

A map of the Democratic Republic of the Congo (RÉP. DU CONGO) showing its geographical features and neighboring countries. The map includes the following elements:

- Neighboring Countries:** République Centrafricaine (to the north), Soudan (to the northeast), Ouganda (to the east), Tanzanie (to the southeast), Zambie (to the south), Angola (to the southwest), Gabon (to the west), and Cameroun (to the northwest).
- Major Rivers:** Congo, Equateur, Lualaba, and Lac Tanganyika.
- Major Cities:** Kinshasa (marked with a star), Gbadolite, Bumba, Isiro, Kisangani, Mbandaka, Bandundu, Ilebo, Kindu, Goma, Bukavu, Kikwit, Kananga, Mbuji-Mayi, Tshikapa, Kalemie, Kolwezi, Likasi, Lubumbashi, Matadi, Boma, and Banana.
- Geographical Features:** The Atlantic Ocean (Océan Atl. Sud) is visible to the west.
- Scale:** A scale bar at the bottom indicates distances in kilometers (0, 200, 400 km) and miles (0, 200, 400 mi).
- Coordinates:** The map shows the Equator (0° latitude) and the Atlantic Ocean (Atlantic South, Océan Atl. Sud).

It is expected that individual *Country Reports* from the *Survey of ICT and Education in Africa* will be updated in an iterative process over time based on additional research and feedback received through the *infoDev* web site. For more information, and to suggest modifications to individual *Country Reports*, please see www.infodev.org/ict4edu-Africa.

Overview

ICT remains largely undeveloped in the Democratic Republic of Congo (DRC). This is largely because the country is still unlinked to the SAT3 underwater optical fibre cable and is thus forced to rely entirely on expensive and unstable satellite connectivity. The lack of a national policy for ICT development, and the apparent lack of concern for the subject among government officials, is not helpful. However, largely through the work of non-governmental actors (most notably COMESA, NEPAD), and Law 012/2002, ICT applications are slowly emerging. Examples of this are programmes focused on teacher training and supervision, the connection of college and university computer centres, and the multi-sector collaboration for advocacy and support of technological advancement.

Greater support from government is needed to ensure that these initiatives are expanded to improve the country's currently low levels of school participation and to reduce the major digital gaps which currently separate the north and south, urban and rural areas, and male and female populations in the DRC.

County Profile

The Democratic Republic of Congo (DRC) is situated in Central Africa, in the Great Lakes region. It extends over 2.35 million square kilometres and is the second-largest country in sub-Saharan Africa in terms of surface area, and third in terms of population. It shares 9,000 kilometres of border with nine countries: the Republic of Congo on the west; the Central African Republic on the north; Sudan on the northeast; Burundi, Uganda, and Rwanda on the east; Tanzania on the southeast; and Zambia and Angola on the south.

The DRC is situated along the equator and has an important hydrographical network dominated by the Congo River, which runs along 4,320 kilometres across the entire country.

The country has many natural resources, including the world's second-largest tropical forest, fertile soil, abundant rainfall, and various mineral resources. The exploitation of copper, cobalt, diamonds, gold, zinc, other metals, and other common minerals has constituted over the years about 75% of its exports and about 25% of its GDP.

Table 1 provides some selected socio-economic indicators for the country.²

Table 1: Socio-economic Indicators: DRC

| Indicator | 2000 | 2004 | 2005 |
|---|--------------|--------------|--------------|
| Population | 50.1 million | 55.9 million | 57.5 million |
| Population growth (annual %) | 2.2 | 2.9 | 3.0 |
| Life expectancy at birth, total (years) | 42.4 | 43.7 | -- |

The Education System³

The education system is essentially funded by parents. The rate of schooling is 52% and the general illiteracy rate in 2004 was very high at 33.2%, and even greater among women at 43.3%. Primary schooling has diminished due to the isolation of the regions, the limited revenue of parents to pay school fees, the lack of infrastructure and school materials, and the poor quality of instruction.

The duration of compulsory education is six years for children between six and 12 years of age. Although children are expected to spend three years in pre-primary school, this rarely happens except in some urban zones. Primary school is divided into three cycles of two years per cycle. The certificate given at the end of primary studies is based on evaluation of class performance and the grade awarded on a national test (TENAFEP), with proportions of 60% and 40% respectively.

Secondary education consists of one long cycle and one short cycle. The long cycle has a general, a standard, and a technical field. Students who pass the national examination, called the State Exam, receive the State Diploma that certifies the completion of their secondary studies.

The short cycle concerns professional education and consists of four years of training, beginning immediately after primary education, or three years of training after the common studies in secondary school. There are also engineering schools that offer training in craftwork for three to four years. Students who satisfy requirements for the end of this cycle receive a certificate.

Higher education is composed of a first cycle of three years and a second of two to three years, depending on the field of study. Three types of higher education are organised in the Democratic Republic of Congo: university education, advanced teacher training, and advanced technical training. The third cycle offers the degree of advanced studies (DES) and the doctorate.

ICT Policies

A defined national policy for ICT is still non-existent, but a number of initiatives are underway. Developments on the technical side include the following:

- Establishment of the ARPCT (Autorité de régulation de la poste et des télécommunications du Congo) as the regulation authority of the DRC. This is an independent entity entirely funded by regulation taxes received from service providers.
- The development of a partnership between the OCPT (Office Congolais des Postes et Télécommunications) and Korea Telecom, which will see the development of an optical fibre system to increase the capacities of telecommunications for fixed telephone service providers.

However, the more comprehensive initiative is a collaboration between government, civil society, media, and private sectors for an innovative approach and a multi-stakeholder alliance on ICT for development policy. This is known as the Multi Sector ICT Dynamic (DMTIC) with the objective of democratising access to ICTs in the DRC and transforming them into a real tool of empowerment and social development. The Web site that describes the initiative states:

The DMTIC is a non-profit-making organisation that was formed as a result of a multi-stakeholder roundtable organised in January 2005 in Kinshasa. The roundtable brought together representatives from government, business and the non-profit sector for the first time in the DRC, to identify key issues that could be included in the development of a national ICT policy. This roundtable was initiated by 'Alternatives', a Canadian non-governmental organisation, in collaboration with the Association for Progressive Communications (APC), the International Development Research Centre (CRDI-Canada), and the 'Catalysing Access to ICT in Africa, (CATIA) programme. The outcome of the meeting was the setting up of a strategic plan for the DMTIC.⁴

Infrastructure

Table 2 provides a snapshot of the state of national ICT infrastructure in the country.⁵

Table 2: ICT in Democratic Republic of the Congo

| Indicator | |
|--|-------|
| Population (in millions) | 53.8 |
| Literacy rate | 64.1 |
| Gross national product per capita | 90 |
| Televisions per 1,000 people | 2 |
| Radios per 1,000 people | 386 |
| Fixed telephone lines per 1,000 people | 0 |
| Cell phones per 1,000 people | 3 |
| Personal computers per 1,000 people | - |
| Internet users | 6,000 |

In the service sector in the DRC, telecommunications is a priority and has had an impact on the gross domestic product with the expansion of the mobile telephone network. From a few thousand subscriptions before 2000, there are currently more than 3.5 million subscribers out of a population of about 60 million, for a telephone density of 5.8%. Before 2000, the telephone density was 0.06%.

The arrival of many competing service providers in the market has extended the network to remote rural zones. Due to political instability, the mobile telephone networks are decentralised (e.g., TATEM TELECOM (Congo Telecom) initially operated only in the port city of Matadi).

ICTs in Education

A national policy on ICT use in education was launched in 2004 within which two main priorities were identified: the Internet network and electronic governance. These priorities are reflected in action at three levels: university, basic education, and community.

University level

At the university level, the following initiatives have been taken:

- The Virtual Francophone Campus works to unite higher education institutions through the organisation of distance training sessions and the facilitation of research in the fields of science and technology.
- Education For Change (EFC) consultants have been engaged by Vlaamse Interuniversitaire Road University Development Cooperation (VLIR-UOS) and Conseil Interuniversitaire de la Communauté française de Belgique – Commission Universitaire pour le développement (CIUF-CUD) in Belgium to identify needs and opportunities to strengthen ICT capacity in the DRC through a transversal programme involving seven universities. This will draw on lessons from the experience and results of existing and ongoing work at the Universities of Kinshasa (UNIKIN) and Lubumbashi (UNILU). The work also seeks to facilitate networking among a variety of teaching and research programmes.⁶
- The University of Kinshasa and a group of dedicated teachers enacted a programme to interconnect all Congolese universities. Using an optical fibre backbone, their project now serves 10 Unikin establishments. It aims to prevent the continued departure of university specialists, as well as to meet the growing demand for distance training programmes. The project was made possible by a grant from Belgium.
- The Polytechnic faculty serves as the regional platform for the Cisco Academy and provides hosting for students from Congo Brazzaville, the DRC, and other surrounding countries.

Basic education

With only 56% literacy among the DRC's female population, USAID has placed women and girls at the forefront of all education improvement and disbursement efforts, and has used technology as the primary tool. With the Internet and radio, for example, USAID has helped to create, not only teachers (by way of technologically based teacher-training programmes), but also learners (through their many broadcasts that stress the importance of girls' education). This vision is further facilitated through the provision of scholarships to the community's most vulnerable female students. (In the 2003-04 school year over 11,000 girls received such support.)⁷

Communities

- *The Community Resource and Learning Center: a bridge between community and schools*
On July 12, 2003, the Community Resource and Learning Center (CRLC) of Vanga (a rural community of approximately 3,000 people on the banks of the Kwilu River in Bandundu Province) was opened. After months of investment by community members, the dot-EDU team (the Education Development Center), the Academy for Educational Development (AED), and The Mitchell Group (TMG), the CRLC now houses a training room as well as a computer room equipped with 15 computers, three printers, two digital cameras, two digital video cameras, two digital audio recorders, a television, an LCD projector and other multimedia equipment. Using VSAT technology, all computers were networked and Internet-ready.

The Center provides the necessary infrastructure to train health and education workers, community members, and primary school children in the use of ICT. In addition, six community members have been trained for management and maintenance. As girls and women are often marginalised with respect to ICT use, special outreach efforts are targeting female students, teachers, and community members. Some modules (French, mathematics, biology) have been developed for teacher training and to supplement existing lessons plans. Based on the YouthLearn methodology for youth development

programming, these modules affirm the centrality of project-based activities, collaboration, and exploration. In addition, these highly interactive and possibly Web-based materials are designed around existing community needs and capacities and fashioned in a way that allows for their use both in and outside the classroom.⁸

- *Using ICT to address chronic information shortages*

Like other areas in the DRC, the Vanga Mission has suffered from a steady decline in the education system, lack of paid teachers and new materials, few up-to-date pedagogical methods, and a shortage of copies of the national curriculum. USAID/DRC provided pilot funds to use ICTs to address these issues and identify innovative means of improving the quality of basic education. USAID/DRC, through dot-EDU, its partners, and the Center in Vanga, are also using the Internet to provide local hospitals with access to otherwise unavailable information.⁹

Current ICT Initiatives and Projects

In terms of major initiatives to welcome more people into the Information Age, ICT training seems to be particularly dynamic. For example, some primary schools are making an effort to orient their students towards computer technology at an early age. As well, there are several private training centres in the capital that offer short courses on network management and developing Web servers and on-line databases. In this model, there is a real market in technology training to meet a high demand.

Other initiatives include the following:

Linking universities

The linking of Universities of Kinshasa and Lubumbashi to reliable VSAT connections through a VLIR-funded (Free University of Brussels/Belgium) project has opened the doors to new research opportunities for both universities. However these links are costly. Contacts have been made recently with the African Virtual University (AVU) to find ways of decreasing costs. Kinshasa and Lubumbashi are separated by a distance of approximately 1,600 kilometres, and there is currently no plan to cover this distance by fibre.

Kinshasa has one of the largest universities of the country and there are several other private and public organisations that provide good quality education nearby. These include:

- Protestant University of Congo
- Catholic Theological Schools of Kinshasa
- Advanced School of Applied Science (Institut Supérieur des Techniques Appliquées)
- Optical Fibre for Education and Research Networks in Eastern and Southern Africa
- Advanced School of Commerce (Institut Supérieur du commerce)
- Advanced School of Building and Civil Engineering (Institut de bâtiments et des travaux publics (IBTP))
- Pedagogical Institute of Gombe (Institut Pédagogique de la Gombe (ISP Gombe))
- LIFASIC

These institutions are located in close proximity making interconnection by fibre realistic in the near future. Accordingly, the first steps are being taken to connect UNIKIN (University of Kinshasa) to the Kinshasa Internet Exchange and agreements have been made to use UNIKIN as a hub for the other institutions.¹⁰

Virtual universities

The Virtual African University (UVA) and the Francophone Academic Agency (AUF) have set up the Virtual Francophone University (UVF). This allows its users to share academic resources formulated in French using a network established by the partnership.

CAFEC

As of early 2005, the African Centre of Cultural Exchange (CAFEC) worked in close collaboration with some Congolese organisations (ASSIC, JUSDATA, etc.) to set up a Congolese action for the popularisation of ICT. This has won the support of Alternatives, a Canadian NGO settled in the DRC for almost three years. CAFEC also managed to create the National Network of Congolese NGOs for the Promotion of ICT (REPRONTIC), which currently involves 23 Congolese NGOs and is a source of much interest from PNUD/DRC. The Alternatives organisation in the DRC also carries out activities in ICT in collaboration with the Multi-sector Dynamism for ICT (DMTIC), which gathers representatives from the public, private sector, and civil society.

Congo Skill

Congo Skill is a non-profit organisation that aims to increase computer literacy in the DRC and other African countries. Congo Skill is the state official representative in the ECDL Foundation (European Computer Driving Licence) based in Ireland. This organisation manages the PICI (International Passport of Competences in Data Processing) at a higher level. ECDL intervenes in Europe and ICDL outside Europe. The IPCD (International Passport of Competences in Data Processing) ensures essential basic competences for sustainable autonomy and productivity. It provides a remarkably high level of adapted computer-related skills and knowledge through a series of modules leading to a certification in fields considered as fundamental.

The Aden Project

As a key instrument in the French co-operation policy for digital gap reduction, ADEN has implemented digital inclusion programmes in 11 sub-Saharan French-, English-, and Portuguese-speaking countries for the period 2003-2008. Provided with a budget of six million euros, it has three goals: democratising access to ICT; training local populations; and supporting the Internet uses, contents, and applications for development.

Four centres have already been founded: one in Delvo of Butembo, another in UCG Butembo, a third in Kimpese, and the last in Kisangani. These centres are resources for the masses eager to access the Internet, but constant problems are experienced such as poor electrical power provision, low attendance due to the population base being away from the centres, and faulty computer materials and accessories.

iEARN

iEarn in DRC intervenes by:

- Teaching students how to use computers
- Enabling students to break out of isolation and become exposed to the global network to express themselves
- Deconstructing the myths surrounding computers and the Internet
- Allowing students to fully access and enjoy knowledge through ICT

APEFE

The Association for the Promotion of Education and Foreign Training (APEFE) has created a technical training unit inside the Institute of Technical Teaching in Kinshasa (ISPT Kin).

RESOP

The Open Network for Teaching Resources (RESOP) project provides “a network of teaching resources for teachers training with a view to reshuffling and readapting the national system” in the DRC. UNESCO manages this project while the French society provides the distance training means.

Easy Tec

Easy Tec is a Kinshasa-based organisation that promotes ICT training, offers maintenance services for computers and computer equipment, helps create Web sites, and provides network administration and software development (billing, accounting, cash flow, payroll, staff development, stock development, etc.).

Implementing ICT in Education: What Helps and What Hinders?

Table 3 provides a summary of the current stage of ICT development in the DRC in terms of enabling or constraining features in the education system.

Table 3: Factors Influencing ICT Adoption

| Factors | Enabling Features | Constraining Features |
|---|---|---|
| <i>Policy framework and implementation</i> | | A non-existing national policy, and the apparent lack of concern on the part of the government for the development of ICT signals a weak perception of the possible impact of these technologies for the country's welfare. |
| <i>Advocacy leadership</i> | | Local suppliers have not benefited much from the national backbone, and the central authorities seem currently unconcerned with the development of the sector. |
| <i>Gender equity</i> | | There exists gender inequity to ICT access as well as inequality between rural and urban areas. |
| <i>Infrastructure and access</i> | The networks that unite university and college institutions with the common goal to facilitate access to information and provide training are of great importance for the reinforcement of the quality of executives' training. | The DRC is not linked to the SAT3 underwater fibre-optic cable, and access to the Internet relies solely on satellite, and is thus very expensive and unstable. |
| <i>Policy and collaborating mechanisms</i> | The mechanism of collaboration between government, civil society, media, and private sectors is an | |

| Factors | Enabling Features | Constraining Features |
|--------------------------------|--|--|
| | innovative approach and a multi-stakeholder alliance on ICT for development policy. | |
| <i>Human resource capacity</i> | Expand further training to widen access. | |
| <i>Fiscal resources</i> | | School fees need to be lowered and adapted to the ability to pay by the local population. |
| <i>Learning resources</i> | ICT is slowly making its way into the classrooms, largely through the work of non-governmental actors. | In terms of the teaching of technologies, the situation is little more than at its beginning stages. |

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