested improvements to monitoring and control of WfW projects*

Participants suggested a number of improvements to the monitoring and control of *WfW* projects. Figure 5.14 depicts their responses.

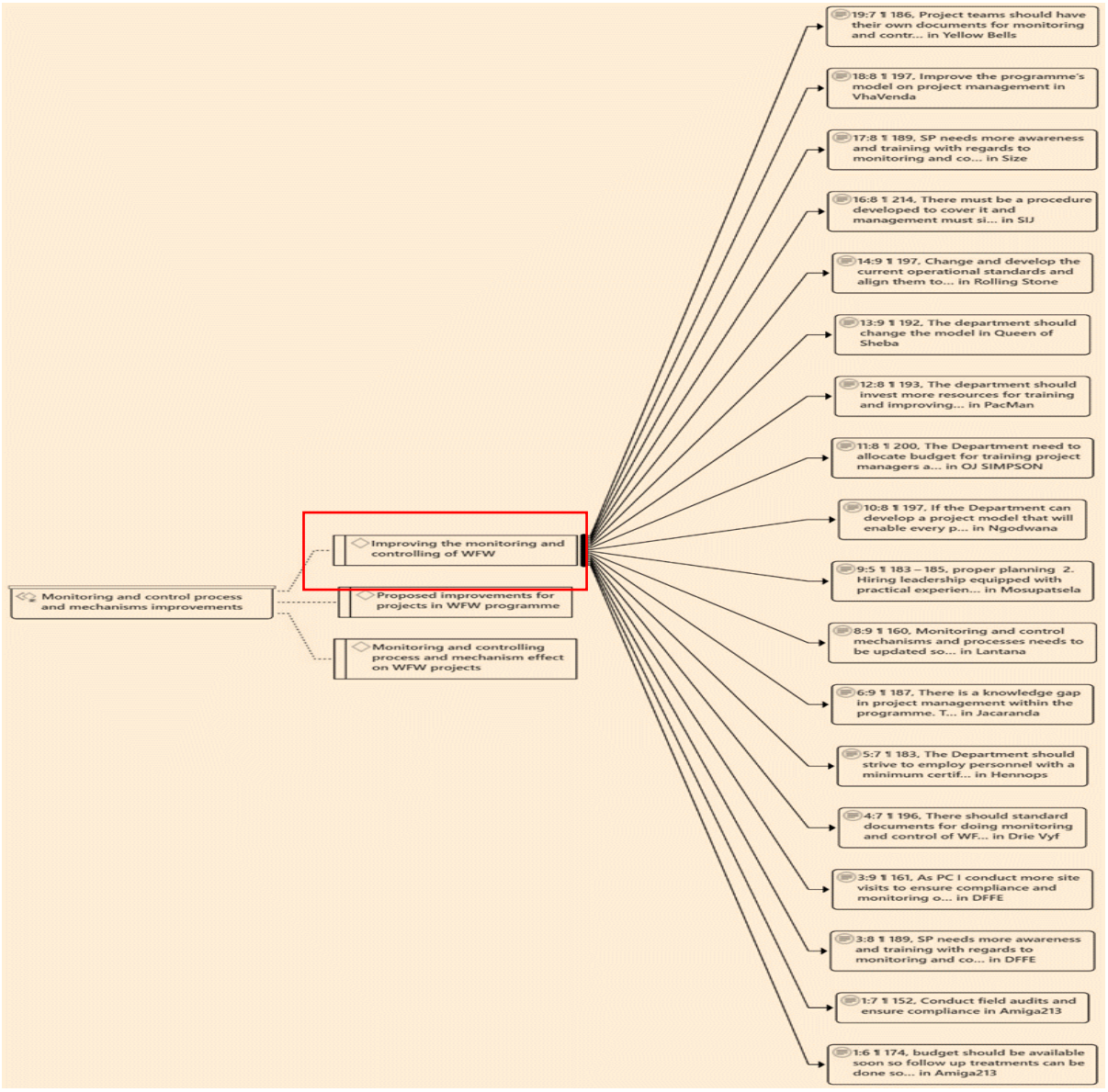


Figure 5.14. Network of quotations for Theme 3.3: *Suggestions for improving the monitoring and control of WfW projects*

As seen from Figure 5.14, this theme had 18 quotations coded under it. Participants recommended adjustment to the programme model for project management and aligning the current operational standards to the PMI's (2017) *PMBoK*. Participants also suggested that the DEA invest in training *WfW* project staff and stakeholders in monitoring and control, and implementing standardised documents for performing monitoring and control. A common suggestion to relook the programme model for project management. The quotes below support these findings.

"…budget should be available soon so follow up treatments can be done sooner" [Amiga213].

"SP needs more awareness and training with regards to monitoring and controlling projects" [DFFE].

"There should standard documents for doing monitoring and control of WFW projects" [Drie Vyf].

"The Department should strive to employ personnel with a minimum certificate of Project Management not only the Environmental and Nature Conservation qualifications because managing WFW projects entails more than just environmental management, there is also an element of business project management which seems to be ignored in the coordination of projects" [Hennops].

"There is a knowledge gap in project management within the programme. The model should broken down for both the officials and stakeholders so that there can be a better understanding of the model" [Jacaranda].

"Monitoring and control mechanisms and processes needs to be updated so they can also be suitable for the model that is used when implementing the LUI projects" [Lantana].

"If the Department can develop a project model that will enable every project stakeholder to do their part in monitoring and control, their project management will improve" [Ngodwana].

"The Department need to allocate budget for training project managers and area managers on Monitoring and Control; and Advanced Project Management" [OJ SIMPSON]

"The department should change the model" [Queen of Sheba].

"Change and develop the current operational standards and align them to the well known PM branches such as PMBOK and Prince2" [Rolling Stone].

"Improve the programme's model on project management" [VhaVenda].

4.14 Company Document Analysis

Document analysis is defined as a procedure for reviewing and evaluating printed and electronic documents. The analysis requires thorough examination and interpretation in order to gain an understanding of the contents in relation to the topic under study (Yin, 2018:111). Yin (2018:111) notes that document analysis is often used as an additional method in studying a phenomenon.

This section presents the analysis of and findings from the Quality Assessment Reports obtained from the *WfW* programme directors. It also provides insights into the existing monitoring and control mechanisms in the programme.

Only five Quality Assessment Reports, for the years 2017 to 2020, were received. These reports were analysed, together with data from the WIMS, through a comparison with the PMI's (2017) recommended monitoring and control techniques.

The Quality Assessment Reports determine the extent of compliance with quality standards, as well as the support required to comply with the standards. The reports contain scoresheets; the scores are awarded based on the evidence provided. The findings of the assessment are specified together with recommendations, and inform corrective actions. Table 4 lists the Quality Assessment Reports obtained from the *WfW* programme directors.

Table 4

List of Project Quality Assessment Reports

No.	Description of project	Date	Contract number	Type of project	Reports signed off
1	Dr. KK	2019	AIP/QA/1019/DRK	Invasive alien plants clearing	Yes
2	Koster	2017	KOS/2017	Invasive alien plants clearing	Yes

3	Hex River	2017	Hex/2017	Invasive alien plants clearing	Yes
4	Boskop	2019	AIP/QA/1019/BOS	Invasive alien plants clearing	Yes
5	Sterkstroom	2020	IAP/QV/0320/STE	Invasive alien plants clearing	Yes

4.14.1 Contents of a Quality Assessment Report

Figure 5.15 is an extract from a Quality Assessment Report, which shows the standards used to monitor and control project management activities in the *WfW* programme.

#	DESCRIPTION OF STANDARD		NUMBER OF SUB ELEMENTS			% Compliance
			Total	Not applicable	Assessed	
1	Project Quality Planning		6	0	6	100
2	Project Implementation		4	0	4	60
3	Transport		4	4	0	NA
4	Tools, Equipment and PPE		5	2	3	73
5	Harzadous Chemical Substances (HCS)		3	1	2	100
6	Health & Safety		13	0	13	62
7	Method of work		64	57	7	54
	7.5.1	Felling	9	9	0	NA
	7.5.2	Ringbarking	7	7	0	NA
	7.5.3	Frilling	7	7	0	NA
	7.5.4	Bark Stripping	4	4	0	NA
	7.5.5	Hand Pulling	4	4	0	NA
	7.5.6	Foliar Spray	4	4	0	NA
	7.5.7	Cut Stump	6	1	5	52
	7.5.8	Biological Control	7	7	0	NA
	7.5.9	Stem Injection	6	6	0	NA
	7.5.10	Aquatic Weeds	8	8	0	NA
8	Environmental Awareness		5	0	5	100
9	Costs		2	0	2	20
10	Training		2	0	2	100
	CLEAR ALL scores	PRINT ALL with	108	64	44	74,4

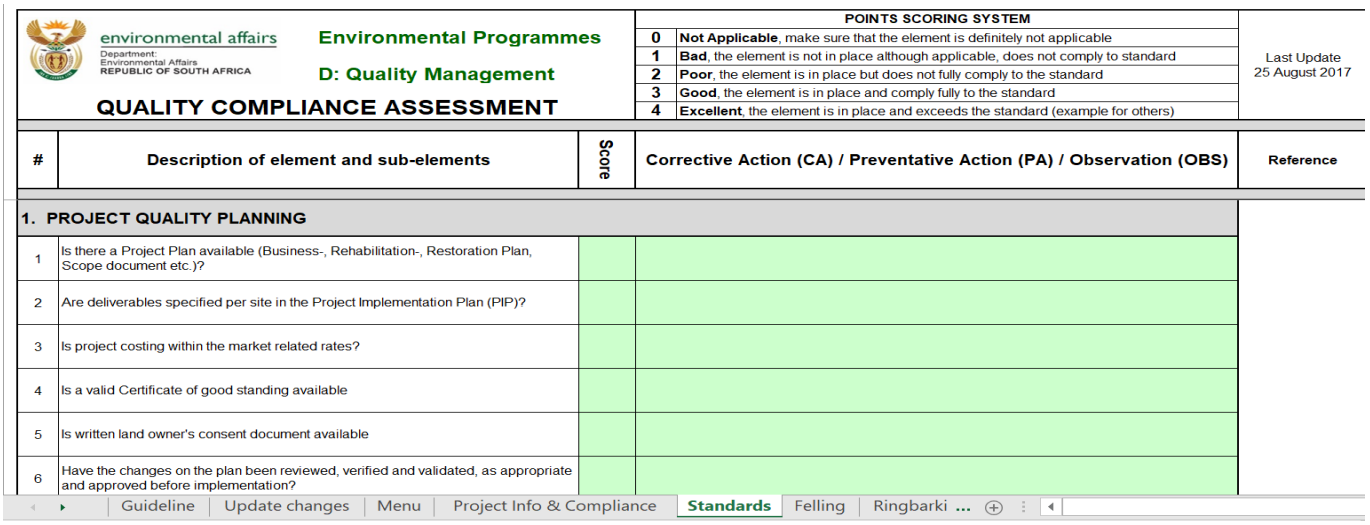
COMPLIANCE TO STANDARDS						
#	DESCRIPTION OF STANDARD		NUMBER OF SUB ELEMENTS			% Compliance
			Total	Not applicable	Assessed	
1	Project Quality Planning		8	2	6	40
2	Project Implementation		5	0	5	52
3	Transport		2	0	2	60
4	Tools, Equipment and PPE		5	2	3	47
5	Harzardous Chemical Substances (HCS)		3	3	0	NA
6	Health & Safety		13	0	13	54
7	Method of work		126	117	9	51
	7.5.1	Gabion Structure	14	14	0	NA
	7.5.2	Rock Pack Structure	7	7	0	NA
	7.5.3	Concrete / Rock Masonry Structure	12	12	0	NA
	7.5.4	Sloping	9	9	0	NA
	7.5.5	Ponding (hollows / pits)	9	9	0	NA
	7.5.6	Earth Works (including berms and diversions)	9	9	0	NA
	7.5.7	Vegetation Establishment (seeding, grasses, trees)	11	11	0	NA
	7.5.8	Chute (geocells, concrete, rocks, rock masonry etc.)	9	9	0	NA
	7.5.9	Fencing (construction / removal)	9	9	0	NA
	7.5.10	Brush Packing	5	5	0	NA
	7.5.11	Silt Fences	8	8	0	NA
	7.5.12	Silt Traps (ecologs, groynes)	8	8	0	NA
	7.5.13	Bush Clearing	5	0	5	48
	7.5.14	Demolish Structure	7	7	0	NA
	7.5.9	Fencing (construction / removal)	9	9	0	NA
	7.5.10	Brush Packing	5	5	0	NA
	7.5.11	Silt Fences	8	8	0	NA
	7.5.12	Silt Traps (ecologs, groynes)	8	8	0	NA
	7.5.13	Bush Clearing	5	0	5	48
	7.5.14	Demolish Structure	7	7	0	NA
8	Environmental Management		5	1	4	80
9	Costs		2	0	2	10
10	Training		2	0	2	10
			171	125	46	44.8

Figure 5.15. Contents of Quality Assessment Reports

The five Quality Assessment Reports were for different projects in the *WfW* programme and for different periods. In the analysis of the reports, 10 categories of monitoring and control were examined, to determine if these were aligned to the PMI's (2017) processes. The categories were as follows:

- Project quality planning;
- Project implementation;
- Transport;
- Tools, equipment, and personal protective equipment (PPE);
- Hazardous chemical substances;
- Method of work;
- Environmental awareness/management;
- Costs; and
- Training.

The assessor awards scores and enters these into a scoresheet. Figure 5.16 shows a portion of the quality assessment template.



environmental affairs
Department: Environmental Affairs
REPUBLIC OF SOUTH AFRICA

Environmental Programmes
D: Quality Management

QUALITY COMPLIANCE ASSESSMENT

POINTS SCORING SYSTEM	
0	**Not Applicable**, make sure that the element is definitely not applicable
1	**Bad**, the element is not in place although applicable, does not comply to standard
2	**Poor**, the element is in place but does not fully comply to the standard
3	**Good**, the element is in place and comply fully to the standard
4	**Excellent**, the element is in place and exceeds the standard (example for others)

Last Update
25 August 2017

#	Description of element and sub-elements	Score	Corrective Action (CA) / Preventative Action (PA) / Observation (OBS)	Reference
1. PROJECT QUALITY PLANNING				
1	Is there a Project Plan available (Business-, Rehabilitation-, Restoration Plan, Scope document etc.)?			
2	Are deliverables specified per site in the Project Implementation Plan (PIP)?			
3	Is project costing within the market related rates?			
4	Is a valid Certificate of good standing available			
5	Is written land owner's consent document available			
6	Have the changes on the plan been reviewed, verified and validated, as appropriate and approved before implementation?			

Guideline | Update changes | Menu | Project Info & Compliance | Standards | Felling | Ringbarki ...

Figure 5.16. WfW Quality Assessment Template

Assessment scores are interpreted as follows

0 = Not applicable;

1 = Bad (the element is not in place, although its applicable/does not comply with standard);

2 = Poor (the element is not in place/not comply fully to standard);

3 = Good (the element is in place and complies fully to the standard); and

4 = Excellent (the element is place and exceeds the standard).

In addition to the scores, there is a space for comments by the assessor, who may note corrective action, preventative action, and/or observations.

The findings of the comparison conducted are reported below, per assessment category.

4.14.2 Findings from Document Analysis

4.14.2.1 *Project quality planning*

Project quality planning is scored based on evidence provided that the planning was done thoroughly. In this category, the elements assessed are: Project map, Strategic planning, Management unit clearing plan, Annual plan of operation, Annual budget, APO implementation, Monthly KPI report, Management structure adequate for project

size, Administrative and occupational health and safety requirements, Aerial survey, and Environmental requirements.

In this category, the PMI (2017) recommends measurement, monitoring, and dissemination of information relating to project performance, along with an analysis of trends and measures. The purpose of quality planning to prevent problems from being passed along to customers. Inspections, measurements, and tests are utilised to achieve this goal. The process of monitoring and controlling project work also includes the identification of corrective action, preventative action, forecasts, and controlling the risks associated with the project (Hassib, 2018). The PMI's (2017) project planning include the following procedures:

- Project scope definition and approval documentation;
- Authorised budgets and schedules (in work-breakdown format);
- Team roles and responsibilities;
- Change process; and
- Quality assurance.

PMI (2017) project planning is detailed, with clarity regarding monitoring and control of projects from their inception. The *WfW* standards introduce monitoring and control at the implementation phase, whereas the PMI (2017) emphasises the importance of quality assurance from the inception of the project.

4.14.2.2 *Project implementation*

Project implementation is assessed according to the following standards:

- Has appropriate mapping been done?
- Are performance contracts (clearing contract and service level agreement) with detailed delivery specification available?
- Is a contractors file with the required information available?
- Are validated interim inspection documents (inspection lists, progress reports, checklists) available?

In project implementation, the PMI (2017) focuses on monitoring and controlling projects by tracking, reviewing, and reporting on the progress in meeting the

performance objectives defined in the project management plan. PMI (2017) processes also focus on measuring, monitoring, and dissemination of information relating to project performance, along with an analysis of trends and measures.

4.14.2.3 *Transport*

For this element, the *WfW* monitors and controls compliance of the project team's transport to ensure that the vehicle used in the project is roadworthy and licensed and that the driver has a valid licence to transport people. Transport should comply with the OHS Act (RSA, 1993) and OHSAS 18001(Kausek,2007:25). The PMI (2017) focuses on implementing risk response plans, tracking identified risks, monitoring residual risks, identifying new risks, and evaluating risk process effectiveness throughout the project.

4.14.2.4 *Tools, equipment, and PPE*

In *WfW* projects, assessments are conducted to ensure that the right tools and equipment are used for tasks, and that individuals have suitable PPE. This is required for compliance with the OHS Act (RSA, 1993) and OHSAS 18001 (Kausek,2007:25). The assessment includes monitoring whether tools are maintained. This category also includes risk management and mitigation.

The PMI does not cater for any systems for monitoring and control of tools, equipment, and PPE. It gives general guidance to risk assessment and management.

4.14.2.5 *Hazardous chemicals and substances*

Hazardous chemicals and substances are used in the *WfW* operations. For health and safety and risk-management purposes, the use of these substances is monitored. The programme monitors compliance with regard to the usage and storage of these chemicals on site and avoidance of spillages.

The PMI (2017) recommends risk reassessment and -audits to manage operational risks.

4.14.2.6 *Health and safety*

Maintaining health and safety standards is an important consideration in the project management of *WfW*. Compliance with the following is monitored: The OHS Act (RSA, 1993) and OHSAS 18001 (Kausek,2007:25)., specifically Hazard Identification and Risk Assessment (HIRA), formalised safe work procedures, an emergency evacuation plan, availability of first aid, a SHE representative on site, and a list of contact numbers of emergency services in the area.

The PMI (2017) recommends the monitoring and control of aspects of health and safety through quality auditing and inspection, observational and behaviour-based safety management programmes, and reporting.

4.14.2.7 *Method of work*

Work methods are the physical actions undertaken to perform a task. The monitoring and controlling of work methods are performed to prevent injury and discomfort. In *WfW*, method of work is monitored and controlled by checking if the methods used in a project are specified in the project contract, and if the methods are appropriate for the given tasks. Specific activities related to the task are also assessed.

The PMI (2017) recommends a control schedule for monitoring method of work. The control schedules processes include maintaining details on the status of project activities and managing changes to the baseline schedule, in order to achieve the project's objectives. Corrective or preventive actions can be planned based on deviations, and baseline changes can be managed on the basis of deviations.

4.14.2.8 *Environmental awareness*

Environmental awareness in *WfW* project management is monitored by assessing the cleanliness of the site during implementation (site has to free from litter and waste), changes to the physical environment in terms of access routes and paths, the footprint of the project activities being kept to a minimum, and reporting of any heritage resources found on the site to the relevant authorities. These aspects are based on the requirement of the National Environmental Management: Biodiversity Act (No. 10 of 2004) and National Environmental Management: Waste Act (No. 59 of 2008).

PMI (2017) monitoring and control processes do not have specific techniques of monitoring environmental awareness in projects. However, the PMI promotes project sustainability and sustainable businesses through the maintenance of environmental stability in project management. This is done by integrating environmental goals into business policies and activities. This integration is assessed through risk-based audits that ensure compliance with environmental regulations and standards, with the aim of ensuring good governance and sustainability.

4.14.2.9 *Costs*

In *WfW*, costs are monitored to check if the expenditure corresponds to the progress, and if there is a variance between the planned and actual costs. KPIs are used to track spending against the amount of work completed at the time of the assessment.

The PMI (2017) recommends that costs be monitored and controlled through a cost-control process. The process is similar to the one of *WfW*, as it also monitors the status of the project in order to update the project costs and manage changes to the cost baseline. Controlling the cost of a project can be accomplished with processes focused on planning, estimating, budgeting, financing, funding, and managing costs to ensure that the project is completed within the approved budget.

4.14.2.10 *Training*

The *WfW* assesses training to ensure that it is aligned to the project requirements. The process also involves verifying if the training intervention's attendance registers, evaluation forms, and certificates are available in the project file.

The PMI (2017) uses a staffing management plan as the tool for monitoring and controlling training needs. The plan forms part of the human resource plan, but it focuses more on addressing training requirements for staff, location, team-building strategies, and other factors that will aid accomplishment of the project's goals.

The next section discusses gaps identified in the *WfW* programme's quality assessments.

4.14.3 Gaps in *WfW*'s Quality Assessments

The following gaps were identified in the quality assessment reports:

- There is no system in place for recording findings, causes of non-conformance, and recommendations. Such a system would enable results-based monitoring by programme managers.
- Quality assessments are conducted during or after project implementation. Such assessments should commence from the initiation phase.
- The processes of the initiation phase are not monitored, despite the risk that incorrect processes pose to project outcomes.
- Quality assessments do not make provision for stakeholder engagement.
- The assessment does not include risk management. Project assessment should include project risks such as financial risk, communication risk, human resource risks, and external risks to both external and internal stakeholders.

4.14.4 The WIMS

According to Levendal, Le Maitre, Van Wilgen, and Ntshotsho (2008:39) the WIMS is a system of planning, based on geographical information system (GIS) mapping and geo-referencing, for contracts and projects. Levendal *et al*. (2008:38) further note that *WfW* clearing projects are run as contracts, with the contract and project information captured on WIMS.

The programme uses WIMS to record the following project data:

- **Polygons**: Each polygon is given a WIMS 13-digit treatment area number;
- **Species:** The type of species prevailing in the area to be cleared;
- **Density class of species**: The classes range from 0.1–1%, 1–5%, 5–25%, 25–50%, 50–75%, and 75–100%;
- **Area to be treated**;
- **Area workload**;
- **Norms:** These norms are used to calculate contract values. Contract values include the costs of clearing operations, labour, PPE, transport, and administration;

- **Agreement with landowner:** Details of the agreement with the landowner of the area to be cleared;
- **Timesheets:** Used to record worker's attendance; and
- **Consumables:** Records of consumables used in operations.

In terms of costs, WIMS records only direct costs for clearing operations. It does not record overhead costs such as project management personnel's wages and other activity costs.

4.14.4.1 *Gaps in Monitoring and Control Identified in the WIMS*

The gaps with regard to monitoring and control identified in the WIMS are as follows:

- The effectiveness of clearing operations;
- The effectiveness of the clearing methods in preserving the natural environment of the cleared areas;
- The impact of clearing methods on natural resources such as rivers, dams, and streams;
- Information on project management phases in the programme fed into the system;
- WIMS does not record the quality assessment reports.
- The information in WIMS is captured as it is received, without verification. Thus, the information may not be a true reflection of events. Adverse events may then only become evident upon assessment, by which time it may be too late to effect correction.

4.15 Discussion of Findings

This section discusses the key findings of the study, in alignment with the research sub-questions, in answering the main research question:

What are the current gaps in the monitoring and control processes of the *WfW* programme, and how should these be addressed to improve the *WfW* programme?

4.15.1 What project management monitoring and control processes and measures should be used, according to the PMI's (2017) *PMBoK*, for effective project management?

The research findings revealed differences between the project monitoring and control processes of the PMI's (2017) *PMBoK* and the *WfW* programme. In *WfW*, monitoring and control processes and mechanisms are understood to be aimed at ascertaining whether work is done in compliance with the programme's operational standards (DEA, 2021), and to ensure that the desired outcomes will be achieved. The study by Callistus and Clinton (2018) found that there was a lack of understanding of the need for monitoring and evaluation in the *WfW*. The study by Rose (2013) reported that project developers tend to give little attention to monitoring and control, and that it is only done for the sake of meeting the requirements of funding agencies, and not to ensure the success of projects.

This present study found that the best practices for monitoring and control in the *WfW* programme are site audits, OHS audits, quality management, quality verification, and final inspections. Previous studies reported auditing as the best practice (Foxcroft and McGeoch, 2011; Kraaij *et al*., 2017).

The present study found that the key processes in a *WfW* project are site visits, assessments, and reporting on OHS, together with recommendations. However, the activities performed during site visits varied between participants. With regard to key processes, Ntshotsho *et al*. (2015) also reported site visits and assessments.

4.15.2 What are the gaps in the project monitoring and control processes and practices in the current *WfW* programme, based on the PMI's (2017) *PMBoK*?

This study found that project monitoring and control in the *WfW* programme is a process that is done from the execution of the project. Participants recommended that it should start before infield work commences. This is important in ensuring that the project achieves its intended objectives of eradicating invasive alien plants, job creation, biological control, creating an enabling legislative environment, public education, and communication.

Previous studies highlighted that effective monitoring and evaluation can only be achieved when it is done within a framework of adaptive management that allows for continual feedback and improvement, and when there are explicit standards in place for measurements (who, when, where, how) (Henderson & Wilson, 2017; Hill *et al*., 2020). This view is aligned with that of Geerts *et al*. (2013:135), who found that quantified indicators or measures of success that are clearly linked to programme goals, objectives, and activities are important in project monitoring and control in the *WfW* programme. However, these previous studies focused more on conducting project monitoring and control within a framework of adaptive management, while the present study did not reach any conclusions regarding a framework.

This study found that, the most common guideline used in project monitoring and control in the *WfW* programme is the OHS Act (RSA, 1993), followed by the *WfW* Norms and Standards, NRM Operational Standard, Quality Management Standards(DEA, 2021), and PFMA (RSA, 1999). In this regard, previous studies (Mashamaite *et al*., 2020; McDowell, 1986) identified the CARA Act (RSA, 1983) and the NEMBA Act (RSA, 2004), and related draft regulations.

With regard to tools and techniques used in the *WfW* programme, participants indicated that they use: cameras (for taking pictures as part of evidence), GPS devices (for mapping treatment areas), a notebook (for taking field notes), the WIMS (for monitoring financial and spatial reporting), first- and second-party audits during the execution phase, timesheets during and after implementation, the *WfW*'s Operational Standards document, the OHS Act (RSA, 1993) (to monitor compliance with legislation). Mugido *et al*. (2014) found that monitoring reports were important in the *WfW* programme, which reports include details on activities undertaken, inputs supplied, and money disbursed. In addition, project reports were found to be considered essential to record key decisions made during formal and informal meetings. Ismail *et al*. (2016) and Mugido *et al*. (2014) reported the use of a map of the treatment area, and identified six information systems that were being used by the *WfW* programme, to various degrees, or were being developed for future use. These included the WIMS, the *WfW* Self-Assessment Standards, the Southern African Plant Invaders Atlas (SAPIA), the National Invasive Alien Plant Survey (NIAPS), remote sensing tools to determine evaporation rates, and periodic assessments by means of

research projects. The present study's findings regarding tools used in *WfW* projects are thus largely consistent with those of previous studies.

With regard to challenges experienced in *WfW* projects, the present study identified the following: poor adherence to *WfW* standards, a lack of compliance, deviations from project specifications, a lack of resources, working with unskilled participants, a lack of understanding for monitoring and control by staff, traveling distance between sites, poor retention of participants, and landowners refusing to participate in the programme. Previous studies reported a lack of specific, measurable, achievable, relevant, time-based objectives as challenges experienced in the *WfW* projects, which objectives can be used to evaluate progress towards the goals set out in the Strategic Plan (Baard *et al*., 2017; McConnachie *et al*., 2013). However, it is likely that most, if not all, at least projects meet the basic requirements of the Self-Assessment Standards (e.g., using the *WfW* mapping standards and norms), because the WIMS system requires this information to generate contracts. Nevertheless, Ntshotsho *et al*. (2015) indicated that a lot of information is gathered but not used for reporting, because procedures and systems for capturing, analysing, and creating summaries of the data are not available. In Gafane's (2011) study, all participants who were Managers indicated that they do have time available and are willing to improve on what they do, provided they have the necessary skills and tools. This is aligned with the present study's finding that a lack of resources and skills are challenges experienced in the *WfW* projects.

4.15.3 Why are there project monitoring and control process and practices gaps in the current *WfW* programme when compared to the PMI's (2017) *PMBoK*?

This study found that the effect monitoring and controlling process and mechanism have on *WfW* was different across where the study participants were working. Wherein some participants alluded to monitoring and controlling process and mechanism having an effect on ensuring that *WfW* projects have value for money and that fruitless expenditure is avoided. The primary objective of monitoring and controlling activities is to avoid issues in the future and to take corrective action (Hassib, 2018). Moreover, monitoring and controlling process was found to ensure that *WfW* projects meet their intended deliverables at little cost.

Findings of this study was consistent with that of a previous study that reported that management of complex problems such as invasive alien plants cannot be effective if it is not based on well-designed monitoring and evaluation systems which give managers and project coordinators appropriate feedback which enables them to improve (Van Wilgen, 2008). In the case of *WfW* projects, monitoring becomes effective as it tracks progress according to previously agreed on plans and schedules as routinely gathered. Girard (2017) also alluded that project fails due to critical monitoring and control issues that are not addressed.

Another finding from this sub-theme was that the participants expressed A process and practise gap in the current *WfW* programme that this study noted was that project monitoring and control within the *WfW* programme should start after infield work commences and during the implementation and closeout phase. The study participants expressed that this process should start before. Moreover, this study found that some of the current process and practice gap that exists in the *WfW* programme are the different tools used in the different sites. This could be a potential problem of achieving the goal of monitoring and controlling in the different sited to compare the plan with what actually happened, to evaluate variances and to correct them (PMI, 2017).

The aforementioned finding was the same when it came to guidelines that are used by the study participants to do project monitoring and control in the *WfW* project. This would still pose the same challenge of being unable to compare the plan with what actually happened in the different sites.

Some of the practice and process gaps that this study noted in the current *WfW* programmes were poor adherence to *WfW* standards, lack of compliance, deviations from project specifications and lack of resources. On the other hand, some of the notable gaps were the skills of stakeholders, lack of understanding for monitoring and control by project staff, the traveling distance between sites, poor retention of participants and refusals by landowners to participate in the *WfW* programme. Eby (2021) further states that a project has different phases, each consisting of distinctive activities. A project may reach its conclusion in a small or a big way, but it always has constraints such as cost, time, and resources.

4.15.4 How should the monitoring and control process and measures be addressed to ensure successful delivery of the *WfW* programme?

This study found that there are levels within *WfW* projects that need improvement to ensure successful delivery of the *WfW* programme. Improvements include capacity-building for project management personnel, the development of new standards, constant monitoring of the team, and conducting monthly quality verifications. Of these, the most important is the education of staff and stakeholders involved in monitoring and control.

The programme model and operational standards need to be align with the PMI's (2017) *PMBoK* and/or Prince2. A notable necessary improvement of the programme model on project management in *WfW* projects. While *WfW* is addressing certain aspects of M&E, the process is not as effective as it could be. The organisation also records information that could be used to, for example, report on the effectiveness of treatment operations, but this information is not recorded in WIMS, and cannot be analysed and reported on regionally or nationally (Coetzer, 2010). The information is also not used to formally evaluate progress and effectiveness and identify aspects that need improvement. The current project model used in the strategic plan does not provide measurable objectives or targets that *WfW* can be used measure progress (Motala & Ngandu, 2019). The WIMS tools can be extended to analyse and report on the change in status of invaders in a contract area from one contract (treatment) to the next, and the potential increases in streamflow. Van Wilgen (2008) noted that each five-year management plan must have a well-defined, measurable overall objective and a set of targets, so that progress towards goals can be monitored.

4.16 Summary of Chapter

This chapter presented the findings of the analyses of the primary and secondary data, followed by a discussion of the findings.

The next chapter concludes the study with the managerial implications, an overview of the limitations of the study, and recommendations.

CHAPTER 6. MANAGERIAL IMPLICATIONS, LIMITATIONS, AND RECOMMENDATIONS

6.1 Introduction

This chapter concludes the study and discusses the managerial implications based on the findings. The chapter reviews the limitations of the study, and recommendations are made to the organisation as possible solutions.

6.2 Answers to the Research Questions

The main research question of this study was:

What are the current gaps in the monitoring and control processes of the *WfW* programme, and how should these be addressed to improve the *WfW* programme?

The findings clearly indicated that there are gaps in the monitoring and control processes of the *WfW* programme when compared the PMI's (2017) processes. The *WfW* project management model is one of the biggest issues that must be thoroughly analysed by the top management of the programme. Further research is required into this model to see how it impacts the monitoring and control processes practised in the programme. The monitoring and control processes determine the success or failure of the programme, and, if the model is not aligned to the modern project management practices as guided by institutions such as the PMI, other phases of the project management model will be affected. This will ultimately impact delivery on the mandate of the DEA: ensuring that South Africans have access to an environment that is not harmful to their health and wellbeing, and protecting the natural resource for the current and future generations. Furthermore, it will negatively impact the spending of the department in providing service delivery, as these gaps contribute to irregular expenditure.

Practices should be recorded and studied thoroughly to identify the root causes of problems, and mitigation measures should be put in place. Such monitoring and control should also be recorded for future project-planning purposes.

The human resource personnel involved in government projects and programmes are an important element of project management. The government should employ

competent personnel who understand the core work of programmes. Successful projects result from having competent project management personnel with the relevant skills and knowledge. These personnel should also understand the administrative part of their job, as this also contributes to the success of projects. The administration element of project management plays an important role in archiving lessons learned from previous projects and using the knowledge to plan for future projects. However, if the personnel deployed in the programme do not have knowledge and understanding of these processes, any records may be useless, and future projects may fail due to a lack of access to knowledge gained in previous projects.

Monitoring and control mechanisms in the *WfW* appear to be complex, as the study found differences in participants' knowledge of these processes. These differences emanate from a lack of a standardised approach. Participants understanding of the project management model also varied. However, project management practices were found to be mostly the same in every project, depending on the chosen model and the alignment of the model to a project management methodology. Leaders of the programme should put much emphasis on the *WfW* model, its project management phases, and the roll-out of each phase, and link it with the best methodology to suit its execution. This will minimise the gaps identified in the model, and will assist in the successful execution of projects.

6.3 Managerial Implications

The leadership of the *WfW* programme should consider changing the *WfW* project model, as it is not well understood across the regions. The model informs execution, which also varies across regions. In changing the model, extensive research should be conducted on the project management model that will be suitable for the programme, as it should be informed by modern project management methodologies. The research should also inform the execution of every phase, coupled with improved monitoring and control techniques.

The following aspects based on the findings are worth noting to improve the monitoring and control processes within the *WfW* programme:

- Future project management personnel should at least have a certification in project management. Alternatively, the programme managers should invest

training funds to capacitate Project Co-ordinators and Area Managers with project management training. Quality management officials should also have a certification in both project- and quality management. Quality management courses, such as ISO courses, are recommended.

- Due to the differences in understanding of the current model, any new model should be rolled out to all the regions, to ensure uniform execution of projects. This will also facilitate monitoring and control processes.
- The quality management standard and *WfW* Standards should be revised or updated annually. Such revisions and updates should also be done with consideration of new monitoring and control tools and techniques.
- The programme management personnel need to also be involved in the project management phases of the programme. They should dedicate a percentage of their time to monitoring the project to ensure smooth operations. When needed, they could advise Project Co-ordinators and Area Managers.

The IMSC and NRM Chief Directorates should have regular strategic planning sessions to discuss issues affecting the programme from a quality-management perspective. These sessions could include discussions on lessons learned from previous quality assessments and suggestions for improvement. Feedback from these discussions will then help Area Managers and Project Co-ordinators to improve their monitoring and control during project operations.

6.4 Limitations of the Study

The USC (2021) defines limitations of a study as the design or method characteristics that may have impacted or influenced the findings. These limitations have a negative effect on the transferability of findings to other contexts.

The present study has the following limitations.

Participants had to complete the questionnaires electronically, as the research took place while strict COVID-19 regulations were in place. In-person interviews may have yielded more data with greater depth, as the researcher would have been able to ask probing questions.

Only five Quality Assessment Reports were received, which limited the amount of data for analysis in the document analysis phase of the study.

There were no response from Implementation Managers or Implementing Agents. The views of such participants may have yielded different and/or additional findings.

The next section provides recommendations for practice

6.5 Recommendations for practice

Recommendation 1:

To improve the current *WfW* monitoring and control mechanisms, the current WfW model should be aligned with the PMI's (2017) *PMBoK* and/or Prince2 (Vaníčková, 2017:228). The same should be applied to the programme's operational standards. Aligning the current monitoring and control processes of the *WfW* programme will benefit the programme in the following ways:

- *PMBoK* (PMI, 2017) practices allow companies to have standardised processes across departments, so that people who work on development projects can manage them in the same way as those working on distribution projects (PMI, 2017).
- The *PMBoK* (PMI, 2017) can help project managers to work with a standardised system across companies. A *WfW* Project Co-ordinator working in Limpopo can move to North West and use the same practices, ensuring continuity (PMI, 2017).

The *PMBoK* (PMI, 2017) offers methods to assist those who are unsure of how to manage risk. It also discusses what does not work. Application of the recommended practices could improve *WfW*'s monitoring and control processes.

Recommendation 2:

This study found that the effect of monitoring and controlling processes and mechanisms in *WfW* projects differed across regions, evident in participants' differing views and understanding of monitoring and control. These differences might be a contributing factor in gaps in the entire programme, especially because all the regions

in the programme have the same strategic goals and objectives. It is therefore recommended that the programme leaders develop a project monitoring and control system that is uniformly understood and applied in all regions.

Recommendation 3:

The *WfW* programme should adopt risk management mechanisms and systems in its monitoring and control processes. Such systems could enable project management personnel in the programme to effectively and efficiently monitor project activities during the development stages of the Annual Performance Plan and Annual Plan of Operation. This system will assist personnel in identifying risks that may arise and planning mitigation. It will also ensure that financial risk resulting from poor monitoring and control mechanisms are detected during early stages, rather than in the later stages, when it may already have led to irregular expenditures.

Recommendation 4:

The present study identified a gap in participants' knowledge of project management. It was also noted that they do not hold project management certification; most hold qualifications in environmental management. The programme managers should liaise with the Human Resource Unit of the DEA to provide inputs into the job design of future project management positions in the programme. The job design should include a minimum requirement of a certificate in project or programme management, and the job specification should be aligned to project management. This will ensure that every professional employed in the programme has knowledge of project management, which will enhance achievement of the programme's objectives.

Recommendation 5:

The project management personnel in the *WfW* programme should also invest in virtual project management capabilities. Virtual project management is the process of managing projects using remote or virtual teams who communicate using tools such as G Suite, Zoom, or Microsoft Teams. The DEA should also invest in project management software such as Google Cloud's G Suite, which contains Gmail, Docs, Drive, Calendar, and more, and everything is stored online, so team members can view it easily. Meetings are scheduled and the team alerted via Calendar (Keup, 2020).

Zoom which is a video conferencing programme for conducting briefings and meetings and one-on-one contact are made easier with Zoom (Keup, 2020).

Project Co-ordinators and Area Managers in the programme can also invest in different project management software to improve their skills and knowledge in monitoring and control of projects. Software such as Wrike, Monday.com, and Jira are widely used in South Africa. These software packages enable virtual teams and managers to work together more effectively by being able to assign, monitor, and track progress (Keup, 2020).

Virtual project management could improve the monitoring and control mechanisms of the *WfW* programme considerably, as it will enable managers to effectively communicate with project teams on the ground. It will also minimise the time spent travelling to the widely dispersed project sites.

Recommendation 6:

The *WfW* programme relies on implementation monitoring processes, not results-based monitoring. These mechanisms should be analysed to enable project management personnel to draw results-driven conclusions. Such results should be stored for future reference, to give guidance to future project monitoring and control processes.

Recommendation 7:

The Planning Unit of the *WfW* programme should invest time, resources, and research in stakeholder engagement processes. As the programme is headed towards creating PPPs with implementing agents, thorough research and development (R & D) is required to ensure that service providers appointed by the department understand the mandate, objectives, mission, and vision of the *WfW*. This should be combined with processes such as environmental advocacy and awareness, to further ensure that service providers understand the purpose of their involvement in the programme.

6.6 Suggestion for Future Studies

The success or failure of the *WfW* programme depends on the execution of projects. This study has identified gaps and their causes in monitoring and control of *WfW*

projects. The following avenues could be pursued in future studies to validate and expand on the findings of this study.

- It is evident from this study's findings that the current *WfW* project model and its phases have many project management gaps, including in monitoring and control. The prevalence of these gaps will continue to adversely affect the programme. Further research is required into the project management processes and phases in order to enhance project management. Such a study could also compare the model to those used in the rest of the public sector and the private sector.
- Research could also be conducted on linking the current *WfW* project management model to the *PMBoK* (PMI, 2017) models.
- Research could also be done on the stakeholder engagement processes of the programme. Such a study should include PPPs, landowners, and other stakeholders.
- Research can also be done on a system that will enable programme managers to record monitoring outcomes of the programme for future reference.

6.7 Conclusion

It is evident from the findings that gaps in the *WfW* programme's monitoring and control that inhibit the successful implementation of projects. These gaps may be a contributor to project failure and lead to irregular expenditure of taxpayer's money. There is a need for improvements to the current project model, which should focus on the programme's monitoring and control processes.

The study also indicated that numerous factors cause gaps in monitoring and controlling projects in the programme. As the programme is implemented across the country, it is important that there is a similar understanding of monitoring and control processes to minimise the gaps identified in this study. The lack of understanding and differences in the conducting of monitoring and control across provinces will remain a challenge if not addressed through a standardised approach in project execution.

WfW Programme Managers should prioritise alignment of the model to suitable best practices. Such practices will enable the programme to achieve its mandate while using state funds effectively and efficiently.

Monitoring and control constitute a critical part of the programme's work, and the gaps identified in this study should be addressed as a matter of urgency to minimise the dire risks associated with a lack of proper monitoring and control.

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Annexure 1: Permission to conduct the study

Christo Marais

To: ALEX MITHILENI; Alex Mithileni
Subject: RE: Request to conduct a study

Dear Prof du Plessis

Via email: Mr. ALEX MITHILENI <alex.mithileni@gmail.com>

Refer to your letter dated 19th May 2021 related to *Request for Permission to conduct a study in the Department of Environment, Forestry, and Fisheries*.

On behalf of the Department of Forestry Fisheries & the Environment the study by Mr. Alex Mithileni titled *"Exploring the project management monitoring and control process in the 'Working for Water Programme"* within the public sector" is approved.

As Mr. Mithileni is an employee of the department he will be given access to the relevant departmental documentation on the Working for Water Programme.

The project management, monitoring and control process has been problematic over the last number of years within Working for Water. We are in the process of changing our accounting systems and the outcome of the research should add value to our decision making around project monitoring, evaluation and reporting.

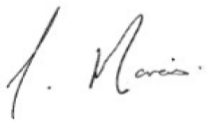
At the moment routine monitoring is largely focused on input (financial and labour/person days of employment) and output (hectares of land treated and training offered). The time step for this monitoring and reporting is however to short for outcomes and impact monitoring.

As the primary focus of the study is on *"project management monitoring and control process"* it will most probably not deal with outcomes and impacts of the programme but might consider these when exploring the monitoring processes.

One condition to the approval of the research is that a copy of the thesis be made available to the Department once completed, examined and accepted by the University.

I would like to wish the candidate all the best with his studies.

Regards



Christo
Dr. Christo Marais
Chief Director: Natural Resource Management Programmes
Department of Environment Forestry and Fisheries

Annexure 2: Informed Consent letter

Date: 08/03/2021

ETHICS & INFORMED CONSENT

Dear Participant

This **Informed Consent Statement** serves to confirm the following information as it relates to the officially approved MBA research project with EMS-REC ethical number **NWU-00895-21-A4** at the North-West University on "**Exploring project management monitoring and control in the public sector: Case of 'Working for Water' programme".**

The sole purpose of this study is to obtain information from yourself as an important participant in this study, due to your close involvement in the ***Working for Water* (*WfW*) programmes**.

1. Participation is completely voluntary, and you may withdraw at any time. You may also decide not to answer specific questions.

2. The research approach is qualitative; a semi-structured narrative questionnaire will be sent to you to complete as interviews (observing COVID-19 protocol) cannot be conducted. It should take you approximately 40 min to complete the questions.

3. Basic background information will be asked, e.g., your age, and related experience to the topic for description of the participating sample group.

4. Confidentiality of the data is guaranteed and only the combined results will be used for research and publication purposes.

5. The data gathered from the interviews will be recorded and only be used for research purposes and academic publications.

6. Please note that no participant will be identifiable as a pseudonym/number will be used in the study.

7. Also note that this study does not have a preferred answer to any of the questions as it will explore your experiences and perceptions on the phenomenon of *WfW* programme.

8. The results and results of this study will be available on request.

If you have any questions you can contact the research supervisor: Prof Yvonne du Plessis at yvonne.duplessis@nwu.ac.za or the researcher at alex.mithileni@gmail.com or cell phone 065 822 4410.

Please indicate your consent: Sign with a personal code:…….

I hereby give my consent after having read the above information that my data may be used as stated above.	**YES**	**NO**

Thank you

Alex Mithileni

MBA Research Student

Annexure 3: Ethical Clearance

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT

Private Bag X6001, Potchefstroom
South Africa 2520

Tel: 018 299-1111/2222
Web: http://www.nwu.ac.za

Economic and Management Sciences Research
Ethics Committee (EMS-REC)

27 July 2021

Prof Y du Plessis
Per e-mail
Dear Prof du Plessis

EMS-REC FEEDBACK: 25062021 – Round Robin
Student: Mithileni, SA (32483120)(NWU-00895-21-A4)
Applicant: Prof Y du Plessis - MBA

Your ethics application on***, Exploring the monitoring and control process in the "Working of Water" programme in the public sector,*** which served via Round Robin, refers.

Outcome:

Approved as a minimal risk study. A number **NWU-00895-21-A4** is given for one year of ethics clearance.

Please note that the ethics approval of this application is subject to the Covid-19 protocols.

Kind regards,

Mark Rathbone

Digitally signed by Mark Rathbone
DN: cn=Mark Rathbone, o=North-West University, ou=Business management, email=mark.rathbone@nwu.ac.za, c=ZA
Date: 2021.07.29 10:01:26 +02'00'

Prof Mark Rathbone
Chairperson: Economic and Management Sciences Research Ethics Committee (EMS-REC)

Annexure 4: Qualitative Questionnaire

<u>QUESTIONNAIRE:</u> Exploring the project management monitoring and control process and mechanisms gaps in the public sector: Case of *Working for Water* programme

Please consent (Sign the consent form, attached, with a personal code name) to voluntarily participating and in understanding the rules of conduct of this research before you continue completing this questionnaire. **NB: Please use the personal code you used in the consent form on this questionnaire, e.g., Spiderman.**

This is a qualitative questionnaire comprising two sections**:**

SECTION A: BASIC DEMOGRAPHICS

A few demographic questions are posed to describe the participants as a group for research purposes. You are free to refrain from answering any of the demographic questions if you so wish. This information is confidential and you cannot be identified.

The researcher is aware of the sensitivity of questions in this section, however, the information will allow us to compare groups of participants.

Instructions: Please answer the following questions by crossing the relevant block with an (x) or writing down your answer in the space provided.

1. **What is your highest qualification?**

No qualification	1
Grade 9 certificate	2
Matric certificate (Grade 12)	3
National Diploma	4
Bachelor’s degree	5
Honour’s degree	6

Master’s degree	7
Doctoral degree	8

2. **What is your job title?**

Project Co-ordinator	1
Area Manager	2
Implementation Manager (OPS)	3
Quality Management Practitioners	4
Implementing Agent	5

3. **How many years of work experience do you have in project management?**

1–5	1
6–10	2
11–15	3
16–20	4
20 or more	5

4. **In which Province do you work in the *WfW* programme?**

Gauteng	1
Mpumalanga	2
North West	3
Limpopo	4
Free State	5

SECTION B: NARRATIVES ON PROCESS AND MECHANISMS OF MONITORING AND CONTROL IN THE *WfW* PROGRAMME

Introduction: Due to COVID-19 regulations and travelling expenses, we cannot have face-to-face interviews; and thus this questionnaire. Where you are asked to provide answers to questions, please read and take time to provide your answer to the best of your knowledge and experience in the monitoring and controlling processes and mechanisms in relation to the work you do within the *WfW* programme.

Write your answers in paragraph format with as much detail as possible in the provided space.

a. **What is your general understanding of the purpose of monitoring and controlling in the *WfW* programme/project?**

Answer here:

b. **What are some of the best practices for monitoring and controlling in your *WfW* project?**

Answer here:

c. What are the key process steps for project monitoring and controlling in a *WfW* project?

Answer here:

d. When do you do project monitoring and control within the *WfW* programme?

Answer here:

e. What are the guidelines you use to do project monitoring and control in the *WfW* programme?

Answer here:

f. What tools and techniques of monitoring and control are stipulated for the *WfW* programme?

Answer here:

g. How do you apply the tool and techniques mentioned above when doing monitoring and control in your *WfW* programme?

Answer here:

h. What are the most challenging issues facing project monitoring and control in your programme and how do you address them?

Answer here: Challenges	How you address challenges?
1)	
2)	
3)	
4)	

i. In your opinion what effect does the monitoring and controlling process and techniques have on the success of the *WfW* project?

Answer here:

j. What suggestions do you propose to improve the monitoring and controlling of projects in your *WfW* programme?

Answer here:

k. According to your knowledge and experience, what is the current state of the overall monitoring and controlling process in the *WfW* projects? Motivate your answer.

Answer here:

l. What are your general comments on the monitoring and controlling of *WfW* projects?

Answer here:

THANK YOU FOR PARTICIPATING

Send your completed questionnaire to: GATEKEEPER.....

Annexure 6: Certificate of Language Editing

TERESA KAPP

Phone:
+27 82 799 7874
E-mail:
tekapp@mweb.co.za
info@teresakapp.com

This serves to certify that I duly edited:

Exploring the project management monitoring and control process in the Working for Water programme within the public sector

by

Samson Alex Mithileni

Orcid.org/0000-0002-1090-0868

I am an accredited editor with the University of Johannesburg, University of Stellenbosch Business School, NWU, UP, UCT, and GIBS, and my clients include the United Nations, Absa, FNB, Takealot, and various other universities and organisations in South Africa and Namibia.

Please note that all editing is done in *Track Changes*, and I therefore have no control over what is accepted or rejected by the author. Furthermore, I have no control over text added at a later stage.

Should there be any queries, please contact me on the number provided above.

Teresa Kapp

21March 2022

Annexure 7: Turnitin Summary

ALEX MITHILENI- MBA — Reviewed by Supervisor: Prof Y du Plessis

MBA mini dissertation as on 15 March 2022 body only

ORIGINALITY REPORT

20%	17%	4%	10%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	www.dwaf.gov.za Internet Source	2%
2	etd.cput.ac.za Internet Source	1%
3	Submitted to North West University Student Paper	1%
4	www.up.ac.za Internet Source	1%
5	Nathalie Perrier, Salah-Eddine Benbrahim, Robert Pellerin. "The core processes of project control: A network analysis", Procedia Computer Science, 2018 Publication	1%
6	projectmanagementacademy.net Internet Source	1%
7	Submitted to Foundation for Professional Development Student Paper	1%
8	www.epwp.gov.za Internet Source	<1%