

## **TRANSFORMATION AND OTHER CHALLENGES FACING SASA**

In February 1990 President F.W. de Klerk announced to an expectant nation that the Nationalist Government of the Republic of South Africa deemed it necessary that the political system existing in the Republic be replaced by a more inclusive democratic dispensation. This dispensation would be established by consensus after negotiation with representatives of all the people in the Republic. Political parties which had been banned were un-banned, and an endorsement of the Government's proposed course of action for change was to be sought from the then electorate, by way of a referendum.

The rest, as the saying goes, is history. To the relief and astonishment of all the world South Africa had pulled back from the brink of a disaster, which, in the words of former Prime Minister John Vorster, was "too ghastly to contemplate". The negotiated settlement thrashed out by CODESSA, and the subsequent events of 1994, surpassed in significance those of the Convention of Vereeniging in 1910 which led to the establishment of the Union of South Africa.

At last ALL South Africans were to be ONE nation. In retrospect, it is a pity that the 1910 Convention of Vereeniging had not taken on board the wisdom of Abraham Lincoln expressed in the American presidential campaign of 1860 in which, in condemnation of slavery, Lincoln proclaimed that: "A house divided against itself cannot stand", and therefore, "this government cannot endure permanently, half slave and half free". It is astonishing that this truth eluded South African electorates and governments for just on eighty years after Union.

Political freedom for all under a human rights oriented Constitution has led to a dramatic change in the distribution of political power in our country and has resulted in new role players with new ideologies and policy directions coming to the fore. An inevitable consequence has been that all the assumptions and conventions on which the old order was based have come under intense and critical scrutiny, and a veritable avalanche of creative energy has been unleashed to ameliorate the condition in which this new society finds itself, and to enhance its prospects of prospering.

It has been an amazing experience to see the blossoming of so much unsuspected talent since our society has opened up. In this regard one cannot but agree with Minister Trevor Manuel's sentiment, expressed in his address to our conference of 2003, that "apartheid was a lie". Minister Manuel lamented the fact that the lie was supported by fraudulent statistical outputs which has led to the present-day unhealthy disregard by ordinary people for official statistics. Far more serious than that however, was that the apartheid lie denied that, broadly speaking, all of humankind was, inherently, intellectually and spiritually equally blessed, and that consequently the racial discrimination it practised was evil. The effect of the racist lie was to dismiss the talents, abilities, and culture of those on the wrong side of the divide as inferior, with disastrous consequences for our economic and social development; we are probably a hundred or more years behind of where we could have been had this tragedy not been perpetrated and visited on us.

It is to be hoped that the scourge of racism from whatever quarter will, in time, be rooted out of our society, and that President Mandela's promise

in his inaugural address to the effect that: "Never, never and never again shall it be that this beautiful land will experience the oppression of one by another,...." will be honoured by his successors. In my view it would, to this end, help if it was made a statutory offence for any organ of State to require anyone to disclose what his or her racial or ethnic affiliation might be.

Admittedly, much of the improved access to available talent has come about through so-called transformation and BEE (black economic empowerment) policies; however, it is to be hoped that the coercive aspects of these policies will in due course become superfluous. Perhaps one day our President will be able to declare that: "Never, never and never again shall it be that in this beautiful land the State shall have the right to enquire into the matter of a citizen's race."

This being the first year of the second decade of freedom for all in our country, it seems appropriate that we should at this time reflect on what our Association stands for, and on what it can and should do to help in the stabilisation and progression of our evolving non-racial society. With regard to the latter, Minister Manuel's four challenges put to us in his opening address to our Conference of November 2003 come to mind, and it is fitting that we give further careful consideration to what Minister Manuel had to say, given our history, and taking into account the transformational and empowerment policy imperatives of the day.

Before doing so, let us take stock, very briefly, of where the Association has come from, and what the status quo is.

The SASA was established in 1953 along the lines of western learned societies. The object of the Association was to promote knowledge and love of the discipline through research and the exchange of ideas. The majority of members of the Association were academics, with smaller numbers of members from organisations such as the Chamber of Mines, the CSIR, the SABS, and Government Departments such as the SAR&H. The Association had no agenda other than its focus on the discipline; there was no exclusion from membership on racial grounds, but the social conventions of the times, and indeed the employment policies of most institutions, neither encouraged nor led to black membership of the Association until into the early nineteen eighties.

In 1968 the Association established the SASJ, and the Association's main, if not only, preoccupation continued to be research and the exchange of ideas. The late nineteen seventies and early eighties saw the Association embark on the English-Afrikaans dictionary of statistical terminology project, establish the Association's Education Committee, and support the proposed registration of statisticians as practising scientists.

The nineteen eighties was the decade of the mission statement. Whereas in the past organisations had objects and goals, fashionable management philosophy and practise of the times demanded that an organisation have a mission statement which would both proclaim the particular organisation's lofty aims, and provide a guide against which the appropriateness and efficacy of the organisation's activities could be assessed. In time the need for an organisational vision was recognised, and many organisations have a vision **and** a mission statement.

SASA has a statement of mission and goals (about which more later), but no stated vision. Of course that does not mean we are lacking in vision, it has just not been succinctly articulated in print as yet.

The eighties also saw the establishment of chapters (or branches) of the Association and a relaxation in the requirements for membership. Much debate was given to the balance between applied and theoretical statistics. The Association was and has remained much to the fore in inviting visitors from overseas to give talks on their areas of specialisation, and provide members with valuable contacts.

During the nineties and to the present time the Association was involved in identifying growing areas of applications of statistics and sponsoring workshops and training in these areas. Medical, Quality, Finance, Wildlife and Official Statistics are areas which come to mind.

I think it is correct to say that the Association's focus has almost exclusively been on Statistics and the Statistician, with minor inroads into social outreach, and that this has been in keeping with its Mission and Goals statement.

The question does arise whether this is appropriate for the times.

The stated mission of the Association is:

"To facilitate advancement of statistical knowledge and promote applications of statistical theory in all spheres of life and hence contribute positively to the development of South Africa".

It seems it is the advancement of statistical knowledge and the applications of statistical theory, rather than the Association itself, which is to contribute positively to the development of South Africa. Fortunately the Association's Mission and Goals document goes on to proclaim that:

The Association has identified activities which it will undertake to accomplish its stated mission, these being:

- ❖ 1. creating a forum for attracting and nurturing statisticians in South Africa, and advancing their interests
- ❖ 2. actively participating in appropriate processes and structures which impact on South African society
- ❖ 3. promoting public understanding of those statistical concepts which enhance critical faculties and effective citizenship; and fostering public appreciation of sound statistical practice
- ❖ 4. being accessible to, and supportive of the users of statistics in the broader community
- ❖ 5. actively cooperating with organizations and societies associated with disciplines that are broadly related to statistics

The Association's Mission and Goals document also goes on to say that:

The Association will arrange an annual conference and will give guidance to members by means of the SASA Newsletter and by making available to members the South African Statistical Journal and/or any other publication; and will in general carry out in a judicious and organised manner any function or act in pursuance of and promoting the above goals.

Looking at the five listed activities it almost seems the second one is the odd man out in that it does not refer to statistics. But this is fine because, remarkably, the Mission and Goals document is silent on the important matter of transformation, and we can claim that transformation can be regarded as subsumed in this listed activity.

Transformation is meant to be the active pursuit of gender and racial representivity so that the demographic composition of an organisation will, at all levels, approximate that of the population at large.

I would imagine that the membership of SASA would reflect the demographics of the subpopulation of individuals which have a more-than-passing interest in Statistics, and SASA's untransformed appearance with respect to racial representivity may therefore be due to historic imbalances generated by the apartheid past, which will be corrected organically as transformation takes place in the wider community. This however, may not be entirely true, and SASA should give further consideration to how it intends to aid and accommodate the need for transformation.

Clearly transformation *per se* cannot be SASA's mission, but in South Africa's circumstances, transformation is an ideal worth striving for in the interest of the stability and prosperity without which the country and SASA could not function.

In my view transformation is too much of an issue to be left understated in SASA's Goals and Mission document, and we should either give it explicit mention in the second listed activity, or add it separately to the list of activities undertaken to accomplish SASA's mission.

If added separately:

- ❖ 6. implementing strategies which will assist in the transformation of South Africa to a fully democratic social order.

or if an addition to the second activity,

- ❖ 2. actively participating in appropriate processes and structures which will assist in the transformation of the South African society.

SASA is contributing to transformation by annually awarding two bursaries from its own funds, to financially deserving students in their third academic year of study. To enhance the prospects of SASA's bursary holders becoming statisticians we should extend the scheme to the fourth academic year possibly through linked sponsorships, so that a SASA bursary/scholarship holder who successfully completes the third academic year and qualifies for admission to the fourth (Honours) year of study in Statistics, will have guaranteed sponsorship for the fourth academic year. Hopefully we would be able to raise funds for this from the corporate world.

Turning now to Minister Manuel's four challenges to SASA, let us reflect on whether they fall within the ambit of our mission, and on how, if at all, they can be met.

“The **first** challenge, which confronts SASA, is the restoration of trust in official statistics. Without the vital element of trust, no official statistics will be reliable.” (quote from minister Manuel's address) Note that the challenge is the “restoration of TRUST”

It is not entirely clear what is meant by “official statistics”. Would a statistic provided to the public at large by a senior government official be an official statistic? If yes, the challenge amounts to “mission impossible” under present conditions of free speech. Officials and politicians alike bandy statistics about at will, often in pursuit of some hobby-horse, or to make a favourite point, and at times the statistics quoted are patently false. The result is that no one is inclined to take any government-sponsored statistic either at face value or without a big pinch of salt. Crime statistics and the acrimonious debates they have generated are a case in point.

An amusing example of a recent patently false “official statistic” comes from a news item on the 11 am and 12 noon bulletins of SAFM on Friday 11<sup>th</sup> June 2005. In those bulletins it was reported that Willie Hofmeyer, Head of the Assets Forfeiture Unit, had stated that “in this year alone, 60% of South Africans had been asked to pay a bribe”. Considering that youngsters 20 years of age or younger are not likely to be asked to pay a bribe, and that they make up about 40% of the population, it means Mr Hofmeyer was said to be telling us that by mid-year virtually every adult South African citizen had been asked to pay a bribe; presumably by

year's end each and every one of us would have been asked to pay a bribe at least once, which seems to be rather far-fetched. If Mr Hofmeyer had said anything at all, it should probably have been to the effect that 60% of the cases reported to his unit had involved bribery.

If, on the other hand "official statistics" are only those put out by Statistics South Africa, there is a better prospect of meeting the challenge. Is the "restoration of trust" in StatsSA's outputs within the ambit of our mission which, currently, is:

"To facilitate advancement of statistical knowledge and promote applications of statistical theory in all spheres of life and hence contribute positively to the development of South Africa"?

It seems unlikely that one could advance statistical knowledge to the full if the largest producer of high-profile statistics has little or no credibility in spite of the undoubted quality of its statistics. For better or for worse StatsSA is the most public face of statistics, and by association its reputation impacts ours too. We certainly are not serving Statistics if we do not do what we can to help give the lie to the "lies, damned lies, and statistics" image.

In the recent past StatsSA has suffered some embarrassment because of errors that were made in compiling the 2003 CPI figures, and some manufacturing statistics in 2004. To its credit StatsSA admitted to the errors when they were found, and corrected them. Through his weekly column the Statistician General has reached and informed a wide and relevant audience of StatsSA's activities; this honesty and transparency on StatsSA's part should help immensely in gaining public trust. Building

a track record of a low incidence of errors, and a fearless readiness to announce and correct them when they do occur will go a long way to the restoration of faith in StatsSA's products.

This Association should do what it can to work with StatsSA on matters of mutual interest and especially in improving public understanding and appreciation of the work that is being done. In his Presidential Address to SASA last year Mbulaheni Nthangeni gave us an excellent exposition of the roles of StatsSA and the National Statistics System, and the role SASA can play in fostering a greater awareness of official statistics and assisting in capacity building through working for the provision of training in this field. This, and more than this, needs to be done, and StatsSA and SASA could devise strategies jointly to achieve the desired goals.

To facilitate this co-operation, SASA should be charged to ensure that a person from StatsSA serves on SASA's Executive Committee as a co-opted member.

The **second** challenge, according to Minister Manuel, "is that there are too few South Africans who love statistics or have a passion for it". The Minister went on to lament the destructive effect Bantu Education had on the teaching of mathematics and science, and said that its residue of mediocre teaching of mathematics and science in the majority of schools must be reversed, not merely at universities or in the work place, but at primary and pre-schools as well; and, he said, "SASA has a role to play in building out the ICOTS model teaching approach as a conscious effort to interrupt the cycle of the poverty of numeracy".

This challenge falls squarely within the ambit of SASA's mission, but the order is indeed very tall. The increasing "poverty of numeracy" is a widespread phenomenon in the western world; it seems that a decreasing proportion of school leavers in the Anglophone populations can be considered to be numerate, and that at the highly skilled levels of mathematics these populations maintain their pre-eminence partly through immigration.

Factors which have contributed to, and continue to contribute to this increasing "poverty of numeracy" include:

- ❖ trimming of education budgets to the detriment of class sizes and teacher quality
- ❖ poor counselling leading to avoidance of "difficult" subjects
- ❖ unattractive syllabuses which are too theoretically orientated

The general effect of these, in South Africa, is that a substantial proportion of learners do not take mathematics to matriculation level (more than 40% up to 2004 in SA) and that the quality of passes is very poor (in SA less than 28% of learners pass matriculation mathematics at the level for which they enrolled). Up to grade 10, school syllabuses in mathematics are of the one-size-fits all variety, and currently in grades 11 and 12 the choices in mathematics are limited to higher grade and standard grade, where the latter is simply a watered down version of the former.

This particular arrangement is now to be improved by the introduction of a subject, to be called Mathematical Literacy, which will be a compulsory alternative to Mathematics in the grades 10 to 12 curricula. This means that the 40% odd of matriculants which avoided taking mathematics at any level will now be compelled to take Mathematical Literacy from grades 10 to 12 inclusive. This is a momentous step towards improving the level of numeracy in the school-leaving population, and a crucial step towards ameliorating the “poverty of numeracy” Minister Manuel spoke of, and one on which we can fruitfully build. The Minister of Education and her Department are to be congratulated on taking this bold modernising step.

It is common cause that no person can be regarded as properly educated without having the basic skills required to interpret statistics and understand numerical facts and associated data. Yet, at least 40% of our matriculants have completed their secondary school education with this lack. Many of these would have gone on to university and entered their professional lives in this condition. Imagine what happens if some of these become journalists. We obviously have many journalists who have had no statistical education whatsoever and who are completely lacking in numerical skills.

The result is both an inadequately informed public, and a public with a very low opinion of statistics because of the weak arguments often put forward in the media on the basis of inadequate or flawed statistics. I am sure most of us have had experience of real clangers in the media; it's a pity we don't have a scrapbook of them which we can use as evidence to convince the Heads of Schools of Journalism that their students need instruction in Mathematical and Statistical Literacy with the emphasis on

their being able to critically appraise the common sense or lack thereof in the numerical content of their reports.

Here is an example of a recent *faux pas* in the Business Report, a publication in which one would expect to find better-than-average numerical/statistical reporting.

It is a complaint from a reader about straight-forward arithmetical errors; what is amusing is the Editor's response: Two of the three errors were ours, he says, and the third was the company's. It seems both the reporter and the company's communications department did not care much for numerical accuracy.

The proposed inclusion of Mathematical Literacy, which contains a fair amount of statistics, as a fundamental requirement in the Further Education and Training curriculum is an essential step towards alleviating the poverty of numeracy in our country. Statistics Departments at Universities and other tertiary educational institutions should make use of the opportunity this affords them to generate the "love for numbers and a broad statistical literacy in society" Minister Manuel spoke of, through the introduction of follow-up courses which would be accessible to ALL undergraduates, and indeed compulsory for some; such as all Social Sciences and Journalism students for example. SASA's Education Committee should be tasked with using its collective wisdom to draft suitable syllabuses which interested Departments at tertiary educational institutions could use for proposed courses at their institutions.

“The **third** challenge,” Minister Manuel said, “is the absence of sufficient discourse on methodology and outcomes. At a distance I observe how easily positions are polarised and entrenched. I have seen this with data sets like causes of death, road accidents, crime and HIV and AIDS. Statisticians become the analysts. The value of statistics is lost. I truly hope SASA, and this conference, in particular, will deal with this illusion of certainty which parades as professional confidence.”

From the Minister’s comment that there is an absence of sufficient discourse on methodology, I must infer that he hasn’t met up with the Bayesians yet.... .they’d make him change his mind on that one!

Seriously, human nature being what it is, there will always be differences of opinion on methodology, and consequently also on outcomes. Pardon the string of clichés, but, as the sayings go: so many men, so many minds; and one should also bear in mind that: figures don’t lie....it’s liars that figure; and like the poor, the liars will always be with us.

As for the “illusion of certainty which parades as professional confidence”, the illusion is seen for what it is through educated eyes; that is, through broad statistical literacy the illusion will be understood for what it is, and the paraded professional confidence be seen as bravado at best.

The proposed Mathematical Literacy syllabuses for Grades 11 and 12 state that the learner will have attained the required outcomes when he or she is able to, amongst other things:

- ❖ manipulate data in different ways to justify opposing conclusions and critically evaluate statistically-based arguments, describe the use and misuse of statistics in society, and make well-justified recommendations.

In short, the learners will be taught how to lie with statistics, and hence to always be on their guard. I'm sure we're doing this with our graduates too.

Minister Manuel's **fourth** and final challenge is “that we try and pace ourselves relative to our capacity; deepening the skills base whilst engaging in a process to determine how much we can undertake reasonably”.

This is an obviously sensible thing to do in any organisation, so why would Minister Manuel have mentioned it?

Those 80 000 statisticians Mbulaheni was talking about in his presidential address last year; ... I cannot help wondering whether an impish Trevor Manuel was using that occasion and this forum to signal StatsSA not to expect those 80 000 statisticians anytime soon.

Ladies and gentlemen, we live in a rapidly changing and globalising world, and if we are to remain a non-trivial participant in the activities of this changing world, it is imperative that our citizenry be educated and otherwise equipped to rise to the challenges and demands they will face in their working lives.

Comparative statistics on indicators such as the level of numeracy of learners, levels of unemployment, distribution pattern of incomes, crime

levels, ease of doing business, levels of corruption, etc. do not flatter us. However we are not bottom of the pile on any of these measures, and we have the intellectual capacity and the political will to improve our standing in the world.

The SASA will continue to contribute in every way it can to the improvement of those attributes of the citizenry at large, and statisticians in particular, which will make our country and the world a better place.