Strengthening the quality and use of data in Africa

1   Introduction

The aim of this paper is to provide some background on information systems for the Commission for Africa. It highlights the poor quality of current data available in most parts of Sub-Saharan Africa, discusses the role of information in development, and proposes some recommendations for action for consideration by the Commission for Africa.

In this paper the terms 'data' and 'information' refer to any kind of qualitative and quantitative data on national or district level outputs and outcomes. This includes government and non-government data, censuses, surveys and administrative systems, and representative focus group and participatory studies. Similarly the terms statistical, information and data 'system' refer to the processes which produce and disseminate all these different data sources.

2   The case for better information

Information can be a valuable driver of change. It shines a light on any society. It can foster awareness and understanding of social injustices, and it can provide evidence for people both within and outside government to argue for, to decide on, and to implement successful reforms. Information is the lifeblood of transparent, informed and open societies - fundamental aspects of democratic and well-managed states.

The quality of national data systems in most Sub-Saharan African countries is dismal. Important social and economic information is often not available or of inadequate quality. Even where good data do exist they are often poorly disseminated and used. Better availability and use of data in Africa can achieve impact in at least three areas:

- *Policy making*: better government decisions and improved effectiveness in their implementation

- *Political accountability*: more effective means for citizens to hold their governments to account

- *External investment*: create a more transparent environment which attracts private companies and development agencies

In recent years the increasing focus on monitoring MDGs, PRSPs and IDA and Managing for Development Results has led the development community to recognise the urgent need for better development information. Numerous governments and organisations have made commitments and put forward recommendations to address this need, both at national and international level, but many are yet to be implemented. The Commission for Africa could help take this forward by promoting the issues of most relevance to Africa:

- Improve data collection and analysis through the following activities:

    - Develop comprehensive, adequately funded, National Statistical Development Strategies so countries have comprehensive frameworks and action plans to improve, prioritise and coordinate statistical activities. This could be done through supporting PARIS21, the IMF's General Data Dissemination System, the WB

Trust Fund for Statistical Capacity building and the World Bank's new lending instrument called STATCAP. The cost of strengthening surveys and statistical systems is estimated to be $54 million plus an additional $689 million will be needed for the 2010 censuses and a further $108 million to strengthen routine administrative data. Part of this work is already funded under existing projects but much of it would require new funding.

o Improve external validation and accreditation of national data systems, potentially through supporting NEPAD. To strengthen NEPAD to assist with the peer review of statistics would cost around $3 million plus and additional $2 million would be neede to operationalise the IMF's GDDS and SDDS frameworks across Sub-Saharan Africa. Further work is also needed to support community monitoring. Support is needed to create a network of regional centres of excellence which can be used for capacity building. They would have a role in assisting countries with community monitoring as well as lesson learning and training across the region. These centres could be either research institutes or NGOs and would cost around $2 million each to help them encompass this new role. There would also be additional costs in individual countries although part of this may already be being funded under other projects. This could be around $1 million per country which would be $56 million across the region.

o Promote the demand for the use of analysis through building human resource and information technology capacity to develop timely relevant analyses for policy makers. This could be done through supporting the Africa Household Survey Network and supporting SADC in its role in developing famine early warning systems as well as replicating the role of SADC in early warning systems to also cover the rest of Sub-Saharan Africa. To strengthen the role of SADC and to replicate its work in the rest of the region would be around $5 million. Further work, costing around $3 million, is also needed to strengthen the Africa Household Survey Databank as well to support the UNDP in their Devinfo tool for analysing data.

o Improve donor coordination around monitoring and reporting. No additional funding is required for donor coordination.

- Create a supporting IT infrastructure through developing:

  o An enabling Regulatory Framework for software and telecommunications. This would involve the cost of creating an enabling telecommunications framework, through specialised consultancies to help in redrafting legislation. This could cost up to $1 million but the cost would depend on how much work was needed. The cost of waiving license fees would be a cost saving for developing countries rather than an additional cost although there would be some initial costs in negotiation.

  o Appropriate IT infrastructure to support the collection and analysis of data. The cost of doubling the number of computers currently used in Sub-Saharan Africa as well as internet access points,

> mobile telephones and PDAs would be $6 billion for the computers plus $10 million for internet access points. The use of mobile telephones and PDAs could also be increased which could cost around the same amount as the cost of the computers.
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> o Obtain the appropriate application tools needed to support the work and provide the training required to use them – this will include increasing the use of new analytical and dissemination tools such as poverty and service availability mapping. The cost of obtaining appropriate application tools as well as the training required would be upwards of $5 million.

3 The current situation – poor quality information poorly used

Many reports and studies have pointed out the poor availability, quality and use of data, particularly in Africa. Just a few selected examples are highlighted below.

The summary of the 2003 Human Development Report noted that "sound monitoring and evaluation will require the international community to dramatically increase investments in surveys and data collection. For too many (*Millennium Development)* Goals in too many countries, data are insufficient for proper quantitative assessments".

A recent WB IDA report highlighted poor data quality as one of the lessons from monitoring IDA 13: "a paucity of data on core development outcomes limits the choice of indicators". It went on to report that "consultations with IDA borrowers have consistently indicated that countries welcome international efforts to develop comparable indicators for core development outcomes and improve basic data availability and quality. They also encourage development agencies to harmonize results around national monitoring and evaluation systems for PRS implementation." Increasing support for statistical capacity building was one of the four recommendations for IDA14. (World Bank, 2004)

A finding of the recent WB PRSP evaluation was that although there was more attention to monitoring systems as a result of PRSPs, national monitoring systems were not yet capable of delivering the information needed. "The PRS process has begun to orient stakeholders towards a results focus, though the development of country-specific indicators and monitoring systems to track them is still at a preliminary stage in most countries." (OED, 2004). Developing effective monitoring and evaluation systems was one of the four key areas for improvement in the PRS approach identified in the recent WB response to this review.

The Marrakech Memorandum, which came out of the 2nd World Bank international roundtable on Managing for Development Results, included this statement: "A global effort is needed to support countries in generating reliable and timely data to assess progress towards the MDGs and other country goals, and to strengthen international reporting mechanisms. A global partnership is also essential to reduce the burden on countries of multiple, agency-driven reporting requirements and monitoring and evaluation systems." This was endorsed by all the Development Banks and the DAC.

An analysis of the data reported in international data sets illustrates the extent of the problem. This is not a complete reflection of the true situation, as data yet to reach international sources are often available in country, but it gives a broad

indication of data quality. Looking at the data available from 1998 onwards in the 2004 World Development Indicators CD-Rom:

- 75% of the 55 countries in Africa have no data on national poverty rates

- 20% of countries have no data on the proportion of school age children in school

- 30% have no data on the proportion of children completing four years of schooling

- 25% have no information on under-5 malnutrition

- Over 85% have no data on hospital beds per 1,000 people

- Some of the most populous developing countries - China, India, Indonesia, Brazil, Pakistan, Bangladesh and Nigeria - do not have complete vital registration systems.

4   Why this matters

Accurate, well-disseminated information has the potential to change societies. A good national information system has the potential to help address problems: to improve policies, mobilise and strengthen civil society and communities, and attract private companies and donors. It can help facilitate real change.

There are many examples of the damage which can result from poor or inadequate information: bad policy decisions which could have been averted if they had been based on good data and analysis; ineffective civil society lobbying hampered by poor evidence; private companies and donors deterred from investing in developing countries because of a lack of trust in the economic environment (many investors will say that it is the lack of knowledge of the true economic situation, at least as much as the actual situation itself which is the deterrent to investing).

One example is the 2002 famine in Malawi which the evidence suggests could have been averted, or at least diminished, if better data had been available (see Box 1).

> **Box 1: Could better statistics have prevented the Malawi famine?**
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> Between February and April 2002 hundreds, and possibly even thousands, of Malawians died from famine. The causes of this crisis were clearly complex, but poor quality estimates of crop production played a role. In early 2001 official statistics were severely overestimating crop production, delaying action by the international community. Donors actually declined government requests for support in September 2001, believing any shortfall in maize would be more than compensated by reserves and a reasonable harvest of cassava and sweet potatoes. A state of emergency was not declared until February 2002, by when it was too late. An ActionAid commissioned study concluded that the "optimistic over-estimate (of crop production) delayed predictions of a food emergency, even though shortages of maize and other food crops began to appear in the market and prices began spiralling out of control" (Devereux, 2002).
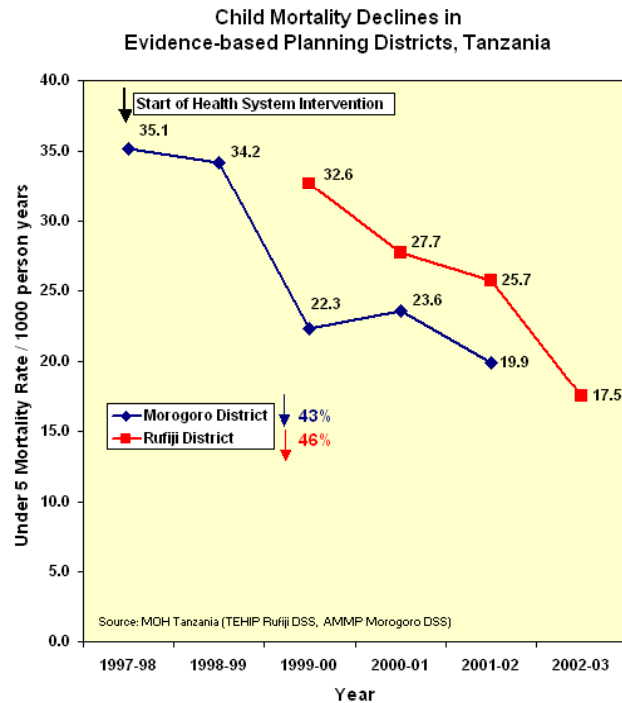>
> Further Information: http://www.eldis.org/static/DOC9912.htm

This is a dramatic example of the potential impact of poor data. Although the link between data and poverty is not usually as clear-cut as this, a further example at a more local level also highlights the importance of having access to up-to-date,

robust information to inform decisions. Box 2 describes how the ready availability of relevant demographic data enabled the better targeting of effective health interventions.

Box 2: How good data helped improve child mortality in Tanzania

In the Morogoro District of Tanzania the Ministry of Health operates a sentinel surveillance system to monitor key demographic indicators such as mortality and morbidity. These data were used to set priorities and allocate health care resources. Following the evidence presented in the data, health expenditure for the district was increased by $0.86 per head and better targeted at the key diseases. As a consequence child mortality dropped by 43% since 1997-8. According to the District Medical Officer: "Now we can prioritise comfortably because we have concrete, reliable information from the public at large." (IDRC, 2003). This system is only in place in 2 of Tanzania's 129 districts. The challenge now is to replicate this nationally and elsewhere.

Further Information: http://web.idrc.ca

Child Mortality Declines in Evidence-based Planning Districts, Tanzania

Start of Health System Intervention

Under 5 Mortality Rate / 1000 person years

- Morogoro District: 35.1, 34.2, 22.3, 23.6, 19.9 — 43%
- Rufiji District: 32.6, 27.7, 25.7, 17.5 — 46%

Years: 1997-98, 1998-99, 1999-00, 2000-01, 2001-02, 2002-03

Source: MOH Tanzania (TEHIP Rufiji DSS, AMMP Morogoro DSS)

Making decisions on the basis of poor data invariably results in resources being poorly targeted and therefore wasted. One problem with this situation is that the 'cost' of poor information cannot be known at the time, but only in retrospect when the damage has been done.

A particular problem has been noted in the area of environmental statistics which suffer from a paucity of data. Water resources are a key area of vulnerability for many African countries yet very little accurate, timely data is available.

The increasing focus on supporting nationally led development programmes has further emphasised the critical role of national information systems. The traditional "project based" approach to development, where donors directly established and supported services such as schools and hospitals in developing countries, required comparatively less effort to monitor as the beneficiaries of these projects were easy to identify. However, with donors more and more supporting national governments to develop their own services, a sophisticated means of monitoring and evaluation requiring good national information systems is needed. It is impossible to develop, manage and monitor comprehensive policies to achieve the MDGs and PRSPs without an effective national information system.

The Mexico exchange rate crisis (Box 3) provides an economic example of the potential effects of poor quality financial and economic data. This and subsequent major economic setbacks have made international investors more wary and risk-

averse when considering investing in new environments in the absence of proper financial information.

> ### Box 3: Did poor economic data play a role in the Mexico exchange rate crisis?
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> In 1995 Mexico experienced a sharp depreciation of the peso. This had serious effects on the Mexican economy and made investors increasingly cautious about investing in other emerging markets. There were many factors which contributed to this, but again poor data played a role. According to the Manager Director of the IMF at the time "the experience underscored the importance of having information that is as up to date as possible. The Fund's ability to pinpoint impending problems in member countries … depends critically on the availability of accurate, comprehensive economic and financial data." (Camdessus, 1995). The crisis led the IMF to introduce a new international set of standards for economic and financial data – the Special Data Dissemination System – for countries wishing to access international capital markets. Only 2 African countries have data systems which meet this standard and are currently members.
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> Further Information:http://www.frbatlanta.org/filelegacydocs/J_whi811.pdf

For Africa to attract financial investment in this context, it needs to demonstrate that it has a stable macro-economic and financial climate. This requires reliable and regular economic information to support sound economic decision-making and provide early warning signals.

The final example in Box 4 is a historic one, where data showing the appalling extents of social deprivation in the areas of the UK helped in galvanising political commitment behind policies of social reform.

> ### Box 4: The role of information in reforming UK society
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> In the 1850's poverty levels in the UK were similar to those in the developing world now. Life expectancy in London was 37 years. Surveys carried out by the Fabian Society in the late 19th and early 20th Century helped turn this around. The information, including Rowntree's seminal study on describing and quantifying poverty, helped educate the public and provided the basis for reform. As a direct result of this and other empirical work the UK government introduced new legislation to reduce poverty and improve access to health care. (Clare Short, 1999)

A good information system is a fundamental building block for a democratic society. Although clearly not sufficient in itself, Civil Society Organisations and communities will find it hard fully to engage in political issues without access to reliable information about their society and progress on commitments made by the government. In developing countries, and particularly in Africa, it is unrealistic to expect Civil Society organisations to have the capacity to produce this information themselves. They will need to rely on the government to fulfil its role of maintaining an independent reliable national statistical system as a public good.

5   What can be done?

Numerous meetings and organisations have recognised the importance of better information in reducing poverty. Many commitments and recommendations have been made, but most are still to be acted on. The most significant was the 2nd World Bank Roundtable in Marrakech in February 2004 on Managing for

Development Results. This followed around two years of consultations and studies on focussing policies and programmes on results, and the need for information and data systems to underpin this.

Donor agencies are already adopting these management approaches for their own systems, but the objective now is for this approach to be embraced by national governments in the management of their own programmes, supported by donors.

Essentially, managing for results involves using information to improve decision making and steer country led development processes towards clearly defined goals.

The objective of donors in supporting governments is to reach the end goal where a sound results based management system includes specific quantifiable indicators connected to a timeline with baseline data. This then allows periodic assessments of project and programme performance against defined targets.

The set of core principles arising from the Marrakech meeting is listed in the Annex. It can readily be seen from these that a key foundation for an effective system for managing for results is timely and reliable statistics at the country level (for governments) and global level (for the development community to track progress overall). However, serious problems beset measurement of many key indicators, including the MDG indicators. Many countries need greater capacity to produce reliable statistics and make use of them for effective decision making.

The meeting therefore agreed an action plan for statistics, which joins a number of other international commitments and initiatives, including: the OECD paper on harmonising donor practices; World Bank and IMF evaluations of the PRSP process; the original establishment of PARIS21 and the World Bank Trust Fund for Statistical Capacity Building and the recent proposal for further funding.

The Marrakech action plan will involve three main areas of work which could be promoted by the Commission for Africa and are highlighted below:

- Improve the data collection

- Provide supporting human resources

- Provide supporting information technology infrastructure.

The issue of human resources is not addressed in this paper as it is covered in a separate paper.

5.1 Improve Data Collection & Analysis

5.1.1 Develop comprehensive, adequately funded National Statistical Development Strategies

In parallel with stimulating greater demand for data, and increasing awareness of the value of and capacity to make use of data and analysis, it is essential also to strengthen the capacity of national statistical systems to produce the required data.

In the past, funding and technical assistance for statistical capacity building have failed to have a sustained impact on many statistical systems. We now have a better understanding of why this was this case. Assistance has tended to be ad-hoc, uncoordinated and undermined by parallel donor monitoring mechanisms. There was also little demand for or interest in the national statistical system from government or donors. To address this, the statistical community recognised the

need for a new approach to statistical capacity building and is now promoting the use of comprehensive 'National Statistical Development Strategies':

"Strategic planning has proved to be a powerful tool for guiding the development of national statistical programs, increasing political and financial support for investments in statistics, and ensuring that countries will be able to produce the data needed for monitoring the MDGs and their own development plans. A well thought out plan should:

- Provide detailed analysis of current strengths and weaknesses

- Address national, regional and international needs for data

- Align with the country's development program and poverty reduction strategy

- Include all the main data producers and users

- Build upon and increase the value of existing data processes

- Promote data quality improvements in line with international standards and good practice

- Serve as a coordinating framework for international and bilateral assistance" (Marrakech 2004)

The Marrakech Action Plan for Statistics included a recommendation to "support the implementation of Statistical Development Strategies in all low income countries by 2006". This strategic approach is being heavily promoted by the World Bank, PARIS21[1], to a lesser extent the IMF and UN, and several bilaterals including DFID. It is also the basis for STATCAP, a new WB lending instrument which makes it easier for countries to use IDA loans for statistical capacity building.

There are a number of potentially influential international statistical initiatives which aim to take forward the actions highlighted above. Some of these have already been referred to above and are here described in more detail. The main ones are:

- **PARIS21**. Established in 1999, this international network of statisticians, policy makers and development agencies aims to improve evidence based policy making through strengthening statistical systems. It works through raising the profile of statistics, facilitating cross-country lesson learning and developing best practice in statistical capacity building.

- The **WB Trust Fund for Statistical Capacity Building** complements PARIS21's advocacy role by providing seed money to countries to help them develop and implement strategic plans for better statistical systems.

- **STATCAP** is a new lending instrument developed by the WB which makes it easier for countries to access IDA funds to improve statistical capacity. Countries need to develop statistical strategic plans (which can be funded through the Trust Fund) before being eligible to access the funds.

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[1] Partnerships in Statistics for Development in the 21st Century – an international network which aims to improve evidence based policy making and statistical systems in development countries

- The **IMF's General Data Dissemination System (GDDS**) provides a valuable framework to help assess and raise awareness of strengths and weaknesses of statistical systems.

These initiatives can work together to provide a valuable role in improving Africa's information systems as shown in the example in Box 5.

> ### Box 5: Developing a Statistical Strategy in Kenya
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> In Kenya the UK Department for International Development has been working closely with the World Bank to help the Kenyan Central Bureau of Statistics (CBS) to establish a National Statistical Strategy. One of the first step's in this process was Kenya becoming a participant in GDDS in January 2002. As part of this process the CBS produced a plan for improvement. This plan for improvement was then developed further into a National Statistical Strategy which forms the basis of a STATCAP for Kenya. DFID and the World Bank are working to provide joint basket funding to support the National Statistical Strategy. Funds have also been used from both Paris 21 and the World Bank Trust Fund to help in this process.

An important part of a National Statistical Strategy is an integrated survey and census plan. This should set out the country's own priorities for data collection over a ten year period. At present many countries conduct a number of surveys at the request of donors, which may not always fit in with their own priorities. An important part of the statistical strategy is to liase with all users to establish their needs for information and how best these can be met. A new Household Survey Network is currently being developed to improve coordination and information sharing around international surveys.

The survey and census plan also needs to take into account other routine data collection systems. Countries need to talk to users to establish exactly what data is needed, the frequency and the timeliness. This will then allow them to consider the full information collection system and to decide on which sources are the most appropriate.

Routine administrative data systems are often neglected but can be important sources of information for policy making and monitoring. The Health Metrics Network is due to be launched later this year with $50 million of Gates funding over seven years. The aim will be to improve health information systems through developing an international consensus around a series of indicators, standards and data collection instruments which should make up a health information system, and supporting their implementation in countries.

Increase funding for analytical work and statistics

One of the reasons for the current poor quality of data is the sustained lack of investment in these systems, and the heavy dependency on donor funding. Few African governments currently fund any surveys, censuses or routine data systems, despite their being critical to the management of the government system. To obtain better data donors and governments need to commit more predictable resources to these activities, in addition to ensuring existing funds going to this sector are better prioritised and coordinated.

"The case can be made that in a number of countries and international organisations there has been a significant under-investment in statistical work in

the past decade. Evidence of this is the data gaps and data quality issues which have been highlighted by the MDG monitoring process. … Fortunately, successes in the past three years show that significant improvements can be achieved at the national and international level, especially when improvements are backed by adequate resources" (Marrakech, 2004)

Population censuses are a core statistical exercise which should be conducted every 10 years. No other data source provides such basic information as age, sex, household assets, and family size for the whole population down to the very local level. Fourteen African countries have not conducted a census since 1994. It is important that this does not happen for the next round of censuses due around 2010. The Marrakech Action Plan included a recommendation to begin preparations for the 2010 census round and noted that "the first priority is to build consensus on the importance of the 2010 census round, recognising the role census data will play in measuring the MDGs in 2015". The cost of conducting a census is around $1 per person which for Sub-Saharan Africa would add up to some $689 million. This cost would be spread over several years but it is important that funding is in place well before 2010 in order that countries can make preparations for the work.

The Marrakech Action Plan contained some rough cost estimates for improving national statistical systems. It estimated that an additional $120 million per year would be needed worldwide to improve national statistical systems, $90 million in low income countries. This would equate to around $54 million for low income countries in Sub-Saharan Africa. This is a small percentage of the additional resources which it is estimated are the additional funds needed to achieve the MDGs overall (at least $50 billion).

Further funds would also be needed to strengthen routine administration data systems. This would be more expensive than improving the national statistical systems as it would involve working with a range of different sector ministries. Much work is already going on to strengthen sector strategies of which strengthening the administrative systems will often be an integral part. The cost of improving administrative systems is likely to be in the region of twice the cost of improving the survey data, that is around $108 million. Part of this is already being funded as part of other work but additional funding would be needed to ensure all countries and all sectors are able to collect the data they need.

5.1.2 Establish a system of external validation of data quality

One of the challenges for African statistical systems is to gain the confidence of users. National and international users need to feel secure that the statistics produced by the national system are independent (free from political interference), reliable (based on international best practice), and will be disseminated in a timely manner. With statistics the problem is often as much user perception as actual practice. Without this assurance, donors and national policy makers will continue to look for and rely on non-government information sources of data such as donor-supported surveys.

One possibility to address this would be to include statistics within the NEPAD peer review mechanism. A good national information system is an essential part of the core NEPAD objective of democracy and sound economic management.

This could also be linked to the IMF's GDDS[2] and SDDS frameworks. Establishing a system of peer review for statistics would help to increase integrity in the statistical system. Strengthening NEPAD to perform this role would cost around $3 million. The IMF GDDS and SDDS frameworks could provide useful frameworks for assessing data quality. To operationalise these across Sub-Saharan Africa would cost around $2 million.

Citizen participation can also be used as a way of strengthening the external validation of information. The involvement of communities in monitoring can increase the accountability of governments as shown in the example in Box 7.

Box 7: Monitoring the Poverty Action Fund in Uganda

The Poverty Action Fund (PAF), currently 36% of the budget, was established by the Government of Uganda as a mechanism to mobilise additional resources for expenditure in the social sector to alleviate poverty. Following the establishment of PAF, the Uganda Debt Network, (UDN) set up 17 district-level PAF Monitoring committees. The PAF committees monitor district budget allocations and service delivery. They are composed of better-off mainly urban-based district residents who have the time, confidence and credibility to challenge district officials and politicians. The PAF Committees work has resulted in national level action and debate and awareness of corruption. The work of the Committees has led to improved services in many instances: reduction in 'shoddy' work, reduced teacher absenteeism, longer hours and less rudeness by health workers.

Further Information: http://www.udn.or.ug/html/body_paf_monitoring.html

Community monitoring is currently carried out in many countries on a small scale but further work is needed to build capacity across the region. This could be done through creating a series of regional centres of excellence which could be used for training and lesson learning. These centres would assist countries in setting up community monitoring. As well as the cost of setting up three regional centres of excellence at around $2 million each there would be an additional costs within countries conducting this work. The cost of setting up a community monitoring system in an individual country could be around $1 million, making a total of $56 million for countries plus the $6 million to set up three regional centres of excellence.

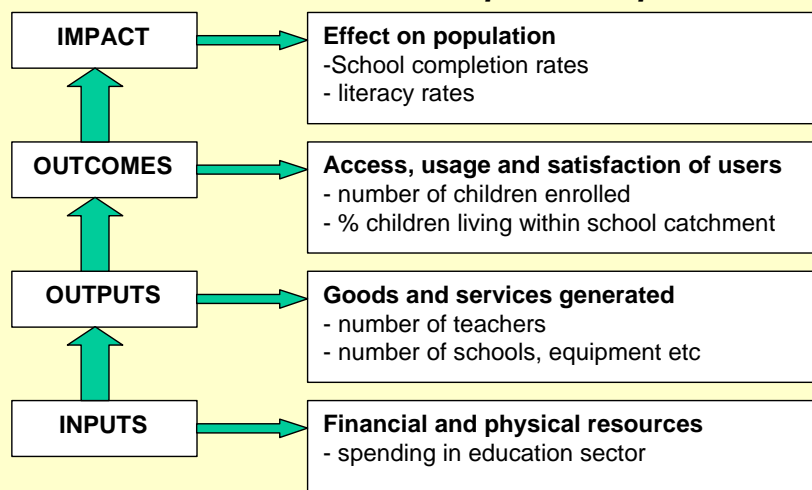### 5.1.3 Promote the demand for use of analysis

Even when data are available they are often not used in decision making. As the recent WB external review of PRSPs noted: "Available information is generally not linked to decision making".

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[2] The **SDDS** was established by the IMF in 1996 to guide countries that have, or that might seek, access to international capital markets in the dissemination of economic and financial data to the public. The **GDDS** was established in 1997 to guide countries in the provision to the public of comprehensive, timely, accessible, and reliable economic, financial, and socio-demographic data.

Previous examples have shown how the lack of use of data can lead to poor decisions. There is a need to promote a culture of evidence based decision making, where those with the responsibility for taking decisions actively seek data and analysis on the impact of the different policy options they are considering. In addition, this analysis should be available to all stakeholders in order to enable them to take an intelligent part in the policy process. Poverty and Social Impact Analysis is a possible solution, and is increasingly being used to assess the impacts of major policy decisions on the poor and other vulnerable groups in advance of final decisions being taken.

There is, however, a need to bring together a wide variety of data, including cross-sectoral data, to show the full effect of policy decisions, from inputs to outputs, outcomes and impact. Box 8 shows an example of this for the education sector.

Box 8: Education Sector data from inputs to impact

IMPACT	→	**Effect on population** -School completion rates - literacy rates
OUTCOMES	→	**Access, usage and satisfaction of users** - number of children enrolled - % children living within school catchment
OUTPUTS	→	**Goods and services generated** - number of teachers - number of schools, equipment etc
INPUTS	→	**Financial and physical resources** - spending in education sector

As well as contributing to a more vibrant and participative policy process, it is also likely to lead to increased demand for relevant data to inform the analysis. This can be a powerful stimulant to action to strengthen statistical and analytical capacity.

Impact analysis of particular policy options depends on the broader body of social and economic analysis available in a country. The wide availability of such analysis, and the data underpinning it, provides for better national debate on policies, and in particular strengthens the ability of government and stakeholders to argue their case for nationally relevant policies in their dialogue with donors.

An example of recent efforts to promote the demand and use of information is highlighted in Box 9 which explains how the Famine Early Warning System Network (FEWS NET) was set up to strengthen the ability of African countries and regional organisations to manage the risk of food insecurity through the provision of timely and analytical early warning and vulnerability information.

Box 9: Developing Famine Early Warning Systems

The Goal of the Famine Early Warning Systems Network (FEWS NET) is to strengthen African capacity for early warning and response planning; increase usefulness of information to decision makers; improve response planning based on relevant background food security information; improve

response planning based on early warning information and the identification of food insecure groups and to improve local monitoring and analysis.

The map below of Ethiopia shows some of the analysis produced by FEWS NET which highlights the areas of the country where they expect food shortages over the coming year.

Further Information: http://www/fews.net/
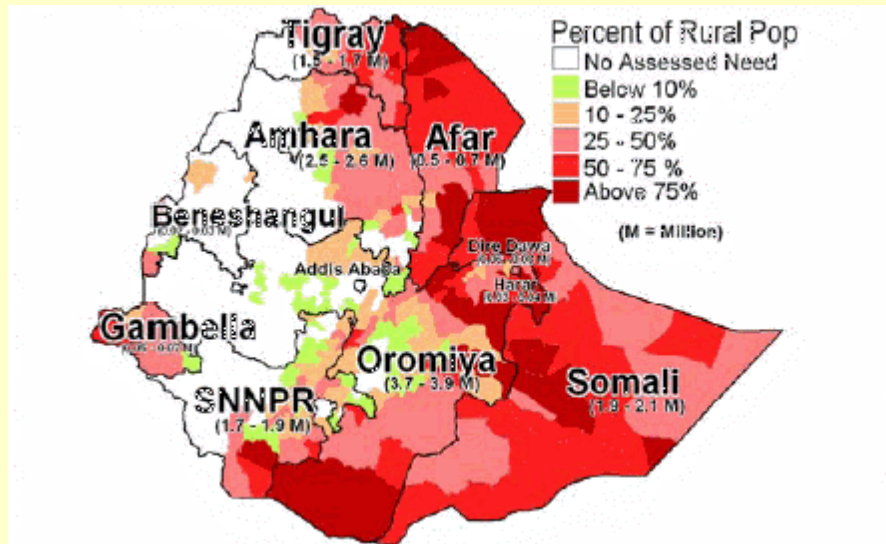
SADC currently support the development of famine early warning systems. Further funding is needed to strengthen their role and to improve the models and the predictions they produce. The role which SADC play could then be replicated in the rest of the region to ensure that all countries were covered by high quality famine early warning systems. The cost of strengthening SADC and replicating its work on famine early warning systems is likely to be around $5 million.

It is important to develop a culture of openness amongst those capable and responsible for conducting research, carrying out surveys, and producing all types of analysis. Countries need effective knowledge management systems, the technological capacity for sharing knowledge, and the institutional will to do so. In particular, source data from household surveys, participative studies, and other research needs to be properly archived, with appropriate access allowed (with the necessary safeguards) to those with a legitimate interest in conducting further analysis.

Developing participatory approaches to monitoring is another way to build demand for better data and analysis. By involving local communities in monitoring projects and programmes they can provide useful feedback into the policy planning processes. Involving local communities in monitoring can also provide an important mechanism for evaluating the quality of the data collected.

Capacity in many African countries for data management is often very weak. It is partly a technical issue, but is also strongly dependent on institutional issues such as who controls the data, who authorises access and dissemination, and the political will to support openness. While such knowledge management processes need to be developed and run at country level, regional initiatives to promote the value of sharing data and lesson learning in overcoming the problems would be an effective and efficient way of making progress. NEPAD, or other regional institutions, could play a role in leading this work.

The African Studies Association has highlighted the issue of better archiving of data as a key area needing improvement. There is much analysis of data but it is not always shared and used as effectively as it could be. Promoting the dissemination of free statistics is also needed to increase government accountability and openness. Box 10 outlines the Africa Household Survey Databank, which is one initiative aimed at better archiving of data. This is an area where further funds are needed to ensure maximum usage is made of all the data which is collected.

> ### Box 10: Africa Household Survey Databank
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> The Africa Household Survey Databank aims at creating a better understanding and monitoring of poverty in Sub-Saharan Africa by enhancing the capacity of the national statistical agencies in survey data management. The program addresses the issues of data archiving and dissemination through:
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> - the development of innovative tools for survey information management
> - the dissemination of survey data and documentation
> - the training of national statistical agencies' staff in data management
> - the support of statistical capacity building activities at the country and regional levels
> - answering the World Bank institutional needs for statistical information
>
> Further Information: http://www4.worldbank.org/afr/poverty/databank/default.cfm

DevInfo is a user-friendly database and presentation package developed by UNDP and UNICEF. It allows users to access and display data through a number of different tables, charts and graphs. UNDP are currently promoting this through a global project to improve national dissemination of MDG indicators and statistical literacy. This encourages countries to establish a national indicator database to improve access to key indicators.

The role of the Africa Household Survey Databank could be strengthened and linked to other initiatives such as the UNDP's work on Devinfo and the World Bank's work on creating a databank of household data. To strengthen these areas would cost around $3 million.

5.1.4 Improve donor coordination

A widely acknowledged cause of the current weak capacity is the extremely poor donor coordination around monitoring activities. In the past donors have often supported systems for monitoring their own programmes, undermining and duplicating national capacity. In addition, they place separate and uncoordinated reporting demands on governments which stretch yet further already weak and fragile systems. This is a key theme picked up by virtually every study on information and statistical systems.

The OECD's publication on Harmonising Donor Practices for Effective Delivery (2003) summarised the situation: "Reporting and monitoring of development assistance is a critical function of effective aid delivery. …… Achieving this effectively is in the interest of donors and partner countries. One problem is that reporting and monitoring systems have often been designed to meet donors' information needs rather than to support the priorities of partner countries. An additional problem is that duplicative reporting and monitoring systems are making competing demands on partners' limited resources. This impairs partner

countries' ability to rely on useful, timely information for their own development strategies." (OECD, 2003) PARIS21 and IDA borrowers, among many others, have also highlighted this issue.

The good practices suggested in the OECD paper consist of:

- Relying and building on country systems

- Co-ordinating and simplifying donor reporting and monitoring systems

- Making information more transparent

The Marrakech Action Plan for Statistics applied the general principle of donors co-ordinating their actions to buildcapacity in the statistical system. It emphasised the problem of lack of co-ordination around household surveys: "Better timing and standardisation of surveys would increase the coverage and comparability of the results obtained. Yet there are many examples of the parochial interests of one donor seeming to outweigh the interests of the country (and other users) in maintaining comparability over time and across countries." This has led to a Household Survey Network being established to improve coordination and dissemination of survey methods, timing and data. The secretariat currently sits with the WB.

There should be no additional costs for strengthening donor coordination as much of this work is already ongoing.

5.2 Create a supporting IT infrastructure

Information Communication Technology (ICT) can provide the infrastructure to facilitate information transfer and so can support the range of activities outlined in the previous section. Information technology can potentially offer a low cost mechanism for collection of accurate information and the possibility of extending participation in decision making processes. Better ICT can be used to support processes designed to increase the accountability of governments and to increase the participation of communities in decision making.

To enable Africa to benefit from these new technologies a systematic programme of rural community upgrading is needed so that they can benefit from the new information technology efficiencies. There are three areas of ICT which are all important: the regulatory (policy) environment, the infrastructure itself and the applications which make use of ICT.

5.2.1 Regulatory Framework

At present the cost of computer software licences can be very high even for the basic Microsoft applications. Millions of computers are used across Africa and each one uses at least one commercial software package. At present these are purchased separately for each country and each part of government and non-government. By adopting an Africa wide approach for enterprise licenses on common software it may be possible to greatly reduce the cost of licenses. It may also be possible to consider waiving the software licence fees for low income countries. This would ensure that countries had access to the latest software. It would also help if the cost of anti-virus software licences were reduced or waived as this can cause many African government departments a large problem.

There are around 6 million computers currently being used in sub-Saharan Africa[3]. If the cost of each licence was £300 this would mean around £1.8 billion was spent on software licences which could have been spent on other priorities. There are also additional software licence costs for statistical software such as SAS and SPSS which are very expensive and require an annual license. Stata is another statistics package which is more reasonably priced, at only £100 per copy after the first two licences. Waiving these license fees would also help to ensure that staff have the tools to conduct data analysis.

Waiving software license costs would not cost any additional money apart from the cost of negotiating with software companies. There would however be a huge cost saving for African countries.

In order for computers to be used more effectively they need to be connected either through actual networks or through the internet. At present the use of the internet is very low in Africa because of the high cost. The high costs are often related to the telecommunication regulatory framework. The extent of fixed lines for dial-up to the internet is mainly limited to the capital cities. Where access exists it is constrained by often slow and generally unreliable dial-up connections.

The territory of Africa already has comprehensive satellite coverage, which could potentially provide telephone and internet access. Such wireless communications systems could counteract the problem of the vast inaccessible terrain across Africa which makes the cost of wire-line network and fibre optic links prohibitively high. The use of low cost satellites, such as VSAT, could provide internet services but prohibitions on VSAT hamper the extension of telecom infrastructure and high license fees make it inaccessible for most small businesses and non-government users. If these constraints were addressed then economies of scale and the mass deployment of high bandwidth VSATs could have a significant development effect on this situation. VSAT liberalisation would allow groups other than the incumbent's telecommunications group to establish satellite services, although they would still have some persistent restrictions. An "Open Skies" policy could help Africans to increase their usage of the internet which in turn could help to lower prices making access more affordable.

The cost of creating an "open skies" policy would be the cost of specialised consultancies to help countries to write new regulation.

5.2.2 Infrastructure

The cost of information technology has been reducing rapidly over the years but it is still often too high for many people in Sub-Saharan Africa to reap its full benefits. There are many examples of pilot projects to use information technology but often these have not been scaled up due to the high cost. A comprehensive investment in information technology across all sectors may provide a more cost effective solution rather than separate investments in each sector. The comprehensive application of appropriate information technology could provide many potential uses, such as the following:

- **Government** – the internet and mobile phone networks can be used both to collect and disseminate information. For example, in Uganda, Foodnet provides market prices for agricultural commodities via short

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[3] Estimate based on 11.9 computers per 1000 people, data from ITU World Telecommunications Development Report 2002

message services. This helps to ensure that producers get a fair price for their products. The same services could also be used to collect information by the national statistical office, see Box?. The internet and mobile phone networks can also be used to create a more direct link between rural communities and government and can give citizens access to more information about government performance and about their rights as citizens. Both of these can be used to increase accountability of the government to its citizens. The internet and mobile phones can also be used to facilitate civic participation.

- **Education** – in the education sector the internet can be used to provide resources for teachers and to provide distance learning for students and teachers. The internet can provide a wealth of information which otherwise would not be easily accessible for rural communities.

- **Health** – Similarly to the education sector the internet can be used as a resource base. Mobile phones and PDAs can also be used to collect health information. In Uganda they have been using PDAs to collect health information as well as providing reference material, see Box 11 for further details.

> ### Box 11: Using PDAs to improve health services in Uganda
>
> The Ministry of Health of Uganda (MOH) recognizes that improving the health information system is necessary for the successful delivery and implementation of its five-year plan. The ability to collect and analyze data accurately is fundamental to achieving this goal. Against this backdrop, the Uganda Health Information Network (UHIN), was set up aimed at expanding the current health information system in Uganda and providing nationwide access to health and medical information. As part of this programme handheld computers will be available to health professionals connected via the existing GSM cellular telephone network. The basic handheld will have local reference material and one international medical textbook pre-loaded. It will also have a program that will enable the units to be used for data collection.
>
> Further Information: http://pda.healthnet.org/index2.php

- **Business** – A strong economy needs a well educated workforce, and the introduction of information technology across Africa should help to achieve this. . High tech industries have been one of the fastest growing sectors and, as such, Africa could gain great benefits by being part of this sector. The internet and mobile phones can be used to link suppliers with buyers. This can help to give the suppliers more bargaining power and to identify suitable markets for their products. The internet can also be used to promote better banking and credit facilities,

- **Environment** – The internet and, more generally, better information technology can help to gain more accurate forecasts of rain and crops which should help in terms of being able to better predict and plan for food shortages. PDAs and computers can also be used to record land ownership and also to promote promote public availability of information about land ownership. This could help to increase the openness and accountability of governments.

- **Culture** – The internet has created a global community in which people in the UK can find out more about cultures across the world. The internet can be used to promote African arts, culture, music and literature. This should help others to understand African culture and vice versa.

New information technology can support the collection and dissemination of information. It can also help to improve the quality of the information collected. Since the 1990s there has been a wave of telecommunications sector liberalisation as well as a general reduction in the cost of telecommunications.

Although every part of Africa has satellite coverage, restrictive telecom policies stop this being fully utilised to support Africa's development. The inaccessibility of parts of rural Africa mean the cost of wire-line networks and fibre optic links is exorbitant. Low-cost satellite based internet could provide connectivity which would open up many opportunities. The capacity of satellites needs to be reviewed along with the cost of using the satellite technology.

To enable countries to maximise the benefits of information technology they also need the hardware such as computers, and access points which relay information to the satellite network. At present there are around 6 million computers in Sub-Saharan Africa, most of which are located in the capital cities. Additional computers are needed to support local government, particularly in countries with decentralised systems of government. Over the next three years a doubling of the number of computers is needed but these will be needed to be located in rural areas. As well as the cost of the computers there will need to also be the cost of access points to enable the computers to be linked to the internet and thus to transfer information. If each Sub-Saharan African country needed 100 rural IT access points each with 10 computers, this would be a total of 60,000 computers. Additional computers would also be needed in other areas as well as mobile telephones and PDAs. To double the number of computers currently used in Africa would mean an additional 6 million computers. The total cost of these would be around $6bn over three years. There would also be the cost of setting up internet access points which could be an additional $10 million plus the cost of any further base stations which may be needed. There would also be the need for additional mobile telephones and PDAs which together would form an integrated information technology infrastructure to support the information needs in Africa.

5.2.3 Application Tools

There are a variety of new IT tools and new applications of those tools. Some examples of these are described below.

Hand-held computers have been used in developed countries for some years to collect survey data but are now available at prices such that developing countries can now consider their use.

New IT such as handheld scanners and PDAs can also be used to support other initiatives, such as the Kimberley process, outlined in Box 12.

Box 12: Using IT to track diamonds and logs

The Kimberley Process is a joint government, international diamond industry and civil society initiative to stem the flow of conflict diamonds - rough diamonds that are used by rebel movements to finance wars against legitimate governments. The Kimberley Process Certification Scheme is an innovative, voluntary system that imposes extensive requirements on Participants to certify that shipments of rough diamonds are free from conflict diamonds. PDAs could be used to assist in the data capture and analysis of the Kimberley Process.

A similar process is being suggested to use barcodes to track logs. When a log is fell a unique barcode would be attached to each log and with a number linked through a central database containing information about the log's origin, species, size and legality. This information can only be read by the auditors' hand-held scanners, and will be cross checked at several points in the chain with the auditors' independent database. The system aims to create an incentive for concessionaires to meet the rules which will give the buyer assurance of the legality of his purchase, and the seller access to new, greener, more valuable markets.

Further Information: http://www.kimberleyprocess.com

Further Information: http://www.panda.org/downloads/forests/tncwwfalliancenewsjuly2004.pdf

New forms of information technology can be combined and used in innovative ways to support many purposes. For example in Senegal pastoralists have been using mobile phones and Global Positioning Systems to exchange information, as explained further in Box 13.

Box 13: Cyber Shepherds in Senegal

In Senegal the vegetation cover is shrinking, the soils are becoming impoverished and the desert is advancing which is putting extra pressure on the people. Livestock migration is an essential part of this context but it can cause problems with conflicts between migrant herders and farmers and between sedentary and migratory pastoralists. Migratory pastoralists are also having to travel further and further with their livestock leading to lower milk and meat production.

In selected pilot zones herders have been taught to read and to prepare geographic maps using Global Positioning System devices. Several of the herders have also been given mobile telephones to speed up the exchange of information and to provide them with an "early warning system" against pending disasters. Some herders have also received IT training so they can access information on the internet, such as maps

showing sites which are occupied and which have green vegetation together with an estimated "carrying capacity" indicating the number of animals which can be pastured there without risk to the environment. Information is also available on recognising and dealing with animal diseases.

Further Information: http://web.idrc.ca/en/ev-47038-201-1-DO_TOPIC.html

Remote Sensing is an important tool for meteorologists as well as environmentalists. Meteorologists need both in-situ weather stations and remote sensors to collect weather information. The network of weather stations leave gaps which can be covered by remote sensors. Information from in-situ weather stations along with radar and satellite weather information are used to determine *current* local atmospheric conditions, but meteorologists also need to integrate data from many sources to get a complete and accurate picture of regional, global and future atmospheric conditions. This information is then fed into computer models to help predict weather conditions and make critical decisions. In Sub-Saharan Africa there is a lack of both data and the skills to use this data in weather forecasting. The information is vital for both prediction and early warning of events. The information can also be used to help to predict longer term climatic change.

Remote sensing satellite information can also be used to estimate forest cover and to help governments to better manage their natural resources. It can also be used for estimating crop production which can help countries to better manage food shortages.

Combining data sources can provide a powerful tool for policy makers and statisticians to do more detailed analysis that previously would have been much more time consuming and costly. Box 14 shows an example of how data from different sources can be used to build effective policies. To use data sources more effectively across different sectors governments need to have networked computers so that information can be exchanged.

Box 14: Using data to tackle crime in South Africa

South Africa's inequality and crime rates are among the highest in the world. The threat of crime has diverted resources from other needs and is thought to have discouraged investment and hindered long-term economic growth. Using data from the 1996 Census, crime data from the national police service, and estimates of expenditure, a correlation between inequality and types of crime has been demonstrated across local police jurisdictions. Burglary rates are 20-30% higher in police station jurisdictions that are the wealthiest among their neighbours, suggesting that criminals travel to neighbourhoods where the expected returns from burglary are highest. The research suggests that public resources for crime prevention in high property crime areas may not be as effective as policies which help to reduce inequality between neighbourhoods.
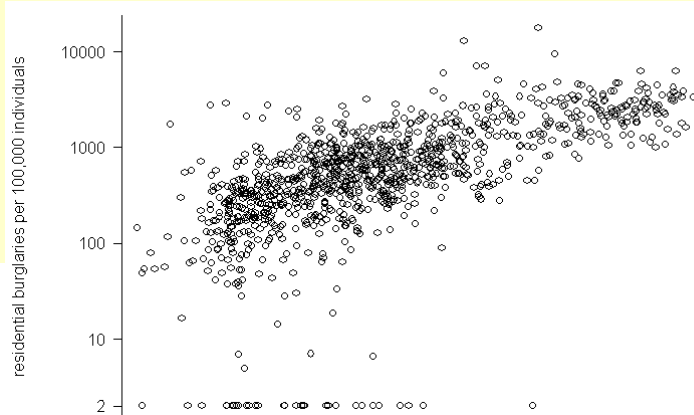
Poverty Mapping is an analytical technique to produce and map local level estimates of poverty and other social variables through combining survey and census data. It provides a visual picture of the inequalities within the country and has proved useful in attracting the interest of policy makers. Box 15 shows how poverty mapping has been used to target poverty policies in Nairobi, Kenya. To be able to make better use of this technique further training and better information technology would be needed along with good quality survey and census data.

Box 15: Using poverty mapping to target policies in Nairobi, Kenya

In Kenya household survey data for Nairobi showed around 45% of the population is poor. Using the 1999 census data along with the survey data they were able to estimate poverty levels for the 110 sub-locations which showed considerable heterogeneity with poverty rates varying from only 5% to 65% in the very poor areas within the city. This information will be used to help the government of Kenya to more effectively target their poverty reduction strategies.

Further Information: **http://www.worldbank.org/research/povertymaps/kenya**
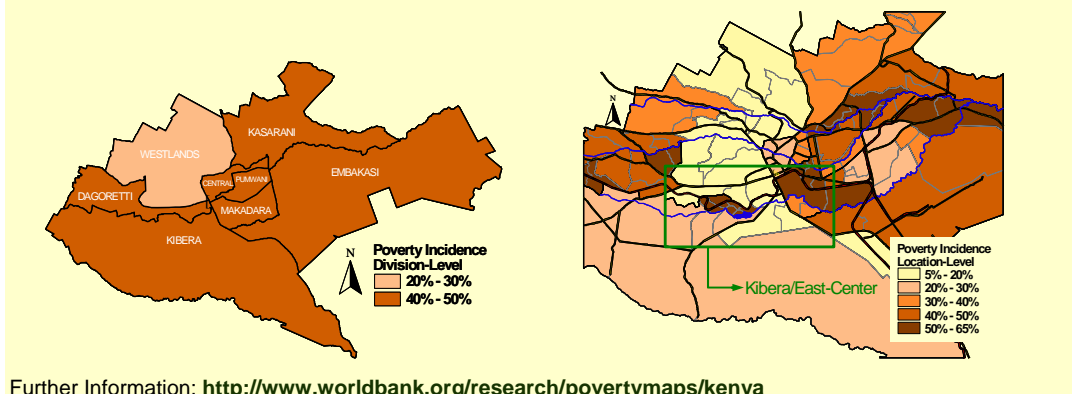
Service Availability Mapping is a new technique being developed by the WHO to map health and other service facilities to pinpoint more accurately and vividly demonstrate distribution of services across the country. This is still being tested, but has the potential to provide valuable, previously largely unavailable, information on service delivery.

Solar Power could be used to provide power for these new information technology services which would avoid the need for electrification. There would also be many wider benefits from extending the use of solar power. There are many pilot projects already underway which show the benefits of solar power such as the example in Box 11.

Box 11: Extending opportunity to the edge of the desert

In the desert grasslands of Northern Nigeria village life has continued almost unchanged for centuries. Like many rural areas in sub-Saharan Africa it lacks a modern source of energy. In 2001 the Solar Electric Light Fund (SELF) began an ambitious project to demonstrate the comprehensive use of solar generated electricity in a village setting. The

project has had numerous impacts following are some of the impacts which the project has had providing:

- Powerful solar-powered pumps have reduced the amount of time spent on collecting water

- Health clinics benefited from solar powered lighting, enabling the health service staff to see patients at night and to store vaccines in refrigerators

- Primary schools have been provided with at least two illuminated classrooms which are now heavily used in the evenings for adult education. The schools have also been provided with a computer for the benefit of both teachers and pupils

- Streetlights have been installed which have allowed the villagers to socialise in the evenings when the weather is cooler. Several new food-selling businesses are now open in the evenings.

- Solar powered micro-enterprise buildings have been provided for each village, which generate electricity for very small businesses that otherwise would not be able to have access to electricity.

- Home lighting systems have also been provided which have helped children to study in the evenings and adults to operate home businesses.

- Irrigation pumps have been provided which have enabled farmers to produce and sell more produce and so get a greater income for their families.

- The main source of income for women in these villages is the production of peanut oil. Solar powered peanut oil expellers have been provided which save time and labour and allow the women to earn more income.

Further Information: http://www.self.org/nigeria.asp

The cost of supporting these new IT applications both in terms of hardware and software as well as training could be around $5 million. This would cover the cost of strengthening a regional network of institutions to build IT capacity as well.

To make use of the IT hardware and applications an initial investment is needed to obtain the hardware and to train the staff. Ideally this would need to be done as part of a broad programme across all sectors and across all areas to ensure the full benefits could be achieved. Following the initial investment it should be possible for the system to become sustainable particularly if there are spin-off benefits for the private sector. A parallel investment in solar power and information technology could provide a wide range of benefits.

6   Why should this be an issue for the Commission for Africa?

There is now a real opportunity to make concrete progress in this area. There is a great deal of good will and interest in improving information, although this has yet to feed through into significant improvements in statistical systems. It will take time to turn around the decades of lack of investment and interest in these systems. As with many other capacity problems, the situation is worst in Africa. By highlighting this as an issue, the Commission for Africa would be able to build on existing interest and commitment - there is real potential to achieve substantial progress.

Africa Commission paper on strengthening the quality and use of data in Africa

The real value of robust information is only just being fully recognised. One reason is that advances in technology are continuously providing new possibilities for presenting and analysing data, increasing its value. The Commission for Africa may want to focus specifically on promoting new and innovative uses which have so far been relatively unexploited. These include:

- viewing information as a means to engage the public in politics, to understand their rights and hold governments to account

- making use of new analytical methods and technologies to improve the use of data in policy making – PSIA, poverty mapping, service accessibility mapping, DevInfo

- taking full advantage of the existence of robust, regular information on the country to attract external investment

Poverty Analysis and Monitoring Team

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Annex

PROMOTING A HARMONISED APPROACH TO MANAGING FOR DEVELOPMENT RESULTS:

CORE PRINCIPLES

1   At all phases—from strategic planning through implementation to completion and beyond—focus the dialogue on results for partner countries, development agencies, and other stakeholders.

2   Align actual programming, monitoring, and evaluation activities with the agreed expected results.

3.   Keep the results reporting system as simple, cost-effective, and user-friendly as possible.

4.   Manage *for*, not *by*, results.

5.   Use results information for management learning and decisionmaking, as well as for reporting and accountability.

Source: http://www.mfdr.org/documents/2CorePrinciples05Feb04.pdf