

# Statistics South Africa in Transition: Reflections on a decade of Statistical Practice (1994-2004)

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## Summary

*This paper plots the trajectory of the last ten years of statistical practice in South Africa. Its focus is on the ten years of 1994-2004 (the first decade of democracy post-apartheid), although some information on 2005 has been included, where pertinent.*

*The paper provides a set of short remarks on the pre-1994 period. Prior to 1994, official statistics reported adequately on the white minority, and the vital registration systems covered this section of the population fairly comprehensively. However, in the absence of a national system focusing on the total population, the stage was set for the fragmentation of statistics in their thematic and spatial representation. This fragmentation included the institutional basis for producing statistics, and was directly linked to the requirements of apartheid governance. To the extent that those excluded from access to power and resources appeared in the official statistics, it was as objects of policy, for purposes of control and the geographical fragmentation that underlay apartheid. As apartheid was dismantled, and the foundations for a new inclusive democratic order were initiated, this fragmented system of statistical producers represented a terribly under-prepared flock of contestants clamoring to catch the eye of the new bureaucracy.*

*A new Statistics Act was enacted in 1999, but the void that it sought to fill was deep and broad and meant that it would take some time before the Act could be adequately implemented, despite the strength it wields in terms of statistical co-ordination.*

*South Africa entered the new millennium as a modern economy, with a strong series of the statistics required for measuring, monitoring and planning. However, the poor institutional integration of the statistics system has continued to weaken the value of the statistics themselves. Efforts to attend to integration and development of a national system of statistics, together with an impatience to address errors and inadequacies in the statistical collections themselves, form the backdrop to this exploration of the different phases of South Africa's statistics system in transition.*

## Key words

Official statistics, staircase model, Central Statistical Services, Special Data Dissemination Standards, National Statistical System,

## 1. Introduction

This paper reviews ten years of statistical practice in South Africa, broken down into four periods: 1994-1998, 1999-2000,

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2001-2002 and 2003 to present. This sort of periodisation is, of its nature, an approximation of the complexity of discontinuities, change and consistencies. Institutional transformation is usually subject to a complicated mix of radical ruptures and more-tranquil continuities, a more subtle blend of the past, present and future than the theorists would have us believe. Transformation is more an ongoing process than a set of dramatic events.

Prior to 1994, apartheid in all of its manifestations – political, social, economic, ideological and cultural – dominated society. This included the collection and dissemination of statistics, both official and other.

Official statistics reported adequately on the white minority, and the vital registration systems covered this section of the population fairly comprehensively. However, in the absence of a national system focusing on the total population, the stage was set for the fragmentation of statistics in their thematic and spatial representation. There were very few attempts to ascertain what was happening to the majority population group, nor was there any statistical infrastructure that would allow the collection of data from this group.

Social policy was determined by a small group with their own information systems, and they placed little reliance on official statistics. The role of the statistical office was to produce data used primarily as historical information. As a result, timeliness, quality and relevance were less significant than would have been the case if the data had been used for policy purposes. Periodic releases reported at intervals that were more than six-fold of the reference period (a monthly series would be released at least six months later than the reference month). The quality of the information that was released was difficult to determine, as metadata specifying methodology, definitions, standards and the like was largely absent.

South Africa's system of statistics prior to 1994 produced and reproduced a fragmented and deeply divided statistics practice. The statistical and research landscape consisted of research agencies, the official agency, the homeland agencies, development agencies and academia.

The consequence was that, prior to 1996, there were few nationwide benchmarks against which to measure progress and change post-apartheid. The most conspicuous result of this practice of intentional omissions is reflected in the difficulty South Africa faces in measuring progress towards the Millennium Development Goals, precisely because of the difficulty in establishing historical benchmarks. The second manifestation of this legacy is reflected in the inconsistent conclusions drawn from the Human Development Index of the UN Human Development Report Office.

The effects of transformation of official statistics post-apartheid have been tumultuous, reflecting the consequences of unusually fast change, competition between new priorities and existing demands, and the growing centrality of official statistics in both public and private spheres.

The initial consequences of change, linked to a limited skills and capacity (both qualitatively and quantitatively) resulted in errors of statistical computation that seriously undermined the credibility of official statistics, and focused leadership's collective eyes on issues of governance and management in the statistical cycle.

In the last period under review (2003 to the present), the organization embarked on a number of focused responses to address the consequences of rapid transformation, including

- a concerted effort to introduce and sustain improved quality in all phases of the statistical cycle;
- addressing the changing range of user requirements for statistics;
- greater international engagement; and
- strategic deployment of existing staff for training, and recruitment new staff with appropriate skills.

Stats SA still has a number of challenging steps to climb: however, the organization now hold out the promise of a statistical agency well-equipped to play its role in national development, and participate as an equal in the world of international statistical practice.

## 2. The 1994-1998 Period

The period 1994 to 1998 involved a period of extreme rapid change. In its assessment of what was then known as Central Statistical Services (CSS), a Swedish mission noted that the organization must have transformed faster than any other statistical agency in the world (Swedish Mission, 1998). The extent and speed of the changes posed substantial problems with which the CSS grappled, not always with complete success. In further questioning whether such momentum was sustainable, the mission implied that it might be dangerous to undertake change at such a pace.

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**Stage 4:**  
The organisation  
works actively with  
its clients

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**Stage 3:**  
The organisation  
carries out changes  
on its own

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**Stage 2:**  
The organisation  
delivers expected  
output

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**Stage 1:**  
Low and  
unpredictable  
output

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The Staircase Model for institutional assessment applied by the Swedish mission involved the following organizational 'steps':

- Stage 1: The organization has low and unpredictable output.
- Stage 2: The organization is able to deliver expected output with reasonable reliability and quality.
- Stage 3: The organization carries out changes on its own.
- Stage 4: The organization works actively with its clients or customers.

On this model, an organization has to fulfill the requirements of one stage before it qualifies for the next, i.e. the fact that an organization is very developed in terms of client relations does not make it a Stage 4 organization. First it has to attend to its output and internal development, in order to climb from Stages 2 and 3. In essence, the Swedish mission questioned whether the rate of institutional change in Stats SA had allowed for successful consolidation of each of the stages set out in the model.

## 2.1 Changing the leadership of CSS

The head of the apartheid-period CSS remained in office for more than a year after the new government took office in 1994, whilst the next level of managers remained in place for various lengths of time up to 1998. In similar vein, the Statistics Council was only replaced in 1996 by a more broadly representative interim Council. A new Statistics Act was enacted towards the end of 1999. Within the CSS, as in many other institutions, remnants of legislation, personnel, and spatial arrangements instrumental to sustaining apartheid, clumsily clung onto the system of statistics as the sun set on apartheid. These interim arrangements co-existed uneasily with powerful impetuses for change.

As Orkin et al (1998) put it,

*"Various important external developments soon added pressure onto this inadequately prepared environment, and as it were impinged upon the CSS negatively in this uneasy period. After 1994 the 'independent states' and other homelands were re-incorporated into what used to be 'White' South Africa, and nine new provincial governments created, exercising appreciable devolved responsibilities for health, education and welfare services as well as associated financial autonomy. The incumbents of the various racially or linguistically segregated administrations were lumped together under new leadership, and enjoined to rationalize. Several hundred previously segregated local authorities and their administrations were similarly realigned"*

In July 1995, the first steps to change leadership of the organization were taken, with Mark Orkin appointed head, and the writer and Orkin's eventual successor (Pali Lehohla) appointed as Chief Director of Demography.

Over a very short period, a new hierarchy of users, with high expectations of changed and improved statistical delivery, was created. These users expected to be served with up-to-date statistics that were integrated and organized according to new spatial definitions.

The luxury of several years that statistical development requires was compressed into a few months. Every survey instrument was conceived as a possible candidate for delivering the information requirements, resulting in congested and lengthy questionnaires.

## 2.2 Census '96 as an agent and expression of urgency for change

Change was an imperative and was to be undertaken simultaneously on all fronts in order to maintain momentum and meet the deadlines for public sector transformation. An important component of the reconstruction of the society was a credible information base. The 1996 population census was seen both as a way of constituting such an information base, and as a nation-building exercise (counting all South Africans as part of a consolidated nation for the first time). However, this was a high-risk operation. Most plans were completed less than 12 months from the census date, while some, covering for example payment of temporary field staff, were only finalized as enumeration drew to a close! Data capturing was undertaken in nine separate locations (one in each province) – a bad decision for control of quality and accuracy, although a good one in terms of equal access to temporary employment in each province. Later the organization regretted the decision as management infrastructure was stretched across processing centres to deal with wildcat strikes.

Worst still was the rush to provide preliminary results from the raw count. This backfired badly when the final result differed markedly from the preliminary count. A rescue plan was put together, forcing the CSS to learn that statistics are as much about proper execution of an estimation procedure as they are about communication. Although corrective steps were taken and the reception to the changed results was overwhelmingly positive, the organization is still dogged by problems of communication of its statistics.

## 2.3 Introduction of new technology and implementing timeliness

During this period, the organization pledged to put a computer on each staff member's desk and used sophisticated cutting-edge technology to deliver census results. Thanks to increased funding for the census, each staff member had a computer delivered at their desk, and a network and Internet link. All staff were compelled to start using the Microsoft Office suite of software, which soon replaced the existing and often-incompatible mix of mainframe programmes and other PC applications.

The acquisition of the Australian-developed SuperCross software to disseminate Census '96 results was highly successful, with the software soon being extended to other series, and also used for Census 2001. However, the decision to sell products from the 1996 census was a major error, and user resistance to this decision limited use of the data. By the time data from Census 2001 was being released, access to census information and linked software was virtually without cost to users, and application of census data increased dramatically.

Timely release of data was prioritized, and new management implemented a policy that results from monthly series had to be released within six weeks of the end of the relevant reference month. For quarterly series, release had to be undertaken within fourteen weeks. This routine has been observed without fail for all the 256 series that are produced.

## 2.4 Geography as a catalyst for enhancing interdepartmental collaboration

As the 1996 census operations drew to a close, an ambitious interdepartmental project was being born. Sparked by the need for a national election in 1999, and based on extensive paper-based map work conducted in preparation for the census, the Department of Land Affairs, the Independent Election Commission and Statistics South Africa worked on the paper

maps to convert them into a spatial dataset. This was converted into an electronic spatial dataset by drawing polygons using the technology of Global Positioning Systems (GPS).

This national asset was subsequently used for planning Census 2001, is integral for running surveys, and addresses dissemination of small area statistics by making results available through a GIS-based technology.

## 2.5 Introducing social surveys

A household survey, based on the 1992 World Bank survey, was introduced as a benchmarking and monitoring instrument in 1994 and run as the October household survey (OHS) every year up to 1999. The survey was discontinued when the organization was not allocated sufficient funds to continue running it, and was replaced by a labour force survey in 2000. To some extent, this reflected a shift in priorities to labour market data. A number of ad hoc social surveys were conducted in this period, such as the victims of crime and time-use surveys.

## 2.6 Overview of the 1994-1998 period

Within the CSS, 1994 to 1998 saw rapid change, including improvements in timeliness of release of economic statistics, the implementation of the first series addressing social concerns, and the introduction of new technologies which radically altered the way in which statistics were collected, processed, analyzed and disseminated. During this period, the first inclusive population census conducted under democratic rule was undertaken. However, the most significant changes involved the dissolution of the old order's management, and its replacement with a leadership team committed to a new role for statistics within a democratic society.

New legislation governing official statistics was introduced in the 1999-2000 period (the Statistics Act of 1999); the CSS was renamed Statistics South Africa (Stats SA); and a comprehensive review of national accounts was undertaken including the rebasing and benchmarking of the GDP.

In this first phase of change, the agency had to negotiate its way through a disjuncture of structure, function and management style. This was more widely reflected in a period of tumultuous social change in the wider society. The phases of change moved through the last vestiges of apartheid, the excitement of the transformation phase accompanied by optimistic innocence and sweet illusion about the outcome of this transformation.

A significant contribution by the organization was Census '96. The information produced is used as input to a wide range of interventionist policies designed to improve the welfare of the majority of the population. The population censuses of 1996 and 2001 were particularly significant in this regard. Khalfani et al argue that:

*"compared to the previous censuses the 1996 census was a huge success ... Such a large improvement in enumeration reflected the political success of the reformed South African government and the capable efforts of a reformed statistical department as part of the new administration".*

The extensive use of census data in government's 'Towards the Ten Year Review' (GCIS, 2004. further attests to the depth of usefulness of the information.

However, most major initiatives have required experts from other countries to plan, schedule and organize new statistical efforts. A good example of this involved the Swedish technical assistance programme that was deployed from 1995 to 2002. Timing of this important assistance given coincided with a void in the recipient organization. So high were the demands on the organization and so few were the human resources to address these demands that the Swedish consultants found themselves deployed in line functions. At the end of the agreement, the organization found itself pleading with the consultants to stay longer, because there had been inadequate capacity with Stats SA to incorporate skills transfer, and because there were no local counterparts to take over the line functions the Swedish consultants had filled.

Wisely, the Swedes were adamant that their time for assisting was up, and Stats SA was forced to increase its capacity to absorb the benefits of international assistance. Increasingly, the Department sources international consultancies on a 'recipient-pays' basis, and this assists in limiting the time periods for such assistance, and deploying it as effectively as is possible.

There is still insufficient statistical, organisational and technical integration. This has been a significant contributing factor to the relatively low quality output of the organisation. The pre-1994 international isolation of the South African regime meant that most local statisticians were kept ignorant of developments in official statistics, and this is a legacy that will require many years to overcome.

With hindsight, we have learned that new problems invariably arise out of solutions executed. We succeeded in the necessary destruction of the old and we now can see the first promise of the benefits. However, consolidation of this process posed sometimes bigger and even more-complex challenges. Expectations were high, and the organization was young, inexperienced, ill prepared, enthusiastic and full of energy. In a world that did not stay still for a moment, playing catch-up while meeting new expectations is no easy task.

### 3. The 1999-2000 Period

The period 1999-2000 was one of relative calm and consolidation. The results of the 1996 census had been delivered, the reporting cycles for statistical releases had been brought in line with best international practice, the series had become compliant with the International Monetary Fund's Special Data Dissemination Standards (SDDS), the GDP was rebased and benchmarked and the exit of the old guard of senior managers had been largely completed.

This gave the organization a moment to reflect on what direction it would take, and there was sufficient stability to introduce strategic planning rather than ongoing crisis management. The organization changed its name from the Central Statistical Service to Statistics South Africa and the new Statistics Act was enacted. Head of Stats SA, Mark Orkin, seem justified in his assessment that there was a new calm, not a bleep on the media monitors, and that he could after five years sleep easy.

#### 3.1 Signing up to the Special Data Dissemination Standards

South Africa's decision to sign up to the Special Data Dissemination Standards of the International Monetary Fund (IMF) was a milestone during this period. South Africa was one of the few (and first) countries to sign up to the SDDS, and the

only one on the African continent to have done so. Important as the SDDS is for purposes of reliable international comparison, signing up had its consequences, especially in terms of balancing workload, governance, staff training and data and product quality.

In November 2003, South Africa's Minister of Finance, Trevor Manuel, raised the difficulties in establishing this balance when he addressed the Fiftieth Anniversary Conference of the South African Statistics Association :

*"The fourth challenge is to try and pace ourselves relative to our capacity ... South Africa, or parts of it, are highly sophisticated. We aren't deemed either highly indebted or poor. We are thus required to play in a different league. We have to comply with the Special Data Dissemination Standard (SDDS). The requirements are onerous. Yet, we must recognize that the South Africa of the majority is indeed deeply poor. Similarly, we lack a sufficient skills endowment to meet all of the requirements. SASA must rise to the challenge of deepening the skills base whilst engaging in a process to determine how much we can undertake reasonably".*

There is little doubt that the efforts and resources required to adhere to the SDDS exacerbated some of the difficulties Stats SA faced in 2003. We have come to see that ambitious decisions in a context of stretched resources can have negative consequences!

### 3.2 Rebasing and benchmarking the Gross Domestic Product (GDP)

Following the requirements of United Nations System of National Accounts (SNA), revisions to national accounts figures for the five-year period 1993-1998 were completed by June 1999. The improvements in measurement raised level estimates by upwards of between 11% and 14%.

### 3.3 Planning for Census 2001 and introducing the labour force survey

This period also marked the beginning of preparations for Census 2001. We had at that point hardly licked our wounds from Census 1996, including an unresolved issue of 'unauthorized expenditure' of R36 million which was the subject of a Parliamentary enquiry.

In the area of social statistics, a new half-yearly labour force survey (LFS) was introduced to deal with employment measurement, reflecting the importance of labour market data for governing policy, planning and monitoring.

### 3.4 Laying the foundation for use of administrative records

Further improvements in economic statistics were mooted through the use of an integrated business register. This was the solution proposed for the degenerating sampling frame used for economic surveys, and a memorandum of understanding to develop a new register was signed by the four participating departments (Labour, Trade and Industry, South Africa Revenue Service [SARS], and Stats SA). This was followed by a change in legislation enabling SARS to make tax data available to Stats SA for statistical purposes.

### 3.5 Government voices emerge

At the same time as these changes were occurring, government began demanding more and better statistics at all three levels (national, provincial and local), as well as requiring more and better coordination of information bases used for decision-making. This increased attention to matters of official statistics placed Stats SA far closer to the centre of government policy, planning and monitoring than before. Increased use of, and attention to, statistics was welcome indeed. At the same time, it placed growing pressure on the organization to seek means of co-ordinating the production of statistics across government – one of the requirements of the Statistics Act.

### 3.6 Staff matters and governance

As transformation progressed, a range of new stakeholders began demanding a role in organizational management and decision-making. Trade unions organizing within the public sector, and the staff they represented, began challenging departments on issues previously viewed as prerogatives of government. With their history of central involvement in the struggles to overthrow apartheid, trade union efforts to become more influential in issues of departmental governance and strategic direction demanded sensitive and careful response, without undermining management's authority and ability to manage. For the first time management was challenged on matters of transformation by the unions, and some differences in approach between unions and government – to date close allies because of a shared history of struggle and a common commitment to transformation – began appearing.

### 3.7 The transition in transition

Organizations in transition are never static, and rarely tranquil for any period. It was not long before new challenges and associated difficulties revisited the organization. This occurred despite the strategic planning meetings in which the organization admitted to an over-reliance on crisis management and ad hoc decision making, and committed to a more-planned work programme. This time the challenges included planning for Census 2001, finalizing implementation of Y2K compliance, and greater discipline and prioritization in taking on new projects.

Pioneer head Mark Orkin had left, Ros Hirschowitz acted as caretaker from July to November 2000, and the writer was appointed South Africa's first Statistician-General in terms of the Statistics Act in November 2000.

The period presided over by Ros Hirschowitz was a particularly difficult one. Orkin's style of management and leadership, like most pioneer agents of change, was perceived as autocratic, and the change of guard provided an opportunity for issues to boil over. In particular, matters relating to staff, transformation and the role of provinces became heavily contested. This simmering pot boiled over, and Hirschowitz spent a large part of her five months as acting head putting out fires.

There were a number of challenges to existing management during Hirschowitz's brief tenure, including the formation of an organizational development task team (OdeTT), which made proposals on many of the issues which seemed to be dividing the organization. OdeTT's membership was drawn from trade unions, head office and provincial staff, and management. Based on its recommendations, Stats SA management committed itself, in February 2001, to an agenda for change that was underpinned by

- improving stakeholder relations,
- a focus on people development,
- developing a culture for the organization and improving the working environment,
- developing processes and systems to ensure predictability, and
- implementing an organizational design to suit delivery.

With the appointment of a new departmental head, and Statistician-General, in November 2000, the uncertainty over leadership of the organization was resolved. However, issues relating to organizational design persisted and a new structure was only finalized in April 2001.

The process associated with OdeTT had initiated the building of a new trust amongst the diverse constituencies making up Stats SA, and the organization appeared ready to enter its next phase on the basis on a strong consensus.

### 3.8 Overview of the 1999-2000 period

At the end of 2000, the composition of the organization was completely different from that of 1994. It still lacked, however, the skilled human resources and proper plans required to shift it out of a mode of permanent crisis management.

Technology had been modernized without staff becoming modern; production methods were still archaic and individual retention and storage of documentation prevented the development of a functional system of knowledge management and information retrieval.

The signing up to the IMF's SDDS had brought new pressures that reinforced routine ways of working without reflection as a way of meeting punitive deadlines. However, the GDP had been successfully re-based and benchmarked, plans for Census 2001 were well advanced, and preparations for the new labour force survey were underway.

Government was making its expectations known as the principal stakeholder of official statistics, and the organization was exploring the landscape and seeking ways of meeting these increasing user demands. Dissenting voices were being raised about the pace and content of transformation and governance, particularly from the trade unions.

With its limited capacity, and absence of depth and experience in management and leadership, the organization had reached a point where it was poised on the brink of a crisis. This was compounded by change in leadership. The creation of OdeTT allowed for managed change amongst staff and management and created conditions for a shared vision.

## 4. The 2001-2002 Period

With a new head and Statistician-General at the helm, expectations, particularly within Stats SA, were heightened. For the first time, the head of the statistics agency was a full director-general (the CSS had been headed by a deputy director-general), and this created an expectation among staff of an overall improvement in prospects. Many staff may have concluded that the new head, being black, would be more sensitive to aspirations of black staff, while some among the white staff might have been fearful of this first black head of department.

However, most of the new management appointed, as well as the new head, had worked in Stats SA for some time, and this continuity assisted in controlling unrealistic expectations and unreasonable fears. What remained was the enormous task of organizational development and building.

The development of an overall strategy document, funded by the Partnership in Statistics for development in the 21<sup>st</sup> century (PARIS21), a global consortium of policy makers, statisticians, and users of statistical information, was an important brick in the building process. Ben Kiregyera<sup>2</sup> was deployed as a consultant by PARIS21 to South Africa. A next step entailed implementation of the first phase of the National Statistics System (NSS), which consisted of advocacy, the third introduced a dedicated component unit responsible for statistical quality, while a fourth introduced a dedicated programmes and projects unit as a way of introducing project management and management information systems.

The relative lull in public and media attention that Stats SA experienced in the 1999-2000 period extended into 2001 and 2002. This allowed for a period of introspection as well as the consolidation of a workforce committed to a new leadership. But this was the calm before the storm. The full impact of the changes that occurred in the preceding five years was to be felt in the period beyond 2002.

## 4.1 Spelling out the priorities

Within a week of appointment, the Statistician General (SG) spelt out new organizational priorities, including a strengthened commitment to training, skills development and human resource development, and improvement in working conditions. The first framework for these priorities was the Reconstruction and Development Programme (RDP), (a base policy prepared by the ANC before it took power). The second was Growth, Employment and Redistribution (GEAR), government's policy to address building the economy, and achieving macro-economic stability through employment and redistribution.

## 4.2 Production inputs to meet priorities

In order to achieve these goals, the SG began specifying the inputs to these priority areas were, and how they would be managed. The key inputs to the production system were defined as

- statistical units;
- their associated data items;
- the relevant classifications into which these units and their data items are grouped; and
- the standards that are applied in the treatment and reportage on these statistical units and their respective data items over time.

The process of understanding and unpacking these areas, together with the application of the related statistical procedures, would enhance data governance and coherence over time. However, it took some time for all staff to absorb this new way of defining the core elements of Stats SA's business, and placing them at the centre of all activities (including support func-

2: Ben Kiregyera is the Chairperson of the Board of Directors, Uganda Bureau of Statistics (UBOS), he is also the first African to win the Mahalanobis Award

tions). Indeed, it was the misunderstanding of, or resistance to, this approach which led a small group of managers to attack the leadership of Stats SA, and call for the removal of the Statistician-General.

### 4.3 Frames for collection and estimation

The role of collection frames in statistical production now formed an integral part of statistical units, data items, classifications and standards and, as a consequence, these frames had to be evaluated, strengthened and, where necessary re-engineered or totally replaced.

By building and enhancing the *geographic frame*, the quality of statistics would be improved. This is because geography provides a dimension of uniqueness for a statistic relating to a statistical unit. Subsequently the organization invested heavily in geography and the associated technological infrastructure.

The second central frame was the *business frame*, which is the basis for drawing samples in the collection of economic statistics. Classifications were implemented for purposes of disentangling establishments from enterprises and subsequently classifying each establishment by its key operation and product.

The third frame was the *population of people*. Primarily sourced from the population census and mapped geographically, this would be continually tested for quality and improved through application of the population register and vital registration systems. This has necessitated intensive collaboration with the Department of Home Affairs on the population register and the management of information on vital events (including a project to capture data on causes of death).

### 4.4 Reviewing organizational structure

Management had pledged that it would look at an organizational design that would facilitate delivery. By October 2001, the first two deputies to the Statistician-General were appointed. The third level of the structure was systematically filled over the year 2002. Three new units were created. The first focused on quality, the second would lead programme and project management and the third was to lead the national statistics system.

### 4.5 The crisis of Census 2001

Census 2001 posed major challenges for the organization. Although better resourced than the 1996 census, reliance on external contractors for a range of services proved less successful than expected. As enumeration loomed, additional questionnaires of appropriate quality for scanning had to be printed, at great cost and speed, in the United States. Difficulties arose with the consortium appointed to assist in recruitment of temporary staff and develop a payments system for over a hundred thousand enumerators, and Stats SA took over this operation at short notice. Scanning-based data processing, using intelligent and optical character recognition, was introduced in an attempt to speed up release of census results. However, this proved far more complex than anticipated, and the relationship with consortium appointed to undertake this had to be restructured to become more of a joint venture, which absorbed and diverted the majority of the resources of the organization. This exposed the institution to other risks and dangers.

## 4.6 The acid test on economic statistics

As the organization began to rollout the census, other areas of concern had emerged. An internal research document from the new Quality and Methodology unit questioned the very basis of economic statistics (the business register used as the basis for a sampling frame). This research prompted intense debate on the condition of economic statistics. The discussions, although acrimonious at times, were well-managed, and broad consensus was finally reached. It was concluded that the quality of the economic series suffered from:

- A deficient business register.
- Obsolete samples.
- Application of questionable methodologies in respect to imputation, weighting and raising factors.
- Inadequate professional competencies.
- Poor management processes.

The combined result of these factors had resulted in under-estimation of some areas of economic activity, with inevitable consequences for estimation of GDP.

Some reluctance to acknowledge these serious quality issues had to be carefully managed to prevent it from turning into a resistance against measures 'that the agency might want to introduce towards the improvement of the quality of its products (Arrow, 2001). Von Reibnitz and Ryten (2004), in their assessment of the situation at the beginning of 2003 stated that:

*"The current malaise of Stats SA economic statistics can be traced back to the lack and/or poor quality of its business register. The AUSAID consultancy missions of 1996/97 clearly established the weaknesses in the economic statistics. Importantly the missions made a set of recommendations, few of which have been implemented".*

The internal Acid Test Report of 2001, and the input by Von Riebnitz and Ryten (2004), formed the basis for the development of a strategy to revive economic statistics. The preamble to this strategy notes that

*"strong consensus is emerging around a strategy which will have to be pursued over the next two years in the ten main activity streams in economic statistics, if Stats SA is to meet the goal enunciated by the Statistician-General to lift the quality of the economic statistics output of Stats SA to a level which will satisfy the reasonable requirements of the major national and international users".*

Importantly, this process broke a culture of silence which had previously masked key organizational weaknesses, and added to the richness of a culture of debate that emerged in OdeTT.

## 4.7 Training

Management's new commitment included development of human resources as a central element in organizational life. This aimed at addressing the limited skill base in Stats SA, which was the result of changed requirements of staff in terms of skills, experience and knowledge; and a consequence of the appalling neglect of mathematical and statistical skills at primary, secondary and tertiary levels over decades, especially where black pupils and students were concerned.

The first task was to seek advice from institutions in South Africa and abroad on how to deliver through better skills. A foreign study training programme was initiated and Stats SA has, since 2001, been sending staff for further study at the East African Statistical Training Centre (EASTC) in Dar es Salaam, Tanzania; and the Institute for Statistics and Applied Economics at Makerere University, Uganda. Collaboration with local universities is under exploration, and a group of Stats SA staff members have undertaken post-graduate study at the University of Witwatersrand.

Training initiated by Stats SA is expected to reach beyond the development of professional statisticians. Management was shocked when it found that two messengers who had joined the department thirty years back were about to retire – still as messengers. To demonstrate commitment to building human resources, management pledged that never again would a staff member who joined the organization in a junior capacity retire in that same position. As a consequence, messengers and cleaning staff are now provided with facilities for improving their skills, especially in the use of computers.

#### 4.8 Creating statistical infrastructure

The collection and dissemination of statistics requires a system that is logically integrated in terms of legislation, geography, resources, technology, users, producers and suppliers. The infrastructure critical to this integration consists of legislation, geographic distribution, technology and resources. In the period under review, Stats SA has had to create and develop almost all elements of this required infrastructure:

In terms of *legislation*, the Statistics Act of 1999, that governs statistics in South Africa has been hailed as particularly forward-looking, especially in respect of the powers of co-ordination vested in the Statistician-General. However, Bill McLennan (2004) has noted that these powers have not been fully used: 'In a way this is a pity as Statistics South Africa has the strongest legislative backing I have seen for producing, or encouraging, a properly co-ordinated statistical service across government.

*Geographically*, each of South Africa's nine provinces has a statistics office, and regional offices being developed within each province. The provincial and regional offices are at the centre of Stats SA's decentralized fieldwork and survey strategies.

In the first five years following the inauguration of democratic governance, the organization experienced severe *resource* constraints. Resource allocation improved considerably thereafter. The physical move to a new building was completed smoothly, and staff settled easily into a new environment.

*Access to cutting edge technology*, especially in data processing, analysis, dissemination and – more recently, the data warehousing project – has become progressively easier, with positive effects on delivery, performance and quality.

#### 4.9 Improving communication

Communication with stakeholders, especially in the area of media relations, took on a high priority in anticipation of the release of census results. One of the most successful initiatives involved an agreement with a national daily business newspaper for a weekly column by the Statistician-General. This has become a central tool in explaining statistical processes, alerting users to important issues, responding to controversial statistical issues of the day, and clarifying ambiguity in the uses and abuses of statistics.

Since 2002, when the column first appeared, it has been published by *Business Report* on Thursdays, under the title of 'Inside Statistics', and has garnered a considerable readership.

#### 4.10 Overview of the 2001-2002 period

The 2001-2002 period ushered in a new leadership deriving its mandate from the Statistics Act; a second population census was undertaken; and the fundamentals of South Africa's economic statistics were challenged from within Stats SA. The new leadership introduced an intense focus on development of human resources, including representivity in staffing aimed at redressing racial imbalances inherited from the apartheid past. Attempts were made to address some of the organizational instabilities which had resulted from the previous period of rapid change.

The period 2001-2002 saw a change of guard at senior level, as well as a shift in management and leadership style. A coalition committed to new directions was established through the formation of OdeTT and increased trust and the ability to work together amongst diverse constituencies. With a commitment to the agenda to change, a new organizational culture began emerging.

While not all commitments in the agenda for change were met, the crucial one on improving skills was started and has focused staff and management on training. Awareness of Stats SA and the uses of official statistics increased considerably over the period, focusing more attention on the department and its outputs.

Questions on the quality of economic statistics, and the neglect of other work areas brought about by the pressure of the population census, were being raised with increasing frequency and intensity. Partially in response to these concerns, it became increasingly apparent that improvements in statistical quality would have to be linked to the development and improvement of geographical, business and population frames.

### 5. 2003 to the present

Early in April 2003, Stats SA acknowledged that it had erred in overstating the rate of increase in the housing rental component in the CPI. The source of this error lay in methodologically faulty imputations, undertaken because the data required had not been collected since the October household survey was discontinued in 1999.

The consequences of these unsound imputations and projections had not been properly identified, largely because of the absence of skilled analytical capacity in the agency.

This high-profile error severely dented the credibility of Stats SA, and heralded a period in which the reliability of the data it collected was questioned from all sides: government, the media, investment analysts, economists.

Although, the facts were true, the source of the problem was the intentional omissions emanating from the termination of the household survey programme in 1999 that supplied this information. The overestimation also arose due to lack of analytical capacity and insight by the office to address matters of this nature.

The results of Census 2001, released in July 2003, were received positively, and stakeholders got down to the serious business of analyzing and applying the data. Nonetheless, Stats SA accepted that it faced serious operational, image and credibility problems which required urgent attention.

Tackling these issues demanded a multi-pronged approach. Organizationally, a programme and projects office to support planning, implementation and monitoring, and to facilitate the implementation of a matrix structure, was introduced. The findings of a review of economic statistics were digested, and management agreed that help in revitalizing this area was required urgently. A team of experts recently retired from the Australian Bureau of Statistics and Statistics Canada was assembled to develop a renewal strategy for economics.

A second qualified audit for the organization was released in September 2003 and a memorandum drafted by a group of staff alleging incompetence and corruption against the Statistician-General was released in November 2003. With renewal of the Statistician-General's contract due for consideration in the same month, organizational leadership appeared seriously unstable.

However, there were positive results from this period of uncertainty and instability. By the end of 2004, the economic statistics strategy was yielding far-more accurate data, and this was being seen in the compilation of national accounts. Revisions of series based on the new integrated business register were being absorbed, and by the middle of 2005 the quarterly GDP release was reflecting a more coherent picture of economic activity.

## 5.1 Programme and project planning

Attempts made in 1999/2000 to implement integrated plans and manage information better had yielded few tangible results, and at the beginning of 2003, a new planning and project monitoring system was launched.

The trigger for improvements in the implementation of the system was a set of audit queries directed to responsible managers, and used as a management tool to enforce governance. The second trigger was the training of personnel in project management, the third being the integration of inputs, outputs and resource management.

## 5.2 The CPI debacle

Stats SA's miscalculation of the CPI generated a storm in April 2003, and media coverage was understandably extensive and hostile. Stats SA prioritized transparency and honesty in communicating the sources of the error, and the steps being undertaken to correct it.

Senior and respected colleagues from abroad, notably Canada's Jacob Ryten, ABS head Dennis Trewin and Britain's statistical chief Len Cooke gave invaluable advice in guiding the agency through this trying period. The Statistics Council rallied in an objective way on the matter and the Minister of Finance, to whom Stats SA reports, provided necessary perspective on this issue.

Members of Parliament called for the Statistician-General to be fired. Cartoonists had a field day satirising the agency and its senior staff. As a leader, the situation became the sort of nightmare that ensured one would never sleep again!

With the impact of the CPI error threatening to contaminate response to the results of Census 2001, due for release in July 2003, the S-G's regular newspaper column, 'Inside Statistics', mounted a systematic campaign of information, explanation and admission which, by taking the public into his confidence, did much to repair Stats SA's dented credibility.

### 5.3 Allegations of corruption

Already shaken, Stats SA was further disrupted when, in May 2003, a senior manager circulated a dossier alleging incompetence and corruption on the part of the Statistician-General. In October, a second document made similar allegations.

At the S-G's request, the Minister asked the Public Service Commission to assess these allegations, and after an extensive enquiry, found that the substance of the allegations was without foundation, and that no evidence could be found to support the most-damaging claim of corruption.

This bruising and disruptive episode brought home a number of lessons. It reminded management of the dangers of making allegations against colleagues without having evidence to support these; it showed how disruptive agendas for personal power can be when they are combined with minority resistance to necessary change; and it demonstrated how those with questionable intentions and motives can exploit a consultative and participatory management style which flattens organizational hierarchies.

### 5.4 Errors or managed revisions?

Managing the revision of economic statistics in line with the renewal strategy placed substantial strains on the organization, and a range of stakeholders – including the media – found it difficult to distinguish between planned revisions, changes in methodology, and errors.

The 'Inside Statistics' column was used on a number of occasions to tease out the differences. When it was found that my counterpart in the United Kingdom, Len Cooke, was facing similar issues, his views were regularly inserted into various editions of 'Inside Stats'.

Central to our credibility was acknowledgement that when an error occurs, it is an error, and correcting it is not a planned revision, nor should it be presented as such. Equally central to our learning at the time was the realization that the media sells newspapers (or viewing or listening time), and we produce statistics, and that there is rarely commonality of interests between those two activities!

### 5.5 Focusing on quality and data governance

By introducing a unit for quality through standards and methods, the key inputs to the production system could be refined so as to improve the quality of products.

Closely linked to these elements of quality improvement is the issue of data governance and management. In 2003 January the organization allocated resources to investigate the concept of data warehousing, which soon developed into a more-ambitious programme to re-engineer the way in which Stats SA processes, transforms, analyses, stores and disseminates the data it collects.

The Data Management and Information Delivery (DMID) project holds out the possibility of a system that will minimize, if not eliminate, the sorts of statistical errors which have haunted the agency.

## 5.6 Getting the implementation strategy right

In an assessment note on Stats SA, Jacob Ryten (2004) had this to say:

*“Statistics South Africa (SSA) is a special case among statistical offices in any part of the world. It is an office in transition; it is an office that has advanced standards; it is an office with a great deal of technical know-how; and it is also an office that has a comparatively short history as the break away from Apartheid marked a major discontinuity in South Africa’s social and economic fabric. If the world managed to stay still for a while and no one within the public sector were allowed to move from their post, it is questionable whether SSA would need help from anyone. Unlike many other offices in Africa, Asia and Latin America, after a while SSA would emerge as an office with capabilities of developed countries (it has the standards)”.*

The organization runs seminars every Friday where staff present their projects, methods applied, progress and findings. This has proved highly successful and quite different from the acrimonious sessions held on economic statistics in 2001. Staff at all levels are more open to criticism and are prepared to learn from others. This is a pleasing sign of a maturing and developing institution.

However, Ryten’s wish notwithstanding, the world does not stand still, and people do move on, not least because of retirement. When they leave, they withdraw more than physical presence. They often take away with them human capital for which there is no short-term replacement.

Towards the end of 2004, Stats SA started a recruitment process that seeks to inject young talent into the organization. The results of this are bound to change the way we conduct business. The pilot programme has yielded 15 recruits, and next year we aim for a further 30 recruits. A thousand applications for this special programme are already on our books. We aim to have brought in twenty percent of Stats SA staff members through this process within five years.

## 5.7 Overview of the period 2003 to date

The past two years probably represent the most tumultuous that the organization has ever experienced. Resilience of leadership and management has been tested to limits not encountered before. In addressing this, the organization implemented a programmatic and project planning approach to its work, enabling initial implementation of a matrix structure.

The organization has also faced a range of major management challenges, including audit qualifications for three successive years; and a disruptive challenge to the Statistician-General's authority by a group of staff led by a disaffected senior manager, who leveled allegations of embezzlement and corruption. The fact that a Public Service Commission enquiry found that there was no evidential basis for these allegations did little to undo the destructive consequences of these actions over a two-year period.

The error in CPI estimation, and the broader revision of the economic series, have forced far-greater attention to data quality, while the DMID project is nudging the organization towards better data governance and management, more-coherent metadata, and improved facilities for analysis.

There is a growing realization that leadership and management of a statistical agency requires skills and approaches which differ in many respects to those needed in other departments of government. Dennis Trewin (2005), Australian Statistician and head of the Australian Bureau of Statistics, has recently noted that the key priority in leading a national statistical office has become relationship management. This includes

- Relations with Ministers and government;
- Relations with policy agencies;
- Relations with media, which can have such a significant influence on perceptions of the National Statistical office; and
- Increasingly, relations with other producers in the National Statistical System.

## 6. The road ahead

There is, after a long and difficult gestation period, broad organizational consensus over the ten main activity streams to lift the quality of economic statistics. However, Stats SA needs more than the assistance of the few experts who identified these streams – although this support is still required.

Stats SA will also require steady support from a well-known, capable and respected statistical institution. There are three main dimensions to this:

- *Proactivity*: the ability to detect clouds on the horizon and advise on measures to be taken to avoid accidents, losses of credibility, doubts about competence and so on. Only an outside look can help focus attention on weaknesses, fragile methods and systems, lax supervision, and poor quality of output.
- *Replacement*: Stats SA's young professionals have a desperate need to acquire training and managerial experience and confidence. They do not lack the motivation or the intelligence but they have no free time if they are expected to simultaneously carry on with their regular duties.
- *Seal of approval*: young institutions find it hard to increase credibility at the same time as they broaden their scope and improve the quality of their output. This second imperative inevitably leads to mistakes, yet the first demands an error-free environment. A respected and independent institutional process capable of reassuring users about quality, integrity and professional competence facilitates management of the tension between broadening of scope while increasing credibility.

## 6.1 Implementing the economics statistics strategy

To address the morass of problems relating to poor statistics, Stats SA focused specifically on those activity streams, which form the core, though not the sum total, of the economic statistics activity of the organization. The main outcomes required for each of the activity streams were identified, as were the main challenges to be faced. It is now clear which tasks must be completed and which milestones must be met to achieve these outcomes.

- The underlying *thrust* of the strategy was to capture as closely as possible the true levels of activity in the South African economy, as well as the changes over time.
- The *outcome* will be more reliable measures of GDP and its components, as well as supporting economic series, some of them new, all of them enhanced, which will be more relevant in their own right.
- The *prerequisite* for achieving this outcome is a business register which covers consistently over time the businesses which account for a very high proportion of total business activity, recording their full structures as well as producing units, accurately classifying them to industry at both levels of unit, and carrying appropriate, reliable measures of size for sample stratification purposes.
- The key *output* required is that the annual national accounts accurately describe the real level of activity in the South African economy, and that the quarterly accounts accurately measure the real growth in the economy.

The first major milestone towards achieving this outcome was the release of re-benchmarked national accounts time series in November 2004 based on a fully balanced Supply-Use table which reconciled the three approaches to measuring GDP. The re-benchmarking process, between January and October 2004, drew on all of the major economic statistics series produced by Stats SA. Most of these series had deficiencies, some of which were ameliorated in the short term to allow the re-benchmarking to proceed, and all of which will have to be enhanced progressively to satisfy the requirements of all major users regarding scope, coverage and reliability.

## 6.2 Continuing to develop human capacity

In 2003, Finance Minister Trevor Manuel described the training challenge as follows:

*“There are too few South Africans who love statistics or have a passion for it ... This too is embedded in South Africa’s apartheid history. On 17 September 1953, the Minister of Native Affairs, HF Verwoerd, said in Parliament ‘What is the use of teaching the Bantu child mathematics when it cannot use it in practice?’ Thus Bantu Education was introduced in 1954, consciously de-emphasizing the teaching of Mathematics and Science. A generation of maths students was destroyed and thereafter, successive generations of maths teachers. To this day, the teaching of maths and science ... is too frequently mediocre. Ten years into democracy, this residue of apartheid decision lives on. It must be reversed – not merely at universities or in the work place, but at primary and pre-schools”.*

There is no outside agency which can develop the important competencies Stats SA requires. Accordingly we have embarked on developing the skills in-house through the launching of an internship programme designed to obtain high academic achievers for the organization who are put through a rigorous twelve month induction program. We will develop this programme further to provide training to both existing professional staff within the organization as well as subsequent training to the successful interns. We will continue to increase the intake as our capacity to mentor them improves. We hope

in a relatively short time that we will have both increased capacity to undertake new work and will be much more self-reliant on our resources than in the past.

As our capacity increases we will both widen the scope of our economic and social statistics as well as improving the quality and reliability of our data thereby providing a better service to our policy makers and analysts.

### 6.3 Implementing the NSS through data governance

While the Statistics Act gives the Statistician-General far-reaching powers for coordination of the production and dissemination of statistics, this has not been fully exercised. Bill McLennan has noted that, the Statistician-General has 'rather significant powers of coordinating the statistical work of government agencies', per sections 7(2) (g) and 14 of the Act. However,

these powers have either not been used or used only sparingly. In a way this is a pity as Statistics South Africa has the strongest legislative backing I have seen for producing, or encouraging, a properly coordinated statistical service across government.

As part of this process we intend to place a much greater emphasis on standards for statistical units, classifications, data items, tabulations and publications to produce greater coherence in our statistical output. Through this, we intend interacting to a greater extent than before with other producers of South African statistics, attempting to develop and adopt common standards, and thereby providing a richer picture of what is happening in our society.

## 7. Conclusion

The years since 1994 have seen a great deal of change in the role, functions and significance of the statistical organization. It has developed the statistical infrastructure required to collect information from a large heterogeneous population, which speaks eleven official languages. Statistics South Africa has undergone extremely rapid and far-reaching change with notable successes. This process has been neither smooth nor error-free. Quality of the statistical output is uneven, and errors in high-profile series have undermined credibility and trust. Inadequate capacity, skills and experience internally led to over-reliance on outside experts. The organization however, has not been deterred from seeking and finding solutions.

In a follow-up report to its first 'staircase' mission, SIDA (2002) noted that Stats SA had made considerable progress. Output had become more regular and quality had improved. However, while new processes, methods and tools had been introduced, the desired results were not yet apparent.

Over these ten years of statistical practice we have progressively addressed the new demands made on official statistics. These were well-expressed by the Finance Minister in 2003 when he said

*"I like good news. I like to tell good stories about how well we are doing as a country. But please don't give me what I like, give me what I need, because part of what I need to do is to help deliver democracy to people who have waited for it to touch their lives. Government needs good statistics".*

In its attempts to deliver on this mandate, the organization has prioritized human capital development, programme and project management and proper coordination of statistical production and use. The follow-up assessment of the SIDA mission was correct: in terms of the staircase model, Stats SA still has a number of steps to climb: however, the organization Stats SA now hold out the promise of a statistical agency well-equipped to play its role in national development, and participate as an equal in the world of international statistical practice.

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