

# **Data and Methods Needs: Regional Perspective from Africa**

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Perspectives on Africa as regards data and methods needs poses questions as wide as demand for and use of data, quality of data, who collects, compiles and distributes this for consumption, what are the administrative, legal, resourcing and institutional prescripts for leading and managing the system. More importantly what the implications for these are in the advent of data revolution.

## **Framing the question**

Historically and until recently, data for undertaking studies in population dynamics in Africa has been derived from censuses of the population. In contradistinction other jurisdictions of the world especially the Scandinavian countries, administrative records are the basis for the study of population dynamics, legal prescripts, policy directives plans and service provision to citizenry. In Africa particularly very little use of administrative data is known to have been applied for demographic analysis or projections save in half a dozen or so countries where these sources are applied in combination with census data, if and when the two sources exists. Any Masters or PhD thesis in population studies for any African study, starts with a disclaimer on the adequacy of frequency and quality of data upon which projections are to be made. The question of Data and Methods Needs becomes relevant and is very appropriate to ponder. This is given the new world of the 4IR that is driven significantly by data revolution and new technological advances that bear relevance to digitalized integration of census operations and prospects for self-notification in the arena of civil registration and vital statistics. More specifically in census applications, the integration of remote sensing, navigation of enumeration areas and digital recording of individuals have improved the management and speed with which census results can be churned. In the arena of civil registration and vital statistics prospects of digitizing and digitalisation have made it possible to self-notify births and deaths included causes of the latter. However, the advances in data revolution whilst generally beneficial as will be discussed, they have been challenging particularly in Africa more than anywhere else on the globe. Is Africa going to be left behind or will she leapfrog. The input serves to provide a historical account on the challenges of data, its sources and methodological imponderables, initiatives Africa set in motion to address some these challenges and perspectives and prospects on the future.

## **Background**

The question of how population information has been collated and applied is part of the political economy of countries. It occupies a supreme spot and sphere of influence as regards how countries evolved and developed to the stage they are in. The sources

of population data are now rapidly evolving and thus are the methods. How then do countries in Africa cope with such changes? Margo J. Anderson provides some fascinating historical account of census taking across the world. So before we get to the topic, let us explore the census landscape over the last six thousand years.

A historical account by Margo J. Anderson researched and gleaned from records, suggests that “from Babylon to China to India to Russia, governments needed to tax people and conscript soldiers, so they counted men. The practice of using data from a census to inform and direct policy—How much can the government spend on new roads or ships? Will the military have enough resources for war?—still exists today.”

The collation of population statistics from the time of Yu the Great dates as far back as at least 2000 years before the birth of Christ. This practice carried on up to 2 A.D. during the Western Han Dynasty. It was however disrupted by the years of the Long March that ended in 1953. Babylon shows that the count there was as early as 3800 BC. They counted livestock and quantities of butter, honey, milk, wool, and vegetables

On the African continent, Egypt shows that she undertook censuses as far back as 4000 BC. South Africa started undertaking censuses with the arrival of the colonizing Europeans. The effort was confined to the colonies with the first such count taking place in the Cape Colony in 1865. Side by side with these, chieftaincy and kingdoms including parish based records reflect the existence of civil registers in many parts of Africa albeit disjointed and hardly represented a system to survive and live up to the practice in Scandinavia. So of necessity censuses had remained the mainstay of population based statistics in the world outside Scandinavia including Africa, although the challenges of quality remains sore in Africa. Not only is the matter of quality but the frequency with which censuses are undertaken on the continent has always been a perennial matter of professional concern. Adding to this has been the matter of application or use of data more generally and census data specifically.

## **The 2020 Round of Census**

The 2020 Round of Censuses began in 2015 and ends in 2024. This is five years from now. How will Africa perform in this decade?

Over the four decades from 1980 to 2020, several changes in methods of collection, processing, storage, retrieval and use of data have occurred. This includes citizenry's compliance with census taking. The advent of mobility across time and space induced by transportation systems and handheld devices has made physical access to people who are to be enumerated through a census difficult if not impossible in instances. The demands for privacy and impositions of inaccessibility because of security concerns have further compounded the ability to access both the dwellings and their contents - the people. On the other hand very few countries in Africa have ever bothered to undertake a post-enumeration survey to validate the extent of undercount and attendant adjustments to the data that need to be made. So the nature of problems impacting on sources and methods as we knew them are massive, almost making the undertaking of censuses an impossible task.

Africa's historical performance to comply with censuses is not dressed in glory and the situation appear to be poised for deterioration in 2020. Across the four rounds of censuses from the 1990 Round, we witnessed the highest participation in a census in the 2010 Round of Censuses. In this period there was the lowest number of countries that did not participate. Amongst countries that appeared in the census roster this time around were habitual absentees like Angola and Sudan notably. Not to be outshined crisis and violence ridden Somalia also ensured that at the very least it would run a large scale survey in this round. The performance of African countries that failed to participate in the 2010 Round of Censuses were half those that did not in the 2000 Round and three quarters of those that failed to do so in the 90s Round. In the Twenty Ten Round a rapidly deteriorating situation regarding the collection, collation and compilation of statistics for population dynamics was halted decisively.

1985-1994	1995-2004	2005-2014	2015-2024
12	18	9	14 out of 25 failed to undertake the census on date scheduled

In their recent Committee of Directors General meeting held in Tunis in November, on the agenda item on the 2020 Round of Censuses, the Committee noted its concern that the record reached in the 2010 Round of Censuses may not be reached. Notably 14 out of the 25 countries scheduled to undertake a census up to 2019 have not done so yet. Ethiopia which had already procured equipment of handheld devices has not been able to undertake a census amidst up to three postponements to undertake the census to date. If the current trend persists in the 2020 Round of Censuses, the conclusion that can be drawn is that not only the sources but methods regarding the compilation of population numbers are likely to be compromised. The prospects thus are dim. The question to be posed is what changed the dial in 2010? Can it be reset? Or was the display of compliance a typical African flash in the pan syndrome.

### **The 2010 Round what can we learn**

A number of factors drove the 2010 performance. Its date stamp of what became the Africa Symposium for Statistical Development (ASSD) is January 2006. But its genesis is 1997 after Mark Orkin, the then head of Statistics South Africa and I had an intense discussion on censuses in SADC.

**The SADC connection:** I immediately, as head of demography and population statistics, placed the item on the agenda of SADC statistics committee where we deliberated not only on census themes for SADC but became so ambitious that we contemplated a single census night for SADC – how naïve could we be. It was not a measure of naiveté that was at stake but one of how far we were prepared to go to achieve our goal and I was the coordinator. A common SADC questionnaire for the census was in fact achieved for the 2000 Round and a peer movement was established to encourage the DRC, Angola and Madagascar to undertake a census in the 2000 Round. Two of these, Angola and Madagascar ultimately heeded the call and ran their censuses in the 2010 and 2020 Round of censuses respectively.

***The ACAP connection:*** The second stream that flowed around the same time was the establishment of the African Census Analysis Project (ACAP) that I hosted was established and launched in South Africa in 1998. The technical effort of ACAP to read and archive census data as well as enable scholarship at the University of Pennsylvania was a feat. This is especially when the world had very little hope for retrieving data from old tapes that were rotting or in a safe in an African statistical office. The record shows that historical census data for countries was carefully stitched together and accompanied by doctoral thesis by African scholars. This brought what had been dead data to life for many an African censuses – thanks to the efforts of Tukufu Zuberi who sloughed it for African scholarship for two decades and retrieved censuses of almost all African countries for one or the other census period.

***The ASSD connection:*** The ASSD became a brand name of African effort and the success of the 2010 Round of Censuses is directly attributed to the ASSD. Birthed in January 2006 in Cape Town, its genesis are traced to Yaoundé in November of 2005 where African countries, in particular under the leadership of Afristat, gave consideration for a Unilateral Declaration of Independence from UNECA because we all agreed that UNECA had betrayed Africa on matters statistics more generally and censuses in particular. But we were and are UNECA. And thus the notion of rejecting ourselves from ourselves was inconceivable. I was given the nod to address this with my political principals in South Africa. The then Minister Trevor Manuel and the newly appointed executive secretary of UNECA, Abdoulaye Janneh convened us in January 2006 where we were given marching orders to revive statistics at UNECA. The African Symposium for Statistical Development (ASSD) was born. I had the honor to chair the ASSD up to my retirement. Amongst the ASSD achievements was the revival and creation of the Centre for Statistics at the ECA with its first director being Prof Ben Kyeregera who within two years left a living legacy for African statistics. Second we had the highest ever participation in censuses in Africa, third we introduced the ISibalo Young African Statisticians (IYAS) movement who would undergird the African statisticians' growth strategy and fourth we put the civil registration and vital statistics on the agenda and infused the two yearly CRVS ministerial meetings to supervise the Africa Programme for Accelerated Initiative on Civil Registration and Vital Statistics (APAI-CRVS).

***The SHaSA connection:*** We had just restored statistics at UNECA, AfDB continued to play a crucial technical and funding role and the ASSD was the catalyst for statistics. The African Union was clear that it needed a lead role in statistics. The Strategy for Harmonisation of Statistics in Africa, the (SHaSA) was born. Shasa is a KhoiSan word for deep fresh cooling water. So how appropriate and fitting was the acronym for the Lagos Plan of Action and Agenda 2063. These programmes can only succeed if they drink the SHaSA - the deep fresh cooling water that should quench the African thirst for development.

The SHaSA is a continent-wide effort - jointly developed by the African Heads of National statistics Offices (NSO's), the African Union Commission (AUC), African Development Bank (AfDB) and United Nations Economic Commission for Africa (UNECA) - that directly responds to the measurement challenges in the African integration agenda, particularly the Minimum Integration Programme (MIP), and was adopted by the African Heads of State and Government in 2010.

The vision of the African Statistics System (ASS) is to generate timely, reliable and harmonised statistical information, covering all aspects of political, economic, social and cultural integration for Africa. It is anchored on four strategic pillars and will be achieved through the establishment of a strong and operational ASS and actualisation of the African statistical renaissance. The four strategic themes are:

- (i) To produce quality statistics for Africa;
- (ii) To coordinate the production of quality statistics for Africa;
- (iii) To build sustainable institutional capacity in the ASS; and
- (iv) To promote a culture of quality decision-making.

What then is our wish for the SHaSA and STATAFRIC? The program should optimize the Africa count program in 2020 Round of Censuses, it should propel and guard the CRVS jealously from being hijacked by nefarious interests, it should focus on measurement of poverty and this from a multidimensional perspective. STATAFRIC should be the ears and eyes through which the technical work of national statisticians, the technical work through the ECA and the AfDB can reach the political leadership of Africa to implement Agenda 2063 and ACFTA through the international comparisons programme (ICP). May STATAFRIC be that institution that becomes the salt of African politics. But for SHaSA to succeed there are two fundamentals that have to occur particularly given the grave challenges associated with:

**Resource mobilization and**

**Advance in technology.**

## **Technology Strategy**

The technology strategy starts and ends with the core business, in this case the African Statistics System. This chapter aims to define the technology vision and what needs to be achieved in support of the SHaSA.

### **Vision**

Statistics powered by innovative technologies.

### **Mission**

To transform statistics, knowledge and understanding through enabling technology

### **Overall strategic goal and thrust**

The overall goal is to increase efficiency and use of official statistics on the continent for evidence based decision making, monitoring and evaluation through technology driven statistical processes.

## **Strategic Outcomes**

The following four strategic outcomes have been defined that the strategy wishes to achieve over the medium-long-term. These outcomes are aligned to the strategic pillars in the SHaSA.

### **Strategic Outcome 1: Innovation driven statistical system delivering quality statistics**

*Goal statement:* Statistical products and services are improved and expanded to better meet planning, monitoring, and evaluation needs at a national, continental and internal level through innovation. Agile technologies are deployed at both continental and national levels enabling better knowledge sharing and decision making.

*Key indicators for success are:*

- African countries deploying modern technologies across the statistics value chain generating timely information for use;
- 80% African countries using digital data collection methodologies for the 2020 round of population and housing censuses.
- African countries adopting standardised processes to harmonise outputs from administrative records;
- 80% African countries using technology to transform Civil Registration administrative records into official vital statistics
- Researched methodologies on the use of alternative data sources for official statistics (big data) to address the information gap on the continent; and
- African countries, with the support of regional organisations, have developed innovative applications to support data integration, research and spatial analysis.

### **Strategic Outcome 2: Coordination, collaboration and cooperation among partners**

*Goal statement:* Coordination and collaboration mechanisms are established at international, continental and national levels for holistic technology development on the African continent. Africa participates in global initiatives and debates on enabling technologies for statistics systems. African countries are collaborating and supporting each other to roll out modern technology in Africa.

*Key indicators for success are:*

- Africa, a global player in a technology driven statistics system;
- Technical ICT working group leading and sharing information on enabling technology for statistics;
- 80% African countries established ICT working groups for the NSS; and
- Centres of Reference established and supported countries to modernise statistics systems.

### **Strategic Outcome 3: Capable technology infrastructure**

*Goal statement:* Legislative frameworks enable efficiency of statistical systems through technology. Africa deploys platforms for knowledge management to turn existing, fragmented technologies and resources into accessible and stable services that can better benefit all NSOs and any other statistical producers. An enterprise-wide ICT infrastructure is supporting statistical production in the NSS.

*Key indicators for success are:*

- African countries have amended statistical legislation taking into account the impact of technology
- 80% of African countries have included innovation through technology in the NSDS;
- 60% of African countries have designed and implemented an end-to-end ICT infrastructure allowing integration among partners in the NSS; and
- At least one continental platform created to enable a better knowledge sharing environment.

### **Strategic Outcome 4: Technologically competent statistical community**

*Goal statement:* The continent has created a pool of technical skills through the ICT capacity development programme as well as the African institute and other private technology institutions. African countries embrace a culture of change adopting new and innovative technology.

*Key indicators for success are:*

- Countries audit report on current ICT skills and needs matching emerging technologies;
- The Statistics Training Institute have established an ICT development programme; and
- All African countries have included ICT skills development in the NSDS;
- All African countries have basic ICT skills to support technology development.

#### **a) Strategic Risks**

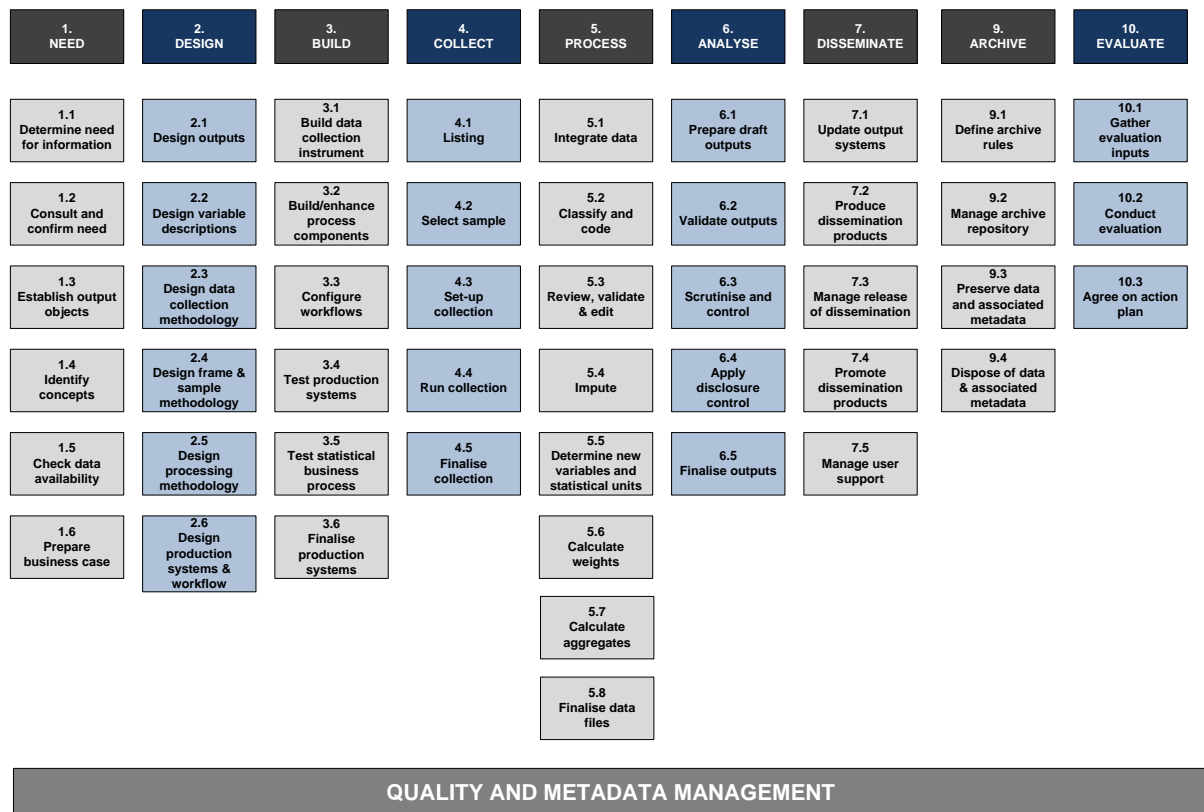
The following strategic risks have been identified. Mitigating strategies must be developed to address these risks:

- Critical information infrastructure breakdown (systemic failures)
  - Telecom Infrastructure in countries
- Data fraud and theft (exploitation of private data )

- The risk of large-scale cyber attacks
- Governance of emerging technologies
- Sustainability of Private sector involvement
- Security and confidentiality

The Generic Statistical Business Process model adopted by the UNSC is outlined below:

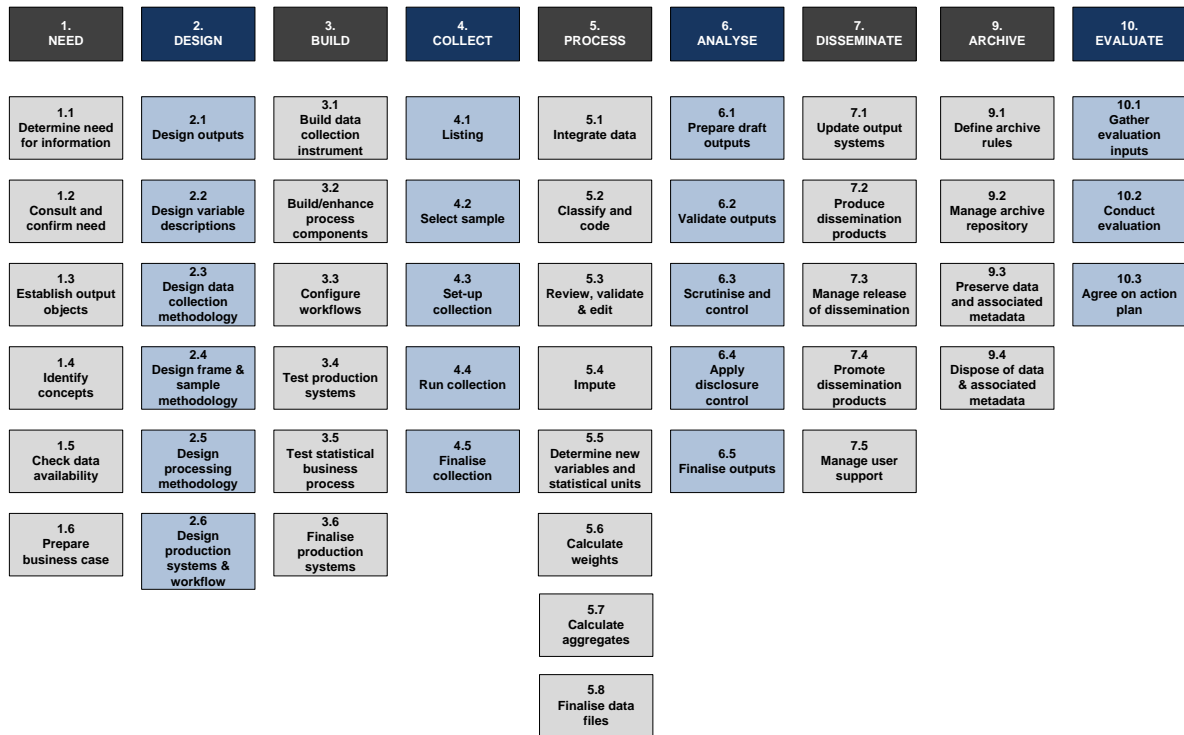
## Statistical Production Process



The Generic Statistical Business Process model adopted by the UNSC is outlined below:



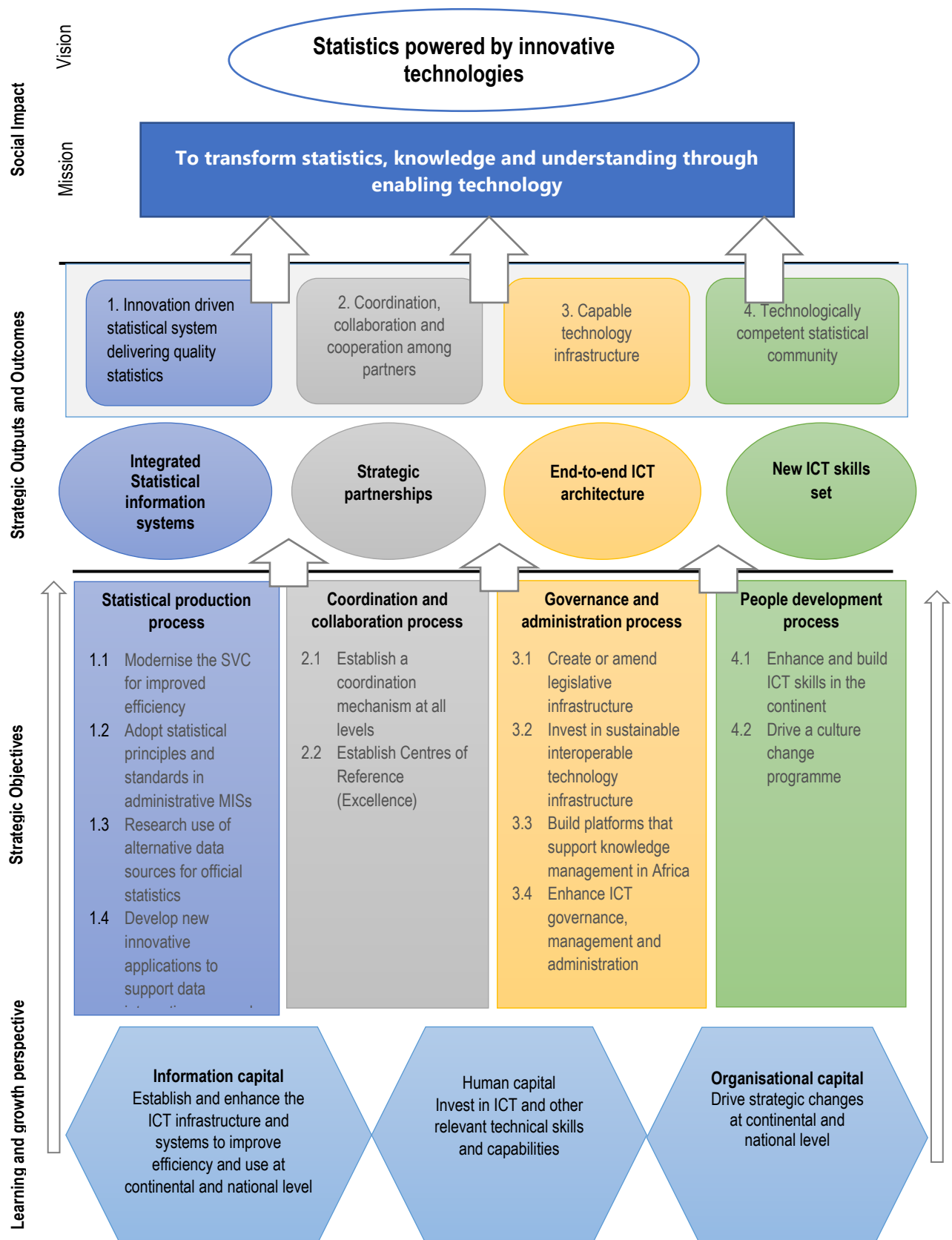
# Statistical Production Process



QUALITY AND METADATA MANAGEMENT

## Strategy map

Below is a strategy map summarising the strategy for easy consumption.



# Resource mobilisation Strategy

## Background & Rationale

This exercise is undertaken against the backdrop of an explosion of data availability and an unprecedented demand for quality statistics at national, continental and global levels. On the other hand, national statistics systems (NSSs) across the continent and indeed across the world are struggling to balance this demand through the provision of an adequate supply of quality statistics. To further confound the issue, countries on the continent are at different levels of statistical readiness (development) to adequately respond to the challenge of data provision. This is true for both national statistics offices (NSOs) as well as the wider NSS within countries.

This increased demand for statistics has led to an increased demand for funds to cater for the expanding needs, and it is envisaged that this pressure will only intensify with time. Given the precarious financial position of most countries across the world, cost effective and sustainable ways have to be found to ensure that NSSs across Africa are appropriately funded to ensure its development to be able to cater to individual country's growing statistical needs. To this end innovation, and in particular utilisation of appropriate technologies, will form the backbone of initiatives towards improvements in the statistical value chain processes.

The basic assumption underlying this exercise is the accuracy of the funding quantum arrived at in the SHaSA costing model. Therefore all aspects of the statistical system infrastructure necessary to provide statistics according to individual countries' mandates, would be taken care of through the final cost arrived at during the costing exercise. Thus the strategy is predicated on the acceptance that an annual budget of US\$ 5 billion would be required to provide adequate statistical capacity within the continents' National Statistics Systems to deliver on a minimum set of statistics.

The US\$5 billion annual cost associated with producing this minimum set of statistics necessary for Africa to report on its development progress includes the amounts that individual countries currently provide towards the budgets of statistics production within the various NSSs across the continent. It is furthermore assumed that approximately 80% of the overall amount is currently funded through budgetary allocations within individual countries and that the remaining 20% is obtained through other means. As can be expected there are significant variations from this position across the continent. It remains to be seen how future increases in demand for quality statistics across the statistical system affects these proportions. The funding model does not take into consideration possible savings, and thus possible reduction in the overall costs, that the utilisation of technological advances may have over the medium to long term.

It should furthermore be noted right at the outset that although the strategy is meant for all national statistics systems (NSSs) across Africa, the situation described below is entirely premised on the experiences of national statistics offices (NSOs). However, the funding requirements that form the basis of this strategy was arrived at by estimating the cost associated with the entire statistics system requirements and not only those associated with NSOs.

## **Where do we want to be?**

This chapter aims to define the funding vision and what we wish to achieve in support of the SHaSA.

### **Vision**

Statistics production financed mainly through sustainable means

### **Mission**

To effectively fund our statistical programmes in pursuance of meeting national, continental and global data needs through integration of a variety of sources.

### **Overall strategic goal and thrust**

The overall goal is to increase Africa's commitment to increased funding of its statistical development in pursuance of a prosperous Africa, while at the same time systematically moving towards a sustainable funding regime in fulfilment of its financial commitments to realise efficient and effective statistical systems in Africa.

### **Strategic Outcomes**

The following two strategic outcomes have been defined that the strategy wishes to achieve over the medium-term. These outcomes are aligned to the overall SHaSA requirements and the SHaSA Technology Strategy.

#### **Strategic Outcome 1: Africa funding a greater part of its national statistical system activities through own resources**

*Goal statement:* African governments commit to progressively move towards improved funding of national statistical systems that will ensure adequate quality data for monitoring and evaluation and reporting at national, continental and international level. This will ensure that countries dependent on donor funding to undertake activities related to its statistical programme outputs systematically reduces such dependency in line with resolution ... (on donor dependence elimination).

*Key indicators for success are:*

- African governments committed to improved funding of their national statistics systems in accordance with clearly articulated national strategies for the development of Statistics (NSDSs);
- Well-coordinated, yet reduced, donor dependence especially in terms of the production of core statistical outputs;
- Local funding opportunities, additional to national budgetary allocations, investigated and mobilised;

- Individual countries have functional NSDSs in place that drive their statistics programmes.
- Individual countries progressively increased their budgetary allocation to statistics producers within a clear timeframe;
- Budgetary allocations targeted towards the funding of core statistical outputs for immediate attention;
- Africa adopted an intra-Africa support mechanism for technology sharing and capacity building;

## **Strategic Outcome 2: Credible fund mobilisation and implementation mechanism**

*Goal statement:* Fund mobilisation and disbursement for Africa by Africa.

*Key indicators for success are:*

- Pan African institutions empowered to undertake their respective roles;
- Transparent and accountable mobilisation and implementation mechanisms established;
- Fund mobilisation and disbursement structures guided by African statistical development imperatives;
- Clear transparent governance structures established to oversee the mobilisation and administration of funds.

## **Strategic Outcome 3: Member countries take centre stage in funding endeavours**

*Key indicators for success are:*

- Member Countries empowered to play oversight role in the operation of the fund mobilisation structure as well as the administration of the Trust Fund;
- Government support through Ministers of Finance, planning and Economy in place.
- African NSOs actively involved in the funding prioritisation on the continent; .

## **Strategic Outcome 4: Sustainability of funding paramount**

*Goal statement:* The continent has developed a funding regime that ensures statistical development without unnecessary uncertainties. External funding is closely controlled in line with set guidelines and protocols and is led by the African Union Commission supported by the African Development Bank.

*Key indicators for success are:*

- Clear understanding of individual countries' statistical development needs and priorities exist;
- Periodic assessment of changing needs in line with technological and other innovative advancements undertaken;
- Country NSDSs clearly aligned towards sustainable funding regimes;

## Strategic Risks

The following strategic risks have been identified. Mitigating strategies must be developed to address these risks:

- Lack of a coordinated resource mobilisation mechanism for the continent based on member states' needs and emerging statistical needs;
- Lack of government commitment in some countries towards statistics production funding; and
- Sustainability of involvement in, and commitment to, possible Public-Private sector partnerships by all stakeholders.

Diagram showing linkages at the strategic level

