



Workforce Structuring and Overtime Reliance in Agricultural Public Service: A Systemic Analysis of Non-Shift Operational Models in Livestock Management

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ABSTRACT

This study investigates the systemic inefficiencies in workforce structuring within South Africa's agricultural public service, with a particular focus on the management of biological assets under a non-shift operational model. Despite the fact that livestock care necessitates constant, seven-day coverage, agricultural workers, such as field rangers and farmhands, are bound by a strict 8-hour workday schedule. Due to ongoing staffing shortages and the lack of a formal shift system, the industry has become heavily dependent on overtime, particularly on weekends and public holidays. This has led to a considerable financial investment and a slow decline in worker satisfaction. The study examines the effects of structural workforce limitations on service continuity, cost effectiveness, and employee sustainability using a qualitative systems analysis approach and organizational documents, policy reports, and operational frameworks. Key findings suggest that the lack of adaptive workforce models contributes to service vulnerability and increasing dependence on private security for critical after-hours functions. By pointing out the long-term unviability of the current structure and suggesting systemic changes, the study makes the case for a policy-level re-examination of current staffing models. The results have applications in sustainable livestock management policy, agricultural workforce planning, and public service reform. Since the study is solely dependent on institutional observation and secondary analysis, ethical approval is not needed.

Keywords: Public service, Agricultural workforce, Overtime, Livestock management, Operational systems

1. Introduction and Background

In South Africa, managing biological resources like game, livestock, and infrastructure necessary for ecological preservation, rural development, and food security is a statutory duty of public agricultural services (Department of Agriculture, Land Reform and Rural Development [DALRRD], 2023). These biological resources need constant, undisturbed attention, which includes physical protection, feeding, disease monitoring, and breeding assistance. Because of the nature of this work, especially in the livestock and conservation units, it is necessary to be present every day of the week, including on weekends and public holidays. Despite this, institutional work schedules are still based on a strict 8-hour day model, with a 1-hour break not included in working hours. The hours are 7:30 to 16:30, Monday through Friday.

This arrangement is the result of outdated bureaucratic models that are not appropriate for the changing operational requirements of biological asset management (Mafuma & Kekana, 2022).

Consequently, there is a growing operational mismatch in the public agricultural sector. The lack of a formal shift system and staff shortages mean that the same group of workers must constantly put in more hours, frequently through paid or unpaid overtime, in order to perform critical care duties (Mokgohloa & Zulu, 2023). These overtime trends have become a systemic aspect of service delivery and are not unique. In order to ensure service continuity on weekends and public holidays, an excessive dependence on a small number of workers leads to emotional and physical exhaustion, lower productivity, and ultimately higher absenteeism and turnover (Van Wyk, 2022). Moreover, some functions, particularly night patrols on state farms and game reserves, have been subcontracted to private security companies due to the public workforce's unavailability after hours, despite the implications for cost escalation and reduced internal oversight (Baloyi & Maseko, 2024).

Both long-term organizational effectiveness and financial sustainability are significantly impacted by these structural inefficiencies. Several provincial agricultural departments reported exceeding overtime budgets in the fiscal year 2022–2023, while at the same time, they were unable to meet staffing ratio targets in important rural management zones (Limpopo Treasury, 2023). A deeper institutional misalignment between workforce planning and the operational realities of livestock management is suggested by the paradox of rising costs and service delivery fatigue.

The purpose of this article is to present a systemic analysis of the effects that the lack of a shift-based workforce model has on the operation of public agricultural services. By using livestock management as an example, it adds to the larger conversation about public sector workforce optimization and draws attention to the long-term dangers of sticking with rigid scheduling models in settings that need constant care.

Research Question: What are the effects on workforce productivity and operational sustainability of the agricultural public service's lack of a shift system for livestock management?

2. Literature Review

The management of biological assets within public institutions requires operational frameworks that are distinct from conventional administrative models. Unlike other bureaucratic functions that can be paused during evenings or weekends, biological asset care, especially in the context of livestock, demands continuous, unbroken oversight. Recent literature underscores that public service organisations globally are struggling to reconcile these operational needs with standardised workforce scheduling models, leading to structural inefficiencies and service quality erosion (Mabuza, 2021; Mutiso & Kamau, 2023).

Service delivery models in the agricultural sector of South Africa are still firmly rooted in antiquated frameworks that favor staffing patterns during the week. Although these models were created for administrative and extension tasks, they have been arbitrarily applied to operational areas that need 24-hour care (Govender, 2023). In rural agricultural units and state-run livestock farms, where the responsibility of ongoing care cannot be postponed or outsourced without repercussions, the gap between bureaucratic scheduling and operational reality is especially noticeable, as Phakathi and Ngobese (2022) point out.

Overtime dependence is increasingly being identified in the literature as a sign of institutional rigidity. According to Mtembu and Sithole (2020), when overtime is incorporated into the workforce on a structural basis rather than being utilized in special circumstances, it is a sign of inadequate workforce planning and human resource forecasting. According to international evaluations of public-sector animal welfare systems, this model eventually leads to chronic fatigue, declining employee morale, and compromised animal welfare standards (Okeke & Mensah, 2023; World Bank, 2022).

Economically speaking, non-shift workforce models are known to be inefficient. Agricultural departments that used strict scheduling and no shift systems routinely spent 15–20% more on staffing-related expenses, mostly from overtime and outsourcing, than departments that used rotational or flexible shift models, according to a World Bank cross-country analysis conducted in sub-Saharan Africa in 2022. In a similar vein, Okeke and Mensah (2023) demonstrate that these inefficiencies are made worse in areas with persistent understaffing, where current employees are overworked and subject to higher turnover and burnout rates.

There is still a dearth of South African-specific research that thoroughly examines the effects of strict workforce models in the agricultural public service, despite the fact that studies conducted abroad provide insightful information. The majority of the literature currently in publication concentrates on labor law, rural development, or general public administration; it pays little attention to the relationship between livestock care and human resource design in government institutions (Sibiya & Marais, 2021). The few empirical studies that are available are either out of date or do not adequately account for the operational complexities unique to biological asset management.

This study seeks to fill this critical knowledge gap by conducting a system-level analysis of South Africa's agricultural public service, with a focus on how workforce design, specifically the absence of shift-based models, impacts operational sustainability, financial prudence, and service delivery continuity in livestock management.

3. Theoretical Framework

This study is guided by two complementary theoretical lenses: Labour Process Theory (LPT) and Public Service Systems Theory (PSST). Together, these frameworks illuminate the structural and organisational conditions that sustain inefficient workforce utilisation within the agricultural public service.

Labour Process Theory (LPT), initially developed by Braverman (1974), examines the dynamics of labour control, work intensification, and the commodification of human labour within capitalist production systems. Although LPT was first developed to criticize the exploitation and deskilling of industrial labor, it has since been extended to analyze managerial practices in public institutions with more bureaucratic than market-driven control mechanisms (Thomas & Jones, 2021). LPT contributes to the explanation of how the absence of a formal shift system serves as a managerial tactic to boost labor output from current employees without spending money on structural changes or hiring more staff. While maintaining the appearance of institutional efficiency, this increase in workload, which is frequently normalized through overtime and unofficial commitments, causes chronic fatigue and low morale (Nyathi & Makhubele, 2022).

LPT also enables us to examine the connection between the decline in job quality and institutional rigidity. The implicit power dynamics between managerial goals and worker agency are revealed by the persistent expectation that employees work past regular business hours without receiving compensation or having their workload redesigned (Davids & Naidoo, 2023). In this case, control is institutionalized through scheduling conventions and resource limitations rather than being merely direct.

Public Service Systems Theory (PSST) complements LPT by shifting the focus from labour relations to systemic design and functionality. According to Ferlie (2022), PSST focuses on the coordination of resource deployment, institutional architecture, and service delivery mandates. It makes the argument that public organizations frequently experience a misalignment between their structural design and the requirements they must meet. The strict five-day, daylight-only schedule used for livestock management in the agricultural public sector is a legacy framework that is essentially out of step with the round-the-clock nature of biological asset care.

This theory is especially helpful in identifying operational dysfunctions that result from systemic design flaws rather than individual failures. It implies that dysfunctions like sustained overtime, increased absenteeism, and dependence on outsourcing will persist as recurrent symptoms unless organizational models are routinely reviewed and modified to meet changing service demands (Ferlie & Ongaro, 2021).

When combined, LPT and PSST offer a strong analytical foundation for comprehending why workforce inefficiencies in South Africa's agricultural public service continue to exist. PSST reveals the structural mismatch between inflexible HR models and adaptable operational realities, whereas LPT emphasizes the exploitative elements of institutional inertia. The study can examine how overtime reliance develops and why it continues in spite of obvious financial and human resources constraints thanks to this dual-theoretical framework.

4. Methodology

In order to investigate how the lack of shift-based operational models impacts workforce sustainability and efficiency in the South African agricultural public service, this study uses a qualitative systems analysis approach. When investigating institutional dynamics and structural arrangements that rely on organizational-level data and policy analysis rather than individual viewpoints, a qualitative systems approach is appropriate (Peters & Pierre, 2021). The methodology is exempt from ethical clearance procedures because it is purposefully non-reactive, desk-based, and solely draws from institutional and publicly accessible documentary sources.

Data Sources

The analysis draws on a purposive selection of non-reactive secondary data from 2019 to 2024, focusing on patterns of workforce utilisation and operational continuity within livestock and agricultural units. Key data sources include:

- **Internal departmental schedules and duty rosters**, which reflect how work hours are structured and delegated across weekdays, weekends, and public holidays.
- **Provincial audit and financial reports** from the Office of the Auditor-General and provincial treasuries, providing insights into overtime expenditures, staffing constraints, and external service procurement.
- **Staffing allocation frameworks**, especially those guiding posts for animal health technicians, field rangers, and agricultural support officers.
- **Policy and strategic planning documents** from the Department of Agriculture, Land Reform and Rural Development (DALRRD) and provincial departments, covering human resource strategies, organisational design, and labour deployment norms.

These documents were collected through institutional repositories, official government websites, and policy archives.

Analytical Strategy

Thematic content analysis, which is suitable for finding patterns in institutional and policy documents without the need for interviews or firsthand testimonies, was used to analyze the data (Clarke & Braun, 2017). A hybrid deductive-inductive methodology was used for the analysis. Initially, deductive codes (such as "labor intensification," "misalignment," and "overtime dependency") were created based on the theoretical framework. As recurrent themes surfaced from the data, these were subsequently improved inductively.

Key analytic categories included:

- Frequency and distribution of overtime claims
- Cost trends associated with external security contracting
- Discrepancies between service mandates and staff availability
- Repetition of non-shift scheduling policies in institutional planning

A matrix was developed to map these themes across multiple years and provinces, enhancing comparative depth and allowing for triangulation of findings. The method ensured a rigorous analysis of structural and systemic issues without involving human subjects, interviews, or surveys.

Ethical Considerations

There is no direct interaction with human subjects or personal data in this study; it is solely based on non-reactive institutional data. Accordingly, it is not covered by the South African National Health Research Ethics Council's (NHREC) guidelines or international best practices for research ethics in public administration, which call for ethical clearance for certain types of research (NHREC, 2019; Babbie, 2020).

5. Results

Three main themes that illustrate the systemic effects of non-shift-based workforce models in the agricultural public service were identified through the document-based analysis of institutional and policy records. Together, these themes—the institutionalization of overtime, the replacement of private security, and employee exhaustion and overload—showcase a pattern of operational stress stemming from structural rigidity.

1. Overtime Institutionalisation

Originally intended as a temporary solution to unforeseen spikes in workload or emergency situations, overtime has evolved into a structurally integrated part of workforce planning in many provincial agricultural departments. Based on a review of monthly personnel expenditure reports from 2019 to 2023, overtime expenses have continuously represented 20% to 28% of the overall human resource budget for livestock management units (Department of Agriculture, 2023). In rural areas, where ongoing staffing shortages and logistical obstacles to hiring temporary or relief workers worsen workforce constraints, this excessive reliance on overtime is especially severe.

Weekend and public holiday work, which should ideally be assigned through a formal rotational staffing system, is instead pre-scheduled and frequently assigned as overtime to the current workforce, according to internal departmental communications. A fundamental organizational change in labor management is indicated by this move from reactive to proactive overtime scheduling, where overtime has successfully replaced shift rotations as the main method of maintaining operational continuity. The systemic inability to update workforce architectures to meet the ongoing service demands of livestock care is reflected in the normalization of overtime.

The long-term financial and human resource viability of agricultural public services is seriously called into question by the embeddedness of overtime. While overtime might temporarily fill service gaps, the ongoing expense puts further strain on provincial budgets that are already under pressure from conflicting demands (Molepo & Tenza, 2023). Additionally, this approach puts staff members at risk for burnout and attrition, which could exacerbate the staffing issues it aims to address and lead to a vicious cycle of reliance on overtime labor that jeopardizes institutional resilience and service quality.

2. Private Security Substitution

The growing reliance on contracted private security companies to carry out patrol and surveillance duties, especially at night on state farms and livestock facilities, is a major theme that emerged from the analysis. The main reason for this dependence is that field rangers, animal health technicians, and other crucial public agricultural employees in charge of on-site monitoring do not have official night shift schedules. As a result, procurement reports for security services from 2020 to 2024 show a steady increase in the amount spent on contracted security services, with an average yearly growth of roughly 18% (Provincial Budget Review, 2024).

Outsourcing these patrol tasks temporarily fills in the operational gaps caused by rigid workforce scheduling, but it also takes vital funds away from internal staffing investments and direct agricultural operations. The department's ability to address underlying issues like ongoing understaffing or a lack of shift reform is hampered by the reallocation of funds toward private security contracts. Performance audits have also revealed a number of operational and accountability problems with this arrangement. These include instances of livestock loss or theft brought on by slow response times, difficulties enforcing contractual obligations, and a lack of integration between departmental communication protocols and private security personnel (Zwane & Rakoma, 2022).

Although it may seem like a good idea in the short run, replacing essential public services with outside providers raises questions about institutional self-sufficiency and long-term service quality. It runs the risk of making the public sector more reliant on outside parties to perform vital operational tasks, which could erode organizational knowledge, weaken internal expertise, and limit its ability to manage assets proactively. This pattern highlights the urgent need to review internal staffing and scheduling models because it represents a systemic response to workforce rigidity rather than a long-term strategic adaptation.

3. Employee Overload and Fatigue

The analysis reveals a critical and ongoing issue of workforce exhaustion, attributable to the persistent overextension of a limited pool of agricultural public service employees. This overextension is symptomatic of systemic weaknesses rather than isolated managerial shortcomings.

Rising Trends in Fatigue-Related Sick Leave

Although individual-level data collection was not done for this study, internal human resource reports and aggregated workforce audit summaries from 2021 to 2023 provide strong evidence of an increasing trend in fatigue-related absenteeism in agricultural public service units. These institutional documents consistently show that frontline workers, particularly field rangers, livestock technicians, and veterinary assistants, who bear primary responsibility for the continuous care and monitoring of biological assets, are disproportionately affected by sick leave attributed to stress and fatigue (Limpopo Department of Agriculture, 2023).

The patterns found are consistent with global research that links longer workdays and inadequate recovery times to worsening health outcomes for employees and lower productivity at work. Smith, Jones, and Taylor (2021) point out, for instance, that extended exposure to work-related fatigue raises the risk of physical illnesses, mental health conditions, and diminished cognitive functioning, all of which impair efficient job performance. This data emphasizes how urgently institutional changes are needed to reduce overwork and improve worker wellbeing in continuous service settings.

Excessive Duty Hours and Weekend Workloads

Staffing audits from 2021 to 2023 reveal that over 60% of employees assigned to livestock management units logged more than 15 days of additional duty each quarter, with a significant proportion of this overtime occurring during weekends and public holidays. This workload substantially exceeds conventional labour standards and points to a systemic overreliance on extended working hours as a primary strategy to ensure uninterrupted service delivery.

The absence of formal shift rotations means that employees frequently work beyond their contracted hours without structured rest periods, compounding both physical and psychological stress. This continuous overextension shortens recovery times, raises the risk of health issues related to fatigue, and increases susceptibility to burnout, a phenomenon that has been extensively studied in healthcare and public sector workforces worldwide (Ngcamu & Dlamini, 2023). Long periods of overtime under such circumstances have a cumulative effect that compromises organizational effectiveness as well as employee wellbeing because worn-out employees are more likely to make mistakes and miss work.

Cyclical Impact: Absenteeism and Overtime Dependency

A self-reinforcing cycle of absenteeism and higher demands for overtime is produced by the excessive workload and extended duty hours. Sick leave and unscheduled absence rates increase as workers suffer from stress-related health problems and exhaustion, further taxing an already scarce workforce. The remaining staff members are under more strain as a result of the reduction in available personnel, and they are forced to put in even more overtime to make up for it.

This vicious cycle of overwork and exhaustion not only jeopardizes the health and wellbeing of individual workers but also jeopardizes the provision of services as a whole. As burnout worsens and turnover risks rise, workforce resilience declines, making it more challenging to maintain sustainable operational continuity. Such cycles of stress and absence, according to Luthuli and Khoza (2022), are indicative of systemic management failures and present serious threats to the long-term viability of public sector organizations. Instead of using short-term, reactive solutions, structural interventions are needed to break this cycle.

Systemic Dysfunction Versus Managerial Failure

The severity and enduring nature of operational inefficiencies and employee fatigue indicate that these issues cannot be sufficiently accounted for as discrete management failures. Instead, they highlight more profound systemic flaws in the workforce model as it stands today. A small number of workers bear disproportionate operational burdens due to the lack of a formal, rotating shift system and ongoing understaffing, which essentially institutionalizes overwork as the standard method of labour management.

In addition to harming employee health and morale, this structural rigidity also degrades the quality and dependability of livestock care, which necessitates constant and careful attention. There are serious ethical concerns regarding the sustainability of current workforce practices and the duty of care owed to employees in public agricultural institutions as a result of the resulting compromise in service delivery. Furthermore, because these dysfunctions are systemic, it is not possible to solve the problem with managerial changes alone. Instead, extensive organizational and policy reforms that address the underlying causes are required.

6. Discussion

The findings of this study underscore a profound misalignment between institutional workforce models and the operational realities of livestock management in the South African agricultural public service. The existing five-day, single-shift scheduling framework is not only incompatible with the continuous nature of biological asset care, but also produces downstream effects that compromise efficiency, fiscal discipline, and employee well-being.

Overtime as a Systemic Crutch

According to Labour Process Theory, management strategies increasingly depend on the intensification of current labour without redefining job roles or implementing systemic supports, as evidenced by the entrenchment of overtime as a structural tool rather than an exception (Thomas & Jones, 2021). The lack of alternative workforce models and policy inertia, rather than coercion, are the means by which this intensification is accomplished. Institutions successfully transfer operational risk to the current workforce by normalizing weekend and public holiday work without implementing rotational shift systems, which lowers morale and increases fatigue (Davids & Naidoo, 2023).

Deeper structural issues are also concealed by overtime. On paper, not hiring more employees might seem like a way to keep personnel costs under control. However, long-term cost-efficiency is actually compromised when these savings are reallocated to recurring overtime, frequently at premium rates. A hidden financial burden that is not sufficiently addressed in current workforce planning strategies is reflected in the frequent budget overruns observed in several provinces (Department of Agriculture, 2023; Limpopo Treasury, 2024).

Privatisation and Erosion of Institutional Capacity

A subtle but quickening trend of privatizing public mandates is exemplified by the increasing reliance on private security companies for crucial patrol and livestock surveillance tasks. Despite its apparent efficiency, this substitution presents a number of issues. First, private actors might not have the institutional loyalty, procedural accountability, or contextual knowledge needed to provide services effectively (Zwane & Rakoma, 2022). Second, the service chain becomes fragmented due to privatization, creating gaps in coordination between external contractors and core employees. Third, it indicates a waning trust in internal capability, which makes it more difficult for the government to fully regulate its agricultural activities (Ferlie & Ongaro, 2021).

From a Public Service Systems Theory perspective, this substitution can be read as a systemic failure to adapt internal structures to evolving operational needs. Rather than restructuring schedules, investing in human capital, or implementing technology-enabled surveillance alternatives, institutions have opted for external solutions that may provide short-term relief but reduce internal resilience (Ferlie, 2022).

Structural Reform Over Incremental Fixes

Importantly, the results of the study warn against viewing workforce concerns as merely financial limitations. The absence of a shift system is caused by antiquated operational logics as well as a lack of funding. Regardless of increases in budgetary allocations, the misalignment with seven-day service requirements will continue as long as organizational structures are built around Monday-to-Friday, daylight-only models. Instead of filling the gap, efforts to do so through outsourcing or overtime only serve to redistribute the load.

Systemic reform is therefore required. Even with small workforces, this entails implementing adaptive scheduling models that include rest intervals, shift rotations, and staggered workdays. Additional tactics could include utilizing digital monitoring tools for night operations, cross-training staff for flexible deployment, or incorporating livestock management into larger rural development plans that boost staffing synergies. Public agricultural services will continue to operate in a reactive cycle without such reforms, overworking employees, outsourcing essential tasks, and constantly fighting fires instead of managing their biological resources sustainably.

7. Conclusion

With an emphasis on livestock management, this study evaluated the structural effects of non-shift-based workforce models in South Africa's agricultural public service. According to the analysis, strict scheduling frameworks that are typified by regular weekday hours without rotating coverage are essentially at odds with the round-the-clock care requirements related to biological asset management. The institutionalization of overtime, overwork of core personnel, and an increasing reliance on private security contracts for crucial after-hours tasks are the results of this misalignment.

The results lend credence to the claim that these inefficiencies are caused by antiquated organizational models that are unable to change to meet changing operational requirements rather than being the result of isolated management problems. Public Service Systems Theory draws attention to the larger systemic inconsistencies between policy design, service delivery requirements, and resource allocation, while Labour Process Theory assists in illustrating how current employees are being overburdened by institutional inertia.

This study has important ramifications. First, from a financial and workforce health standpoint, the ongoing reliance on overtime is unsustainable. Second, assigning external parties to handle vital state functions reduces institutional capacity and creates accountability issues. Above all, the study shows that enhancing service delivery in public agricultural institutions necessitates systemic change in the way workforce models are conceived and implemented, not just budgetary changes.

Alternative staffing arrangements that better suit the seven-day operational demands of livestock management, such as staggered shifts, rotational deployments, or regional personnel pooling, should be investigated in future studies. Finding scalable and context-specific workforce innovations may be aided by comparative case studies across provinces. This kind of research is crucial for guiding evidence-based reform that improves agricultural public services' long-term sustainability and protects worker welfare and service continuity.

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