



United Nations  
Educational, Scientific and  
Cultural Organization



# UNESCO Building Human Capacities in Least Developed Countries to Promote Poverty Eradication and Sustainable Development



UNESCO

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## **Acknowledgements**

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in Least Developed Countries  
to Promote Poverty Eradication  
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# Contents

Foreword	7
What are LDCs?	10
Contributing to poverty eradication and sustainable development in the LDCs through education, the sciences, culture and communication and information	13
Education: a catalyst for poverty eradication and sustainable development	16
Reducing HIV infection rates in persons 15-24 years of age	38
Promoting gender equality in the LDCs	42
Science: a catalyst for poverty eradication and sustainable development	44
Mitigating and adapting to climate change	56
Culture: a catalyst for poverty eradication and sustainable development	59
Communication and Information: a catalyst for poverty eradication and sustainable development	64
Supporting LDCs in post-conflict and post-disaster situations	71
Special focus on Haiti	74

# Foreword



The Fourth United Nations Conference on the Least Developed Countries, to be held in Istanbul, Turkey from 9 to 13 May 2011, is an excellent opportunity to take stock of action for the world's least developed countries and to strengthen our commitment in their favour. The stakes are high. This is a struggle for human dignity, and against the dehumanizing conditions of poverty and hunger. UNESCO is contributing to this by assisting the least developed countries through education, the sciences, culture and communication and information.

## Realizing the promise of Education for All

For many children and young people in least developed countries, education remains a distant promise. Enrolment rates in African least developed countries have increased by nearly 20 per cent in the past ten years, reaching 70 per cent today, and some least developed countries have achieved gender parity in primary education. However, in many least developed countries the provision of free primary schooling remains a serious challenge.

This is especially true for poor households and children living in rural areas. An alarming 25 million primary school-aged children are still not in school in least developed countries today. Exclusion and inequalities linked to wealth, gender, ethnicity, language, location and disability are holding back progress. Existing systems are plagued by low completion rates, poor school facilities, low quality instruction, high teacher-pupil ratios, and a lack of qualified teachers. Girls are disproportionately affected by these trends – in spite of improved gender parity in primary education. Poor access to water supply and sanitation also has a significant impact on school attendance. Often, the increase in enrolment was not met with proper school infrastructure. Adult literacy rates have not increased by 50 per cent, as planned in the Brussels Programme of Action. Least developed countries will need to recruit at least 1.9 million new teachers to achieve universal primary education by 2015.

Post-primary education systems in least developed countries are also weak. In many countries, the quality of tertiary education has declined – impacting negatively on innovation and research capacities, and constraining economic and social development. Secondary education, which provides the key to skills development, is often reserved for a minority, while higher education appears almost a luxury. Successful investment in human resources depends also on technical and vocational education and training. The acquisition of “employability skills” through technical and vocational education and training can help to contribute to educational development, labour market inclusion and economic growth.

Promoting education for all is key to reaching all other Millennium Development Goals, including the health and maternal mortality goals. We need to increase international support and funding for quality education in the least developed countries, respectful of country-specific needs, and focusing on girls’ and women’s education.

This cannot only be limited to primary education. It must include technical and vocational training, secondary and tertiary education, and also research institutions. These are imperative for boosting productivity, opening opportunities for jobs and credit, promoting social cohesion and inclusion, and developing the potential of every child and young person.

The evidence is strong. Each additional year of schooling raises average annual gross domestic product growth by 0.3 per cent. One extra year of schooling increases an individual’s earnings by up to 10 per cent.

## Promoting science and culture for development

We must also assist least developed countries in building their capacities in science, technology and innovation. This is vital for developing effective solutions to help the poor benefit from improved access and management of natural resources – such as safe drinking water, clean energy technologies, agriculture and rural development. Science and technology are critical for least developed countries to reduce poverty in a rapid and sustainable manner and to harness innovation for development.

Culture should not be seen as a luxury for least developed countries. Their rich cultural heritage is an asset for growth and social cohesion. We must help these countries strengthen the contribution of their cultural industries and the cultural sector to economic development. Worldwide, culture industries generate USD 1.3 trillion in jobs and income annually, and account for 7% of global gross domestic product. Heritage – especially UNESCO World Heritage sites – produce revenues from visits, sales of local crafts, music and cultural products generating employment for communities. These can be powerful engines of economic growth, generating considerable income and employment, while at the same time serving as strategic outlets for innovation, production and dissemination.

Enhancing access to information and communication technologies is imperative also to bridge the knowledge divide and to assist least developed countries in mitigating and adapting to climate change. These are important steps in our common quest to build low-carbon societies.

I am confident that with strong leadership by the least developed countries and with increased international solidarity we can build a more human, inclusive, sustainable and peaceful future for the populations of the least developed countries.

A handwritten signature in black ink, reading "Irina Bokova". The signature is fluid and cursive, with the first letter of each word being capitalized and prominent.

**Irina Bokova**

*Director-General of UNESCO*



# What are the LDCs?

The United Nations recognizes the Least Developed Countries (LDCs) as the “poorest and weakest segment” of the international community. They are considered highly disadvantaged in their development process and risk, more than other countries, not being able to rise out of poverty. This is why the LDCs must receive targeted support from the international community.

## Which countries are LDCs?

There are currently 48 LDCs, as classified by the United Nations. They are listed by region as follows:

**Africa** (33 countries): Angola, Benin, Burkina Faso, Burundi, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, Togo, Uganda, Tanzania, and Zambia.

**Asia and the Pacific** (15 countries): Afghanistan, Bangladesh, Bhutan, Cambodia, Kiribati, Lao People’s Democratic Republic, Myanmar, Nepal, Samoa, Solomon Islands, Timor-Leste, Tuvalu, Vanuatu, and Yemen.

**Latin America and the Caribbean** (1 country): Haiti

## What qualifies a country to be an LDC?

The United Nations Committee for Development Policy (CDP) uses the following criteria to identify LDCs:

- Low-income, measured by an average income per person over three years. An average income of less than \$745 per person per year is considered for inclusion, and above \$900 for graduation.
- Weak human resources, as measured by indicators of nutrition, mortality of children aged five years or under; secondary school enrolment; and adult literacy rate.
- High economic vulnerability, measured by population size; remoteness;

diversity of goods exported, share of agriculture, forestry and fisheries in the economy; instability of agricultural production; instability of exports of goods and services; and homelessness owing to natural disasters.

To be qualified as an LDC, a country must meet all of the three above mentioned criteria, and if its population does not exceed 75 million.

## What benefits do LDCs receive?

The international support measures associated with LDC status are related to trade preferences, development financing, including Official Development Assistance, debt relief, technical assistance and other forms of support. LDCs that are members of the World Trade Organization (WTO) also benefit from special and differential treatment regarding WTO related obligations.

## How does a country graduate from the list?

A country qualifies for graduation from the list if it reaches the threshold levels for graduation on at least two of the aforementioned three criteria, or its income per capita must exceed twice the threshold level.

The likelihood that the level of income per capita is sustainable must be deemed high. There is a three year “smooth transition” period to assist graduating countries adjust to the loss of benefits associated with being an LDC.

## Which countries have graduated from the list of LDCs?

Since 1971 when the LDC category was established, only three countries have graduated. Botswana graduated in 1994, Cape Verde in 2007, and the Maldives in 2011.

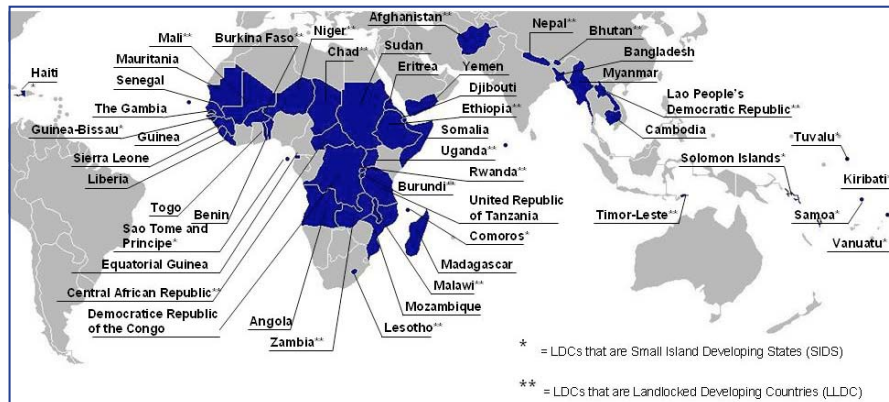
## What is the Brussels Programme of Action for LDCs?

The Brussels Programme of Action, adopted at the Third United Nations Conference on the Least Developed Countries in Brussels, Belgium, in May 2001, sets out wide-ranging actions to be implemented by LDCs and their development partners for the sustainable development of the LDCs. The broad aim of the 10-year Programme is to significantly reduce extreme poverty and hunger through focused interventions in seven interlinked areas of commitment. It sets targets for the achievement of 30 development goals, including the Millennium Development Goals, in the LDCs.

The commitments and goals defined in the Brussels Programme of Action are:

- Commitment 1 - Fostering a people-centred policy framework
- Commitment 2 - Good governance at national and international levels
- Commitment 3 - Building human and institutional capacities
- Commitment 4 - Building productive capacities to make globalization work for LDCs
- Commitment 5 - Enhancing the role of trade and development
- Commitment 6 - Reducing vulnerability and protecting the environment
- Commitment 7 - Mobilizing financial resources

Map 1. LDC World Map



The Fourth United Nations Conference on the Least Developed Countries will take place in Istanbul from 9-13 May 2011 to assess the results of the 10-year action plan for the Least Developed Countries (LDCs), and to adopt new measures and strategies for the

sustainable development of the LDCs into the next decade.

*Source:* Office of the High Representative for the Least Developed Countries, Landlocked Developing States and Small Island Developing States (UNOHRLLS), *The Least Developed Countries, Things to KNOW, Things to DO*, New York, 2009.



Girl's education, Niger

# Contributing to poverty eradication and sustainable development in LDCs through education, the sciences, culture and communication and information

## Providing targeted assistance to the LDCs

UNESCO's Medium-Term Strategy for 2008-2013 (34 C/4) commits the Organization to providing targeted assistance to the LDCs in all of its spheres of competence. In doing so, UNESCO is guided by the Brussels Declaration and the Programme of Action for the Least Developed Countries for the Decade 2001-2010, adopted by the Third United Nations Conference on the LDCs (Brussels 2001). Specific targeted action for the LDCs is defined in the consecutive biennial programme and budget documents covering this six-year period.

Targeted action for the LDCs during the 2010-2011 programme cycle focuses on:

- ▶ Promoting quality education for all, particularly through capacity development, so as to prepare young people for the world of work and to promote economic growth, foster civic participation, personal development and empower women;
- ▶ Providing policy advice and capacity-building in Science, Technology and Innovation for sustainable development and poverty reduction;
- ▶ Promoting the sustainable management of freshwater, ocean and terrestrial resources, including renewable sources of energy, as well as disaster preparedness and mitigation;
- ▶ Promoting mitigation and adaptation to climate change, notably through



DAMARI Center for Women's Literacy, Niger



enhanced education and public awareness;

- ▶ Promoting culture as a powerful engine for economic growth to generate income and stimulate employment;
- ▶ Developing free, pluralistic and independent media, training journalists and media professionals and fostering ICT applications for enhancing quality and impact of teaching and learning processes.

## Special emphasis on LDCs in Africa

Thirty-three of the 48 LDCs are in Africa, and all are in Sub-Saharan Africa. The continent must be assisted if the Internationally Agreed Developed Goals (IADGs) are to be reached by 2015. To this end, UNESCO is according global priority to Africa, as reflected in the Organization's Medium-Term Strategy for 2008-2013 (34 C/4). As such, the Organization is working to address the needs of the continent in all its five areas of competence: education, natural sciences, social and human sciences,



Director-General Irina Bokova visiting the facilities of the UNESCO-supported educational programme “case des tout petits” (home of the little ones), during her first official visit to Senegal, on 7 February 2011

culture and communication and information. Action in Africa responds to national development needs and takes into account the exigencies of regional integration ar-

ticulated by the African Union, including through its New Partnership for Development (NEPAD), and by the African sub-regional organizations.

**Speaking about the consequences of the economic crisis on the poorest countries during her visit to the World Social Forum in Dakar on 7 February 2011, the Director-General of UNESCO, Irina Bokova, noted that “only monetary or regulatory answers will not suffice to overcome the crisis. It is also through quality education, through culture, through science, that societies can find their way to develop and defend their rights. Africa is at a crossroads of global cultural diversity. It knows the successes, it also knows the failures. With globalization, societies are considerably closer together, and if we want to learn to live together, it is here in Africa, that we will find some answers.”**

Special attention is being given to the implementation of the outcomes and recommendations of the African Union Summits, especially those on culture and education (Khartoum Summit) and on science and technology for development (Addis Ababa Summit).

## Gender Equality – a Development Imperative for LDCs

Gender equality is a development imperative for the LDCs. The IADGs will not be met in the LDCs if global efforts to promote gender equality are not strengthened. Therefore, UNESCO is according global priority to gender equality in the Organization's Medium-Term Strategy for 2008-2013 (34 C/4). The concrete action that UNESCO will pursue to promote gender equality and the empowerment of women is described in the Organization's practical and results-based Priority Gender Equality Action Plan for 2008-2013.



Women participants in an adult literacy class, Kapilvastu, Nepal

© UNESCO Kathmandu

*“Gender Equality concerns and affects us all. (...) Ensuring women’s full and equal participation in development and in peace-building processes is a sure way of building stable and open societies, and ensuring sustainable development.”*

**Irina Bokova on the occasion of her acceptance speech as Director-General of UNESCO, 23 October 2009**

# Education: a catalyst for poverty eradication and sustainable development

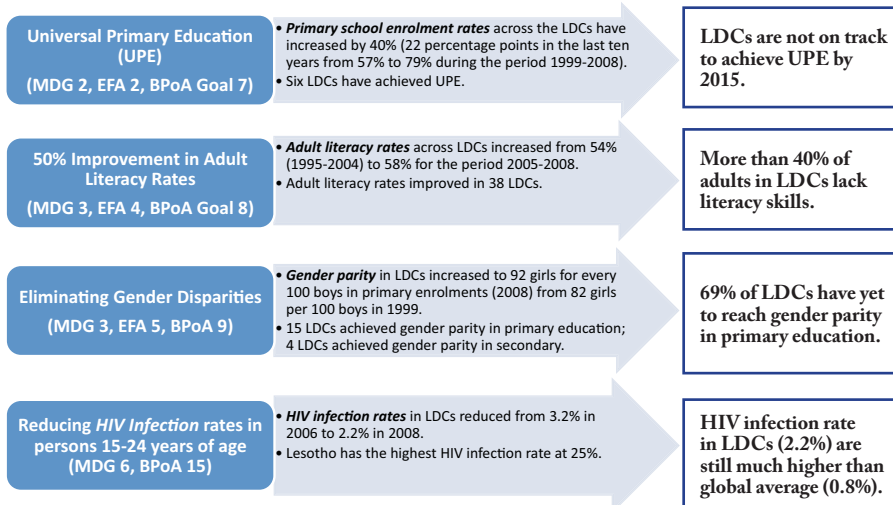
The ten-year Brussels Programme for Action (2001–2010) aims to significantly improve the human conditions of more than 800 million people living in the Least Developed Countries (LDCs). To this end, four of the thirty goals prioritized Education, calling for Universal Primary Education (UPE); a 50% improvement in adult literacy rates; elimination of gender disparity in primary through

tertiary education; and a reduction of HIV infection in young people.

**Each year of additional schooling could increase individual earnings by 10%; each year of additional schooling could lift the average annual GDP growth by 0.37%**

*(Source: EFA GMR 2010)*

– 2011 –



\*All data on education presented in this publication was provided by UNESCO's Institute of Statistics (UIS), unless otherwise mentioned.



© Ministère CR Aterre

Children learning the alphabet

## No country has ever climbed the human development ladder without steady investment in education

As the leading agency in EFA, UNESCO promotes policy dialogue and facilitates mobilization of funding in order to sustain political commitment to EFA and accelerate progress towards the 2015 targets. UNESCO's support to education in the LDCs focuses on the following key priority areas: Literacy; Teachers; Technical and Vocational Education and Training; and Sector-Wide Policy and Planning. The equation is simple: education is the most basic insurance against poverty.

- ▶ Education represents opportunity. At all ages, it empowers people with the knowledge, skills and confidence they need to shape a better future.
- ▶ Education is also a means to access broader social, economic, political and cultural benefits.
- ▶ Education contributes to building more just societies through reducing poverty and inequalities.

Severe Demand for Teachers	<ul style="list-style-type: none"> <li>• LDCs need 1.9 million primary education <b>teachers</b> to achieve UPE (including compensation for attrition).</li> <li>• Forty LDCs are in need of primary school teachers.</li> </ul>
Technical and Vocational Education and Training (TVET)	<ul style="list-style-type: none"> <li>• The share of secondary school students enrolled in <b>technical and vocational educational programs</b> in LDCs is 4% compared to 16% in developing countries and a global average of 11%.</li> </ul>
Strengthening Education Systems	<ul style="list-style-type: none"> <li>• Development of coherent policies and plans is crucial to bring about real and sustainable change in <b>education systems</b> necessary to achieve the goal of Education for All.</li> </ul>
Financing for Education for All	<ul style="list-style-type: none"> <li>• <b>Financing basic Education for All</b> (EFA) requires \$16 billion annually (literacy, pre-primary and primary education). The record on aid for education is disappointing and undermines the achievement of Education for All (EFA) goals. Donors and recipient governments must both increase resources available to education and improve aid governance.</li> </ul>



## Education For All

The Education for All (EFA) goals adopted in Dakar by 164 governments in 2000 remain the benchmark for assessing progress towards Education for All. EFA pledges to expand learning opportunities for every youth, adult and child and to achieve specific targets in key areas by 2015.

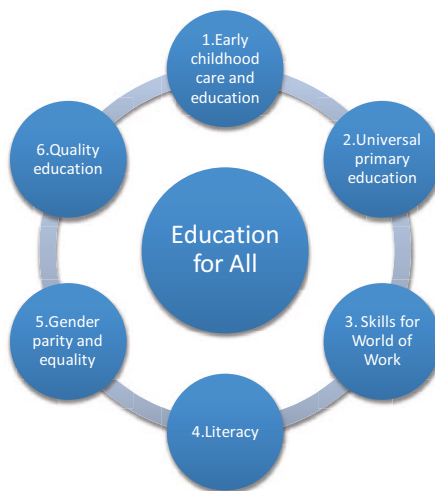
**The quality imperative.** Gains made in access to education cannot be sustained without a parallel improvement in quality. UNESCO works with a range of partners to improve capacity to assess and monitor quality.

**The Southern Africa Consortium for Monitoring Educational Quality (SACMEQ): an original approach to monitoring educational quality.** Since 1994, IIEP supports SACMEQ's ability to track and understand improvements in education. SACMEQ has developed the capacities of 15 ministries of education – 7 from LDCs – by implementing a mechanism for training on large-scale data collection and analysis. Cascading training resulted in 2,500 researchers trained across the network.

UNESCO is building national capacities to design and manage literacy policies and programmes targeting women and girls, to develop gender-sensitive teacher policies, to train teachers in gender-sensitive teaching and learning approaches; and to expand access and retention of boys and girls to quality secondary education.

Access to quality **early childhood care and education (ECCE)** significantly improves learning outcomes in later years. Over 100 countries – among which 18 were LDCs – prioritized ECCE as part of the right to education and as a foundation for equitable and inclusive development at the First UNESCO World Conference on ECCE (Moscow, 2010).

UNESCO promotes a multi-sector approach to ECCE and supports LDCs (including Bangladesh, Haiti, Liberia, Mozambique and Senegal) in building national capacities to design ECCE systems that aim to build a solid foundation for a child's development and lifelong learning.



UNESCO's **Literacy Initiative for Empowerment (LIFE)** targets 35 countries – 24 are LDCs – that have a literacy rate of less than 50% where the adult population without literacy skills exceeds 10 million.

**Establishing comprehensive education systems:** UNESCO provides international leadership, technical advice, standard-setting, capacity-building and monitoring to support countries to reform, strengthen and manage education systems that promote access, inclusion, gender equality and quality.

The **Basic Education Programme in Africa (BEAP)** promotes an expanded vision of quality and relevant basic education of 9-10 years, including at least one year of pre-school, for all students. It focuses on competencies and learning outcomes that prepare learners for subsequent levels of education and the world of work. Since its introduction in 2008, BEAP has facilitated high-level policy dialogue with African Member States to re-examine the effectiveness, efficiency and outputs of their education systems. The programme has been launched in 5 countries, 3 of which are LDCs: Ethiopia, the Gambia, and Tanzania.

UNESCO's supports **Technical and Vocational Education and Training in 10 LDCs:** Afghanistan, Angola, Congo (D.R.), DR Lao, Haiti, Lesotho, Madagascar, Malawi, Mozambique, and Zambia.

UNESCO provides support for addressing teacher issues, namely through its **Teacher Training Initiative for Sub-Saharan Africa (TTISSA)** in 9 LDCs: Angola, Benin, Burundi, Guinea, Lesotho, Mali, Mauritania, Niger and Uganda.

## UNESCO's Institute for Statistics (UIS) is building national statistical capacity to support LDCs in monitoring and evaluating their progress in education

The availability and quality of data are critically dependent upon the statistical capacities of relevant government departments and national agencies. Not all LDCs have national statistical capacity to collect, monitor and evaluate the state of education. However, since the creation of UNESCO's Institute for Statistics (UIS) in 1999, UIS has worked intensively in LDCs to improve statistical and analytical capacities by helping countries to become self-reliant, both financially and institutionally, so that they acquire the expertise to determine their own data needs and priorities, to collect these data, to interpret and use them effectively; to undertake research, problem solving and problem formulation; and to sustain these capacities. As of 2008, 26 LDCs had national statistical capacity to report on education access, equity and quality – measured by EDI – an increase from 1999, where only 8 LDCs had the capacity<sup>1</sup>. This data is used to assess and evaluate progress related to education-related Millennium Development Goals, Brussels Program for Action Goals and Education for All Goals.

During the period 2003-2006, UIS, in collaboration with the European Commission, implemented a Project for **Developing National Statistical Capabilities for the Monitoring of Education for All (EFA)**. The major objective of the project was to build a sustainable national capacity for monitoring progress towards EFA goals in 11 selected countries that joined the EFA Fast Track Initiative, including 7 LDCs: **Bangladesh, Ethiopia, Guinea, Mauritania, Niger, Tanzania and Uganda**. Diagnostic studies and action plans were completed in all countries, followed by the provision of required support for the enhancement of national statistical education systems. Strengths and weaknesses in the production and use of education statistics were fully assessed. Areas that needed strengthening and related modes of intervention were identified. In addition, national officials were trained to produce and efficiently use education statistics for better decision making.

With UIS support, LDCs strive to improve the use of statistics as part of evidence-based policymaking.

The quality of national education statistics has improved.

In 2011, 34 of the LDCs provided net enrolment rate (ANER) - an increase from 25 LDCs in 2005.

Similarly, the number of LDCs with available Gender Parity Index data in primary education increased from 38 LDCs to 45 during the same period.



Students playing, Ethiopia

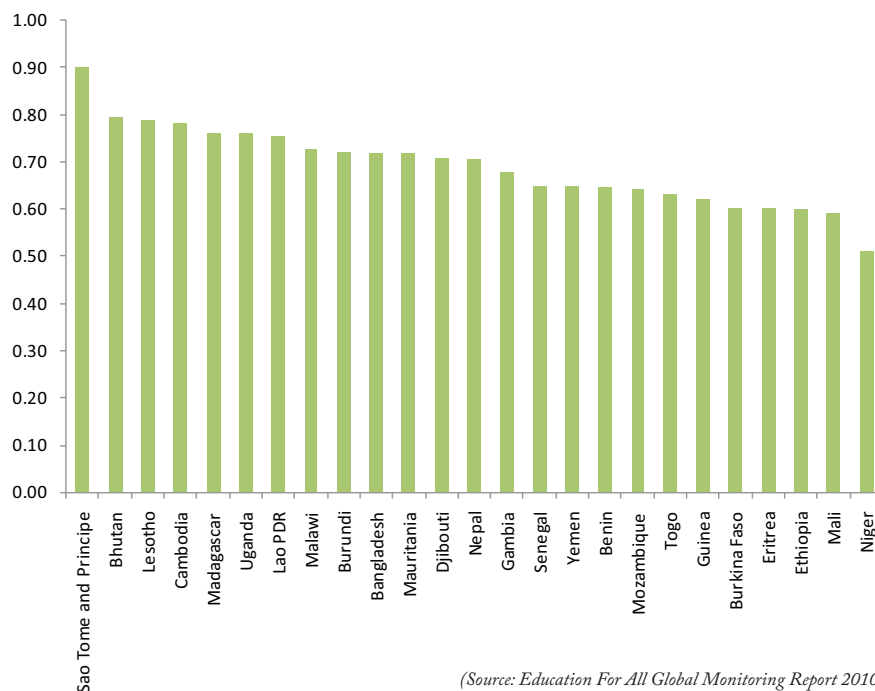
1. See EDI graph 2007, GMR 2010

## Many LDCs have improved educational statistical capacity, but challenges remain

The Education for All Development Index (EDI) provides a composite measure of progress, encompassing access, equity and quality that provides a snapshot of the status of education in the LDCs, where data was available. Over ninety percent of the LDCs where data is available have a low EFA educational development index (26 LDCs); Niger has the lowest EDI. One LDC, Sao Tome and Principe, has a medium EFA EDI.

Because of data availability constraints, EDI includes only the four most easily quantifiable goals, which are included below (attaching an equal weight to each). The EDI value for a given country is the arithmetic mean of these four proxy indicators. It falls between 0 and 1, with 1 representing full Education for All (EFA) achievement.

Figure 1. Education for All Development Index (EDI) (2007)



(Source: Education For All Global Monitoring Report 2010)

### Support to educational policies and strategies planning processes: the case of School Fees Abolition (SFA) in the Democratic Republic of Congo

To accelerate progress towards reaching the EFA goals, the **Democratic Republic of Congo** (DRC) Government has engaged in reforming its educational system, with a special focus on basic education.

UNESCO is supporting the Government in these efforts. Based on a rigorous analysis of the educational system needs and the national priorities, UNESCO has developed an integrated programme to support the formulation of targeted policies and the development of strategic plans to promote free education and to expand the duration of basic education. UNESCO's support for the development of sector-wide education statistics for the past five years has now made it possible to have results- and evidence-based educational planning. Additionally, UNESCO's has supported policy dialogue between key institutions in charge of education, budget and finance to identify the criteria for a policy for abolishing school fees in a country where public funding for education is weak.

In September 2010, the President of the D.R. Congo declared the abolition of school fees for the first three grades of primary education. This was a major milestone towards achieving universal, compulsory, primary education in the DRC. While monitoring the effects of the SFA policy on access and quality of education, UNESCO continues to work with the Government in planning the next steps needed to make basic education for for all, and to urge the Government to significantly increase the budget of the State in favor of education (a major condition for school fees to be abolished at all primary education grades).

In 1999, only 8 LDCs had statistical capacity to report on educational access, equity and quality (EFA EDI).

As of 2008, the number of LDCs with the ability to report on EFA EDI increased to 26.

Still, 22 LDCs need to build national statistical capacity to report on EFA EDI.

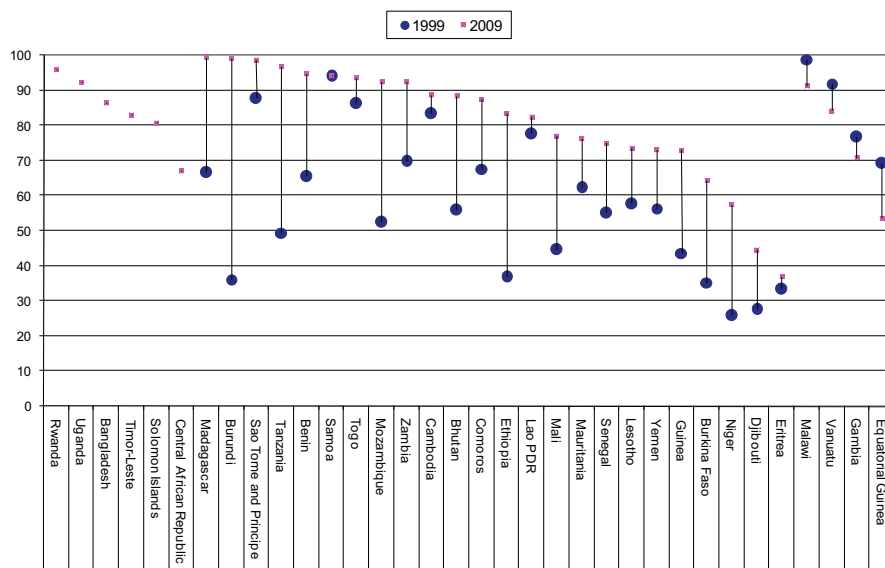
**Primary school age enrolment rates in LDCs increased by 40% between 1999 and 2009; However, LDCs are not on track to achieve UPE**



Many LDCs have made remarkable progress during the last decade. The adjusted net enrolment rate (ANER), which measures the coverage of primary school-aged children, increased in the LDCs by almost 22 percentage points in the last ten years to 79% (2008) from 57% in 1999. Six LDCs have achieved Universal Primary Education or very near to it (ANER>95%): Burundi, Madagascar,

Rwanda, Samoa, Sao Tome and Principe, and United Republic of Tanzania. Considerable progress was also made in Benin, Bhutan, Burkina Faso, Ethiopia, Mali, Mozambique and Niger, where the ANER increased by more than 25 percentage points during this period. The abolition of school fees was considered as an important driver of this rapid progress in ANER.

Figure 2. Trends in Adjusted Net Enrolment Rate (ANER) in the LDCs (1999 & 2009)



Universal Primary Education (MDG 2, EFA 2, and BPoA 7), measured by the primary adjusted net enrolment ratio (ANER);

Adult Literacy (MDG 3, EFA 4, BPoA 8), measured by the literacy rate for those aged 15 and above;

Gender Parity and Quality (MDG 3, EFA 5, BPoA 9), measured by the gender-specific EFA index (GEI), an average of the gender parity indexes of the primary and secondary gross enrolment ratios and of the adult literacy rate;

Quality of Education (EFA 6), measured by the survival rate to grade 5

Notes: data available in nearest year.

(Source: UNESCO Institute for Statistics 2011)

Primary school enrolment rates in LDCs increased by 40% (22 percentage points in the last ten years from 57% to 79%).

Six LDCs have achieved Universal Primary Education or are closer to achieving (ANER>95%): Burundi, Madagascar, Rwanda, Samoa, Sao Tome and Principe, and the United Republic of Tanzania.

Still, more than 20% of children of primary education age in LDCs were excluded from education in 2008.

For UPE to be achieved by 2015 across the LDCs, every child in every country would now be in school. This is not the case and this goal is not expected to be universally achieved by the target date.

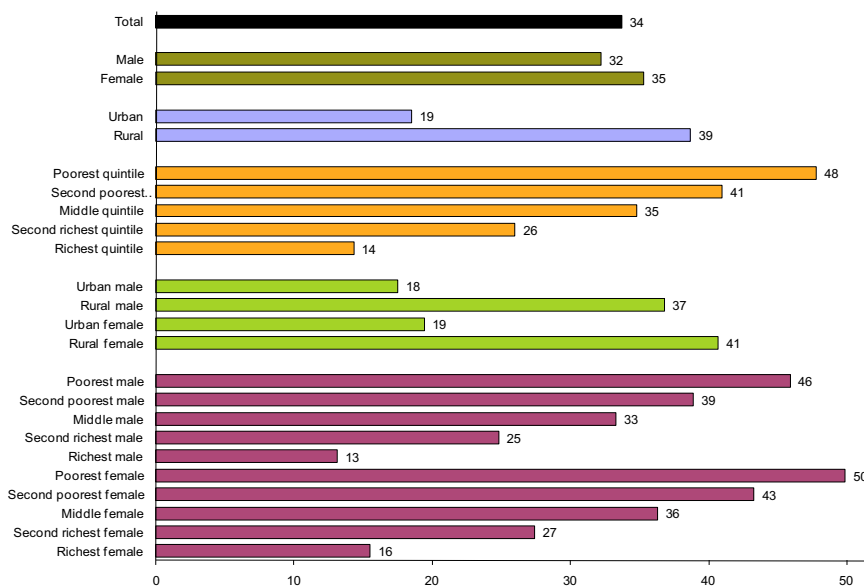
LDCs still lag behind the global average of primary school enrolment rates of 90%.

## 26 million children remain out-of-school in the LDCs

The total number of out-of-school primary-aged children in LDCs dropped from 43 to 26 million between 1999 and 2008, despite a relatively high population growth. Girls represent 54% of the total number of out-of-school children in these countries.

All children of the official entry age should begin school by 2009 in order to complete the full cycle of education to achieve the UPE goal by 2015. In 15 of 30 LDCs with available data on new entrants by age, at least half of the children at the appropriate age did not enter school in 2009. Furthermore, at least one in every three students, in one-half of the countries with available data on retention, had dropped out before reaching the last grade of primary education.

Figure 3. Share of Primary School-Age Children Out-of-School (Percentage) (2000-2007)



Note: The attendance rates from survey data are meant to illustrate disparities in access to primary education and are not necessarily comparable with enrolment rates based on administrative records. For example, attendance data cover only a sub-group of LDCs with high out-of-school rates, which cover a different period, and the mean values are not weighted by each country's population. Source: Based on DHS and MICS surveys conducted in 23 LDCs between 2000 and 2007: Bangladesh, Benin, Burkina Faso, Burundi, Cambodia, Central African Republic, Eritrea, Ethiopia, Guinea, Lao People's Democratic Republic, Lesotho, Liberia, Malawi, Mali, Mozambique, Nepal, Niger, Senegal, United Republic of Tanzania, Togo, Uganda, Yemen and Zambia.

(Source: UIS 2011)

## Poor rural girls and women have the highest risk of being out-of-school. 41% of rural females in LDCs are out-of-school

*(Source: based on surveys conducted in 23 LDCs between 2000 and 2007, UIS 2011)*

Over the past decade, **Mali** has embarked on an ambitious programme to accelerate progress towards Universal Primary Education. Twenty-two donors provided financial and technical assistance with external aid accounting for nearly three-quarters of the program cost in 2007 – excluding teacher salaries. The primary net enrolment ratio increased from 46% at the end of the 1990s to 62% in 2007. While marked gender disparities remain, the ratio of girls to boys in primary school rose from 70% to 80%.

*(Source: EFA GMR 2010)*

Children from the poorest households were more than three times as likely to be out-of-school (48%) than children from the richest households (14%).

Children from rural areas are more commonly out-of-school (19%) than urban areas (39%).

Rural females are much more likely to be out of school (41%) than urban males (18%).

*(Source: Abovementioned data is based on surveys in 23 LDCs between 2000 and 2007, UIS 2011)*

## Literacy remains among the most neglected goals, with more than 40% of adults in LDCs illiterate

The average adult literacy rate among LDCs increased from 54% (1995-2004) to 58% for the period 2005-2008. Still, large disparities exist between LDCs with adult literacy rates from 26% in Mali to 99% in Samoa. Gender disparity for adult literacy in the LDCs is also high with a literacy rate of 67% for men and 50% for women. Among the LDCs, Ethiopia and Bangladesh have the largest number of illiterate adults with 29 million and 49 million respectively.

Analysis of change between 1995-2004 and 2005-2010 highlights that 38 LDCs demonstrated improved adult literacy rate, while the literacy rate only decreased in the D.R. Congo (-0.6%) and Ethiopia and Madagascar maintained the same literacy rates. Progress varied by country and some countries exhibited larger than average growth in literacy rates with 0.1% improvement in Samoa to almost 13% in Eritrea and Timor-Leste and 19% in Niger.

**The Literacy Assessment and Monitoring Programme (LAMP)**, developed by the UNESCO Institute for Statistics, is a tool to assist Member States in measuring levels of literacy achievement.

Illiteracy is a global concern with an estimated 796 million adults who lack minimum literacy skills – 17% of the world’s adults – and nearly two-thirds are women

(Source: EFA GMR 2011)

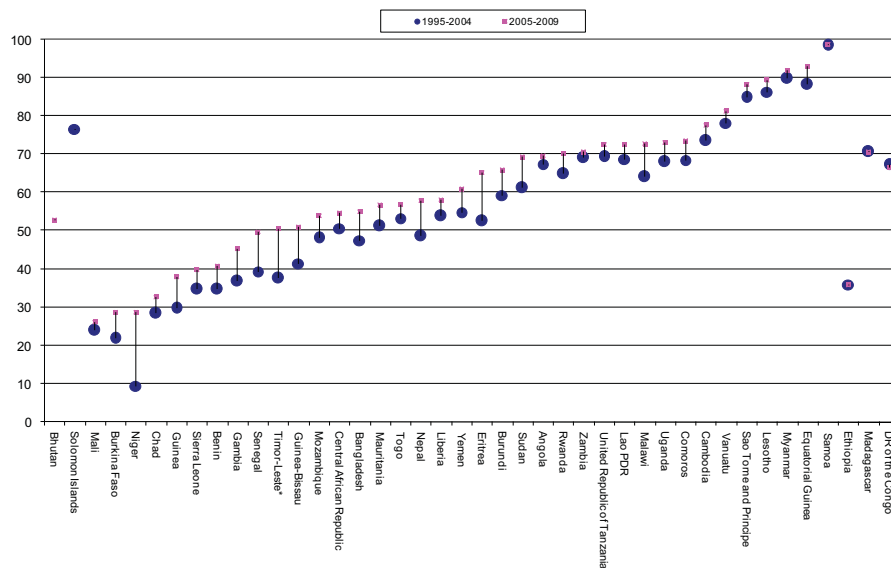
### Why is literacy important?

Literacy is a human right; a means of personal empowerment and a means for social and human development. Educational opportunities depend on literacy.

Literacy is at the heart of basic education for all, and essential for eradicating poverty, reducing child mortality, curbing population growth, achieving gender equality and ensuring sustainable development, peace and democracy.

A good quality basic education equips pupils with literacy skills for life and further learning; literate parents are more likely to send their children to school; literate people are better able to access continuing educational opportunities; and literate societies are better geared to meet pressing development.

Figure 4. Trends in Adult Literacy Rates in LDCs (1995-2004 & 2005-2010)



Note: The Timor-Leste literacy rate refers to the population aged 18 years and older.

(Source: UIS 2011)



## Supporting Literacy Achievement in the LDCs

Since its foundation in 1946, UNESCO has been at the forefront of global literacy efforts and is dedicated to keeping literacy high on the national, regional and international agenda. UNESCO is the lead agency for the **United Nations Literacy Decade (2003-2012)**. Through UNESCO's Institute for Lifelong Learning (UIL), the Organization is implementing the **Literacy Initiative for Empowerment (LIFE)**. LIFE targets 35 countries – and *24 are LDCs* – that have a literacy rate of less than 50%, or countries where the adult population without literacy skills exceeds 10 million. More than a project or programme, LIFE is a process-oriented approach that is country-led and country-specific, with a strategic framework of progressive phases that helps Member States to increase their literacy rates by motivating governments and civil society to focus on literacy, formulating solid policies and developing capacities to deliver good quality multi-lingual programmes.



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Women participants in an adult literacy class, Kaphilvatu, Nepal

## Supporting Literacy Achievement in Nepal

**Nepal** has an adult literacy rate of 58%, but nearly 7.6 million Nepalese youth, adults and elderly people, 67% of whom are women, still lack basic reading and writing skills.<sup>1</sup> The diversity of the country with respect to culture, language and ethnicity poses key challenges in reaching and providing basic education services to the disadvantaged and marginalized groups, especially in remote, rural areas.

In order to meet this challenge, the first government<sup>2</sup> of the Federal Democratic Republic of Nepal launched a national literacy campaign, which was the first intensive nation-wide effort to achieve the goal of literacy for all by 2015. In accordance with Nepal's Interim Constitution of 2007, each community has the right to get a basic education in its mother tongue. The campaign is supported by the majority of EFA partners and many UN agencies, international and national NGOs and civil society organizations.

The UNESCO Office in Kathmandu provides support to this initiative through the Japanese-Funds-In-Trust (JFIT) project "Literacy for All: Empowerment and Poverty Reduction in Post-Conflict Nepal," which develops new modalities for the delivery of basic and post-literacy programmes in local languages. In collaboration with the Non Formal Education Centre (NFEC) of the Nepalese Ministry of Education, the District Education Offices, community learning centres and local NGOs, literacy materials in three local languages – Khas, Awadhi and Maithili – and in Nepali have been developed, revised and tested. These materials are used in three and six-month basic and post-literacy programmes to develop basic reading, writing and numeracy skills. UNESCO also provided support in establishing and strengthening libraries and reading corners in community learning centres so as to support the development of reading habits among neo-literates and community members and to help them engage in continuous learning.

The use of community learning centres in the delivery of literacy programmes has ensured the active participation of local community people and enhanced their ownership.

More than 1,500 women were recipients of these mother-tongue based literacy programmes. Mother-tongue based literacy programmes are an effective modality to encourage and motivate learners. They are instrumental in achieving the goal of literacy for all, and in building a literate Nepal while addressing the very diverse needs of its people.

1. EFA Global Monitoring Report: Reaching the marginalized, 2010

2. After a decade long conflict a comprehensive peace agreement (CPA) was signed on 21 November 2006 and a general election was held on 10 April 2008, resulting into the formation of a coalition government in August 2008. It is worth mentioning here that the 2001 national census recorded the population of Nepal at 23.15 million with 101 castes and ethnic groups and 92 different languages (Ministry of Population and Environment (MoPE): Nepal Population Report 2004). While Nepali, the national language, is spoken by 48.61 per cent of its population, Maithili and Awadhi languages are spoken by 12.3 per cent and 2.47 per cent of its total population respectively. In 2011, the population is estimated at 28.18 million.



**The Education for All goal (EFA 4), and the Brussels Program of Action Goal (BPoA 9) aim to achieve a 50 percent improvement in levels of adult literacy by 2015, especially for women, and equitable access to basic and continuing education for all adults**

### **Building Literacy Capacity in Non-Formal Education in Bangladesh**

In **Bangladesh**, the adult literacy rate of Bangladesh is only 48.8%, according to the Literacy Assessment Survey conducted by the government in 2008. The EFA Global Monitoring Report 2010 presents Bangladesh in the group of countries that are not likely to achieve EFA goal 4 with the largest number of adult illiterates among the LDCs (49 million). Over the past three decades, the non-formal education policy was often driven by a short-term vision and objectives, resulting in institutional arrangements and capacity that were limited. Implementation was commonly ad-hoc. To address this drawback, UNESCO Dhaka provided technical support to the Bureau of Non-formal Education (BNFE), the Ministry and Primary and Mass Education (MOPME) and NGOs to build the institutional and organizational capacity of the Non-Formal Education sub-sector for systematic and comprehensive planning. National ownership and partnerships were strengthened, as were NFE delivery systems. The NFE policy was reviewed, and the NFE programme document with long-term planning was developed and operationalized along with the equivalency mechanisms between formal and non-formal education. The capacity development framework for NFE teachers/facilitators and a delivery framework were also established. The NFE programming in Bangladesh is now ready for large-scale implementation.

### **Many LDCs have made good progress towards gender parity in primary school enrolment; 15 LDCs have achieved gender parity in primary education**

One of the main indicators used to monitor gender parity is the ratio of female to male enrolment by level of education, weighted by the corresponding population. This is referred to as the gender parity index (GPI) of the gross enrolment ratio (GER) for the relevant level of education (e.g., primary, secondary or tertiary). In the LDCs as a whole, the total enrolment rate of girls and boys in primary education is was 101.1% in 2008 (measured by Gross Enrolment Ratio (GER)).<sup>1</sup> However, only 92 girls were enrolled for every 100 boys. Still, this is an improvement from 1999 when there were 82 girls enrolled in primary education for every 100 boys.

Many countries have made good progress towards gender parity in primary school enrolments during the last decade. In Afghanistan, even though the GPI is still low, it increased from less than 0.08 in 1999 to 0.67 in 2008. During the same period, participation among girls improved by more than 20 percentage points in Benin, Ethiopia, Guinea, Senegal and Yemen.

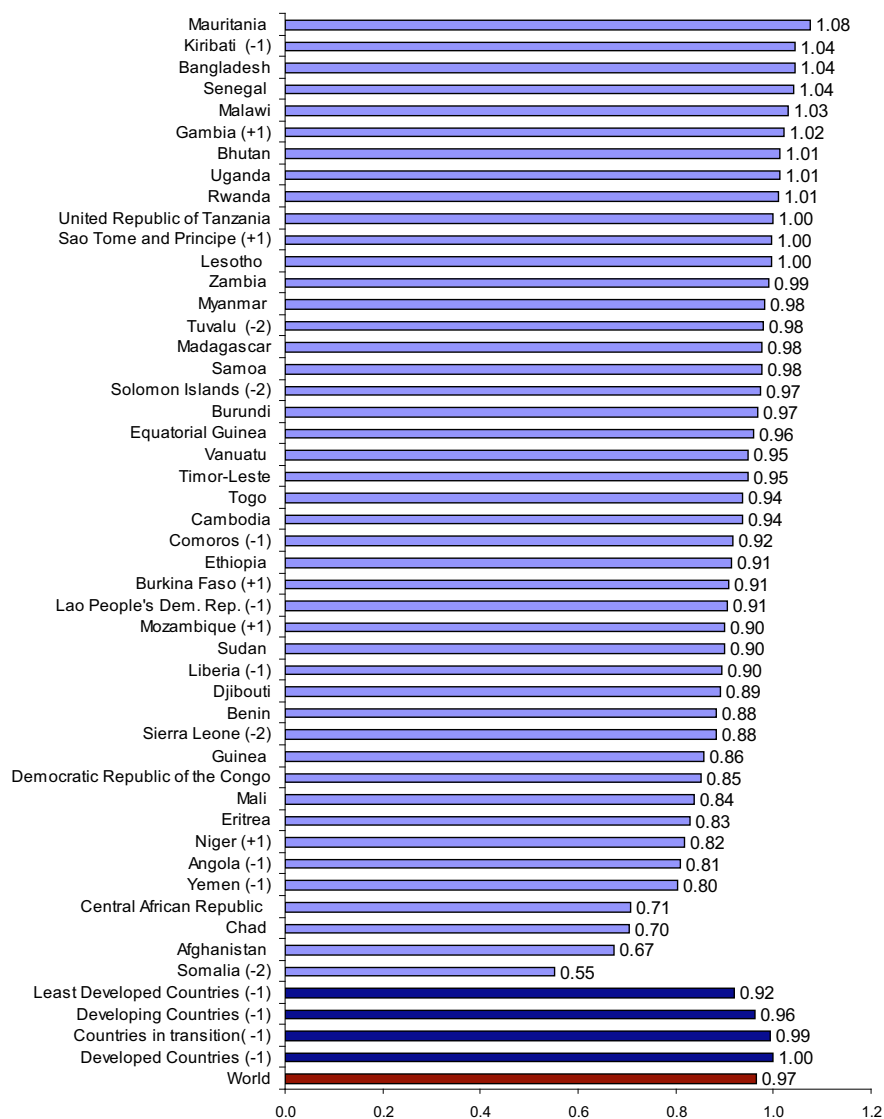


**A child who is born to a mother who can read is 50% more likely to survive past age 5**

*(Source: EFA GMR 2010)*

1. GER= total enrolment in primary education irrespective of age divided by primary school age population multiplied by 100

Figure 5. Gender Parity Index in Primary Education in the LDCs (2009)



Notes: +n: or nearest year available

Parity is reached when GPI value approaches 1.00 (due to margins of error in surveys and administrative data, a range between 0.97 and 1.03 is commonly considered to reflect parity). A GPI below this range indicate more participation rates among boys, and a GPI above this range indicates higher participation rates among girls.

(Source: UIS 2011)

The target is for all countries to eliminate gender disparities in primary and secondary education by 2005 and at all levels of education by 2015.

15 LDCs achieved gender parity in primary education.

Still, there is an average of 92 girls enrolled in primary education for every 100 boys in the LDCs (2008).

Somalia, Afghanistan and Chad have the lowest female enrolment rates in primary education.

Low overall primary enrolment rates in education is generally reflected in lower participation of girls compared to boys. In countries with the lowest enrolment rates in primary education (gross enrolment ratio below 80%), namely Somalia, Eritrea, Djibouti, Niger, Sudan and Burkina Faso, girls' participation was always lower than boys.

## Gender disparity widens in secondary education

The total enrolment rate of girls and boys in secondary education in the LDCs remains low at 34% (measured by GER). Furthermore, 81 girls were enrolled in secondary education for every 100 boys in 2008, which is much lower when compared to the LDC average of 92 girls enrolled in primary education. Little progress has been made with 81 girls enrolled in secondary education in 2008 compared to

1999, when 77 girls were enrolled in secondary education for every 100 boys.

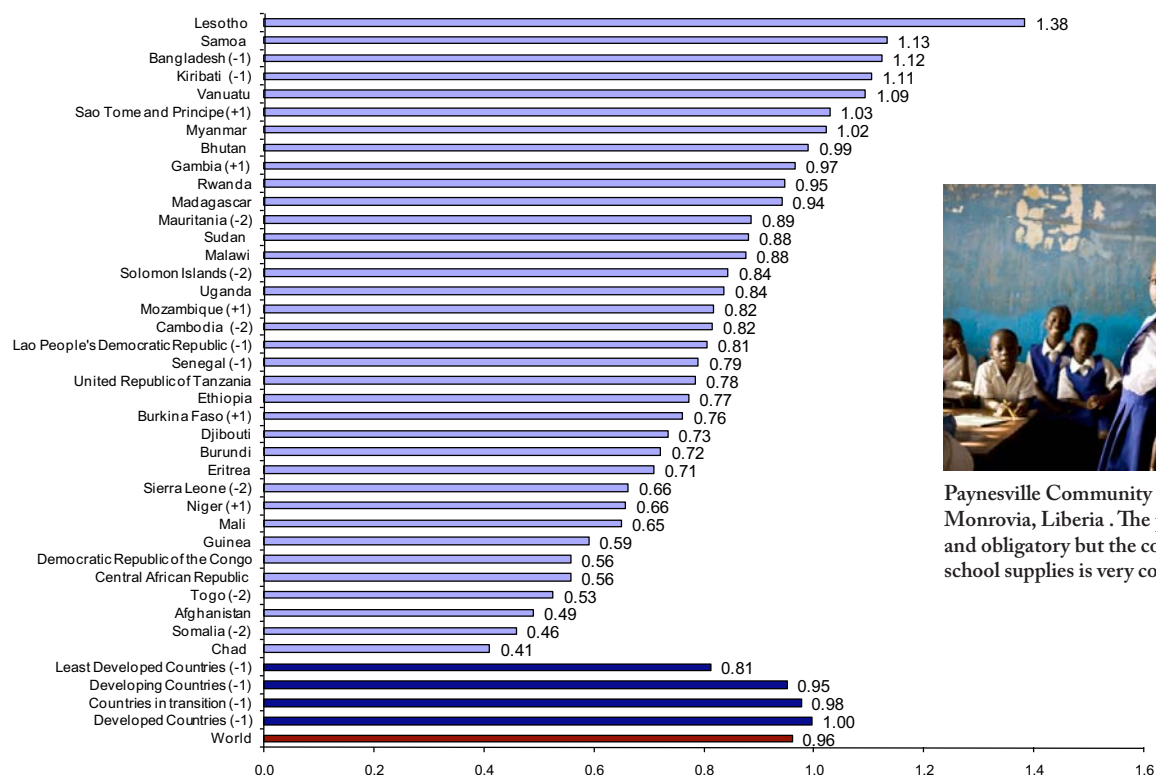
Only four countries – Bhutan, Gambia, Myanmar and Sao Tome and Principe – have reached gender parity at this level. Out of 36 countries with available data, 27 countries had higher participation rates among boys as compared to girls.

There is considerable variation among countries, reflected by the GPI in secondary education that ranged from 0.41 in Chad to 1.38 in Lesotho.

**Cambodia's** Education Sector Support Project, funded by several donors, provides scholarships that help children from poor families make the transition from primary to secondary school. The scholarships have had a marked effect: schools benefiting from the programme have secondary enrolment rates 21% higher than non-participating schools.

(Source: EFA GMR 2010)

Figure 6. LDCs: Gender Parity Index in Secondary Education in the LDCs (2009)



(Source: UIS 2011)



© UNESCO / Glenn Gordon

Paynesville Community Elementary School in Monrovia, Liberia. The primary school is free and obligatory but the cost of uniforms and school supplies is very costly for families.

## Greatest gender disparity exists at tertiary level

LDCs as a whole have the lowest enrolments rates in the world at the tertiary level with a gross enrolment ratio (GER) of about 5%, compared to 26% at the global level. In the LDCs, there are 58 girls enrolled in tertiary education for every 100 boys, which is much lower than gender parity at the primary education level (92 girls; 0.92) and the secondary education level (81 girls; 0.81).

There was no progress achieved in gender parity at the tertiary level where 58 girls were enrolled for every 100 boys in 1999 and

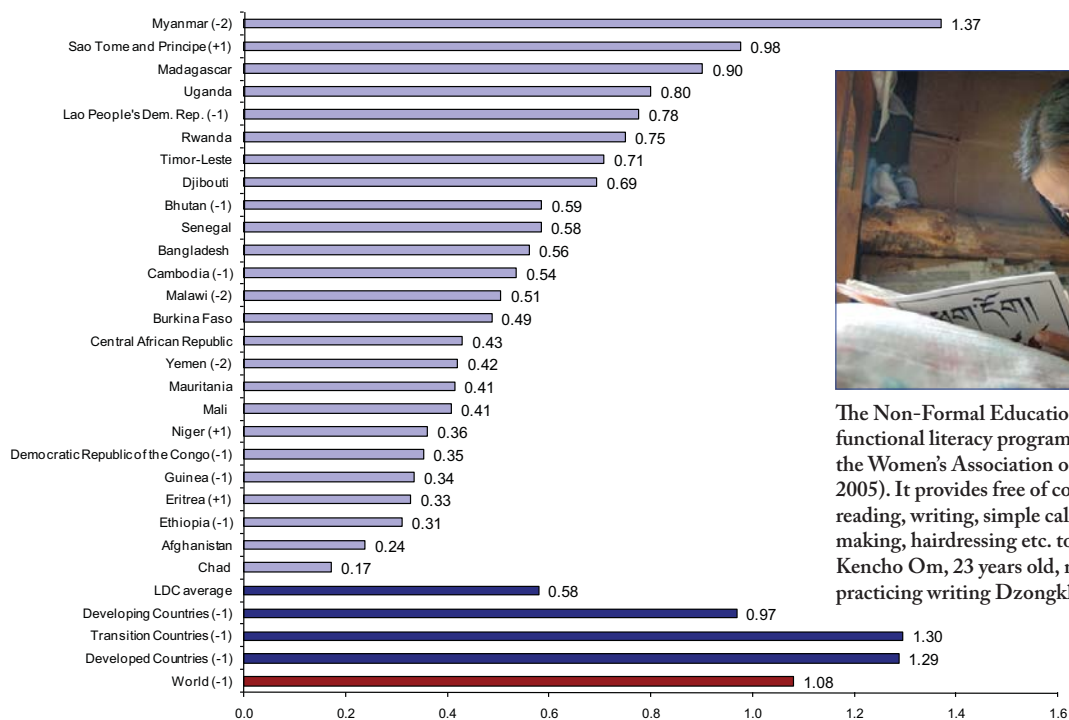
in 2008. This is much lower when compared to the global level of 1.08.

Women's access to higher education differs dramatically among LDCs. The GPI varies from 0.17 in Chad to 1.37 in Myanmar. Among the 25 countries with data available, only Sao Tome and Principe reached equal participation for men and women at the tertiary level in 2009, with a GPI of 0.98. During the last decade, some countries have made progress towards bridging the gap in access to tertiary education. Burkina Faso,

Cambodia, Central African Republic, Eritrea, Guinea, Mauritania, Uganda and Yemen were able to increase their GPI at the tertiary level by more than 50% between 1999 and 2009. Nevertheless, the situation worsened in Djibouti, Mali and Myanmar.

**The greatest gender gap in education exists at the tertiary level for LDCs, where only 58 girls are enrolled in tertiary education for every 100 boys**

Figure 7. Gender Parity Index in Tertiary Education in the LDCs (2009)



© UNESCO / Yannick Joerin

The Non-Formal Education Programme (NFE) is a basic functional literacy programme that was started in 1992 by the Women's Association of Bhutan (623 NFE centres in 2005). It provides free of cost relevant life skills ranging from reading, writing, simple calculating to tailoring, furniture making, hairdressing etc. to out of school youth and adults. Kencho Om, 23 years old, married, with one child, is practicing writing Dzongkha, the national language.

(Source: UIS 2011)

## Literacy

- Bangladesh
- Chad
- Timor-Leste
- Togo
- Yemen

## Teachers

- Angola
- Burundi
- Guinea
- Lesotho
- Mali
- PDR Lao
- Rwanda

## Skills for the World of Work

- Afghanistan
- Haiti
- Madagascar
- Malawi

## Sector-Wide Policy and Planning

- Cambodia
- DR Congo
- Ethiopia
- Mauritania



© UNESCO / Petenik Wiggers

Children are coming from all over Ethiopia to attend the Menelik School. Usually they cannot find an appropriate school at their home village, where there is for example just grade one up to grade four. For the continuation of their education they have to go to a city.

### UNESCO's Education Targeted Country Approach

Twenty countries at greatest risk of not achieving the Education For All (EFA) goals by 2015 were targeted with budgetary allocations of \$25 million. Target countries were selected after meeting two of the following three criteria: (1) LDC status, (2) Low EDI and (3) Post-Conflict Post Disaster (PCPD) status. UNESCO's technical assistance in these countries focus on one of four priority areas – Literacy, Teachers, Skills for the World of Work, and Sector-Wide Policy and Planning.



Primary Education, open-air lesson, Nepal



© UNESCO / Tang Chhin, Sothy

Young Cambodians go to school in the village of Srah Srang, Cambodia



© UNESCO / Florence Migeon

DAMARI Center for Women's Literacy, Niger



## TEACHERS are an important education resource in every country; LDCs need 1.9 million more primary school teachers to achieve UPE of good quality

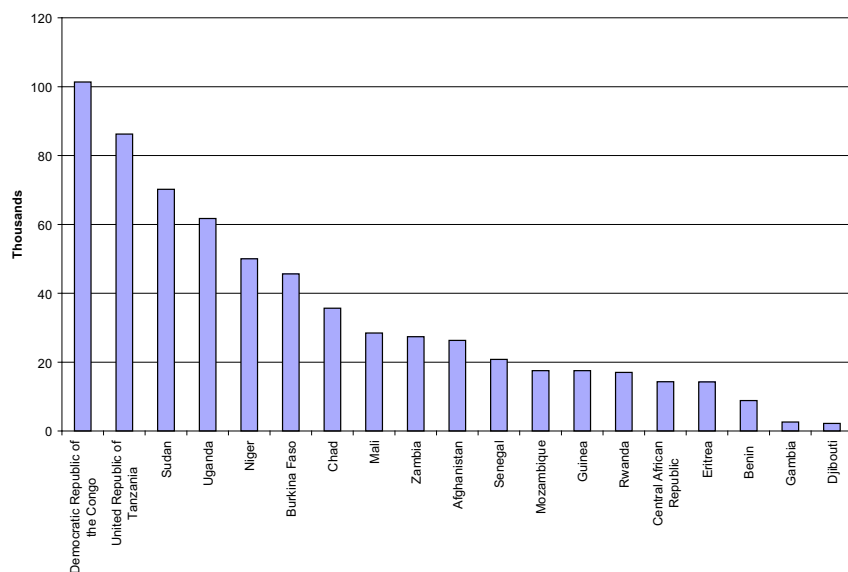
From early childhood through primary and secondary school, the presence of qualified, well-motivated teachers is vital for effective learning. What students achieve in school is heavily influenced by classroom practices and teachers' skills. The expansion of primary education systems has meant an increase in demand for teachers. The shortage of primary teachers is of particular concern

among many of the LDCs, who need 1.9 million new teachers to achieve the time-bound goal of providing universal primary education (UPE) by 2015. This number includes compensation for 5% attrition (due to teacher retirement, for example).

Twenty LDCs face severe primary teacher gaps. They need to expand the number of teachers in classrooms every

year by 3% to 19% in order to meet the goal of UPE. This does not include the regular recruitment to compensate for attrition (due to teacher retirement, for example). Moreover, 10 out of 38 LDCs with recent data available need to increase the number of teachers in the classroom by 0.5% to 3% annually in order to achieve UPE by 2015.

Figure 8. Absolute Numbers of Teachers Needed to be Recruited in LDCs by 2015 with severe teacher gaps (annual growth rate >3%)



### Demand for teachers is a global phenomenon

— approximately one-half of the world's countries, 96 out of 195, need to expand their teaching forces in order to enroll all primary-school age children by 2015.

(Source: EFA GMR 2010)

Projections of teacher supply and demand are one way to anticipate prospective teacher shortages and surpluses. While projections can provide a global picture, they can also be used to identify specific countries with inadequate numbers of primary teachers, especially in the context of meeting their own education goals.

As such, UNESCO's Institute for Statistics (UIS) introduced projections in 2006 to measure the primary teacher gap and to assess the scope of the challenges facing countries.

Notes: Total LDCs data are UIS estimates. They include imputed data for missing countries (10) in order to estimate the global figure for the LDCs.

(Source: UNESCO Institute for Statistics 2010, "The Global Demand for Primary Teachers – 2010 Update", Information Sheet No.5)

[http://www.uis.unesco.org/template/pdf/EducGeneral/Infosheet\\_No%205\\_Teachers\\_EN.pdf](http://www.uis.unesco.org/template/pdf/EducGeneral/Infosheet_No%205_Teachers_EN.pdf).

Sub-Saharan Africa has by far the greatest need for additional teachers, with 27 countries facing a *teacher gap* of 1.2 million. As such, budgets for teacher salaries will have to grow by 50% and capacity for teacher training will need to be available. While countries set their own targets for *pupil/teacher ratios*, the most widely used international ceiling for the pupil/teacher ratio is 40:1 (World Bank Independent Evaluation Group, 2006). The four countries with highest ratios of pupils to trained teachers – all in excess of 80:1 – are LDCs. Furthermore, in some African countries, about 60% of teachers have no formal training. In Mozambique, one recent evaluation found that 41% of primary school teachers were untrained (Source: GMR, 2010).

UNESCO's Teacher Training Initiative for Sub-Saharan Africa (TTISSA), launched in January 2006, for a period of ten years (2006-2015), aims at supporting Member States in their efforts to improve the status and working conditions for teachers; to improve teacher management and administration structures; to develop appropriate teacher policies; and to enhance the quality and coherence of teacher professional development. Being teacher focused, and adopting a holistic and sector perspective to analyze teacher-reality issues is necessary to bridge the severe teacher gap. It enables education systems to increase access, quality and equity of education, all necessary for the achievement of EFA. TTISSA provides support in diagnosing teacher issues to 9 LDCs: *Angola, Benin, Burundi, Guinea, Lesotho, Mali, Mauritania, Niger and Uganda*.

### Raising Teacher Quality and Management with TTISSA diagnostic study, Benin

In 2010, the diagnostic study yielded information that *Benin* was spending 25% of the country's national budget on education (equivalent to 3.5% of GDP). Despite achieving near universal primary education, the primary school completion rate is 69% with a high drop out rate at the primary education level. Importantly, Benin spends 75% of sub-sector primary enrolment budget on teacher salaries, which leaves little room for investment in the quality of education (textbooks, teacher trainings, safe school buildings). With this high expenditure on teacher salaries, UNESCO sensitized key actors in education to advocate new teacher policies that would include teacher provision and utilization, teacher trainings, as well as investment in effective management efforts. The validated diagnostic study results will inform new policies that will benefit teachers across the whole education sector, from early childhood care and education to higher education, including technical and vocational education and training and non formal education. Benin education authorities intend to take the diagnostic results and the ensuing teacher policies to Parliament for validation and to mobilize political support.



© UNESCO / Tom Stoddard / Getty Images

Teacher in drought affected region of Tanzania

**Without adequate numbers of professionally qualified teachers, including female teachers, who are deployed in the right places, well-remunerated and motivated, adequately supported and proficient in local languages, we cannot achieve the Education for All goals and we cannot offer the world's children quality education in the right places**

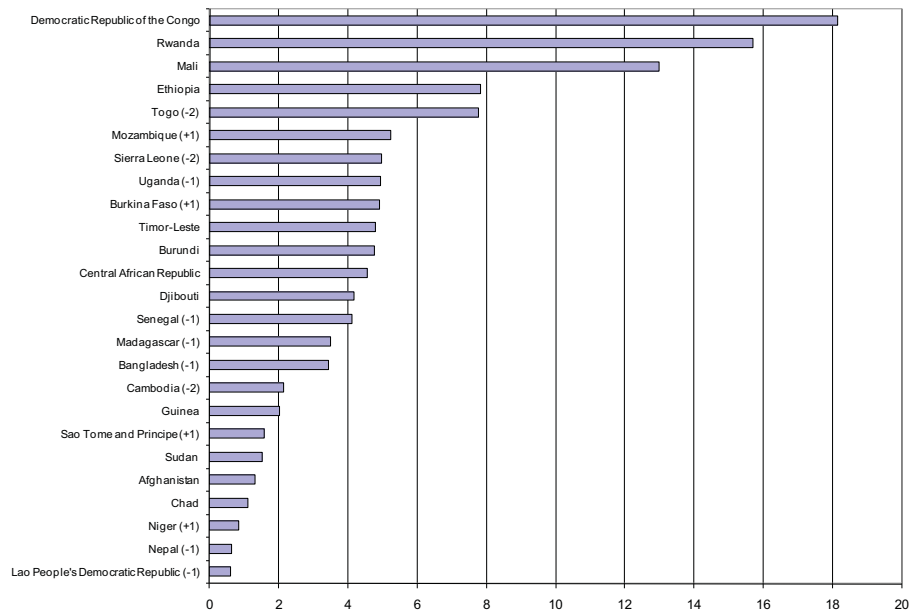
(Source: 2008 High-Level Group meeting on EFA, where Education Ministers from around the world recognized the importance of teachers when striving to meet national education goals)

## Technical and Vocational Education and Training (TVET) provides skills to promote economic growth in LDCs

The Dakar Framework for Action called upon Member States “to ensure that the learning needs of all young people and adults are met through equitable access to appropriate learning and life skills programmes (EFA Goal 3). As an integral part of the Education for All initiative and through its orientation towards the world of work, the acquisition of skills plays an essential role in promoting a country’s economic growth, contributing to poverty reduction and ensuring the social and economical inclusion of marginalized communities.

The share of secondary school students enrolled in technical and vocational programmes in the LDCs is 4% (2008), compared to 16% in developing countries and a global average of 11%. This share varies tremendously across countries and even among LDCs. Whereas TVET enrolment is below 1% in Lao People’s Democratic Republic, Nepal and Niger (2009), it increases to 13% in Mali, 16% in Rwanda and 18% in the Democratic Republic of Congo. The share of females in technical and vocational education ranges from below 30% in Nepal, Sudan, and Niger, and up to 60% in Sierra Leone.

Figure 9. Enrolment in Technical and Vocational Programmes, 2009 (% of total enrolment in secondary education)



Notes: +n: or nearest year available.

(Source: UIS 2011)



© UNESCO / Michel Ransassard

UNESCO’s Programme for street children in Ngozi (200 km on the North of Bujumbura) provides professional training for young girls (functional literacy, and skills needed to work in the service industry), Burundi

The success of Universal Primary Education over the last decade has translated into huge pressure to expand technical and vocational education and training at the secondary education level



Recognizing that skills are critical for educational development, labour market inclusion and economic growth, UNESCO has made Technical and Vocational Education and Training (TVET) a priority area for its support. Through TVET, UNESCO is supporting learners, in particular women and youth, to acquire the skills, knowledge and attitudes needed to develop professional careers and to enter the world of work. UNESCO supports TVET in 10 LDCs: *Afghanistan, Angola, D.R. Congo, D.R. Lao, Haiti, Lesotho, Madagascar, Malawi, Mozambique, and Zambia.*

**Reform of TVET systems in LDCs should address: problems of access, equity and quality; relevance and linkages to labour markets; absence of sustainable funding mechanisms; weak policy and governance capacities; and ways to better link TVET into education systems**

### **Supporting access of young people to labour markets in Senegal and the Gambia**

UNESCO supports the reform of TVET in *Senegal* and the *Gambia* so as to improve the access of vulnerable and marginalized young people to the labour market and to promote their integration into society. The aim is to reform the existing TVET systems so that they are more efficient and equitable in terms of providing access to learning opportunities, and the skills needed to enter the labour market.

One of the main axes of action is the mobile training teams (MTT). MTTs focus on bringing professional training opportunities to poor, rural areas through an innovative approach that uses easily adaptable mobile training resources. MTTs can provide training in tents, in trucks, and even in containers. They can be employed in various social, geographical and cultural contexts. UNESCO is sharing the successful experiences of these mobile teams in Cote d'Ivoire, *Sierra Leone and Haiti* with other countries that are facing similar challenges.

With UNESCO's support, a feasibility study for creating MTTs was conducted in Sierra Leone and Haiti. Each national study confirmed the usefulness of introducing the MTTs, especially in view of successfully accompanying the decentralization of TVET training, for which MTTs are a privileged tool. Senegal has also included MTTs in the 3rd phase of its national education sectoral strategy for 2009-2011. UNESCO has rallied technical and financial partners around MTTs and has supported the creation of a pilot experience (currently being developed) with bilateral partners in the northern parts of Senegal and facilitated contacts between the Gambia and UN partners for establishing a South-South cooperation on MTTs. Since the introduction of the concept of MTTs in Senegal and the Gambia in late 2008, 20 identified key resource persons have benefitted from capacity development opportunities on MTTs.

### **Successful Capacity Building in Laos: Monitoring Strategies and Assuring TVET Quality**

In *Laos*, participation in technical and vocational education and training (TVET) is quite low, with only 18,055 students enrolled in the 2008 academic year and 20,072 students in 2009, according to the Lao Education Statistics and Information Technology Centre. Less than 1% of students are enrolled in TVET programmes. However, the Education Sector Development Framework has set up TVET targets; for example, a minimum of 50,000 students are to be enrolled in different types of technical-vocational schools and colleges by 2015. The Government of Laos is determined to increase the gross enrolment rate in TVET programmes.

With the help of UNESCO, in 2009, the Ministry of Education conducted an investigation into the current status of TVET in Laos. The findings have contributed to the formation of a task force trained to monitor, every three months, the activities of an existing "TVET Master Plan 2008-2015". Additionally, a working team has been established to develop educational quality assurance standards, guidelines and manuals for technical and vocational education institutions. A template for guidelines for reviewing TVET institutions is currently being finalized and will include a reporting system for different administrative levels. Manuals and guidelines for all levels of assessment were developed to facilitate the quality assurance system for public TVET institutions. The manuals represent a large step towards standardizing TVET institutions and addressing labour market needs, graduation rates, and gender gaps across the country. Meanwhile, quality assurance standards of TVET manuals have been prepared and will be piloted in at least 3 institutions.

## Building comprehensive education systems is key to bringing about sustainable change in LDCs

UNESCO supports national decision-makers in developing solid and relevant education policies and strategies and in managing their effective implementation. According to the context, this support can come in the form of technical assistance in education policy analysis, the design of education sector development plans and donor mobilization in support of national educational priorities. In other cases, support can relate to national institutional capacity-building in policy formulation, sector analysis, educational planning, policy simulation and dialogue, resource projections, sector management, programme monitoring and evaluation, technical assistance to develop national legislation, development cooperation and donor coordination.

The development of coherent policies and plans is crucial to bring about real and sustainable change in education systems throughout the world and to achieve the Education for All goals

### Developing basic education in post-conflict setting: the case of Afghanistan

When UNESCO-IIEP began its cooperation with the Ministry of Education of *Afghanistan* in 2002, education planning capacities were at a standstill. Having been accompanied and coached through two planning cycles, the ministerial staff have acquired the knowledge and skills in:

- ▶ formulating education strategic plans in national languages, and to do so with less recourse to external assistance;
- ▶ preparing an Interim Plan for endorsement by the EFA Fast-Track during 2011;
- ▶ organizing the planning of education services in the provinces which are accessible; and
- ▶ driving discussions with donors during Education Sector Reviews, and coordinating interventions on this basis.

Success factors that can help explain these results include:

- ▶ the willingness and commitment of the Afghan planners themselves;
- ▶ a tireless commitment to, and promotion of, a long-term and comprehensive approach to capacity development. IIEP's focus has been (and remains) the development of sustainable technical and analytical capacities of ministerial staff through technical advice, as well as short- and long-term training in key planning areas;
- ▶ Political as well as financial ownership by the local education group of the value adding of the approach as expressed by their political and financial buy-in; as well as
- ▶ the commitment of parties involved to harmonize and align external interventions on national priorities as expressed in the successive education plans.

***Today, UIS estimates that some 4.8 million children are enrolled in primary education in Afghanistan. There were less than 900,000 in 2000.***



Kandahar, Afghanistan

## Developing educational planning in Angola

The **Angolan** education system faces important access and quality challenges. Since 2002, the country has been implementing an Education Reform plan. It is in this context that IIEP, in partnership with the Angolan Ministry of Education (MED) and the European Union (EU) has been addressing two major dimensions of the sector's development since early 2009 (i.e. educational planning at the provincial level and the reform of the national inspection policy).

**Provincial planning:** Educational development requires strategic plans that reflect a vision of the future – a vision based on detailed knowledge of the present, evaluation of requirements, setting of priorities, and estimation of the resources required. In a learning-by-doing approach, the eight provincial teams developed, for the first time in Angola, provincial education sector development plans.

**Reform of the national inspection policy:** an appraisal study lead jointly by IIEP and the Angolan MED concluded that there was a need to strengthen policy dialogue around educational inspection and supervision policies among MED authorities. IIEP's participatory approach led to the setting up of a Working Group on School Inspection Policy, placed under the leadership of the Vice-Minister for Education Reform. Thanks to its membership of some 30 high-level civil servants from the central and provincial levels, a thorough review of the state of inspection was conducted, which informed consensual and strongly owned proposals for the reform of school inspection in the country. A training programme is presently under way to create a pool of supervisors capable of training their peers.

UNESCO supports countries in building sound educational databases in order to better prepare and monitor education development plans through Education Management and Information Systems (EMIS). In **Tanzania**, UNESCO supported an EMIS project that substantively contributed to evidence-based planning in the education sector in Tanzania by enabling education planners to base their projections on solid evidence. Furthermore, education sector development plans, which are currently being drafted by the government, include outputs and outcomes that will be tracked by EMIS. EMIS in Tanzania has attracted the attention of the other United Nations bodies and multilateral development partners and is now being incorporated into joint programming processes. UNESCO has received requests from neighboring LDCs, including **Madagascar and Comoros**, to develop EMIS; UNESCO has also supported EMIS in six other African countries.

## Financing basic Education for All (EFA) requires \$16 billion annually (literacy, pre-primary and primary education)

Since 2000, governments of LDCs on the whole are investing more in education with an increased share of national income devoted to education. Still, there is an urgent need for LDCs to increase national public spending in order to achieve EFA by 2015. The efficiency, equity and overall quality of public spending remains critical.

Overall aid levels have increased, both in absolute terms and as a share of donors' national income. At the same time, donors have collectively fallen

short of a commitment made in 2005 to increase aid to education.

The 2008 financial crisis and subsequent slowdown in economic growth has left many developing countries facing acute fiscal pressures. It is now more important than ever to increase funding for education and to close the EFA financing gap estimated at US\$16 billion annually.

UNESCO is working other EFA convening agencies (UNDP, UNFPA, UNICEF and the World Bank) to mobilize political and financial commitment for EFA. Innovative financing approaches and mechanisms are being explored: public-private partnerships (PPPs) and debt-for-education swaps.



© UNESCO / Marc Hofer

The Karamojong or Karimojong, an ethnic group of agro-pastoral herders living mainly in the north-east of Uganda. The teaching is basic, and starts with simple spelling and easy counting exercises.

**Current state of public-private partnerships:** At both global and country levels, a number of UNESCO initiatives are strengthening cooperation with the private sector. A key financing partnership in the education sector is the Education for All Fast Track Initiative (FTI) launched in 2002. The Fast Track Initiative is cooperating with the Global Education Alliance and private sector partners on Information and Communication Technologies (ICTs) to propagate the model of Multi-Stakeholder Partnerships for Education (MSPEs) in countries. For example, UNESCO is assisting the Government of Rwanda in the implementation and the coordination of a programme in MSPEs to support the country's capacity in establishing its education policies, including ICT strategies.

Partnerships for Education (Pfe), launched in 2007 and jointly led by UNESCO and the World Economic Forum, encourages the creation of development-led global partnerships. Its final objective is to achieve the EFA goals by promoting and enhancing cooperation between governments and private firms. Research from the International Institute for Educational Planning (IIEP) provides an overview of the existing PPP activities, including in some LDCs, in the area of education. It has identified the kind of partners that are involved in public-private partnerships, the level of schooling they target, the kind of support they provide, and the specific subject matters they focus on.

**Fast-Track Initiative (FTI)** *The FTI was launched by the international community together with development partners in 2002 as a catalyst for accelerating progress towards the achievement of MDG 2 and EFA Goal 2 of universal primary education by 2015. While there have been some accomplishments, the initiative has not put the poorest developing countries on 'an education fast track.' Reform is an urgent priority. FTI endorsed 22 least developed countries' national plans between 2002 and 2008.* (Source: EFA GMR 2010)

**Current state of debt swaps:** UNESCO coordinates the work of the Advisory Panel with the activities of the Task Force. In order to implement the recommendations of the latter, the Advisory Panel is investigating new types of debt swaps for education and strengthening technical knowledge in this area. Studies are being conducted on mapping current creditor and debtor country policies and the debt situation worldwide, creating synergies between debt swaps with other financial instruments, and making a case for education. Country pilots will be conducted which could potentially be replicated in LDCs.

(Source: Report of the Writing Committee to the Task Force on Innovative Financing for Education)

**The record on aid for education is disappointing. Donors and recipient governments must both increase resources available to education and improve aid governance.**

# Reducing HIV infection rates in persons 15-24 years of age

**HIV infection rates in LDCs have decreased from 3.2% in 2006 to 2.2% in 2008**



Despite considerable progress in the response to HIV and AIDS, in many countries the number of people newly infected with HIV continues to rise and AIDS remains a leading cause of adult mortality. Continued efforts to tackle HIV and AIDS are critical in order to reverse the epidemic and ensure that all those that need it receive treatment and care. And, without an effective response to HIV and AIDS, the international community will not achieve the IADGs or meet commitments to human rights, gender equality and social justice. UNESCO plays a key role

## **Delivery of HIV Education – Room for Improvement**

The SACMEQ III Project, 2007-2010, involved 15 ministries, 2,779 schools, 8,045 teachers and 61,421 pupils in grade 6 (average age 13.5 years) in Southern and East Africa. Teachers and pupils were tested on their knowledge of HIV and AIDS. Respondents were categorized as having ‘minimal’ knowledge if they mastered 50% of the official curriculum or ‘desirable’ knowledge if they had mastered at least 75%. In most countries, 20-40% of the pupils had minimal knowledge and only 10% of students had desirable knowledge. Moreover, almost all teachers had minimal knowledge - 80-95% in most countries. These findings underscore the urgent need to improve delivery of HIV education in schools.



**HIV infection rates in LDCs have decreased from 3.2% in 2006 to 2.2% in 2008; however, infection rates are still much higher than the global HIV infection rate of 0.8%. Lesotho has the highest HIV infection rate (25%).**

*(Source: UNAIDS/WHO 2009)*

at the global, regional and country level in leading the education response to HIV and AIDS and ensures that this response is culturally appropriate and evidence-informed.

EDUCAIDS promotes, develops and supports comprehensive education sector responses that comprise: quality education; policy, management and systems; content, curriculum and learning materials; educator training and support; and approaches and entry points. EDUCAIDS has provided implementation support in more than *21 LDCs* – and in 80 countries globally – to

produce guidance and resources, including a series of technical briefs that provide clear guidelines to countries on a range of issues relating to a comprehensive education sector response. In all of the LDCs, EDUCAIDS has strong partnerships with the Ministry of Education, which have been established in order to ensure that the two main EDUCAIDS objectives are met: 1) preventing the spread of HIV through education and 2) protecting the core functions of the education system from the worst effects of the epidemic.

### **Helping Universities Fight HIV and AIDS**

Since 2001, UNESCO has been working with the Faculties of Science and Engineering in 23 universities in Botswana, *Eritrea*, Ghana, Kenya and *Rwanda* to help them develop an institutional policy and reform curricula to mainstream HIV and AIDS in their physical, biological and engineering courses.

With African women in the 15–24 year age bracket tending to be hardest-hit by the pandemic, UNESCO's Nairobi office has teamed up with the NGO African Women in Science and Engineering (AWSE). Together with AWSE, UNESCO has organized two project workshops, in 2004 and 2006 and, consequently a consensus emerged for a common undergraduate course for all first-year students. Within months of the workshop, 21 universities had submitted proposals, 18 of which qualified for a grant enabling them to organize a one-day workshop on how to mainstream HIV and AIDS into science and engineering courses in the universities' respective faculties. In parallel, 15 science lecturers from the five countries of the sub-region attended training workshops on how to teach both the common undergraduate course and the integrated ones. 'The project has been received with a lot of enthusiasm from participating universities', says UNESCO project coordinator Alice Ochanda, 'and the need to spread it to many more across the continent is evident'.

UNESCO has also been implementing the **Building Knowledge, Skills and Hope: HIV and AIDS Education for African Children project** in partnership with the Virginio Bruni Tedeschi Foundation in four southern African countries, two of which are among the LDCs (*Angola* and *Lesotho*). The project aims to increase quality and coverage of effective HIV and AIDS education, improve availability of high quality technical support to partners and enhance partnerships and sharing of lessons learned. In Angola, 510 schools, 2,920 teachers and 105,220 students have benefitted from project interventions. In Lesotho, 400 schools, 1,150 teachers and 100,800 students have benefitted. Interventions in Lesotho include support to LEPWHA (the national network of people affected by HIV and AIDS in Lesotho) to undertake school visits and deliver personal testimonies aimed at strengthening HIV prevention efforts and delivering messages of hope to those learners who may be affected by HIV and AIDS, as well as participation in the PhotoVoice aspect of the project, through which students, teachers and parents in the project countries have documented their experience of being infected or affected by HIV and AIDS through photographs and testimonies.

## UNESCO supports LDCs in their efforts to implement comprehensive, scaled-up, educational programmes on HIV and AIDS through the EDUCAIDS initiative in 21 LDCs

### Reducing young people's vulnerability for HIV in the context of South-South Cooperation

UNESCO's Regional Bureau for Education in Africa, located in Dakar, and UNESCO's Brasilia office collectively support the five Portuguese-Speaking African Countries (PALOP) in their HIV and AIDS Education Programming. The joint activities channel technical assistance from the Brazilian Ministries of Education and Health and UNESCO Brasilia to government and key partners in the PALOP countries. Launched in 2007, this South-South cooperation allows countries with similar socio-cultural and linguistic contexts to share experiences, expertise and resources through workshops and country visits, in order to stimulate the education sector response to HIV and AIDS and allow young people to learn about sexuality in an open and encouraging environment.

Through the organization of national and regional workshops, this cooperation has enabled the training of 100 government technicians, including HIV and AIDS Focal Points, from the Ministries of Education and Health, on policy preparation and strategic planning; implementation of HIV and AIDS education activities, as part of the multi-sectoral response; and providing appropriate monitoring and evaluation support. Other good practices from the African region are exemplified, such as the health-education-youth partnership in **Mozambique** (*Geração Biz*). Exchanges among PALOP partners are encouraged through an informal network of 50 key resources persons, an on-line space in Portuguese (currently in development) and the promotion of Portuguese-language materials, available on UNESCO's HIV and AIDS Education Clearinghouse (<http://hivaidsclearinghouse.unesco.org>).

In **Guinea-Bissau**, where only 13% of young people can correctly identify ways to prevent HIV transmission, UNESCO has targeted technical and financial support to strengthen education sector interventions so as to improve young people's knowledge about HIV and AIDS and sexual reproductive health. As a first step, Ministry of Education technicians (about 10 identified key resource persons) were supported in the development of an HIV and AIDS education sector policy and strategy during 2010. With ongoing support, the Ministry was able to carry out a consultative process with a wide array of government, UN and civil society stakeholders to ensure national ownership and alignment with other education sector initiatives. In 2010 and beyond, support to the Ministry will continue for the implementation of the sector strategy with specific actions to mobilize resources and revise curriculum to ensure that HIV and related sexuality education themes are thoroughly integrated across all levels of education.



The Red Ribbon, Lesotho

© UNESCO / LENEPWHA, the association of people living with HIV in Lesotho

### UNESCO's Youth Visioning for Island Living initiative

This youth-led initiative supports youth-centered projects that focus on building awareness of key social, environmental and cultural issues among young women and men in SIDS. Over the past four years, a number of Youth Visioning projects focusing on HIV and AIDS have been implemented. Many of these projects were in LDCs, notably in **Haiti, Samoa, Solomon Islands, Guinea-Bissau, Madagascar and the United Republic of Tanzania**. Projects spanned a wide range of topics – HIV and AIDS and life skills, prevention, youth empowerment, and more. Methodologies were similarly diverse. Youth delivered their messages through discussions, film production, creative arts, theatre, and sports. In all cases, the projects helped build capacity, confidence and experience among youth groups for project development, implementation, assessment and reporting.

### The UNESCO Global Network of Young TV Producers on HIV and AIDS

is a capacity-building project that aims to improve the professional competencies of young television producers reporting on HIV and AIDS, and to mobilize the long-term commitment of regional and sub-regional broadcasting and media training organizations in support of HIV prevention, treatment, care and support. The project is implemented through partnership with major regional broadcasting organizations in Africa, Asia Pacific, Latin America and the Caribbean, and Europe. To date, the project has supported the training of 290 young television producers who have produced 150 broadcast items aired in more than 72 countries, of which **21 are LDCs.**

TV broadcasting and production capacities in LDCs face challenges that require the space, creativity and investigative capacity to produce and disseminate credible and reliable information to the general public. Knowledge about and exposure to HIV and AIDS issues is a precondition for all of the above. The Network provides the opportunity for committed professionals to develop the expertise to meet these objectives by harnessing the creative energy of youth to produce high-impact documentaries.

### HIV and AIDS Gender Sensitive Booklets for Internally Displaced Youth in Internally Displaced People (IDPs) Camps in Three Darfur States

The project aims at building the knowledge and skills of youth in IDP Camps in **three Darfur States** by developing and publishing gender-sensitive HIV and AIDS booklets that focus on prevention, treatment, care and support in emergency settings. UNESCO is working to produce the booklets by working with IDP youth to organize a series of workshops that will document local experiences related to HIV and AIDS (e.g. local stigma, traditional beliefs and socio-cultural causes of the HIV infection). Experiences are documented and translated into easy-to-read word and image messages that are tailored and that focus on knowledge and coping skills for HIV prevention, care, treatment and support. Using this tool, peer learning workshops in IDP camps will be organized to build the knowledge of youth in order to inform them about the drivers of the epidemic and provide them with necessary coping skills for HIV prevention. UNESCO conducted over 27 focus group discussions, involving 284 IDP youth in the three Darfur states, namely West Darfur (El geniena), South Darfur (Nyala) and North Darfur (El fasher), in collaboration with People Living with HIV (PLHIV) and Sudan National AIDS control Programme (SNAP), in order to assess their level of knowledge about HIV and AIDS Prevention, Treatment Care and Support and identify the Socio- Cultural cause that might drive the HIV and AIDS epidemic in three Darfur states. UNESCO produced ten Gender Sensitive HIV and AIDS Booklets, which were finalized and endorsed by the authorized bodies.



© UNESCO Sudan

Raising awareness on HIV and AIDS in Nyala, Southern Darfur

UNESCO is using a **cultural approach to HIV and AIDS** to tailor HIV and AIDS prevention and care responses to national and local contexts in collaboration with a wide range of actors, including decision-makers, traditional healers, networks of people living with HIV, researchers and civil society organizations. E-learning tools have been developed to assist development practitioners in implementing culturally appropriate responses which use the arts and creativity as a means of educating people about the epidemic in **9 LDCs: Burkina Faso, Lesotho, Mali, Mozambique, Senegal, Uganda, Zambia, Lao People's Democratic Republic, and Cambodia.** UNESCO has also supported national research capacity-development so that LDCs can generate evidence-based research locally to better inform their HIV and AIDS policies and programmes (Botswana, Lesotho, Mozambique and Zambia) and HIV and AIDS issues have been integrated into UNDAF processes in several LDCs.

**More information about UNESCO's eLearning tool "A cultural approach to HIV prevention and care"** can be accessed at [http://webworld.unesco.org/hiv\\_elearning/](http://webworld.unesco.org/hiv_elearning/).



# Promoting gender equality in LDCs

UNESCO's action focuses on:

- ▶ Identifying gaps in gender equality through the use of gender analysis and sex-disaggregated data;
- ▶ Raising awareness about gaps;
- ▶ Building support for change through advocacy and alliances/partnerships;
- ▶ Developing strategies and programmes to close existing gaps;
- ▶ Putting adequate resources and the necessary expertise into place;
- ▶ Monitoring implementation; and
- ▶ Holding individuals and institutions accountable for results.

## **Breaking the Poverty Cycle of Women: Empowering Adolescent Girls to Become Agents of Social Transformation in South Asia**

Given that the highest concentration of the world's poorest are in South Asia and the fact that poverty there is increasingly taking a female face, this interdisciplinary project was launched simultaneously in **Bangladesh**, India, **Nepal** and Pakistan, in 2002, to examine effective ways of breaking the poverty cycle of women in this region. The project focused on vulnerable adolescent girls caught in the process of pauperization. To this end, the overall goal of the project was to design, develop and test a model to sustainably improve poor women's livelihoods through a comprehensive multidisciplinary programme, backed by advocacy for a favourable policy framework. The project consisted of four components, which included: (1) Education and Microfinance; (2) Science; (3) Communication and Information; and (4) Monitoring and Evaluation by youth NGOs (Non-Governmental Organizations).

- ▶ Community-based programme structures have been set up in ten project sites covering 200 villages creating learning spaces and forums for adolescents. Initially these spaces were reserved for adolescent girls. At the request of the girls and community members the programme is being extended to adolescent boys.
- ▶ Approximately 6,500 adolescents living in depressed rural areas or urban slums have been provided with continuing learning opportunities.
- ▶ More than a dozen Science and Communication Centres (Gyan Bigyan Kendra) have been set up to provide knowledge of science and technology that can significantly impact the everyday lives up rural people, such as the testing of water for arsenic, and had to use compost fertilizer. Science fairs and meetings with local scientists have also been organized for the popularization of science in the community.
- ▶ Research has been conducted in the all countries that aims to increase understanding of the situation of out-of-school adolescents. A consolidated report has been prepared which provides valuable information on the status of out-of-school adolescents in South Asia. Peer-group monitoring and evaluation activities have been implemented with the aim of better assessing the multiple dimensions of 'empowerment' in the project and of increasing youth NGOs' capacity-building in monitoring and evaluation of social development projects.

Adolescent girls, at the threshold of adult life, are faced with various restrictions, discriminations and violence, and, often become victims of early marriages and pregnancies as well as trafficking



© UNESCO / CCT Team

Literacy class in a community learning centre, Bangladesh

**In Niger, where female literacy rates are less than 20%, UNESCO** has launched a project to encourage autonomy among women and girls in the Youri community.

The project focuses on reinforcing the capacities of girls and women through increasing enrolment in schooling, literacy training, empowerment of women through income-generating activities and sensitization to human rights.

The project has thus far resulted in the construction of classrooms, the schooling of around 100 children (the majority of whom were girls) and the installation of grain mills that reduced the hours women spent making flour, thereby allowing them the time to further their education.

### Freedom of Information and Women's Rights in Africa Project

UNESCO, in partnership with the African Women's Development and Communication Network (FEMNET), a pan-African organization working to promote women's rights and development on the continent, has launched a regional programme on the Freedom of Information and Women's Rights Project. The project aims to demonstrate the relevance of freedom of information in the promotion and protection of women's rights as promulgated in national laws, and regional and international human rights instruments. Through the project, a resource book has been published which includes case studies collected from five African countries (one LDC): Cameroon, Ghana, Kenya, South Africa and **Zambia**, that document the experiences of women's participation in the processes that have led to the formulation and implementation of laws and policies enabling women and men to enjoy freedom of information.

The resource book can be downloaded at: [http://portal.unesco.org/ci/en/ev.phpURL\\_ID=29376&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.phpURL_ID=29376&URL_DO=DO_TOPIC&URL_SECTION=201.html).

# Science: a catalyst for poverty eradication and sustainable development

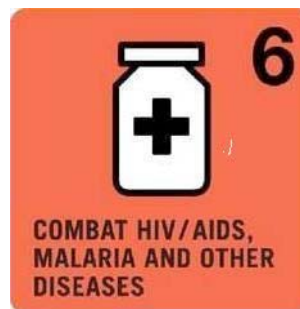


The essential role of science, technology and innovation (STI) as a foundation for sustainable development and for the fight against poverty (MDG 1) was acknowledged at the World Summit on Sustainable Development (WSSD, Johannesburg, 2002). This was also the theme of the 2007 African Union Summit held in Accra, which focused on science, technology and scientific research for Africa's socio-economic development. Furthermore, the need to "improve access to technology and strengthen science, technology, research and development capacities for accelerated growth and diversification" was noted as a key priority for inclusion in the New Programme of Action for the Least Developed Countries, which will be discussed at the United Nations Conference on Least Developed Countries (UNLDC IV), to be held in Istanbul in early May 2011.

Growing awareness of the impact of environmental degradation and climate



change on development is giving rise to new research and development priorities, like clean energy technologies. Innovation has become a key driver of sustainable development. Endogenous innovation also buffers countries against the vagaries of international economic turmoil like the recession of 2008-2009.



Statistics tell an alarming story. As appeared in the recent 2010 UNESCO Science Report, only 0.5% of the world's researchers live in LDCs, in contrast to the 62.1% who live in developed countries (see figure 1). Even more striking, 0.4%

of the world's scientific publications originate in the LDCs, whereas 75.3% of them originate in the developed countries (see figure 2). The effects of the low scientific literacy rate and the poor quality of scientific education in the LDCs are compounded by brain drain and the lack of awareness of the importance of STI as a major contribution to the achievement of the MDGs and the IADGs.

As evidenced by UNESCO's 2010 report on engineering, entitled "Engineering: Issues, Challenges and Opportunities for Development," many students are not going into scientific fields of study such as engineering, which is apparently due to the perception that the subject is boring and hard work, jobs are badly paid considering the responsibilities involved, and that engineering has a negative environmental impact. Regarding gender parity in science and engineering, special efforts must be made to boost the participation of women in scientific fields of study (see figure 3). This includes reducing persistent stereotypes that identify scientific disciplines as strictly technical, masculine fields of study.

As shown in figure 3, which provides information on selected LDCs with available data, the ratio of women to men in the field of science and engineering is lower in all of the LDCs, except for Myanmar. To address these challenges, UNESCO is supporting LDCs in formulating and implementing national science, technology and innovation policies and in building related capacities. It is also applying S&T indicators and statistics through the UNESCO Institute for Statistics (UIS) for evidence policy making, and monitoring policy implementation. To date, UNESCO has been requested to assist 24 LDCs<sup>1</sup> with their national STI policies.

1. Benin, Burkina Faso, Burundi, Central African Republic, Comoros, Democratic Republic of Congo, Ethiopia, Guinea, Guinea-Bissau, Gambia, Lesotho, Madagascar, Malawi, Mali, Mauritania, Niger, Nepal, Rwanda, Senegal, Sudan, Togo, Tanzania, Uganda, Zambia.

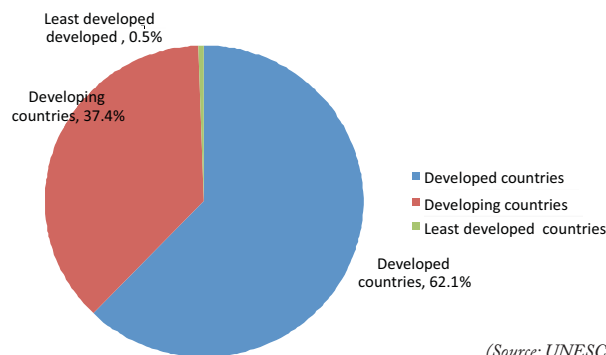
**Science, technology and innovation are central to economic prosperity and to reaching the Internationally Agreed Development Goals in such areas as food security, disease control (MDG 6), access to clean water and environmental sustainability (MDG 7).**

**Only 0.5% of the world's researchers live in LDCs.**

**0.4% of the world's scientific publications originate in the LDCs.**

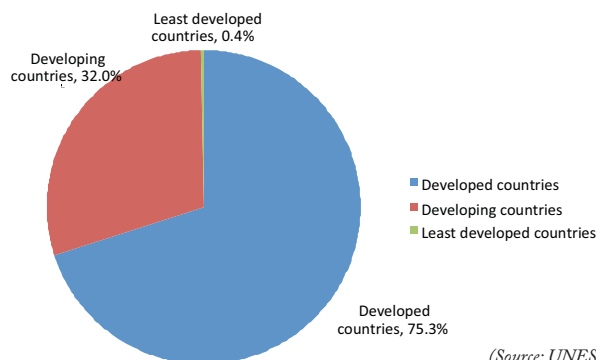
**An estimated 2.5 million new engineers and technicians will be needed in sub-Saharan Africa alone to achieve improved access to clean water and sanitation (MDG 7).**

Figure 1. World Share of Researchers, 2007



(Source: UNESCO Science Report 2010)

Figure 2. World Share of Scientific Publications, 2008



(Source: UNESCO Science Report 2010)

## Contributing to Africa's Science and Technology Consolidated Plan of Action

One of the most ambitious strategies in recent years for strengthening STI in Africa has been the adoption in 2005 of Africa's Science and Technology Consolidated Plan of Action (CPA) for 2008-2013 (CPA) by Africa's science ministers, with buy-in from development aid agencies.

The CPA, overseen by the African Ministerial Council on Science and Technology (AMCOST), is a framework for channelling investment into S&T in Africa. It comprises a number of initiatives in science and technology that would contribute to the development of the continent. It is built on three inter related conceptual pillars: capacity building, knowledge production and technological innovation.

In January 2007, African Heads of State and Government invited UNESCO to work closely with the African Union and the NEPAD Secretariat to implement the CPA, as stipulated in the Addis Ababa Declaration on Science, Technology and Scientific Re-

search for Development, adopted at the 8th African Union Summit.

UNESCO is contributing to the CPA through the implementation of three flagship activities namely: 1) capacity building in science policy, 2) science and technology education, and 3) establishment of an African Virtual Campus (AVC) to address the shortage of qualified science teachers in Africa.

### *AU/CPA: Improving the policy conditions and building mechanisms for innovation*

Recognizing that countries need to respond with science and technology policies, programmes, institutions and partnerships which maximize their economic opportunities, UNESCO advises governments in the formulation and implementation of STI policies that integrate sustainable development. To date, UNESCO has been requested to assist 23 African LDCs, with their STI policy reviews. The focus of this effort

is to build the capacities of the sub-Saharan African States in the area of science policy formulation.

### *AU/CPA African science, technology and innovation indicators initiative to monitor Africa's S&T development*

STI statistics and indicators are not only important in international comparisons, they are essential in guiding policy-makers and targeting new policies, and for ensuring a certain standard of performance. The UNESCO Institute for Statistics (UIS) provides individual country data that reflects the STI potential in many African LDCs. This mapping exercise includes indicators such as the number of scientists and engineers or the expenditure on research and development. The UIS in cooperation with UNESCO and AU/NEPAD have carried out capacity building regional workshops and trainings with a number of specialists from many African LDCs.

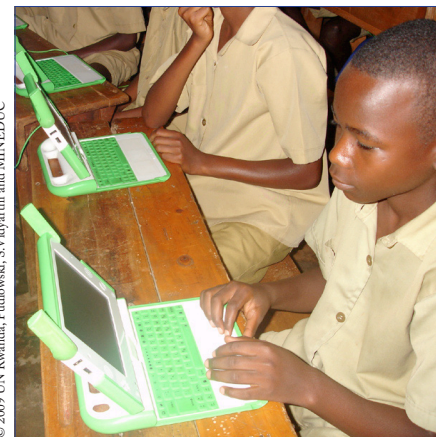
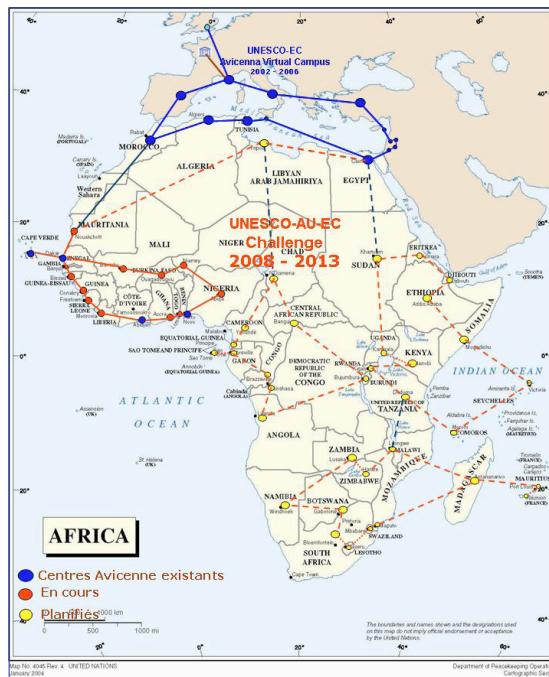
***“The Science and Technology Consolidated Plan of Action marks the start of an African process that offers many opportunities to strengthen scientific and technological capacities. Its implementation will go a long way to ensure that Africa achieves its aspirations embodied in the AU and NEPAD to meet the MDGs”***

*(Source: AU, Consolidated Plan of Action for Science and Technology January 2007)*



## ESTABLISHING AN AFRICAN VIRTUAL CAMPUS: *Improving Science and Technology Education*

To foster the implementation of the CPA and in line with the aspirations of the African Regional Action Plan for the Knowledge Economy (ARAPKE), the African Virtual Campus (AVC) project was developed as a continuation of the complementary efforts between the African Union Commission (AUC), the European Union and UNESCO. One of the main obstacles to S&T education in Africa is the lack of teachers in these areas. The need to train large numbers of science teachers cannot be achieved using traditional teacher training methods. UNESCO is using contemporary Information, Communication and Technology (ICTs) to enhance the capacity of Sub-Saharan African countries to train teachers of science, engineering and technology through e-learning by means of an African Virtual Campus that can provide the necessary courseware, training and tutoring. To achieve this objective, UNESCO is working closely with existing educational institutions to develop a regional e-learning network in science and technology in sub-Saharan Africa. ICTs for distance-learning will be set up in universities, engineering institutes and/or specialized scientific institutions in sub-Saharan Africa to train the trainers and technical staff in charge of managing the network. A quality control mechanism has been put in place to guarantee high-quality online courses. 12 LDCs in Africa have made a request to UNESCO for the establishment of AVCs.



Rwanda

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### Unlocking the potential of science, technology and innovation to meet the MDGs in Rwanda

Unlocking the potential of science, technology and innovation to meet the MDGs is a project developed by UNESCO, the United Nations Economic Commission for Africa (ECA) and its partners under the umbrella of the One UN in **Rwanda**.

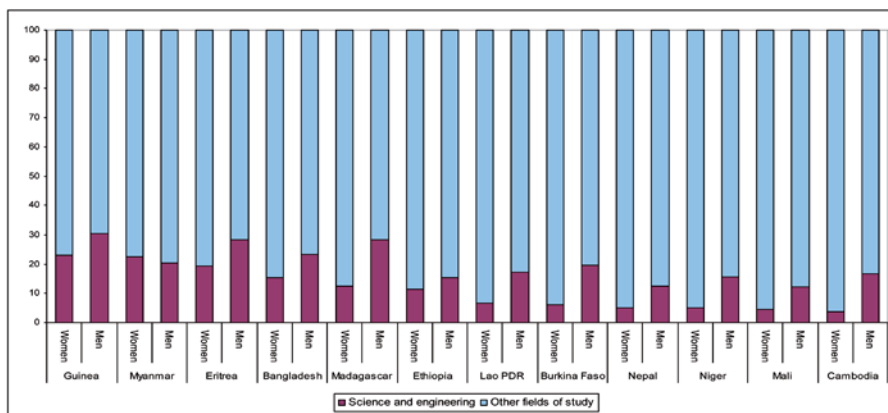
The objective is to assist the country in establishing the required enabling environment for innovation, such as the creation of the development, adoption and implementation of the National Innovation Fund and the provision of support to the Directorate of Science, Technology and Innovation. This is imperative as innovation is increasingly becoming an important element in economic growth, and essentially as a key driver for the emerging knowledge economy. The continued health of scientific development is central to Rwanda's progress, namely through the process of innovation.

The National Innovation Fund will provide funding for scientific applied research projects or feasibility studies, implemented by post secondary institutions or commercial enterprises in Rwanda. Activities will include grants and exchanges to strengthen research and capacity building in post secondary institutions, and funding projects that foster innovations in the private sector to apply knowledge and technology to specific situations and challenges, with a focus on supporting social development and economic growth in Rwanda.

## Closing the gender gap in science

To address the gender gap in science, UNESCO is working with various partners, notably through the UNESCO L'OREAL Partnership “For Women in Science” and the UNITWIN/UNESCO Chairs Programme, to support young women scientists. This includes allocating fellowships or grants and providing mentoring. It also includes awarding prizes to increase the visibility of successful women scientists, fostering training for women scientists at various levels, encouraging the creation of associations and networks of scientists and engineers, and increasing the public understanding of science with a focus on girls and women.

Figure 3. Distribution of men and women enrolment at tertiary education by field of study



Selected countries, 2009, or latest available year. (Source: UIS 2011)

### Christine Ouinsavi, UNESCO-L'OREAL Fellow For Women in Science 2007, Benin

In 2007, Christine Ouinsavi received a UNESCO-L'OREAL Fellowship to develop, at the Laval Forest Study Centre in Canada, strategies to ensure the conservation of forest plant species exploited as an important source of revenue by the rural population of **Benin**. Since then, she has gone on to become an influential African women leader. Research for her Ph. D in agronomy began in 2003 at Benin's University of Abomey Calavi on sustainable management of trees and fruits.

Rural women in Benin rely to a large extent on the sale or consumption of natural forest products - such as the locust bean fruit, shea nut and rônier palm - to meet their daily needs. However, because of current harvesting methods, many of these trees now risk over-exploitation and a reduction in their genetic diversity which threatens their sustainable use.

By harvesting seeds from the selected trees, she set up a seed orchard to cultivate new plants under nursery conditions. Some of the seeds were sown directly in the forests through a pilot programme done in collaboration with villagers. Once established, the seed orchards provided a sustainable source of high-yielding plants and ensured a stable source of income for the rural population.

While completing her studies in Canada, Ms Ouinsavi became the Minister of Primary Education Literacy and National Languages (Benin). She was deeply committed to girl's education, believing that educating girls not only improves their own well-being, but also contributes to the prosperity of their families, communities and countries. She noted that girls should be encouraged to go into scientific fields because “a scientific woman is a complete one”. In 2008 she was appointed as Minister of Trade and Industry –one of only four women at this level.

Despite a hectic schedule requiring frequent travel, Ms Ouinsavi pursues her research as much as possible. She continues part of her lab work at the Africa Rice Center in Cotonou and as a lecturer in agronomy at the University of Parakou.



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## Enhancing the management of, and access to, safe drinking water

Water plays an essential role in achieving the Millennium Development Goals. It is directly addressed in MDG 7, under Target 7c, which aims at reducing by half the number of people without sustainable access to safe drinking water and basic sanitation. It is also an essential component of growth, social and economic development, poverty reduction and equity – all essential for achieving the MDGs. Enhancing access and management of freshwater resources was also noted as a key priority for inclusion in the New Programme of Action for the Least Developed Countries.

As noted in the 2009 United Nations World Water Development Report 3: *Water in a Changing World*, evidence is emerging of the direct economy-wide benefits of investments in water. One interesting example is China, which, although not an LDC, provides some insights that could be relevant for the LDCs. There is evidence that local action on water management in China has delivered measurable improvements in GDP<sup>1</sup>. In the 335 counties in China with primary electrification from hydropower, annual average income per farmer rose 8.1% a year, nearly 3 percentage points more than the national average. In those communities, 30 million people upgraded their livelihoods from marginalized farming to off-farm laborers in the industrial and services sector without any negative impact on agricultural production. Further to the example of China, the World



Women at a well, Dogon Country, Mali

Health Organization (WHO) estimates returns of \$3-\$34, depending on the region and technology, for each \$1 invested in safe drinking water and basic sanitation.<sup>2</sup>

Policy-makers need to better understand the benefits for national development that result from sustainable water management and provision of safe water. Expanding safe drinking water and sanitation services would drastically cut the loss of life from water-related illness and free up scarce health resources in the least developed countries. Five thousand children die each day from diarrhea alone – one every 17 seconds.<sup>3</sup> Up-

grading water supply and sanitation services can also improve education, allowing more girls to attend school instead of spending hours each day collecting water. Improved access would also save millions of work days. The overall economic loss in Africa alone due to lack of access to safe water and basic

**The overall economic loss in Africa alone due to lack of access to safe water and basic sanitation is estimated at \$28.4 billion a year, or around 5% of GDP**

*(Source: WHO 2006)*

1. SIWI 2005

2. Hutton and Haller 2004

3. UN-Water 2008

sanitation is estimated at \$28.4 billion a year, or around 5% of GDP.<sup>1</sup>

Water is also linked to the crises of climate change, energy and food supplies and prices, and troubled financial markets. Unless their links with water are addressed and water crises around the world are resolved, these and other crises may intensify and local water crises worsen, converging into a global water crisis and leading to political insecurity and conflict at various levels.

To assist the LDCs in addressing these challenges, UNESCO is providing education, training and capacity building in the sustainable management of freshwater resources in the context of global changes in the LDCs through its International Hydrological Programme (IHP), including the UNESCO-IHE Institute for Water Education, located in Delft, the Netherlands, and the numerous centres and institutes under the auspices of UNESCO that focus on regional water issues.

Training focuses on linking indigenous knowledge and modern science in order to develop a holistic approach to Integrated Water Resource Management (IWRM), on water and climate risk management, on Remote Sensing for IWRM, on geophysics applications for groundwater management and on conducting hydrological surveys. In addition to organizing technical trainings at the national level, IHP is developing educational activities for children and youth and promoting capacity building at the regional level to enhance the management of transboundary water resources.

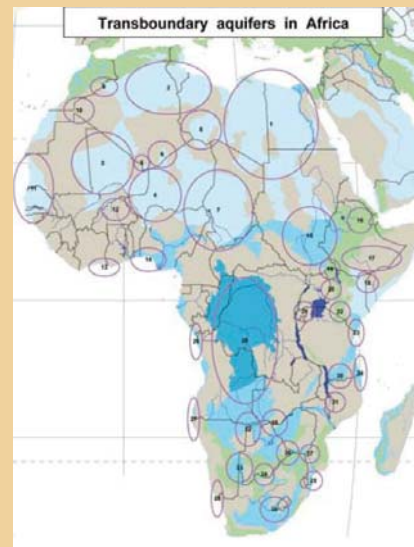
1. WHO 2006

### Transboundary Aquifers in Africa

Through a UNESCO project, hydrogeologists developed the first world map of African transboundary aquifers. This survey uncovered about 38 transboundary aquifers, five of which had never before been identified (see figure 3). Hydrogeologists from Benin, for example, learned that the aquifer providing water for Cotonou extended across the border into **Togo**. Both countries have expressed interest in developing a framework to manage this aquifer jointly, which will become increasingly important as rainfall in the region declines with climate change. The UNESCO project for Internationally Shared Aquifer Resources Management (ISARM) encourages governments to manage shared resources jointly with their neighbours and to establish legal agreements. The United Nations' International Law Commission is currently working on codification of the law governing transboundary aquifers, with the scientific and technical support of UNESCO-IHP.

*(Source: Science in Africa: UNESCO's contribution to Africa's Plan for Science and Technology to 2010, 2007)*

Map 3. Transboundary aquifers in Africa



The Karamojong or Karimojong, an ethnic group of agro-pastoral herders living mainly in the north-east of Uganda. Many Karimojong children have to help in with chores in family life and are part of the collective work force, leaving less time for study and education.

© UNESCO / Mark Hofer

**While the world is on track to achieve the water target globally, large regions of the world and many countries lag behind, and some risk backsliding. This is particularly true for those LDCs in sub-Saharan African and in the Arab states.**

*(Source: United Nations World Water Development Report 3: Water in a Changing World 2009)*

The IHP is assisting LDCs in climate change mitigation and adaptation through two IHP cross-cutting programmes: the Flow Regimes from International Experimental and Network Data (FRIEND) programme and the Hydrology for the Environment Life and Policy (HELP) programme. The FRIEND programme is an international research programme, which helps to set up regional networks for analyzing hydrological data. It provides support to researchers and operational staff of hydrological services in least developed countries, thereby contributing to their capacity to assess and manage their own national water resources. This contributes to the goal of providing a reliable supply of freshwater to the world's poor.

The IHP's HELP programme is translating ecologically sustainable development policies to mitigate climate change into concrete actions at the river basin level. HELP has achieved such a mitigation strategy within the LDCs through the HELP basin network, particularly in Asia and Africa.

The IHP is also assisting with the preparation of national policies regarding freshwater in several LDCs, and has provided training for those responsible for the implementation of such policies.

### Supporting the development of Kiribati's National Water Resource Policy

IHP helped the Government of *Kiribati* to develop its national water resource policy and implementation plan, which are designed to provide safe, adequate, and affordable water services to all communities in Kiribati. It also addresses the conservation, sustainable use and efficient management of Kiribati's water resources and will improve the welfare and livelihood of the people despite the threats of climate variability and change. The policy and plan is currently being implemented by the Government.

### DJIBOUTI - Geophysics applications for groundwater in Djibouti

*Djibouti* is characterised by a semi-arid to arid climate. Groundwater resources cover more than 95% of the water supply. Due to long drought periods, lack of water resource management and pressure from social and economic development, existing aquifers are severely over exploited. To assist Djibouti in addressing this challenge, IHP is implementing the Geophysics Applications for Groundwater project. This project focuses on enhancing water resource access for the poor by building the capacity of Djibouti's national research centre, the "Centre d'Etudes et de Recherches de Djibouti" (CERD), and its national partner institutions, including the Department of Water Resources of the Ministry of Agriculture and the National Office for Water and Sanitation, ONEAD. Water professionals are trained to use the latest technology to help them better access Djibouti's groundwater resources; thereby reducing unnecessary human and financial resources previously used to drill "blindly". Furthermore, it also gives Djibouti the opportunity to explore different underground natural resources such as geothermal energy, mining resources, and petroleum.



Launching of the project in Djibouti

© Mr. Alexandros Makrangelis, UNESCO

**Five thousand children die each day from diarrhea along – one every 17 seconds. Expanding safe drinking water and sanitation services would drastically cut the loss of life from water-related illness and free up scarce health resources in the least developed countries.**

(Source: UN Water 2008)



## Promoting sustainable development and environmental conservation through UNESCO's World Network of Biosphere Reserves

The World Network of Biosphere Reserves currently consists of 564 sites in 109 countries, of which 36 are located in the LDCs, which includes 2 transboundary biosphere reserves. UNESCO Biosphere Reserves are 'living laboratories for sustainable development' and represent learning centers for environmental and human adaptability. They are the only sites under the UN system that specifically call for conservation and sustainable development to proceed along mutually

supportive paths. Such mutuality requires cultural sensitivity, scientific expertise, and consensus-driven policy and decision-making. The mix of land use (agriculture, forestry, mining, tourism, conservation etc.) and the range of public and private as well as civil society organizations active within Biosphere Reserves make it real places to experiment with sustainable green economic development pathways for eradicating poverty and for a range of institutional arrangements that

can enable land/seascape level sustainability at an appropriate administrative level in the LDCs.

**UNESCO Biosphere Reserves are 'living laboratories for sustainable development' and represent learning centers for environmental and human adaptability**



Coffee Ceremony: Roasting Coffee Beans in the Kafa Biosphere Reserve (established in 2010), Ethiopia

## Enhancing access to renewable and alternative energy

Access to electricity constitutes nowadays a major challenge. At present, approximately 1.4 billion people, representing 20% of the global population in the world, lack access to electricity services, and some 85% of them live in rural areas of developing countries.<sup>1</sup> In Sub-Saharan Africa, they represent approximately 72% of the population and this figure rises up to 88% for the rural areas. In this region, households may spend as much as 30% of their disposable income on fuel-based lighting and women devote at least a quarter of total household labour to wood collection<sup>2</sup>.

To address this prevailing inequality, new approaches are needed in order to scale up investment in renewable energy sources such as wind, hydro and solar energy. The process of moving from the concept of energy development focusing on economic growth to one centred on global sustainable development, including environmental protection, will only be possible if the current energy development paradigm is changed.

For widely dispersed and low-density rural populations, decentralised energy technologies based on renewable sources offer a viable alternative to grid extensions; and as such, they can offer win-win solutions by contributing to global efforts aimed at mitigating climate change while addressing sustainable development. Connecting rural or

1. World Energy Outlook 2010

2. Africa Energy poverty : G8 Energy Ministers meeting 2009

### The Solar Summer School

One component of UNESCO's training programme is an annual summer course on Solar Energy for Rural Electrification, which was launched in 1989. The course includes practical field work. Its beneficiaries are experts, policy makers and government representatives, researchers, engineers, technicians and teachers. To respond to local needs, the course is organised in different regions namely: Africa, Asia and Eastern and Central Europe.

In December 2010, the African course held in Bamako (Mali) was attended by 30 representatives from **Benin, Burkina Faso, Guinea Bissau, Guinea, Ivory Cote, Mali, Niger, Senegal and Togo**.

Similarly, the Asian Summer School held in July 2010, in Kuala Lumpur (Malaysia), was attended by 26 experts and in November 2010, the Eastern and Central Europe course held in Almaty (Kazakhstan) was attended by 20 experts from the region.

remote communities to the national electricity grid is prohibitively expensive, even in the long term, and would not be economically viable for LDC governments, since population density and rural energy consumption would be low. By offering an alternative to the national grid, renewable energy thus offers hope not only for the sustainable development of LDCs, particularly those in Africa, but also for the development of rural areas in general.

**At present, approximately 1.4 billion people representing over 20% of the global population in the world lack access to electricity services and some 85% of them live in rural areas of developing countries**

Locally produced, renewable energy sources, such as solar energy for example, can provide the basic electricity needs of 6KW per village, in the form of lighting, pumped water and the electrification of health centres, schools and other public facilities. Access to information and communication facilities, such as access to internet, television and radio, provide a window to the world. Solar-powered refrigerators enable communities to preserve medicine and food. Solar cookers avoid the need to burn wood. Renewable energy offers in general a basic asset for improving the local economy and subsequently helps reduce poverty.

The expected contribution of renewable energy (solar, wind, biomass, etc.) for access to energy is translated by their dynamic growth foreseen until 2030, which





Sizing of a solar system and simulation of an electric breakdown during practical training organized as part of the African solar summer school, 2010

will represent 15% of the energy supply for electricity generation, while hydro energy will provide 29%<sup>1</sup>. The lack of a specific technology that would respond to future energy needs implies that joint efforts are required to find a solution to the problems of access to energy and ensuring the reliability of global energy supplies. One aspect often overlooked is the opportunity for income generation and employment creation that the development of renewable energy sources harbours.

Addressing the challenge of a new global sustainable energy system involves an increased use of alternative and renewable

## Locally produced, renewable energy sources, such as solar energy for example, can provide the basic electricity needs of 6KW per village, in the form of lighting, pumped water and the electrification of health centres, schools and other public facilities

energy sources. It requires the availability of local competencies as well as endogenous scientific capacity as a foundation for increased knowledge of the various related technologies and their adaptation to different contexts and needs. This calls for the development of energy strategies and policies, disseminating relevant scientific knowledge and technology and ensuring local capacities and competencies for the use and better management of locally available energy resources. These are objectives of UNESCO's Global Renewable Energy Education and Training (GREET) Programme. Through this programme, UNESCO has trained some 406 decision/policy makers, project managers, engineers, researchers, technicians, and trainers from 15 Least Developing Countries<sup>2</sup> in renewable energies.

UNESCO has also developed a conceptual Training Solar Platform (see photo). Two prototypes have been put in service in Burkina Faso and Zimbabwe where they are used in week-long seminars and training programmes on decentralised rural electrification run at the national or sub-regional levels. The Platforms cover solar photovoltaic, mini-hydropower and mini-grids of

electricity powered by renewable energy. UNESCO also designs, produces and disseminates updated learning/teaching materials and tools on renewable energy and training curricula.

Under a UNESCO co-sponsored fellowship programme, the International Sustainable Energy Development Centre in Moscow, a Category 2 Centre created under the auspices of UNESCO, annual fellowships are being awarded to postgraduates from the LDCs.

UNESCO provides technical assistance to countries in energy policy-making and planning in the form of advisory services and institutional capacity-building. The Organization also helps countries to define national energy policies and priority projects.

At the regional level, UNESCO supports the programme of the African Energy Commission (AFREC) launched by NEPAD as well as the Community of Sahelo-Saharan States. UNESCO is contributing to this programme via the provision of training for trainers, in-service personnel, field operatives and project managers; by organizing regional consultations to identify renewable energy needs and define national and regional plans; and via institutional capacity-building, training seminars and advisory services to improve policy-making and planning.

2. Afghanistan, Bangladesh, Benin, Burkina Faso, Guinea, Guinea-Bissau, Ivory Coast, Maldives, Mali, Mauritania, Niger, Senegal, Sudan, Togo and Yemen

1. "World Energy Outlook" 2010

## Power to the people

UNESCO supports pilot projects stimulating the use of solar energy to improve living conditions in rural areas. These “solar villages” also serve to demonstrate the advantages of solar electricity to governments.

In **Benin**, the programme contributed in 2009 to the solar electrification of two rural schools and their equipment with ICTs powered by solar equipment. While this initiative helps to improve quality education in the targeted schools, it also serves as a model for duplication in other villages in LDCs. Similarly, the programme helped the Governments of **Burkina Faso** and **Mali** to install solar electricity in public facilities in remote villages. These included rural health care centres and maternity hospitals. Particularly needed in the maternity hospitals was solar water heating to improve hygiene and thereby protect mothers and their newborn babies from life-threatening infections.

Solar-powered irrigation of fields by pumping groundwater was also installed in these countries. Better irrigation could substantially reduce Africa’s current dependence on imported staple foods. In turn, this would help to save foreign currency, reduce government deficits and create employment.



© UNESCO

Village square in Burkina Faso equipped with a solar street lamp

# Mitigating and adapting to climate change

Over 70 percent of the population in the LDCs resides in rural areas and is dependent on income from agriculture.<sup>1</sup> People in LDCs are therefore more exposed than those in other countries to the effects of land degradation, drought, desertification, deforestation, as well as water and air pollution, which are associated with climate change. Those LDCs which are also Small Island Developing States (SIDS) face additional risks as they are low-lying coastal countries, which are often remote, with limited resources and a small population, causing them to be particularly vulnerable to natural disasters and susceptible to external shocks.

UNESCO is therefore giving priority to LDCs and to SIDS in its dedicated climate change initiative, which focuses on strengthening the climate change knowledge base for science, assessment, monitoring, and early warning and on promoting the mitigation of and adaptation to climate change, nota-

bly through enhanced education and public awareness.

UNESCO, UNDP and United Nations Volunteers are in the process of establishing a UN Collaborative Programme on Community-Based Adaptation to Climate Change in Developing Countries (UN-CBA). This programme will fund community-based organizations in and around biosphere reserves, indigenous and community conserved areas and other important ecosystems to develop and implement climate change adaptation projects. World Heritage Sites in tropical forest landscapes are also piloting techniques of adaptive and carbon-financed forest management in LDCs, such as Madagascar. In the Asia-Pacific region, UNESCO is implementing a flagship programme on Biosphere Reserves for Environmental and Economic Security (BREES). BREES is a Climate Change and Poverty Alleviation Programme, which aims at strengthening and promoting the role of biosphere reserves in achieving environmental and economic security throughout Asia and the Pacific. Targeted LDCs in

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1. UN-OHRRLLS - The Impact of Climate Change on the Development Prospects of the Least Developed Countries and Small Island Developing States, 2009

## UNESCO's Sandwatch Programme

Coastal communities worldwide are confronted with climate related risks such as sea-level rise, ocean acidification and increased extreme events. Particularly vulnerable are coastal LDCs and SIDSs. Implemented in partnership with the non-profit Sandwatch Foundation, the Sandwatch Programme provides a framework for children, youth and adults to scientifically monitor and critically evaluate the problems and conflicts facing their beach environments and to develop sustainable approaches. The Sandwatch methodology includes the following steps: monitoring, analyzing, sharing, and taking action. An important part of the Sandwatch approach is that implementation occurs at the local level by schools, communities, NGOs, universities, government departments and individuals, all of whom contribute to the global Sandwatch network. Sandwatch is active in a number of LDCs, including **Benin, Comoros, Gambia, Guinea Bissau, Kiribati, Mauritania, Samoa and Senegal.**

In September 2010, the Sandwatch Foundation - in partnership with the Government of **Kiribati** and UNESCO – brought together junior secondary and high school teachers, as well as representatives of curriculum and environment authorities, to raise awareness about the Sandwatch Programme and to integrate Sandwatch aspects into the formal school curriculum in 2011. One year after Samoa's southern coastline was devastated by a tsunami in September 2009, the Sandwatch Foundation, UNESCO, UNDP-Global Environment Facility Small Grants Programme, SOPAC (the Applied Geoscience and Technology Division of the Secretariat of the Pacific Community) and the Government of Samoa organized a training event for government agencies and coastal communities to introduce them to the Sandwatch programme and its methodology. Among the many post-tsunami issues facing Samoan communities is the question of how to protect settlements from future tsunamis and other high wave events that occur during cyclones. Like in Kiribati, the Ministry of Education in **Samoa** is in the process of reviewing and revising its school curriculum.

this region include *Cambodia, Timor-Leste, Nepal and Bhutan.*

Disaster preparedness and mitigation is one of UNESCO's key strategic objectives as it provides practical and scientific guidance to governments and communities in reducing vulnerability to natural hazards and building the capacity to cope with disasters. The Hyogo Declaration and Framework for Action encompass UNESCO's strategy for dealing with disaster reduction. This includes capacity building in vulnerable nations, research on natural hazards, coordination of early warning systems, the promotion of education and public awareness, and the integration of disaster reduction into development and anti-poverty programmes.

## The Regional Post-Graduate Training School on Integrated Management of Tropical Forests and Lands (ERAIFT)

ERAIFT is based at the University of Kinshasa in the Democratic Republic of Congo. ERAIFT was launched by UNESCO in 1999 to provide post-graduate training in tropical forest management to a new generation of African specialists. Since its inception, ERAIFT has enrolled students from several LDCs, notably from **Angola, Benin, Burkina-Faso, Burundi, Guinea, Madagascar, Niger, Central African Republic, Democratic Republic of the Congo, Rwanda and Togo.** Supported by the European Commission and UNESCO, ERAIFT together with its alumni of young and dynamic African experts is today poised to play a significant role on emerg-



Graduates of the 5th year of ERAIFT, D.R.Congo

ing key forest issues, such as bio-carbon and REDD+ (Reducing Emissions from Deforestation and Forest Degradation), including in the context of the UNESCO's Africa Bio-Carbon (ABC) Initiative.

© UNESCO

### UNESCO's Africa Bio-Carbon (ABC) Initiative

The ABC-Initiative, a project of UNESCO's Mand and the Biosphere Programme, aims at stimulating the participation of African countries in the lucrative global carbon trade market that was introduced by the market-based emissions control mechanisms of the Kyoto Protocol. Today, this market is worth tens of billions of dollars. However, as Africa is proportionately underrepresented in this market, few of these dollars have reached the continent. The ABC-Initiative seeks to develop strategies and models for bio-carbon sequestration projects in Africa. By tapping into the ability of biota and soils to act as a carbon sinks, bio-carbon sequestration projects offer exciting opportunities for linking a number of interconnected objectives. Sequestration of greenhouse gases is potentially released by Land Use, Land-Use Change and Forestry (LULUCF). Using the African sites of the World Network of Biosphere Reserves as platforms for demonstrating and propagating innovative sustainable practices, the ABC-Initiative fulfils the poverty reduction and sustainable development targets of the Millennium Development Goals.

LDCs are extremely vulnerable to the effects of climate change as they lack the resources necessary to adapt

### Climate Frontlines

Climate Frontlines is an interagency platform on indigenous knowledge and climate change implemented by UNESCO through the Local and Indigenous Knowledge Systems (LINKS) programme, in partnership with Secretariat of the Convention on Biological Diversity (CBD), Secretariat of the Permanent Forum on Indigenous Issues (PFII) and the Office of the High Commission on Human Rights (OHCHR). Its online forum, which reaches an estimated 60,000 people, seeks to strengthen voices of indigenous peoples, Small Island and local communities in global climate change debates. Complementing the Forum, the Climate Frontlines network of field research projects highlights local community experiences and knowledge related to coping with various climate change impacts. Climate Frontlines field projects have been implemented in the following LDCs: ***Ethiopia, Myanmar, Nepal, Solomon Islands, Tanzania, and Zambia.***

Natural disasters, further magnified by climate change have become increasingly severe, frequent, and pervasive in the last decade, particularly in the least developed countries



# Culture: a catalyst for poverty eradication and sustainable development

The culture industries generate \$1.3 trillion in jobs and income annually, and account for 7% of global GDP. For example, in Mali the culture sector accounted for 5.8% of employment in 2004 and 2.38% of Mali's GDP in 2006, including the informal component (accounting for 57% of the national economy)<sup>1</sup>. Cultural tourism (i.e., visits to UNESCO World Heritage Sites) represents 40% of all global tourism revenue annually (2007 UNWTO). Heritage, especially UNESCO World Heritage sites, produces revenues from visits, sales of local crafts, music and cultural products generating employment for communities. An example is the world-renowned UNESCO World Heritage site of Angkor in Cambodia, where tourism to the site generated 33 million USD. Clearly culture, in its many manifestations, is a powerful engine for economic growth, generating considerable income and employment, while at the same time serving as a strategic outlet for innovation, creativity, production and dissemination.

1. The economy of culture in Mali, IBF for the European Commission, January 2007

The contribution of culture to the achievement of the MDGs was recently recognized in the Outcome Document of the MDG Review Summit, adopted by the UN General Assembly (UNGA) in October 2010 in UN resolution A/RES/65/1. Further emphasis was given to the role of culture in development in a recent resolution adopted by the UNGA on Culture and Development in December 2010 (A/RES/65/166), which called for the integration of culture in development policies.

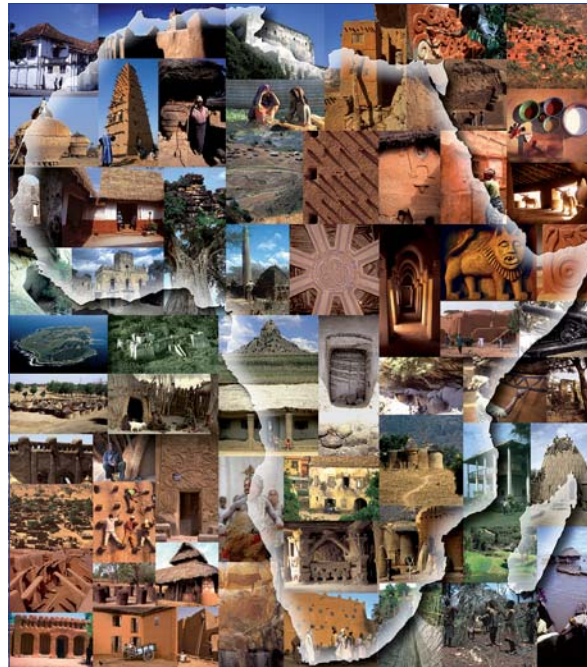


Monuments at Angkor Wat, Cambodia

Through its globally ratified 1972 World Heritage Convention, to which 45 out of the 48 LDCs are signatory, UNESCO protects and monitors more than 911 World Heritage sites, including both natural and cultural sites, of which 78 are in the LDCs. To further bolster the representation of LDCs, particularly those in Africa, which are still poorly represented in the World Heritage List, the World Heritage Centre of UNESCO implemented a “Global Strategy” to obtain a more balanced representation. As a result of this “Global Strategy”, the number of cultural and mixed properties in Africa, which had only 17 out of a total of 444 cultural and mixed properties in 1998, went up to 47 in 2010.

In the framework of the World Heritage Convention, UNESCO conducts a large array of programmes and projects that foster local development throughout the world; these range from environmental protection (biodiversity conservation, forests, marine areas, small islands), to historic urban landscapes, cultural tourism, eco-tourism, and cultural heritage conservation. Through these projects UNESCO assists the LDCs in protecting their cultural and natural heritage, improving their national policies, building capacities, training, and raising awareness among communities, thus contributing to job creation and economic revenue generation.

## Culture is a vehicle for economic development, for growth and for jobs in the LDCs



© UNESCO/Africa 2009 Programme

***“Getting the African sites listed on the World Heritage List is not an end in itself, but it is only the beginning of an adventure. This is because henceforth the listed sites require world-class attention along with other world heritage, which brings to mind the issue of funding. This aspect of the African heritage sites on the World Heritage List is now partly addressed by the creation of the African World Heritage Fund (AWHF).”***

**Gabriel Essack, principal Research Officer, Victoria, Seychelles**

*(Source: Africa 2009 - Conservation of Immovable Cultural Heritage in sub-Saharan Africa)*

## Promoting the conservation of immovable cultural heritage in Sub-Saharan Africa

The UNESCO World Heritage Centre helped to promote the conservation of immovable cultural heritage in Sub-Saharan Africa through Africa 2009, a twelve year programme implemented with African cultural heritage organizations.<sup>1</sup> This programme was aimed at improving the management and conservation of immovable cultural heritage in Sub-Saharan Africa. It directly contributed to a significant improvement of the conservation and management conditions of immovable cultural heritage, both at national and regional levels. Moreover, indirect impacts came from the activities that the partners and participants in the programme undertook, and still continue to implement on their own, taking advantage of the network of professionals set up during the last twelve years. The new references for heritage conservation in Africa resulting from the activities of the programme ensure a better integration of social and economic development needs, better use of individual and institutional capacities on the continent for undertaking projects, training professionals and providing expertise; and finally, better access to national and international support.

Overall, Africa 2009 has sensitized decision makers at the political level, and as a

1. These organizations include: International Centre for the Study of the Preservation and Restoration of Cultural Property (ICCROM), "Culture, Constructives et Développement Durable – Ecole National Supérieure Architecture Grenoble" (CRAterre-ENSAG), "Ecole du Patrimoine Africain" (EPA) and Centre for Heritage Development in Africa (CHDA)

*"The operational team that was built at the occasion of our Project Situ  at James Island (the Gambia) has been able to undertake several additional preventive conservation campaigns on its own. Furthermore, I was given the opportunity to pass on my expertise in Malawi, where I assisted colleagues in charge of cultural heritage in developing a plan for the preservation and presentation of Fort Mangochi."*

**Baba Ceessay, NCAC, the Gambia**

(Source: Africa 2009 - Conservation of Immovable Cultural Heritage in sub-Saharan Africa)

result, professionals are now benefitting from a political environment in which heritage conservation is better recognized as an important tool, both in terms of national identity and pride, and for sustained social and economic development.

Listed below are some statistics and testimonials demonstrating the success of the project:<sup>2</sup>

- ▶ 224 African professionals from 42 countries gained knowledge through their participation in the 11 regional training courses on conservation and management of immovable heritage;
- ▶ 128 African professional from 40 countries acquired skills through their participation in 7 technical courses;
- ▶ 37 projects with a total of 1632 people trained, including professionals, tour

2. Africa 2009 – Conservation of Immovable Cultural Heritage in sub-Saharan Africa

operators, guides, local leaders, artisans, and community members, etc.



The mosque of Djingareyber, Timbuktu, Mali

© Joffroy CRAterre

In **Mali**, UNESCO is implementing an environmental protection project around the World Heritage site of Djenné, which focuses on improving solid waste management. The project is promoting environmental friendly sources of income, such as the construction of an eco-friendly dying factory in Bamako for women, and improving health conditions around the site through the training of site managers and workers in waste management and collection.



© UNESCO

Mali World Heritage site of Djenné

World Heritage Site of Island of Mozambique (**Mozambique**)

UNESCO has been helping to rehabilitate the San Sebastian Fortress of the World Heritage Site of Island of Mozambique through the rehabilitation, restoration, reparation and reconstruction of the rainwater drainage system and the structural elements of the fortress ramparts and buildings, as well as through the training and employment of local craftsmen in rehabilitation works. Clean water was provided for the community by restoring a historical cistern and by building a new cistern near the Fortress.

Capacity development in the management and conservation of this site was also provided for local community representatives and cultural professionals. This resulted in the production of a Manual on the Conservation and management of Cultural Heritage Sites and in the elaboration of a Management and Conservation Plan of this World Heritage Site (2010-2015).

In **Ethiopia**, UNESCO has been working to provide assistance in managing and protecting the Lalibela Rock Hewn Churches, a UNESCO World Heritage Site. The Lalibela region is one of the poorest agricultural regions of Ethiopia, but one of the richest in terms of architecture, religion and liturgical music. In the town of Lalibela, cultural assets are a primary source of income. UNESCO has provided jobs for local workers in traditional building conservation skills, as well as local crafts people, and trained tourism guides. UNESCO also collaborates with the World Bank to ensure that its ongoing tourism development project respects the site's cultural integrity.



© UNESCO

World Heritage Site of Mozambique Island, Mozambique



## Promoting the mobility of artists and cultural practitioners as well as their cultural goods and services

Through the Convention on the Protection and Promotion of the Diversity of Cultural Expressions (2005), UNESCO promotes international cooperation, market access and preferential treatment for artists and other cultural professionals and practitioners. It provides technical assistance to LDCs to improve their legal and institutional frameworks relating to culture and trade, and implements programmes that facilitate cultural exchanges and the mobility of artists as well as the flow of cultural goods and services from the global South.

For several years now, UNESCO has been the lead agency of the Culture and Development Thematic Window of the MDG Achievement Fund (MDG-F), financed by the Spanish government for an amount of US \$95 million. This Window is made up of 18 UN inter-agency programmes that demonstrate the contribution of culture to development at the national level with an aim to speed up progress towards achieving the MDGs.

These programmes address all dimensions of culture, and foster social inclusion and poverty reduction through the promotion and enhancement of cultural resources. They focus on local and national ownership through capacity-building. This is achieved by encouraging the inclusion of minorities and disadvantaged groups in social, political and cultural life, and by harnessing the tremendous potential of the cultural sectors for job creation, economic growth and poverty reduction.

To create partnerships between private, public, and civil society to strengthen local creative and cultural industries for development in the global South, UNESCO launched a Global Alliance for Cultural Diversity in 2002. Projects have ranged from broadening the access for African music, to regional and international markets such as WOMEX (the World Music Festival), to a programme in Côte d'Ivoire to set up a creative enterprises incubator (Nzassa), to a West Africa incubators hub (ARPEM).



© UNESCO / Nada Al Hassan

Basket Market, Ethiopia

### Cambodia – Creative Industries Support Programme (MDG-F Spanish Fund)

Under the thematic window “Culture and Development” from the MDG-F Spanish Fund, a project for the support of creative industries was approved in April 2008. The programme is a concerted effort of UNESCO, UNDP, ILO and FAO, along with four partner Ministries (Ministry of Culture and Fine Arts; Ministry of Commerce; Ministry of Industry; Mines and Energy; Ministry of Agriculture; Forestry and Fisheries) to jointly promote Cambodian creative industries through cultural preservation, entrepreneurship and marketing – enhancing the economic and social potential of the cultural sector. In the framework of this project, 500 artists and crafts people have been trained, of which 90% were from minority groups, in the crafts industry and in the management of commercial enterprises. The programme also supported the Royal Government in designing and adopting a Royal Decree on the establishment of a national Living Human Treasures system in **Cambodia**.



# Communication and Information: a catalyst for poverty eradication and sustainable development

## Empowering people by enhancing access to information and knowledge

- ▶ UNESCO promotes the *freedom of expression as a basic human right* and supports the *development of free, pluralistic and independent media*, including community media, in LDCs. The Organization focuses on expanding opportunities for media as a platform for democratic discourse; fostering citizens' participation in decision-making processes and development initiatives; and encouraging the adoption of ethical and professional standards in journalism while upgrading the capacities of training institutions to offer high quality media training and *journalism education*.
- ▶ To ensure that the availability of media reflects people's concerns and remains a communication channel through which citizens can seek and share information in order to make informed decisions, UNESCO developed *media development indicators*, which were endorsed by the Intergovernmental Council of UNESCO's International Programme for the Development of Communication (*IPDC*).
- ▶ Establishing *community media* as catalysts for information and knowledge acquisition and sharing, learning, inclusive participation in development and self-expression.
- ▶ Expanding opportunities to provide *access to information* for all, targeting in particular marginalised groups such as minorities and indigenous communities, women and girls, persons with disabilities, etc. This action includes advocacy for media and information literacy, improving access to content through the promotion of multilingualism, and encouraging local content production to enhance cultural diversity.
- ▶ UNESCO is focused on the use of *ICTs in education* to enhance both access to knowledge through *open educational resources*, and the quality and impact of teaching and learning processes. The establishment of *virtual universities* is

part of UNESCO's efforts to bridge the digital divide and to broaden access to higher education, particularly in social sciences and engineering.

In particular, UNESCO targets countries in *post-conflict and post-disaster situations* to enable the flow of humanitarian information at all stages of disaster, and to promote the development of institutional and human capacities for the development of sustained free, independent and pluralistic media in post- conflict environments.



Solar Powered Radio, Rattanakiri Province, Cambodia

**Expanding opportunities for media as a platform for democratic discourse; fostering citizens' participation in decision-making processes and development initiatives**

Proof reading Kabul Weekly, the first independent Afghan newspaper supported by the association Aina, UNESCO and Reporters without borders  
Kabul, Afghanistan



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## Creating an enabling environment for the freedom of expression

Enabling individuals and communities to speak out and express their aspirations and concerns has direct implications on their participation in political, economic and social decision-making processes, which are crucial to national development processes. As such, UNESCO is working to create an enabling environment for the freedom of expression in the LDCs by providing support for the establishment of media laws and regulatory frameworks that promote press freedom, diversity of opinion and media ownership, and freedom of information. This is particularly important as such laws and frameworks are often non-existent, outdated, or are not in accordance with internationally-recognized

principles, and are not being effectively implemented in the LDCs. Action in this area has been focused on several LDCs including *Bangladesh, Liberia and Nepal* among others. Furthermore, the promotion of the safety of media professionals remains a critical concern. UNESCO is monitoring the situation for press freedom and the safety of journalists, in particular the situation of women journalists, through independent alert networks established by media and press freedom organizations such as the International Freedom of Expression Exchange Network (IFEX). Action in this area also includes the facilitation of training on investigative journalism (e.g. *Liberia, Sudan*) and safety issues

(e.g. *Haiti*), and advocacy work undertaken chiefly in partnership with large professional media organizations and specialized NGOs (e.g. *Nepal*)



Serge Daniel © 2005 UNESCO

Journalists of the Community Multimedia Centre in Koutiala read the papers together in N'KO, Koutiala, Mali

### Building Institutional Capacities of Journalism Schools in Africa

UNESCO's support for journalism education in Africa is underpinned by a strong conviction that professional journalistic standards are essential to bring out the potential of media systems to foster democracy, dialogue and development. However, many African journalism education institutions do not have the necessary resources to develop a learning environment to address the needs of aspiring and working journalists. The 2007 UNESCO study "*Criteria and Indicators for Quality Journalism Training Institutions: Identifying Potential Centres of Excellence in Journalism Training in Africa*" revealed that "Africa does not need new or more journalism schools. Instead, the continent needs a core of excellent facilities that make a real impact, and which are also at the heart of a wider network with other schools." As a result of this study, **UNESCO identified twenty potential centres of excellence in journalism education throughout Africa, which included centres in 5 LDCs (Burkina Faso, Madagascar, Mozambique, Senegal and Uganda), and UNESCO is now supporting them to upgrade their capacities.**

Action in this field supports seven key areas:

- ▶ Curricula: Implementing UNESCO's model curricula and improving assessment systems
- ▶ Staff training: Building capacities of teaching staff through training and exchange programmes with other universities
- ▶ Learning materials: Making textbooks available in national languages and improving access to learning material
- ▶ Media Resource Centres: Providing adequate equipment and technical facilities for training in new and traditional media
- ▶ Management: Enhancing institutional governance, sustainability and the involvement with the media sector
- ▶ Media monitoring: Improving capacities to monitor media sector development
- ▶ Networking: Creating networks between regional, national and international journalism education institutions and media

**UNESCO is supporting journalism training institutions in many other LDCs, including the Central African Republic, the Gambia, Liberia, Rwanda, Sierra Leone and Somalia, through the International Programme for the Development of Communication (IPDC).**

## Providing support for free, pluralistic and independent media

UNESCO gives high priority to strengthening the capacities of journalism and communication institutions to foster citizens' participation in sustainable development and for the maintenance of democratic processes and good governance. This is achieved through various measures of assistance that focus mainly on training media specialists (particularly women journalists), strengthening news agencies, public service broadcasting and community media, and assisting media in improving the quality of their local content by providing training, production and distribution opportunities.



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### UNESCO Media Development Indicators

Free, independent and pluralistic media landscapes are essential for the development and preservation of democratic processes. The UNESCO-developed Media Development Indicators (MDIs) enable stakeholders to assess media landscapes at a national level and to identify the media development gaps. The indicators measure systems of media regulation and control, media pluralism and diversity, professional capacities and supporting institutions, media as a platform for democratic discourse, and infrastructural capacity.

Support has been provided to apply the MDIs in the Maldives, **Mozambique, Bhutan, and Mauritania**, whereby their specific needs are identified so as to guide the formulation of media-related policies, which, in turn, improve overall media development efforts. Assessments are ongoing in **Nepal and East Timor**.

MDIs are the only policy advocacy tool in media development to be endorsed through an intergovernmental process. They are increasingly being recognized by partner organizations and UN agencies, and are being used in CCA and UNDAF documents (e.g. **Mozambique, Rwanda, Tanzania and Uganda**), making them an integral part of interagency and multi-stakeholder collaboration on media, democracy and good governance programmes.

The International Programme  
for the Development  
of Communication

### The International Programme for the Development of Communication

Unique in the United Nations system, the International Programme for the Development of Communication (IPDC) was created in 1980 with the aim of enhancing free, independent and pluralistic media in developing countries and countries in transition. The IPDC has three chief priorities, namely the promotion of freedom of expression, development of community media and building the capacities of media professionals.

In more than three decades, the IPDC has channeled over US\$ 100 million to some 1500 media development projects in some 140 countries. The IPDC continues to play an important role in UNESCO's media development strategy with particular emphasis on Africa, LDCs, SIDS and countries in conflict/post-conflict situations. The IPDC strives to realize effective media projects that empower people to gain equitable access to knowledge and express themselves through free, independent and pluralistic media. Projects are proposed and implemented by local key organizations under UNESCO's expert guidance, based on the internationally-recognized Media Development Indicators (MDIs).





© Otello Ore

First Printing House in Timor Leste

### Enhancing Citizens' Participation through Community Media

UNESCO has over 30 years of experience in promoting community media all over the world. Community-based media is key to ensuring media pluralism, diversity of content, and the representation of the views and interests of different groups in the media. It also contributes to nurturing democracy and good governance. The benefits are direct: access to information contributes to the empowerment of marginalized communities, provides education and learning, and promotes the active participation of communities in their own social and economic development. UNESCO's action in this area provides assistance for the creation of community radio stations, policy advocacy in support of community media, the promotion of standard-setting tools and capacity-building. Since 2005, 183 CMCs and community radios have been supported by UNESCO in 60 different countries, including **29 LDCs**. A global online directory of CMCs facilitates direct, practical cooperation between international and national agencies with CMCs on the ground: <http://www.unesco-ci.org/projects/eng/CMC-online-directory>.

### Bringing Timor Leste Closer to the World

In 2010, **Timor Leste** established its first printing house. The establishment of this printing house was led by a consortium of three major independent newspapers (e.g. Timor Post, Kla'ak, and The Dili Weekly). The consortium worked together with the International Center for Journalists (ICFJ) to monitor the implementation of the printing press that was purchased to support independent media that lacked financial resources to afford the prices and terms of commercial printing houses. This project enabled independent newspapers to submit their works to the new printing press and publish at an affordable cost, which, in turn, allowed the newspapers to increase their circulation, reduce the cost of their publications, and strengthen their financial sustainability. Consequently, there was an increase of readership in Timor Leste. The ultimate aim is to create a more competitive media landscape along with independent publications, which signifies an important communication channel to secure freedom of expression and newspapers' editorial independence. It will also improve the prospects of sustainability in Timor-Leste's independent media sector.

Community media is extremely important in Timor-Leste because it ensures the flow of information and news so that people are informed about their local, regional, and national current affairs. Strengthening community radio stations across Timor-Leste contributes significantly to the development of mass media in this young country and helps to minimize the information gap that exists between communities in remote areas and those living in urban regions. In the framework of the International Programme for the Development of Communication, which aims to develop free and pluralistic media, UNESCO worked with Community Radio Association Timor-Leste (ARKTL) to create a module for running community radio that draws from an analysis of 8 years of community radio experience in the Timor-Leste community. Now, with a module designed specifically for community radios in Timor-Leste, there is a network of volunteers and communities equipped with the knowledge of how community radios should be operated. This module is now operationalized in three radio stations – Radio Mauloko Maubisse, Bukoli and Oecuse in the districts Ainaro, Baucau and Oecusse – and continues to expand.



## Building productive capacities to make globalization work for LDCs through ICTs in education

### The Broadband Commission for Digital Development

Launched at the World Summit on the Information Society Forum 2010, the Broadband Commission for Digital Development is a time-bound initiative to accelerate the adoption of broadband among Member States. The goal is to speed up the progress towards the MDGs through the adoption of broadband-friendly practice and policies, bridging the digital divide so that the “entire world can take advantage of the benefits broadband can offer”. Irina Bokova, Director-General of UNESCO, is Vice-Chair of the Commission alongside Mr. Touré Ba, Secretary-General of the ITU. Through this initiative UNESCO places emphasis on content as an element that goes hand-in-hand with the infrastructure and connectivity dimension of broadband roll-out; underlining the importance of the production and dissemination of local content, as well as important issues of linguistic and cultural diversity in cyberspace.



Serge Daniel © 2005 UNESCO

Ms Mariko in front of the computer (Koutiala, Mali). She just received in her mailbox a request from Senegal.

### 12 Million USD accorded for cyber education in West African Universities

On 11 February 2011, the Director-General of UNESCO, Irina Bokova, signed an agreement to launch a US\$12 million project to boost the capacity of West African universities, notably by creating a regional virtual library, with Soumaila Cissé, President of the Commission of the West African Economic and Monetary Union (UEMOA). The project is part of a wide-ranging plan initiated in 2006 to develop the use of Information and Communication Technologies (ICTs) to support the reform of higher education in the UEMOA member states (**Benin, Burkina Faso, Cote d'Ivoire, Guinea Bissau, Niger, Mali, Senegal and Togo**).

“Higher education is a vital force for sustainable development and poverty reduction,” said Irina Bokova. “The UEMOA member states have undertaken an ambitious reform in this domain, illustrating a clear strategic commitment to reinforcing their capacity for research, innovation and creativity. UNESCO is supporting the reform by helping to develop the use of ICTs in universities. These technologies have enormous potential for facilitating access to quality education.” The three-year project funded by the UEMOA aims to modernize ICT infrastructure in universities for both education and administration. In addition to a regional virtual library, it will set up a cyber institute for on-line classes. Campuses will be equipped with fiber optic equipment and high speed connection facilities for at least 200 computers. The project will be implemented by UNESCO’s cluster office in Bamako (Mali).

**Open Educational Resources** are teaching, learning or research materials that are available in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution. UNESCO believes that Open Educational Resources (OER) provide a strategic opportunity to improve the quality of education which is critical to the building of peace, sustainable social and economic development, and intercultural dialogue.

UNESCO has developed a new, innovative OER Platform which will offer selected UNESCO publications as OERs, and allow communities of practice including teachers, learners, and education professionals to freely copy, adapt, and share their resources.

The Organization is simultaneously converting UNESCO publications and global adaptations to OER. Feature publications include the UNESCO Model Curricula for Journalism Education and adaptations by the University of Namibia and the Polytechnic of Namibia and other university journalism schools from LDCs including **Lesotho, Madagascar, Mozambique, Senegal, and Uganda**. Lesson Plans for the Marovo Lagoon (**Solomon Islands**) have also been developed to support the transmission of indigenous environmental knowledge in the Marovo language, with plans to adapt them for other LDC island states. The Platform is expected to be launched at the 36th Session of the UNESCO General Conference in November 2011.

## Enhancing mutual understanding and peace

UNESCO supports national and regional stabilization, reconstruction and reconciliation processes and peace-building challenges by highlighting the role of independent professional media for long-term peace and reconciliation. This is achieved through the promotion of dialogue among media professionals in zones of conflict and in other parts of the world through the capacity-building of journalists and media organizations (e.g. *Angola, Burundi, Rwanda, Uganda, Tanzania, Kenya, DR Congo, East Timor, and Afghanistan*), and through the provision of advice for drafting new media legislation that enhances the development of freedom of expression (e.g. *Afghanistan, Sierra Leone*).

The gathering and dissemination of non-partisan information is a key element of free and fair election processes, and the professionalism of media is thus crucial during election periods. Training in elections reporting and monitoring has focused on *Liberia and Sudan*, and more recently in *Haiti* where over 300 journalists were trained, and an additional workshop was given to local and community media on providing life-saving humanitarian information.

**Establishing community radio acts as a catalyst for information and knowledge acquisition and sharing, learning, inclusive participation in development and self-expression**

### Radio Salus, Rwanda

The creation of Radio Salus in **Rwanda** serves as a prime example of how media independence and pluralism are indispensable for democratization processes. Launched by UNESCO in 2005 in the context of the reconstruction of Rwanda, Radio Salus was one of the first private radio stations to broadcast since the 1994 genocide and played an important role in redefining Rwanda's media. Radio Salus became a platform for the debate of a wide range of issues, and the station is now self-sustainable as one of the top three most listened-to radio stations in the country.

Radio Salus has empowered local communities, youth, women, and disabled people; it is the only radio station in the country with blind personnel. It has become a social economic development tool for many with its educational programmes that feature topics such as the economy, the environment, reproductive health, HIV/AIDS, health, and history. The radio station also serves as an educational training tool for students at the National University of Rwanda and has also providing training for over a 100 journalists.

Radio Salus broadcasts 24-hours a day, primarily in the Kinyarwanda, but also in English, Swahili and French, and it has widened its national transmission range to listeners in neighboring **Burundi** and the **DRC**. Following its successful example, UNESCO is currently supporting the creation of a radio training studio at the Great Lakes Media Centre in Kigali and is planning a similar project in Afghanistan.



Radio Salus reporter at work

## Supporting LDCs in post-conflict and post-disaster situations

Conflict and disaster exacerbate the challenges faced by LDCs already struggling to reduce poverty and achieve the MDGs. According to the 2011 EFA Global Monitoring Report, from 1998 to 2008 19 LDCs were affected by conflict: *Afghanistan, Angola, Burundi, Central African Republic, Chad, D.R. Congo, Eritrea, Ethiopia, Guinea, Liberia, Myanmar, Nepal, Rwanda, Sierra Leone, Somalia, Sudan, Timor-Leste, Uganda, and Yemen.*

To provide support to the millions of women, men, children and youth who suffer the tragic consequences of wars and disasters in the LDCs, UNESCO is strengthening the capacities of national institutions and officials so that the governments of LDCs themselves can respond to the crisis and fulfill their obligations vis-à-vis the affected population.

Working within United Nations system-wide coordination mechanisms, UNESCO focuses on five operational strengths: 1. Education in Emergencies and Reconstruction; 2. Natural Disaster Risk Reduction; 3. Culture and World Heritage in Emergency Situations; 4. Media in Conflict and Post-Conflict Situations; 5. Gender Dynamics of Conflict, Peace-building, and Reconstruction.



Tsunami Children's drawing

© UNESCO / Giovanni Boccardi

**Conflict and disaster can reinforce inequalities, desperation and grievance that trap countries in cycles of violence. Children in conflict-affected poor countries are twice as likely to die before their fifth birthday as children in other poor countries, and only 79% of young people are literate in conflict-affected poor countries, compared with 93% in other poor countries.**

(Source: EFA GMR 2011)

## UNESCO in Nepal: Disaster Risk Reduction

**Nepal** is one of 20 most at-risk, disaster-prone countries in the world, with 60% of its total area and 52% of its population exposed to three types of disasters. Nepal has recorded 69 disasters in the last 30 years, which affected 4.5 million people and killed more than 10,000. A recent statistical analysis indicates that relative to the total affected population in a given disaster, more deaths occur in Nepal than any other country in the region. Out of 200 countries, UNDP/BCPR ranked Nepal 11th for earthquake vulnerability and 30th for flood vulnerability. This risk is exacerbated by extremely limited education and awareness of hazards, and rapid population growth.

UNESCO promotes a multi-hazard approach to reducing the vulnerability of populations affected by disasters through participatory education initiatives focused on awareness, training, and improved response capacity at the school and community level. In Nepal, the national authorities and development partners have long recognized the need for action in the area of disaster risk management (DRM) and have made substantive progress in the last decade. Despite established Disaster Risk Management frameworks, local implementation capacity is weak and uneven. UNESCO works closely with the Government of Nepal, relevant ministries, and local partners to improve local capacity and to develop a disaster resilient Nepal through long-term policy and prioritizing strategic interventions to create an enabling environment for disaster preparedness and response.

UNESCO brings an added advantage in policy and capacity development, as well as technical expertise in Disaster Risk Reduction (DRR) and Disaster Prevention across several sectors. UNESCO is working to ensure that the education sector is prepared and utilized to 1) save lives and prevent injuries in the event of a hazard; 2) prevent interruption of education due to recurrent natural hazards, or ensure its swift resumption; and 3) develop a resilient population that is able to reduce the economic, social and cultural impacts of hazards.

As part of the 2006-2007 World Disaster Reduction Campaign theme *Disaster Risk Reduction Begins in School*, UN/ISDR “emphasizes that schools are the ideal venues for creating collective values and for building a culture of prevention and resilience.” The report shows how prevention begins with the dissemination of information awareness raising. In this manner, students, teachers and communities can work together to create a culture of resilience. Learners, particularly children, are amongst the most vulnerable to disasters, yet are also the most receptive to incorporating new knowledge to make themselves and future generations safer, and can be powerful advocates and catalysts for safety in their homes, schools and communities. The integration of the values and competencies for DRR within the school curriculum contributes to ensuring the long-term emergence of a culture of safety, and enables people to understand that major hazards need not mean loss of life, limbs or livelihoods. DRR initiatives must strive to address historic gender disparity in order to ensure that all members of society in Nepal have equal access to life-saving and life-sustaining knowledge

## UNESCO in Benin: Importance of early intervention

The education of over 100,000 children in **Benin** was severely disrupted due to heavy flooding in September 2010. The structural and material losses were significant and affected over 450 schools, about 7.5 percent of the total number in Benin. In particular, schools in the river valleys of Sô-Ava, Aguégués, Athieme and Ouhini were so badly damaged that children were wading through dangerous waters or floating to school on improvised rafts. UNESCO worked closely with UNICEF to establish an education cluster presence, and carried out a rapid needs assessment. UNESCO was closely involved in all aspects of the assessment, including data collection; qualitative interviews of education officials, teachers and parents; and drafting the final report. The assessment aimed to review not just the physical damage caused by the flooding, but to address critical issues of access and quality as well as the need for community-based disaster prevention and response education. This work is of particular significance considering the fragile context and the scarce quantity and poor quality of education data, and provides a solid foundation for future interventions in Benin. UNESCO's participation ensured that all levels of education, including secondary and higher education, is considered in an emergency context and thus bridges an essential gap in international humanitarian response. Additionally, UNESCO continues to work to assist national authorities and regional and local partners to link the short-term response with medium and long-term measures, as aligned with national strategies and objectives.



The number of active conflicts in the world is on the rise, up from 32 in 2006 to 39 in 2008 (Save the Children, 2010). In conflict-affected poor countries, 28 million children of primary school age are out of school – 42% of the world total.

(Source: EFA GMR 2011)



© UNESCO / Roya Aziz/Star Group

Kandahar, Afghanistan

### Literacy and Skills Development in Afghanistan

Peace, security and democracy are the foundations of the development for countries, and require the existence of a self-sustaining critical mass of literate, responsible and productive citizens. **Afghanistan** has one of the highest illiteracy rates in the world with an estimated national adult literacy rate (aged 15 and above) of only 26%, with 12% for women and 39% for men. (FN) The situation is worse in rural areas, where an estimated 93% of women and 65% of men who cannot read and write. Youth are the driving force for a country's reconstruction and its development. As such, youth are the focus of literacy and skills development in Afghanistan, with a particular emphasis on rural areas and women.

UNESCO provided technical support to undertake a needs assessment which, in turn, resulted in the development of the National Literacy Action Plan (NLAP). The NKAP reflected the government, donors and all other literacy stakeholders with a common vision, guiding principles and a sound national strategy necessary for the effective implementation of literacy programmes and plans.

With financial support from the Government of Japan, the 'Enhancement of Literacy in Afghanistan' (ELA) programme was launched in March 2008. The ELA covers 18 provinces of Afghanistan, and aims to provide a 9-month literacy programme to 600,000 youths and adults by April 2013. Already, women have reported greater independence and self-confidence due to the literacy skills and knowledge acquired; learners express that they now '*can go to the hospital by myself*' and '*don't feel cheated at the bazaar since I can check by myself*'.

According to the National Risk and Vulnerability Assessment (NRVA 2007/8), the labour market in Afghanistan is dominated by the agricultural sector and performs poorly in providing employment and decent work: 90% of jobs can be classified as vulnerable employment. As such, 'workplace literacy' is a strong component of the ELA programme. In Bamiyan's central district, ELA provided trainings on wool processing, tailoring, beauty parlour services, milk processing, kitchen gardening, poultry farming, animal husbandry, orchardry, carpentry and knitting.

Women who participated in wool processing, tailoring, and knitting have earned an average income of US \$20-30; some of the participants in beauty parlour training and carpentry were able to start their own business; animal husbandry trainees have raised income by offering vaccination and castration services to other livestock owners; and participants of kitchen garden training and milk processing are now able to reduce their household expenses. Workplace literacy curriculum will now be included in literacy training for 3,000 neo-literate youth in 8 additional provinces in Afghanistan.



## Special focus on Haiti



© UNESCO/Fernando Braugman

Sculpture in the  
National Art Centre,  
Port-au-Prince, Haiti

*“A WHOLE COUNTRY TENDING TO ITS WOUNDS. It was still dealing with the aftermath of the hurricanes when a terrible earthquake struck. On 12 January 2010, Haiti sank into a state of despair as countless lives lay buried under the rubble, countless homes were destroyed, libraries and museums flattened, schools demolished, the brand new Quisqueya University was in ruins, Port-au-Prince cathedral reduced to dust images that will remain etched in our minds forever.”*

**Irina Bokova**

*(Reproduced from the UNESCO Courier, September 2010)*

**UNESCO has a long history of fruitful cooperation and friendship with the people of Haiti**, dating back to when the country first joined the Organization, in 1946. So, it was quite natural for UNESCO to commit itself to the Haitian people when they were so severely tested by the terrible earthquake of 12 January 2010. From the very outset, UNESCO joined with the efforts of national authorities and international partners to respond to the most urgent needs of the population. The organization has been working to reconstruct a devastated education system, supporting local media and protecting cultural heritage. Initiatives range from providing psychosocial support for secondary school children, to training masons in earthquake-resistant construction, co-funding a centre for local journalists, and securing the key cultural sites.

*(Reproduced from the UNESCO Courier, September 2010)*

## UNESCO's education activities in Haiti

The earthquake had a devastating effect on the country's education system.

- ▶ **Training brings concrete contribution to reconstruction** – UNESCO launched a pilot project in Camp-Perin to train 500 masons in techniques that will help save many lives in case of an earthquake. A book in French and Creole containing explanations illustrated with diagrams was published and distributed to building professionals around the country.
- ▶ **Equipment for 28 schools:** 100 desks for teachers, 106 filing cabinets for the administration, 2 800 pocket dictionaries, 280 maps of Haiti, and 280 geometry kits for teachers were distributed to help get teaching in secondary schools started again.
- ▶ **Psychosocial support for secondary school children:** In June and July 2010, some 1 700 schoolteachers in the Ouest department, which was affected by the earthquake, were given training in the prevention of and response to the risks of natural disasters in the classroom. The training will be repeated in six other departments seriously affected by the earthquake.
- ▶ **Emergency syllabus for schools:** Children in Port au Prince began return-

ing to school three months after the deadly earthquake on 12 January 2010. But their normal lessons were replaced by a special syllabus developed by UNESCO and the Haitian Ministry of Education to take into account the trauma and disruption experience by both children and teachers. Under the new syllabus, the education of 600,000 pupils was resumed in stages starting with psychosocial activities, such as singing, dancing, and creative expression, to help children cope with the extreme stress they experienced as a result of the earthquake. They also learned about earthquakes as a natural phenomenon.

- ▶ **Rebuilding and equipping secondary schools and vocational colleges since December 2010** in Port-au-Prince, Carrefour, Croix des Bouquets, Thomaizeau and Grand Goave.
- ▶ **A children's book and reading in Creole:** Distribution of a book and reading sessions in refugee camps; establishment of a partnership with Librarians Without Borders (LWB).

*(Reproduced from UNESCO Courier, September 2010)*



Now your university is your street, Haiti

**38,000 pupils and students died and the 12 January earthquake also killed 1,300 teachers and education personnel.**

**4,000 schools (close to 80% of the educational establishments in the Port-au-Prince area were destroyed).**

**1.5 million children and adolescents under 18 were directly or indirectly affected by the earthquake, including about 750,000 school-age children (age six-12 years).**

## Street University

Ten days after the 12 January 2010 earthquake that devastated Haiti's Quisqueya University, a new model of education emerged. Driven by skills-based volunteering and emphasizing partnerships, Street University was initiated by rector Jacky Lumarque. "Medical students set up a tent in the parking lot. They were supervised initially by their teachers, then by a team of Slovak doctors who arrived with medicine and equipment looking for somewhere to work. Then, the students set up a mobile clinic. After that came fresh water distribution points. The engineering and environmental students went out into the streets, helping people organize themselves into committees to manage the impoverished camps as well as introducing work on zoning, sanitation and waste management. Eleven more tents went up and education students were given a crash course in psychosocial support and put it into practice almost at once in the streets. They also became involved in running art therapy workshops for children on the weekends, 150 at a time, in one of the tents. The university became a giant volunteering machine."

*(Reproduced from UNESCO Courier September 2010)*



© UNESCO/Mehdi Benchehah

A technician installing the antenna of radio Vedek FM, Haiti

## UNESCO's communication and information activities in Haiti

Local media can play a vital role in disaster prevention and in immediate post-disaster situations, where access to information is critical. Knowledge of the languages of affected populations and a familiarity with the

cultural and political setting are essential assets in such situations and UNESCO therefore aims to build the preventive capacities of local and community media to contribute to the provision of life-saving information.

**Internet for youths in the refugee camps:** Internet access and informal computer and search engine training was provided to young people living in six refugee camps in Port-au-Prince through a mobile multimedia unit set up by UNESCO and the Médialternatif group. Some 1,500 young people living in the camps were able to connect with the outside world and improve their educational and professional prospects through this training and internet access. A blog was created for each refugee camp to further social networks onsite, and to provide an opportunity to communicate their everyday reality to the outside world. The project also received support from the AFP Foundation, Reporters Sans Frontières (RSF), and the Collectif Haiti de France (CHF).

*(Source: UNESCO in action Working Together for Haiti 2011)*

### Support for community radio stations:

The community radio station, Vedek FM, was created in 2010 in Cap Rouge, a region home to some 18,000 people previously unable to capture radio signals. Twenty-five local people received training in radio production techniques, presenting and reporting. The radio focus is on the sustainable development of the community. Gender balance in community radio was also a focus for the Organization. REFRAKA, the Haitian Network of Women Community Radio Broadcasters, was given support following the destruction of its premises, and training was offered to women in radio production techniques and gender-sensitive reporting.

**UNESCO and the International Media Support (IMS) have facilitated training for 300 Haitian journalists, supporting their attendance at a series of courses organized by the Haitian Journalism Association (AJH) on election reporting.**

The series of training courses aimed to build journalists' capabilities to report on election processes in the run-up to the November 2010 presidential and legislative elections. Courses focused on raising journalists' awareness on elections issues, related ethical matters and on the potential role that they can play, in particular with regard to reducing violence during this crucial period for the future of the country. Jacques Desrosiers, Secretary-General of the Haitian Journalism Association (AJH) explained, "In view of the important role of journalists in framing public opinion, journalists must have the necessary tools to enable them to produce reports, foster debates and present elections fora and programmes, particularly with the candidates, in order to allow voters to make the best choice". An additional information session on cholera and how to combat the epidemic was held in the framework of the training. This session was given by the French-founded organization Action against Hunger (Action contre la faim) to highlight the central role that journalists can play in disseminating information on the measures recommended by the Haitian Ministry of Health in order to curb the spread of the illness.

*(Source: UNESCO Communication and Information New Services)*



Posters of candidates for Haitian presidency

© UNESCO/Metodi Bencheleh

## UNESCO's culture activities in Haiti

In post-conflict and post-disaster situations, the recognition of cultural diversity, encompassing both heritage and creativity, can serve as a positive force behind dialogue, mutual understanding, reconciliation, social stability and reconstruction.

### UNESCO in Action

- ▶ Protecting collapsed heritage sites from looting, removing rubble and providing technical assistance to safeguard movable objects from 5 different collections.
- ▶ Coordinated action with the world's largest international police organization, INTERPOL, to prevent illicit trafficking of art thanks to international warnings with the International Council of Museums (ICOM)
- ▶ Reconstitution and long-term protection of Haitian archives
- ▶ Rebuilding the Library Sector in Haiti
- ▶ Rebuilding the Museum Sector in Haiti
- ▶ Youth and culture: Voice of the future – The school of art and culture in Jacmel
- ▶ Towards a revised cultural policy framework in Haiti
- ▶ Jacmel, site inscribed in the tentative list of World Heritage for Haiti
- ▶ International consultation on legislation concerning the safeguarding of Haitian cultural property
- ▶ Technical and financial support for the establishment of a Department for Intangible Heritage within the Ministry of Culture and Communication and conducting of a pilot project: Inventory of the intangible cultural heritage in Léogâne
- ▶ Safeguarding Rara, as a symbolic tradition of Haiti cultural identity

*(Source: UNESCO in action Working Together for Haiti 2011)*

**A theatrical project supported by UNESCO with the Haitian street theatre troupe Zhovie aims to give displaced people in Port-au-Prince a moment of joy and solace, and to help relieve their fears after the 12 January earthquake that left many of them with nothing. Zhovie gave the first performance of the play “Zonbi Lage” on 11 April in a camp in the Haitian capital to an audience of several thousands.**

The play, the first event of this kind to be staged in a temporary camp since the disaster, revisits the great myths of Haitian culture, with special reference to Voodoo. Several songs from the traditional repertory were added, inspiring the crowd of spectators to sing along. The Acra camp shelters some 20,000 people in makeshift tents and shacks on Delmas Avenue, a main thoroughfare in Port-au-Prince.

“The purpose of this theatre production is to provide a therapeutic experience for the earthquake victims, particularly young people,” explains Jean Joseph, a Zhovie player who teaches philosophy in a senior high school in the capital. “If we want to help the survivors, it’s not enough to give them food. Mental health counts as much as physical health.”

Zhovie, founded in 2004, is a street theatre troupe of 14 actors and three percussionists. Its show, “Zonbi Lage”, evokes the quake through texts written by Haitian author Frankétienne, a UNESCO Artist for Peace. Characters on stage include Baron Samedi, Voodoo divinity of the dead, and the zombie, a living-dead slave. Besides material support, which is obviously essential, art and culture can also help Haitians heal from and overcome the trauma they have suffered. These restore a sense of normality despite the difficulties of daily life in the camps. Art and culture can bolster social cohesion and lend moral support to displaced people, according to UNESCO. Culture confers upon people a strong sense of identity and belonging, both of which make it easier to cope under difficult circumstances.

Asha-Rose Migiro, the Deputy Secretary-General of the United Nations, attended the performance and said, “The population needs food for the soul too.” The theatre troupe is now much in demand and UNESCO is planning to sponsor a series of performances in other camps for displaced persons.

*(Reproduced from the UNESCO Courier September 2010)*



Scene from ‘Zonbi Lage.’ Acra Camp, 11 April 2010



## UNESCO's science activities in Haiti

UNESCO is supporting the Haitian government in the reconstruction and economic development of the affected areas, while seeking to reduce the vulnerability of the country to future disasters and strengthening national response capabilities. UNESCO's actions in this area will also aim at promoting cultural and crafts skills, and at cleaning up urban areas by training and involving young people in rebuilding their neighborhoods, with associated job creation opportunities. The conservation of biodiversity and the development of biosphere reserves will also be valuable aids to the development of a tourism that respects the environment and Haitian cultural heritage.

### UNESCO in Action

- ▶ Safeguarding and development of the National History Park "Citadelle Sans Souci"
- ▶ Early recovery of Haiti's warning services for coastal hazards
- ▶ Enhancing disaster preparedness at community level through education in four coastal communities in Haiti
- ▶ Medium- and long-term water resources strategy for the sustainable development of Haiti
- ▶ Man and the Biosphere post-disaster support initiative
- ▶ Capacity Building Initiative to develop an STI Policy Framework
- ▶ Culture and development for urban neighborhoods in Haiti with a priority for disadvantaged neighborhoods

### Supporting the Establishment of the First Biosphere Reserve in Haiti

The January 2010 earthquake caused severe deforestation in Haiti, which has resulted in a lack of adequate productive areas for food, fodder and fuel-wood production. To address this issue, UNESCO is working with the Haitian authorities to provide support for the creation of the first biosphere reserve in Haiti. This includes determining protected areas and, more importantly, determining the designation of productive areas for food, fodder and fire-wood. This biosphere will serve as a management tool for integrated nature protection linked to sustainable development.



Pine Forest in Haiti

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**"It is through quality education, through culture, and through science, that the least developed countries will be able to achieve their development goals and defend their rights."**

Irina Bokova  
Director-General of UNESCO

