

INTRODUCTION



Photo: Nokia Siemens Networks

The new millennium has brought progress in many African countries. A prolonged international commodity boom has boosted exports of both oil-exporting countries and other commodity-exporting countries. A number of African governments have significantly improved their macroeconomic management and political governance, though on both scores further progress could be made depending on the country. Member States of the United Nations have reiterated their willingness to support African countries through international cooperation. The Heavily Indebted and Poor Countries (HIPC) programme, initiated by the Bretton Woods institutions in 1996, provides debt relief and low-interest loans to reduce external debt repayments to sustainable levels. Large development projects have been launched with support from bilateral and multilateral institutions, particularly for the improvement and expansion of energy and transport infrastructures. As a result, many African countries have been enjoying some of the highest growth rates in their histories.

Substantial social and economic progress is also evident at the local level across the continent. Local innovations have played an essential role in this process and could prove crucial for long term sustainable development. Innovation is the “embodiment, combination or synthesis of knowledge in original, relevant, valued new products, processes or services”¹. In the African context, it can involve the way business is done, production organised, a supply chain structured, financial resources distributed or essential services provided. It is more a process than a product and stems from both traditional knowledge and the application of modern science and technology. At the grass-roots level, it often involves local communities, utilising locally owned knowledge to create innovations which can then be disseminated to other communities and transferred to other activities. Ideally, local sustainable development initiatives can engender learning processes that go well beyond the projects themselves, pointing the way to solutions of national or regional significance. They can act as exemplars that, if successful, may be scaled-up and replicated. They will then generate externalities which benefit many while addressing needs which cash-and capacity-constrained governments have often found it difficult to meet.



Photo: Nokia Siemens Networks / Pasi Kemmo

Technological leapfrogging for development

Technology alone is rarely the key to unlocking economic value, but it induces real wealth creation when it is combined with new ways of doing business. Information and communication technologies (ICT) afford an important opportunity for technological leapfrogging, in particular through mobile telephony. The adoption of mobile phones has been especially rapid in Africa (Note a), where an estimated 80 million people now have cell phones. This has paved the way for a range of cell phone-based innovations and new business opportunities. For instance, mobile telephony is transforming the financial landscape. Cell phone-based financial services are being developed in Africa to give rural people, many of them poor, access to banking, funds transfer, credit card and other financial services on a fee-per-transaction basis.

The Nokia Siemens Networks’ (NSN) “Village Connection” project offers a simple model to build rural connectivity village by village, enabling an innovative franchise-based business model between an operator and village entrepreneurs. The network helps provide affordable telecommunications services in rural communities, supporting banking operations and easing access to market and other information, thus contributing to rural economic development. By providing wider access to information, cell phones can also enable more people to take part in local decision-making within their communities.

However, Africa still lags behind in its pace of innovation. Apart from South Africa which experiences innovation rates comparable to the rates observed in developed countries², most sub-Saharan African countries remain relatively slow to adopt innovations. The inadequacy of imported innovations to the context of least developed economies explains part of the difficulty to find solutions for Africa’s problems. The small size of most local markets, the lack of resources allocated to research and development activities, and the high rates of out-migration of educated Africans are also important constraints to technological innovation and diffusion. Besides, African indigenous innovators are generally overlooked in the search for solutions to endemic problems. Two main reasons³ can be given for this: (i) innovations and discoveries they produce are mostly incremental, with modest prospect of income gains; and (ii) there is little knowledge sharing due to the application of innovations in isolation, lack of written or electronic records and inadequate communications infrastructure for knowledge sharing.

The build-up of a critical mass of indigenous capacity in sciences, including material sciences, biotechnology, engineering, medicine, and ICT remains essential. The elimination of institutional barriers, such as excessive regulation of innovative markets like telecommunications, is another core issue for the dissemination of innovations. At the local level, low levels of literacy and numeracy of prospective technology adopters, many of whom are poor, can also hinder diffusion.

Notes on the approach

The objective of this report on Innovation for Sustainable Development: Local Case Studies from Africa is to shed light on the way innovative solutions have arisen to address local sustainable development challenges and on the determinants of success and the scope for replication. The report, which is a contribution to the documentation for the 16th and 17th sessions of the Commission on Sustainable Development, focuses on African experience, as Africa is one of the themes of the Commission's 2008/2009 biennium. The volume groups case studies under five headings: Enhancement of Agriculture and Fisheries, Protection of Ecosystems, Water Management, Health Improvement and Sustainable Tourism. Each theme is introduced by a general analysis of trends and challenges for Africa and then further developed through case studies. Two cases have been prepared for each theme and, of the 10 case studies, 6 have been written by practitioners actively involved with project implementation at the local level. The remaining 4 case studies have been written by DSD-DESA with input and guidance from project implementers.

The methodology for the selection and preparation of the case studies can be divided into three steps. First, five themes were identified based on an assessment of key African sustainable development challenges. Next, hundreds of case studies were screened and short-listed, of which ten truly innovative cases were selected. The selection relied on three main criteria: (i) The project should have a clear methodological or practical breakthrough and be effectively implemented; (ii) The project should have measurable and significant output; (iii) The project should generate a real improvement in social welfare and/or environmental protection. Thirdly, consultants who had effective experience in the implementation of these projects were identified and engaged in the preparation of the compendium of case studies wherever possible.

The report aims to draw practical conclusions from the 10 cases in the course of their presentation. A couple of those which emerge are as follows. Sustainable projects need to link environmental goals to income generation, draw upon local knowledge and ideas, ensure effective buy-in from stakeholders through local community involvement in project design and implementation, and employ financially self-sustaining business models (which are crucial for success but remain a challenge in some cases). External forces which impact on a project and affect conditions for success include international markets and national legislation. In some cases, though, local success can provide arguments for more accommodating national policies to facilitate replication and scaling up. Lastly, simplicity in project design, committed seed capital and integration of local traditions and cultural heritage appear to be important success factors for innovative local initiatives.

Note:

- a. International Telecommunication Union (ITU) figures.

Drawing water at a well near Bandiagara, Mali. Access to water remains a key challenge in many African countries.

