# The role of actuaries in public service in South Africa: integrating actuarial expertise in the South African government

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**ABSTRACT**

This paper examines how actuarial expertise can be integrated into the South African public service. There are numerous examples of actuaries who are involved in public service around the world, including in the United Kingdom's Government Actuary's Department, National Health Service and the United States's Social Security Administration. The scope of involvement of actuaries in public policy has increased as actuarial expertise is increasingly recognised in areas such as Sustainable Development Goals and climate change risk. The paper examines the activities of various national departments and identifies strategic programmes that may benefit from actuarial expertise. A methodology was developed to estimate the number of actuarial positions required in selected departments. A salary comparison examines whether public service salaries are sufficiently competitive for actuarial professionals at various levels. The paper concludes that, based on current salaries, public service is a viable career option for actuarial professionals. The Actuarial Society of South Africa should work with national departments to create career pathways for actuarial professionals in public service.

**KEYWORDS**

Public service, public interest, public policy, professionalisation, actuarial expertise, equitable share

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## 1. INTRODUCTION

### 1.1 Objective

1.1.1 The vision of the Actuarial Society is

> an actuarial profession of substance and stature, serving, and valued by, our stakeholders as a primary source of authoritative advice and thought leadership in the understanding, modelling, and management of financial and other measurable risk.[1]

1.1.2 The Public Interest Strategy 2021–2024 focuses on building successful co-creation projects between actuaries, government officials and researchers from other public interest organisations. Co-creation requires sufficient time to frame a problem statement, develop a solution, implement the solution, and evaluate the results together (Mulaudzi, 2021).

1.1.3 Co-creation opportunities arise in various ways. This paper presents ways to maximise these opportunities through public service in the South African government supporting the National Development Plan (NDP, 2012).

1.1.4 Actuaries have been in the past and currently are involved in various capacities within the state including as board members and senior managers of insurance entities, regulatory entities, and state investment entities, actuarial specialists and consultants in these entities, and consultants on cost-benefit and risk-management exercises for various government departments.

1.1.5 In March 2008 while addressing actuaries at an ASABA gala dinner, the former president of the republic, Mr Thabo Mbeki urged actuaries to develop the actuarial discipline to assist the government with '*future planning and projections on the basis of current socio-economic realities*'[2] Later in 2014 at an ASSA dinner,[3] the former Deputy Minister of the Department of Trade and Industry, Mr Mzwandile Masina challenged actuaries to be more involved in public policy and gave a few examples: assisting with the planning and implementation of the National Health Insurance, analysis of investment opportunities for economic growth, and planning and management of social services.

1.1.6 In 2017 at a SAADP gala dinner,[4] the then Deputy President and now

1 https://www.actuarialsociety.org.za/about/
2 https://www.unisa.ac.za/static/corporate_web/Content/tmali/speeches/2008/tm030708.pdf
3 http://www.thedtic.gov.za/the-actuarial-society-of-south-africa-convention-dinner/
4 https://www.gov.za/speeches/deputy-president-cyril-ramaphosa-south-african-actuaries-development-programme-annual

President, Mr Cyril Ramaphosa highlighted that actuarial work is critical for the performance and sustainability of the financial ecosystem, and the importance of the role of actuaries in the development of public policy and national planning.

1.1.7 The South African government recognises the need to apply actuarial skills in public policy and administration in a collaborative manner. This paper considers how actuaries can contribute to public service as envisaged by government leaders.

1.1.8 Actuaries involved in various roles may be inhibited by several factors including lack of awareness of the value of actuarial skills in government, confidentiality requirements that may limit collaboration, and budget constraints.

1.1.9 This paper aims to highlight public policy development areas for actuarial involvement, estimate the number of possible actuarial posts in national departments, compare public service salaries with the salaries of actuarial professionals, comment on the viability of public service as an alternative career option for actuarial professionals and propose ways to integrate actuarial expertise in public administration and policymaking within the South African public service.

## 2. LITERATURE REVIEW

2.1 Skalski (1999) wrote an account of the focus on social changes in the Society of Actuaries' presidential addresses from 1948–1999, highlighting the public interest role of actuaries. Thornton (1999) traced the public interest role of actuaries from the formation of the Institute of Actuaries and how actuaries influenced public policy. What is evident in both historical accounts is an actuarial profession-centric reflection of the role of the actuarial profession in society. This paper approaches the subject from a public interest perspective, asking how actuarial expertise can be integrated into government to improve public policy development and implementation.

2.2 Wang'ombe (2024) highlights the actuaries' role in attaining Sustainable Development Goals (SDGs). Actuaries can play an important role in assessing countries' risks and assisting decision-making on risk mitigations, social and economic transfers, investments, and resource allocation. Wang'ombe makes a significant contribution to the development of the objectives of this paper as she illustrates how actuarial expertise can be used in addressing public policy issues. Governments in Africa are expected to play an important role in realising SDGs and need to be capacitated for this in ways described by Wang'ombe.

2.3 In studying the impact of actuarial inputs on the US pension system, Chen & Matkin (2017) highlighted that the long-term financial health measurement of the pension system is sensitive to actuarial assumptions such as the discount rate and mortality tables. This may influence public policy such as whether contribution rates should be increased or benefits cut. This is an example of the use of actuarial expertise in public policy.

2.4 The integration of actuarial science into government bureaucracy varies between different countries. Van der Heide & Kohl (2023) investigated the role of the insurance sector in the development of public policy regarding public welfare programmes. The insurance sector in countries like the United States and the United Kingdom lobbied for a greater role for private insurance. Given that actuarial expertise in such countries was mainly located in the private insurance sector, this enabled the insurance sector to have a bigger influence on public welfare programme policy discussions. Heide & Kohl (2023) highlight the importance of a sector-bias-free actuarial profession in the public interest.

2.5 The guidelines developed by the ILO and ISSA are useful for describing actuaries' roles within government departments (ILO, 2016). The guidelines distinguish four types of actuarial work that may be undertaken in a social security organisation: traditional actuarial work, operational management, risk management and policy and strategy development work. This is illustrated in Figure 1 and is used in the section below to describe the nature of actuarial work in government departments.

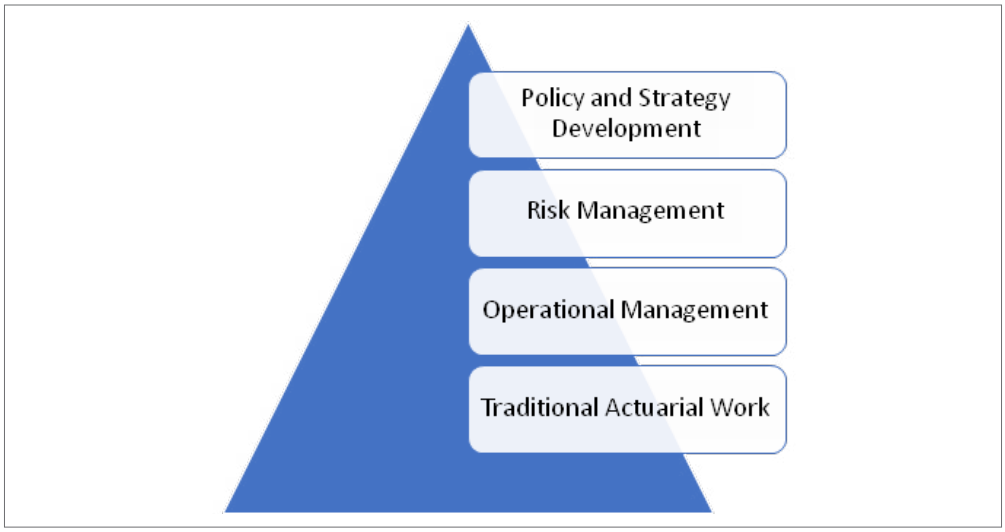


FIGURE 1. Actuarial work in a social security organisation
(Source: Own illustration based on the Guidelines on Actuarial Work for Social Security (ILO and ISSA, 2016))

2.6 **Traditional actuarial work** This includes the valuation of the benefit schemes, determination of contribution rates and associated actuarial investigations. This kind of actuarial work is not necessary in a government department that doesn't administer insurance-type benefits. Within the South African state, organisations such as the Road Accident Fund (RAF), Unemployment Insurance Fund (UIF), Compensation Fund (CF), Government Employees Medical Scheme (GEMS), SASRIA, Export Credit Insurance

Corporation of South Africa (ECIC), Government Employees Pension Fund (GEPF) and several others, are insurance or pension benefits organisations regulated by the Insurance Act (2017) , the Pension Fund Act 1956 and associated regulations. These organisations are obligated to engage the services of actuaries as employees or contractors to fulfil certain regulatory requirements.

2.7 **Operational management** The tactical execution of tasks within organisations requires various skill sets and this varies depending on the nature of the organisation. Actuarial professionals in social security organisations are involved in other areas within the organisation wherein actuarial skills are not mandatory. These areas include sales, marketing, information systems, analytics, benefit payments, stakeholder engagement and communications. The reasons for their involvement in these work areas vary but include their knowledge and understanding of the industry, modelling skills and professionalism. These skills can be beneficial to non-insurance government organisations.

2.8 **Risk management** The identification, measurement, management and monitoring of risks is important in insurance and non-insurance organisations. Actuarial professionals add value to the risk management of insurance entities because of their understanding of insurance organisations and the environment they operate. This can be extended to non-insurance government departments, mindful that this work has to be done in collaboration with other professionals.

2.9 **Policy and strategy development** Every organisation needs to develop strategies and new policies to achieve their objectives, in a dynamic environment. Policy and strategy development involves several steps including specifying the problem, developing a solution, implementation and monitoring. The ILO guidelines (2016) outline how actuarial expertise can add value in policy and strategy development through activities such as analysing trends, identifying risks and opportunities, modelling the benefits and costs of various options, conducting sensitivity tests and scenario analysis, communicating technical results to stakeholders, and developing monitoring and evaluation tools.

2.10 Orros (1996) discusses the role of actuaries in the United Kingdom's National Health Services (NHS). The established roles of actuaries in advising health insurers and performing non-executive roles for National Health Trusts are highlighted and emerging roles are described in this paper. The emerging roles include advising on emergency health services planning, acute hospital service planning, NHS service provider business planning and long-term population projections.

2.11 The role of the Government Actuary's Department (GAD) in social security in the United Kingdom is discussed by Daykin (2001). Daykin identifies three focus areas

for GAD: i) Public sector pension, ii) Social security, pensions policy, demography and pension surveys, and iii) supervision of financial institutions. Apart from demographic work and pension surveys, GAD is expected to be self-supporting. GAD is responsible for performing actuarial functions currently done by several regulatory entities in South Africa. GAD has expanded its scope of work since Daykin's 2001 paper and is now involved in other work areas such as assessing the impact of climate change, disaster risk financing, nuclear decommissioning, health and social care, and investments (GAD, 2024). GAD aims to support the UK's public sector through financial risk analysis, actuarial modelling and advice.

2.12 Many actuaries are employed in the United States public service in various organisations such as the Social Security Administration (SSA),[5] Centers for Medicare and Medicare Services, the Treasury Department (Internal Revenue Service), the Pension Benefit Guaranty Corporation, the Department of Veterans Affairs, the Labor Department, the Office of Personnel Management, the Public Health Service, the Government Accountability Office, Department of Housing and Urban Development, Department of Energy, Railroad Retirement Board and Department of Defence.

2.13 The office of the Chief Actuary of the SSA is responsible for researching demographic and economic trends, conducting mortality and morbidity investigations, preparing regular and special reports on the Social Security system for the United States Congress (SSA, 2024).

## 3. ACTUARIES IN PUBLIC SERVICE

3.1 The main objective of this section is to consider an overview of the public service and ways for actuarial expertise to be integrated into public policy development.

> Effective policy is at the centre of addressing the triple challenges of poverty, unemployment and inequality. This requires capable policy practitioners who can collate, synthesise evidence, conduct forecasting, weigh trade-offs, interpret early warning systems and proactively advise political principals on policy paths to be undertaken. (Presidency Report 2021/2022)[6]

3.2 Above is an extract from the Presidency report of 2021/2022. The Director General describes the skill sets that policy practitioners should have and what needs to be achieved. The political leaders, on numerous occasions when addressing actuaries, pointed out how actuaries can be involved in the practice of policymaking and public administration.

5 Actuaries at SSA
6 The Presidency Annual Report 2021/2022 (www.gov.za)

3.3 This paper addresses how actuarial expertise can be integrated at a departmental level. The following research approach was followed:

— National departments with programmes that require long-term planning and are data-intensive were identified;
— The size of the budgets in selected departments was considered;
— The salary costs in each department were considered;
— The number of permanent posts for each relevant programme within each department, focusing on level 11–16 posts were identified; and
— The number of actuarial posts per department were estimated.

3.4 Actuarial expertise has been utilised in government for various reasons over the years. Table 1 summarises the key actuarial contributions in public policy, straddling the four key actuarial work areas discussed in Section 2. The Unemployment Insurance Fund (UIF), Road Accident Fund (RAF), SASRIA and the Compensation for Occupational Injuries and Diseases (COIDA) are insurance organisations that require traditional actuarial work. Although the traditional role of actuaries is acknowledged in these insurance organisations, actuarial expertise may still be limited to regulatory actuarial roles and not utilised in operational management, risk management and policy and strategy development. Actuarial expertise was used in developing the National Health Insurance policy and the two-pot pension reform policy.

Table 1. Summary of key actuarial contributions in public policy

| Policy issue | Key actuarial contributions |
|---|---|
| National Health Insurance | Risk assessment, pricing, funding sustainability, cost control, benefit design |
| Two pot system | Modelling future cash flows, longevity risk, adequacy of retirement benefits |
| Unemployment Insurance | Reserves and solvency management, premium setting, scenario planning |
| Road Accident Fund | Claims projections, liability management, funding model review, benefit design |
| Education | Resource allocation, funding projections, cost-benefit analysis, student loans |
| Climate change | Insurance for climate disasters, scenario analysis, risk modelling |
| SASRIA | Pricing of catastrophic risks, claim reserves, reinsurance modelling |
| Medical malpractice | Claim reserves, cost containment, medical error liability modelling |
| Social assistance grants | Sustainability analysis, means test optimisation, demographic projections |
| Broader economic planning | Economic growth forecasting, public debt projections, long-term modelling |
| COIDA | Claims projections, reserve adequacy, premium setting |
| Mining | Mine accident risk modelling, class action suits, claims management |
| Criminal justice system | Crime data analysis, prison population forecasting, recidivism risk assessment |

Source: Summary created by Gregory Whittaker

3.5 Policy and strategy development cuts across all the organisations or policy issues identified; however, not all organisations utilise actuarial expertise for this purpose.

Table 1 lists actuarial tasks that can be carried out to support strategy development and policymaking, operational management and risk management.

3.6 The tasks performed by actuarial professionals include data preparation, analysis, actuarial modelling, cost-benefit analysis, programme risk quantification, and quantitative monitoring of results. This paper argues that introducing the actuarial control cycle[7] into public policy development in the public service will enhance the rigour in the planning, implementation and monitoring of government programmes.

## 4. ANALYSING GOVERNMENT EXPENDITURE

### 4.1 Departmental budgets

Figure 2 includes some of the organisations identified in Table 1 above.

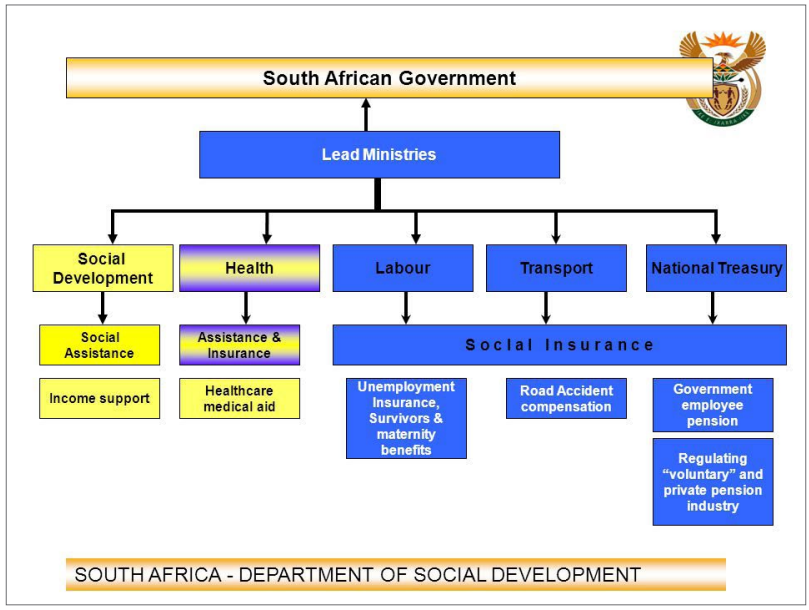


FIGURE 2. Social development programmes
(Source: Department of Social Development – (Reform) The South African Social Security System, 5 December 2004)

4.1.1 The combined 2024/25 budget of the entities and programmes in Figure 2 is R1,62 trillion (National Treasury, 2024). However, only a handful of actuaries are employed permanently in these departments except in insurance organisations such as

7 Described by Gribble as an analytical process that includes specifying a problem, developing a solution, and monitoring results while considering the general economic environment and professionalism requirements. Actuaries use this approach in their work.

the Road Accident Fund (RAF), Government Employees Pension Fund (GEPF), Reserve Bank and the Financial Sector Conduct Authority (FSCA).

4.1.2 Table 2 includes the 2024/25–2026/27 estimates of national expenditure for several selected departments. These departments were selected due to their strategic importance and the potential relevance of actuarial skills in policy development within the government programmes administered in these departments. Of the 2024/25 total budget, 48% is allocated to the National Treasury, 13% to the Department of Social Development, 6% to the Department of Higher Education, 4% to the Transport Department and smaller proportions for the rest of the selected departments. The National Basic Education and National Health departments have relatively lower allocations due to the bulk of expenditure for Basic Education and Health allocated through the Provincial Equitable Share administered by the National Treasury. Table 2 summarises the medium-term expenditure framework for selected departments.

Table 2. South African government's medium-term expenditure framework 2024/25–2026/27

| Departments | 2024/25 (R'000) | 2025/26 (R'000) | 2026/27 (R'000) |
|---|---|---|---|
| Presidency | 612 205 | 637 092 | 667 910 |
| National Treasury | 1 032 135 766 | 1 093 167 728 | 1 148 423 911 |
| Planning, Monitoring and Evaluation | 450 189 | 470 298 | 495 360 |
| Statistics South Africa | 2 646 160 | 2 754 523 | 2 887 645 |
| Basic Education | 32 258 698 | 34 014 578 | 35 058 615 |
| Higher Education | 137 515 561 | 142 685 954 | 150 200 210 |
| Health | 62 218 899 | 63 696 348 | 66 397 459 |
| Social Development | 275 141 088 | 257 407 647 | 269 195 655 |
| Employment and Labour | 3 854 842 | 3 777 012 | 3 955 939 |
| Transport | 80 634 269 | 86 868 222 | 88 591 488 |
| Other | 502 928 793 | 521 403 203 | 539 395 265 |
| **Total** | **2 130 396 470** | **2 206 882 605** | **2 305 269 457** |

Source: National Treasury: treasury.gov.za/documents/National Budget/2024/ene/FullENE.pdf

4.1.3 Table 3 contains the salary costs as a percentage of total departmental budgets. Departments with low percentages are mostly responsible for transferring revenues to departments in other spheres of government or other entities. The National Treasury 2024/25 estimate of R1 trillion consists of R600 bn (58%) for the Provincial Equitable Share, the General Fuel Levy (1.6%) and debt service costs (18%). The bulk of the basic education budget (85%) is for conditional grants to provinces for infrastructure, learning materials, nutrition and other programmes. This explains the low percentage of salary costs to the total national basic education budget.

4.1.4 The Department of Higher Education transfers a significant portion of its budget to universities and other institutions it administers. The extent of the transfers in these budgets highlights the importance of modelling skills to accurately calculate the size and monitor the effectiveness of the transfers.

4.1.5 The Department of Planning, Monitoring and Evaluation does not transfer funds to other departments or government entities. The department plans to spend 74.8% of its budget on salary costs.

Table 3. Salary costs as a % of total departmental budgets 2024/25–2026/27

| Departments | 2024/25 | 2025/26 | 2026/27 |
|---|---|---|---|
| Presidency | 63,3% | 63,8% | 64,0% |
| National Treasury | 0,1% | 0,1% | 0,1% |
| Planning, Monitoring and Evaluation | 74,8% | 74,8% | 74,2% |
| Statistics South Africa | 65,5% | 65,7% | 65,5% |
| Basic Education | 1,9% | 2,0% | 2,0% |
| Higher Education | 8,6% | 8,7% | 8,7% |
| Health | 1,1% | 1,1% | 1,1% |
| Social Development | 0,2% | 0,2% | 0,2% |
| Employment and Labour | 39,0% | 41,0% | 40,9% |
| Transport | 0,7% | 0,7% | 0,7% |

Source: National Treasury

4.1.6 Low salary costs as a percentage of departmental budgets indicate the extent of transfers and subsidies to other government entities or that funds are distributed directly to households (e.g. Department of Social Development). Departments that transfer large portions of their funds to other entities may require actuarial expertise to develop and maintain the transfer/subsidy calculation tools. Actuarial expertise may also be beneficial within the recipient entities.

4.1.7 The approach taken in this paper identifies where policy development posts that require actuarial skills are currently located and advocates for those posts to be designated as actuarial posts. Capacitating departmental posts in this manner may lead to a reduction in consultation costs.

4.1.8 This approach is an alternative to an approach that advocates for the establishment of a centralised Government Actuary's department such as the UK GAD discussed above. In the alternative approach, a new department may need to be established. This is potentially disruptive and subject to political processes.

4.1.9 The preferred approach is mainly an administrative process of changing skills requirements for identified posts. Secondly, actuarial professionals should work with other professionals within the relevant programmes within departments to foster greater collaboration. Hence, those functions should remain decentralised in various departments.

### 4.2 Levels 11–16 permanent posts

4.2.1 Table 4 shows the number of permanent posts per department and the number of levels 11–16 posts identified in each relevant programme within a department. Departments that are unlikely to require actuarial expertise were excluded from the analysis and were not allocated any actuarial posts. The Planning, Monitoring and Evaluation department has the highest concentration of level 11–16 posts, followed by the National Treasury. The nature of the work in these two departments requires highly skilled professionals.

Table 4. Permanent posts per department and level 11–16 posts per department from selected programmes

| Departments | Permanent posts | Level 11–16 posts | % of Level 11–16 posts |
|---|---|---|---|
| Presidency | 628 | 197 | 31% |
| National Treasury | 1 066 | 544 | 51% |
| Planning, Monitoring and Evaluation | 293 | 168 | 57% |
| Statistics South Africa | 3 301 | 701 | 21% |
| Basic Education | 898 | 330 | 37% |
| Higher Education | 28 959 | 672 | 2% |
| Health | 1 468 | 349 | 24% |
| Social Development | 8 270 | 243 | 3% |
| Employment and Labour | 2 848 | 323 | 11% |
| Transport | 705 | 250 | 35% |

Source: National Treasury

4.2.2 The National Treasury administers the Provincial Equitable Share formula. This formula determines the revenue to be transferred to the nine provinces. It considers demographic factors that impact education, health, roads, human settlements, social development and agricultural needs across the various provinces (National Treasury, 2023). Actuaries possess appropriate skills for developing and maintaining Equitable Share models.

4.2.3 Debt service costs amount to 17.9% (R382 bn) of the total budget – this expenditure item has been increasing and was worsened by the effects of the pandemic. The debt to GPD ratio is now projected to be 75.4% of GDP in 2024/25.[8] The management of this function primarily resides within the National Treasury. ASSA sponsored research into state liabilities to enable the actuarial profession to engage in this important issue. Given their roles in managing financial assets and liabilities in the financial services industry, actuaries should be involved in managing state liabilities.

8 www.statista.com

4.2.4 The Department of Higher Education and the National Department of Basic Education have a combined share of 8% of the 2024/25 total estimate. This percentage would be higher if the Provincial Equitable Share for Basic Education is included in the National Department of Basic Education expenditure estimate. A significant amount of data are collected regularly by both departments – this data can be utilised more extensively for research purposes.

4.2.5 There are currently 898 permanent posts in the Department of Basic Education of which 82 are level 11–16 posts within the Planning, Information and Assessment programme. There are 45 such posts in the Department of Higher Education for the Planning, Policy and Strategy programme and 33 for the University Education programme.

4.2.6 The Department of Social Development's 2024/25 budget of R275 bn is 13% of the total budget. Salary costs are 0.2% of the Department of Social Development's budget. This department's budget consists mostly of transfers to households. There are 29 and 72 level 11–16 posts in Social Security and Welfare Services policy development programmes respectively. The South African Social Security Agency (SASSA) has 619 such posts, indicating a big opportunity to introduce actuarial skills.

4.2.7 The National Department of Health's 2024/25 budget is 3% of the total budget. This department was at the forefront of the COVID-19 battle and recently successfully got the National Health Insurance (NHI) bill to be enacted. This department is also responsible for dealing with the increasing burden of medical negligence claims against the state. There are 62 level 11–16 funded posts for NHI. In preparation for NHI, the department is focused on:

1) Developing health financing reforms
2) Managing the direct and indirect NHI grants
3) Managing evolving health financing functions such as user and provider management, health care benefits, provider payment, digital health information, risk identification and fraud management.

4.2.8 The department can benefit from having full-time health actuaries with an actuarial team to support NHI planning, and to manage medical negligence claims.

## 5. ESTIMATING ACTUARIAL POSTS IN PUBLIC SERVICE

### 5.1 Estimating the number of actuarial posts per department

5.1.1 In terms of the approach outlined above, after identifying the number of available level 11–16 posts in an identified department, the number of actuarial posts is estimated. A key assumption required to estimate the number of actuarial posts is the proportion of actuarial posts to the number of level 11–16 posts. This assumption was determined based on data from the UK.

5.1.2 The UK government's GAD[9] employs 175 actuaries and analysts. There were 510 080 civil servants in the UK as of 31 March 2022 of which 15 per cent (76 670) were Grade 6, 7 and Senior Civil Service levels. These levels are equivalent to South Africa's levels 13–16. South Africa's Level 13–16 posts are three per cent of the national government civil servants in South Africa (396 595).[10] Given the relatively small percentage, the number of civil servants on levels 11 and 12 were included. Consequently, the number of level 11–16 posts is 10 per cent of the total number of national government civil servants in South Africa.

5.1.3 The percentage of GAD actuaries and analysts compared to the number of UK civil servants in job grades SCS, Grades 6 and 7 UK's civil servants (76 670) is estimated to be 0.23 per cent (2.3 per 1000). Applying this percentage to the level 11–16 number of posts (38 735) in South Africa yields an estimate of 88 actuaries and analysts for the South African national government.

5.1.4 The distribution of the estimated 88 actuarial posts per department is illustrated in Table 5. The selected departments in Table 5 are currently allocated 10% (3 777) of the total number of levels 11–16 posts (38 735) in the South African national public service. A straightforward application of the 0.23 per cent estimated proportion yields 88 actuarial posts to be allocated amongst the departments in Table 5. However, the demand for actuarial expertise varies between the departments due to the nature of the programmes administered within the department. Consequently, all 88 actuarial posts were allocated to the selected departments and not allocated to the departments deemed to have a lower demand for actuarial expertise.

Table 5. Derivation of the proportion of actuaries to levels 11–16 posts

| | UK | SA |
|---|---|---|
| Population (2022) | 67,6 million | 62 million |
| Civil Service (SA Level 11–16) & UK SCS, Grade 6 and 7 | 76 670 | 38 735 |
| Total civil service | 510 080 | 396 595 |
| SA Level 11–16 or UK SCS, Grade 6 and 7 as % of total civil service | 15% | 10% |
| GAD actuaries and analysts | 175 | 88 |
| % GAD of SCS & Grade 6 and 7 | 0,23% | 0,23% |

Source: Own calculations based on data obtained from the UK government and DPSA

5.1.5 Adjustments were made to the Statistics South Africa and Higher Education department allocations as they had a disproportionately high number of levels 11–16 posts. These changes are described below. The total estimated actuarial personnel cost is

9 About us – Government Actuary's Department – GOV.UK (www.gov.uk)

10 This figure was obtained from the 2024 National Expenditure Estimates; it excludes provincial government and local government civil servants.

R86,7 m.[11] In terms of our approach, this would not be an additional cost but represents a transfer of posts from other professionals within the selected departments to actuarial professionals. This process should ideally be implemented over 3–5 years, taking advantage of natural attrition.

Table 6. Estimated number and costs of actuarial posts

| Departments | Estimated no. of actuarial posts | Estimated actuarial personnel costs | Actuarial personnel costs as % of selected departments personnel budget |
|---|---|---|---|
| Presidency | 5 | 5 289 | 1,4% |
| National Treasury | 13 | 13 751 | 1,5% |
| Planning, Monitoring and Evaluation | 4 | 4 231 | 1,3% |
| Statistics South Africa | 6 | 6 347 | 0,4% |
| Basic Education | 8 | 8 462 | 1,4% |
| Higher Education | 5 | 5 289 | 0,0% |
| Health | 18 | 19 040 | 2,7% |
| Social Development | 16 | 16 925 | 3,2% |
| Employment and Labour | 7 | 7 405 | 0,5% |
| Transport | 6 | 6 347 | 1,1% |
| **Total** | **88** | **86 739** | **0,5%** |

Source: Own calculations based on the National Treasury's full expenditure estimates

5.1.6 Based on our methodology, there would be 13 actuarial posts within the National Treasury. Relevant programmes for actuarial skills within the National Treasury are:

— **Economic policy, tax, financial regulation and research** The objectives of this programme are: to conduct analytical work and research to improve South Africa's economic framework, provide funding to academic institutions to enhance research capacity and improve the tax policy framework in South Africa. The programme has 35 level 13–16 posts and 26 level 11–12 posts.

— **Public finance and budget management** The objectives of this programme are to allocate public funds to promote growth and social development, provide support for planning, policy and programme analysis in provinces and municipalities, and provide technical support for capital expenditure planning and project analysis. The Government Technical Advisory Centre is part of this programme and the facilitation of conditional grants is one of the sub-programmes within this programme. The programme has 77 level 13–16 posts and 92 level 11–12 posts.

11 This assumes the following distribution of actuarial professionals per level: Level 11 – 30%, Level 12 – 40%, Level 13 – 20%, Level 14 – 7%, Level 15 – 2%, and Level 16 – 1%

— **Asset and liability management** The objectives are to oversee state-owned entities, manage the government's borrowing requirements, manage the government's liquidity requirements, and the risk management of the government's fiscal and debt obligations. The programme has 21 level 13–16 posts and 33 level 11–12 posts.
— **Civil and military pensions, contributions to funds and other benefits** The objectives are to effectively administer pension, retirement, and other retirement policies

5.1.7 Given the importance of these programmes for building a capable state as envisioned by the National Development Plan, this paper argues that allocating 13 out of 544 levels 11–16 posts for actuarial expertise within the National Treasury is a sound strategy. The 13 posts are not only for Fellows of the Actuarial Society of South Africa (FASSAs) but would include Associates and Technical Members. ASSA can collaborate with universities to create career pathways for actuarial professionals interested in working in this field.

5.1.8 It was estimated that 16 actuarial posts are recommended for the Department of Social Development. The Department is responsible for key programmes such as:

— **Social assistance** This programme includes the old age, child care, foster care, war veterans, social relief of distress and disability grants, impacting more than 20 million South Africans. The 2024/25 budget for this programme is R266 bn.
— **Social security policy and administration** This programme is for developing social security policy.
— **Social policy and integrated service delivery** aims to provide evidence-based advisory services to social policy.

5.1.9 The Department of Social Development is tasked with designing, implementing and monitoring programmes affecting millions of lives. This work is data-intensive and requires modelling to quantify the impact of various interventions.

5.1.10 The allocated actuarial posts for the National Department of Health are estimated to be 18. This is likely to increase as the NHI is gradually implemented. The allocations for Statistics South Africa (–10) and Higher Education (–10) were reduced in favour of the NDOH (+10) and the DSD (+10).

5.1.11 The Department of Planning, Monitoring and Evaluation has a high proportion (57%) of levels 11–16 posts. The oversight role of this department has an impact on the types of skills and expertise required. It was estimated that four actuarial posts should be allocated to this department given its influence on the other departments' planning and monitoring practices.

## 6. THE PROFESSIONALISATION OF THE PUBLIC SERVICE

6.1 The estimated expenditure by government departments on consultants in 2024/25 is R4,5 bn. Consultants can produce expert advice on articulated problems but are seldom involved in critical steps such as the formulation of problem statements and implementation. The National Planning Commission's diagnostic assessment highlighted the poor implementation of policies in South Africa (NPC, 2010). The Public Service Commission (PSC) report on public reforms towards the professionalisation of the state asserts that the lack of professionalisation of the public service can threaten South Africa's democracy (PSC, 2024). This report proposes ways to improve the performance of the government through recruiting and keeping competent and committed public servants.

6.2 This paper argues that actuarial professionals can be introduced into the public service with negligible additional government funding. Relevant public policy areas that may benefit from actuarial skills were identified and a proposed allocation of posts per department was determined. These posts can be earmarked for actuarial expertise but the implementation should be gradual and based on natural attrition.

6.3 The approach adopted addresses the demand side of actuarial expertise in public service. The next challenge is to address the supply side – the viability of public service actuarial career options for actuarial professionals and cultivating a conducive environment for them.

6.4 Actuarial professionals should be recruited into experience and qualifications-appropriate posts because employing inexperienced actuarial professionals in junior positions to save costs is unlikely to address long-term problems. Employing inexperienced actuarial professionals in senior management roles is likely to be counterproductive. The South African government faces complex challenges and relies on its public servants to develop and implement the best possible policies. This paper argues that actuarial professionals can contribute to this objective by enhancing evidence-based policy development. In the next section, the salaries of actuarial professionals are compared to public service salaries at comparable levels of seniority.

## 7. SALARY COMPARISON

7.1 Actuarial salaries are influenced by the level of experience and qualification as illustrated in Figure 3. However, the survey results have limitations due to low responses in some categories.

7.2 Technical members of ASSA (TASSA) are actuarial professionals with at least an NQF level 7 mathematical or actuarial degree, have completed the technical professional examinations and passed (exempted from) the foundational actuarial professional

practice module. This category of actuarial professionals is not permitted to be referred to as actuaries. However, these professionals are sufficiently skilled to carry out complex modelling exercises, communicate effectively, understand the business and regulatory environment, and act professionally and ethically.

7.3 Associate members of the ASSA (AMASSA) are permitted to be called actuaries. The difference between AMASSAs and Fellows of ASSA (FASSAs) is that FASSAs are experts in specialised actuarial practice areas such as life insurance, health insurance, investments, banking, pensions and enterprise risk management. AMASSAs have the necessary technical and professional skills to add value to public policy development and to grow their expertise in this practice area.

7.4 In Figure 3, we compare the salaries of actuarial professionals and public servants.

7.5 Actuarial professionals are unlikely to move to the public sector for lower salaries.

7.6 Based on Figure 3, a technical member of ASSA (TASSA) with less than two years of experience is equivalent to a level 10 public servant in terms of annual salary. However, a TASSA with less than two years may not be suitable unless joining an established actuarial team.

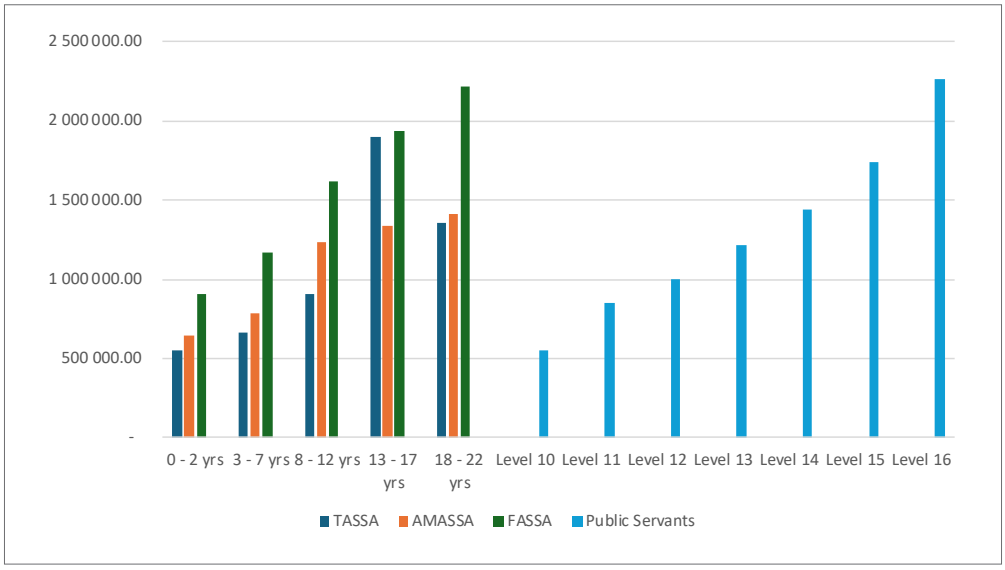


Figure 3. Salary comparisons between actuarial professionals and public servants taking into account work experience in years.
(Source: South African Actuaries Abroad survey of actuarial professionals in South Africa and DPSA circular 11 of 2024 Appendix A (TCE package) dpsa.gov.za)

7.7 Ideally, an actuarial professional joining the public service should have at least three years of work experience, unless they are joining an established actuarial team within the government. The main reason for this is the work-based skills requirement for actuarial professionals to work under the supervision of actuaries for two to three years (ASSA, 2024).

7.8 Levels 11 and 12 in the public service are middle management positions, therefore prior work experience would be valuable. Suitable actuarial professionals with salaries within the public service salary ranges for these levels would be TASSA and Associate Members of ASSA (AMASSA) with three to seven years of experience.

7.9 For levels 13 and 14, it would be ideal to only appoint actuarial professionals with relevant management experience within the public sector. Public service salaries at these levels compare favourably to TASSA and AMASSA salaries. The salaries of experienced FASSAs are only matched at levels 15 and 16 (Deputy Director General and Director General level). However, experienced Fellows are unlikely to have the necessary experience to direct an entire government department without prior public service experience. Consequently, limiting the attractiveness of public service work for experienced FASSAs to the highest levels possible within government is not a sound strategy.

7.10 Attracting top actuarial professionals within the public sector may require the introduction of occupational-specific dispensation (OSD) for actuarial professionals. Table 7 shows the OSD salaries of engineers. An experienced chief engineer earns up to R2 156 640, higher than a director general. Introducing the OSD creates more opportunities for experienced professionals to be recruited into the public service and to stay.

Table 7. Occupation-specific dispensation for engineers and related fields

| OSD post and grade | Notch 1 (rands) | Maximum (Rands) |
|---|---|---|
| Candidate engineer | 687 879 | 728 892 |
| Engineer Grade A | 795 147 | 847 221 |
| Engineer Grade B | 894 042 | 962 292 |
| Engineer Grade C | 1 020 087 | 1 197 978 |
| Chief Engineer Grade A | 1 146 540 | 1 308 036 |
| Chief Engineer Grade B | 1 387 065 | 2 156 640 |
| Specialist Engineer | 1 678 929 | 2 391 291 |

Source: DPSA (2011)

7.11 This paper does not argue for new government posts to accommodate actuarial professionals. However, actuarial professionals can be gradually recruited in earmarked roles in key programmes.

**7.13 Practical steps to be undertaken:**

7.13.1 Actuaries are not trained in political administration and policymaking. Actuarial professionals should supplement their actuarial training through short courses, postgraduate degrees, continuous professional development (CPD) events, mentorship, and other work-based learning tools, to be effective policy practitioners.

7.13.2 The Revolving Door Policy (2008)[12] is described in the National School of Government draft National Implementation framework document. This policy gives a framework to facilitate the movement of senior managers between the private sector, academia, and the public sector to inculcate "fresh, current and inspirational learning and innovative ideas". This policy allows for secondments between government departments and academic institutions and sabbatical leave for studies.

7.13.3 A similar policy can be explored to attract senior actuaries into the public service.

7.13.4 This paper highlights how the actuarial profession in South Africa can contribute towards the professionalisation of the state. Although we have demonstrated that public service salaries are competitive for certain categories of actuarial professionals such as TASSAs and AMASSAs, remuneration is not the only obstacle for actuarial professionals to work in the public service.

7.13.5 ASSA needs to work with government departments to determine the best possible ways to attract and retain senior actuaries and grow a pipeline of actuaries in the public service. In addition to this, the following can be done to prepare for actuarial professionals in public service:

— Work with the National School of Government to develop training interventions for public servants working with actuaries and for the actuaries in public service.
— Develop university courses for training actuaries working in public service.
— Develop secondment opportunities for public service actuaries to work in global organisations and academia.
— Develop professional designations to promote public service actuarial specialisation.

## 8. CONCLUSION AND NEXT STEPS

8.1 This paper demonstrates that public service is a viable career option for actuarial professionals. It highlights public policy development areas that can benefit from actuarial skills.

8.2 The number of actuarial posts for public policy development in government departments was determined based on data from the UK. The paper proposes a strategy to repurpose permanent posts in identified departments into actuarial posts over 3–5 years.

12 Revolving Door Policy (2008) discussed in 17_p_15_12_2008.pdf

8.3 Public service salaries are competitive for actuarial professionals and the value proposition may improve if the Occupation Specific Dispensation is introduced.

8.4 ASSA would need to work with government departments to prepare the ground for actuarial professionals to be employed in the public service.

8.5 The paper should be shared and discussed with national departments to develop a joint action plan.

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