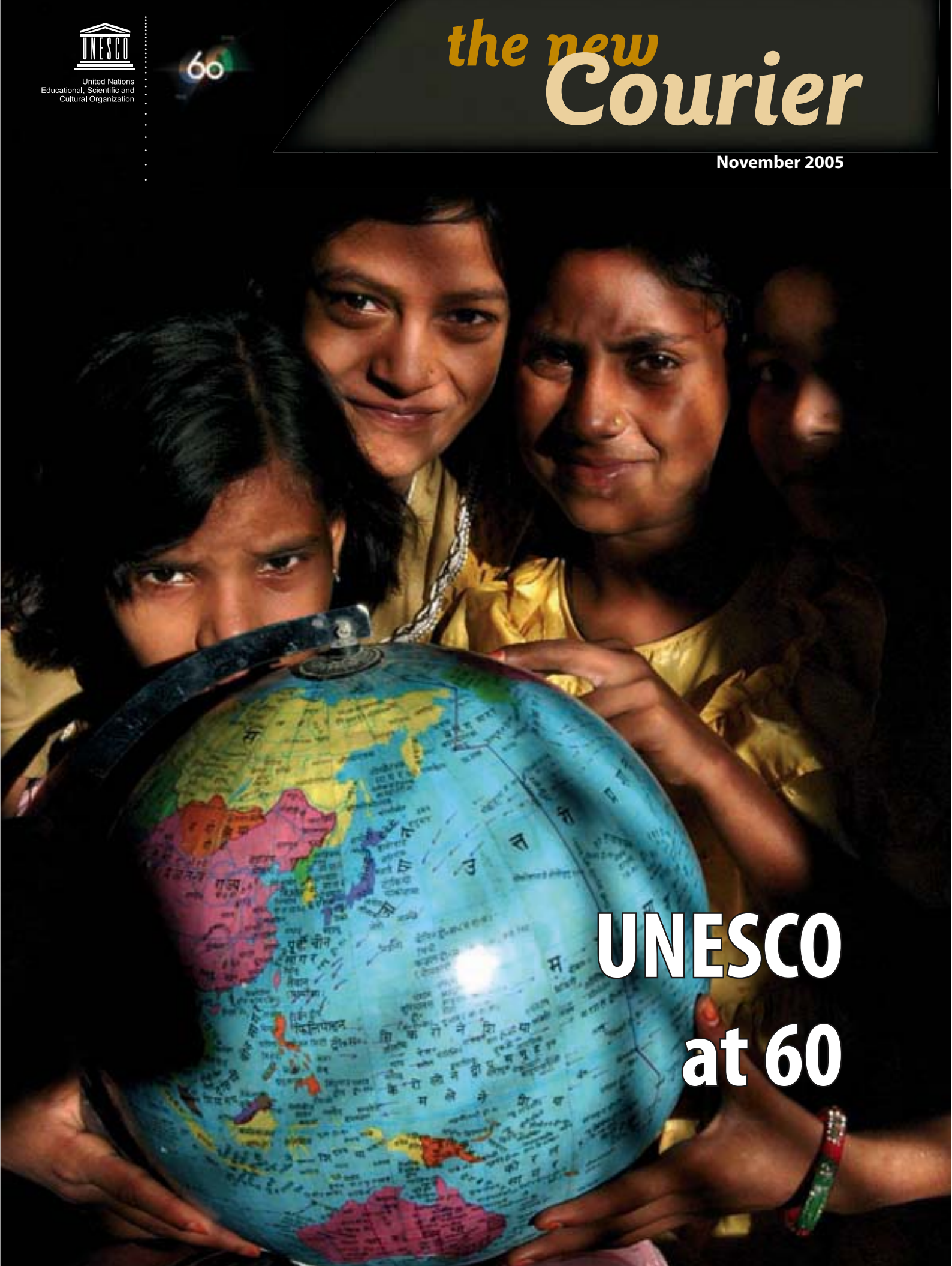
United Nations
Educational, Scientific and
Cultural Organization

60

the new Courier

November 2005



UNESCO at 60

Cover photo:
School for girls, Pahla Kadam,
Uttar Pradesh, India.
© Ami Vitale/Panos Pictures, London

the new Courier is published
by the United Nations Educational, Scientific
and Cultural Organization
7, place de Fontenoy, 75352 Paris 07 SP, France
Tel: 33 1 45 68 46 85
Fax: 33 1 45 68 56 52
Email: unesco.courier@unesco.org
Internet: http://www.unesco.org/courier

Director of publications: Saturnino Muñoz-Gomez
Editor in Chief: Vincent Defourny
Issue coordinator: Agnès Bardon
Editorial staff: José Banaag, Laura Berdejo,
Christophe Bouton, Lucía Iglesias Kuntz,
Cathy Nolan, Delphine Tissier
Photo editors: Ariane Bailey, Micaella Zyss
Photographers: Niamh Burke, Michel Ravassard
Editions produced away from headquarters:
Michiko Tanaka
Artistic direction: Gérard Prosper
Production: Eric Frogé

Distribution: Pilar Morel Vasquez
Printed by: Imprimerie Corlet,
Condé-sur-Noireau, France
Electronic version: Richard Cadiou, Fiona Ryan

ISSN 0041-5278

Editorial

On November 16, 1945, the Constitution of the Organization was signed and sealed to give expression to the international community's hopes for a world of solidarity and dignity following the "great and terrible war" to which it had just put an end.

And just as our forerunners denounced at the root of that war "the denial of the democratic principles of the dignity, quality and mutual respect of men", so we must be alert, for the future, to the threats looming over those principles and that dignity. Horror always arrives suddenly, in the form we least expect. Twelve years before 1945, nobody could have imagined that the "final solution" would be conceived and put into practice. We must derive from that example of historic blindness the resolve never to relax our vigilance and the desire to forestall any lessening of respect for human dignity.

Following the end of the Second World War, as the world assessed the extent of the crimes and disasters caused by oblivion, contempt and assaults on human dignity, UNESCO was created to avert the recurrence of such a tragedy and to build the foundation for "the intellectual and moral solidarity" of humanity.

Today, as the 21st century begins, the intrinsic value of UNESCO's mandate appears in its full power. More than ever, it is in the minds of men that the defences of peace must be built. This means affirming dignity in and through diversity.

To celebrate its 60th anniversary, UNESCO has chosen to highlight the coherence and intelligibility of its long existence. Besides celebrating the date of its creation on November 16, we have also decided to evoke, over the course of 60 weeks, the activities developed over 60 years, with results obtained, projects launched and the new challenges we are now facing.

In that spirit, this special issue of the *new Courier* celebrates the 60th anniversary by presenting reports on ten key subjects. Each puts into perspective UNESCO's action and illustrates with a few concrete examples how much progress has been made and which questions are still pending. The themes resonate with global news and demonstrate the relevance of the issues that concern UNESCO. The close ties between the latest events, the major issues of our time and UNESCO's activities – often less than spectacular – best reveal the instrument of international cooperation that was intended by its founders and emphasize how essential it is today.

Finally, this issue is also special because it marks a turning point in the 50-year history of the *Courier*. It opens a door to another way of sharing its articles with the greatest number of readers, and contributes to UNESCO's presence on the internet. The 60 themes of this 60th anniversary will be presented on the website as a certain number of reports that find their continuation in the thousands of pages that are on line. In 2006, the electronic version will prevail.

My wish, therefore, is that as you read the reports in the *new Courier* and take the time to reflect today on human dignity, you will contribute to bringing about, in the face of what Hannah Arendt called "the banality of evil", the emergence of new forms of analysis and reflection to help us find the path to solidarity.

Koichiro Matsuura

Summary

Key to the Future

Primary school pupil in Trinidad

In 2000 UNESCO was asked to lead a worldwide drive to achieve Education for All by 2015. The aim: provide a good quality primary education for every child, halve adult illiteracy and secure equality of opportunity between girls and boys, women and men. Other key objectives: widening early childhood care and youth and adult learning. Five years on, however, progress has been uneven. Two of the most critical challenges: achieving gender equality and ensuring the quality of learning as enrolment rises.

It has been a landmark year for development. Anti-poverty campaigns and the Live 8 concerts helped turn up the heat on the leaders of the G8 group of industrialized countries, who raised hopes by pledging an extra US$50 billion of aid to Africa. That was followed by an EU members' pledge to increase aid to 0.7% of gross national income by 2015.

While this represents a welcome boost of resources, the US$1.16 billion per annum specifically targeted at basic education remains far short of the estimated US$5.6 billion funding gap required to reach universal primary education and gender parity alone.

Peter Smith, UNESCO's Assistant Director-General for Education, is not satisfied: "I want to see more commitment from donors," he stresses. But developing countries must raise their spending too, or donor fatigue will set in, he says: "They will say 'Who wants to invest in something that the people who own it don't want to invest in'."

New ideas needed

Globally only 47 of the 163 countries with data had achieved universal primary education by 2002, leaving 100 million children out of school. There is certainly a growing commitment among countries to creating national plans to widen education provision. But other challenges exist, such as quality of education, the subject of UNESCO's 2005 Education For All Global Monitoring Report, "The Quality Imperative". For instance, in Zambia and Uganda, which have both abolished school fees, it is easy to find schools with well over 100 and even 200 children per class. Another challenge is how to ensure the poorest and most disadvantaged children are brought into the system, starting with girls but also AIDS orphans, disabled children and street children.

One avenue would be to expand or complement the World Bank's Fast Track Initiative, which is designed to channel multilateral funds to countries with sound plans to expand education. The idea is to widen the flow of funds, and urge donor countries and developing countries to make commitments. The hope is to work with politicians to bring the private sector into discussions about investing in educational infrastructure.

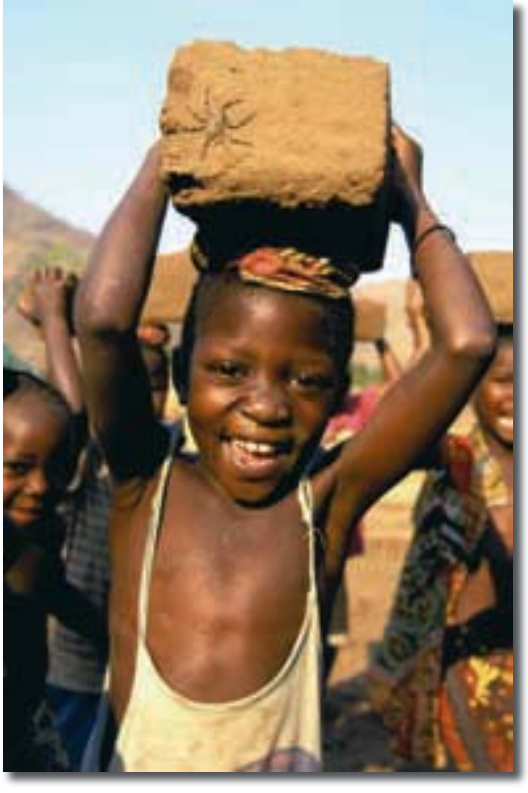
UNESCO has a key role to play, says Smith, not only as a convenor, but as a provider of new thinking, to help countries find imaginative ways to tackle the shortfall in teacher quality that do not involve recreating expensive and outmoded factory-style learning environments. This will mean finding new models of teaching – perhaps by para-professionals or even mothers. "Our job is to show people best practice, to show them the new ideas that work and give them the best resources – then they have to make their own minds up about what they want to do," Smith says. ◆

Brendan O'Malley
International editor of
The Times Educational Supplement

The record so far

- Worldwide, 100 million children are not in school.
- Two-thirds of countries have achieved gender parity at primary level, 40% at secondary level and 3% at tertiary level.
- To achieve universal primary education and gender parity alone, aid targeted specifically at basic education needs to be raised to US$5.6bn.
- Globally 771 million adults are illiterate. The adult literacy rate is expected to reach 86% by 2015.

Source: 2006 Education For All Global Monitoring Report



In Nectangula, Mozambique, pupils help build their school

Afghanistan: A Difficult Return for Girls

Four years after the fall of the Taliban, education for girls and other marginalised children is not yet a reality

Kokabar is something of a celebrity in Afghanistan's Parvan province because she ran an underground beauty parlour during the Taliban years, when make-up salons were banned.

"The first time the Taliban entered our province, they smashed up my shop and beat up my husband. After that I worked in secret with local brides," she says.

Now she has two salons in the bazaar in Charikar city, north of Kabul. She is the inspiration and master trainer for dozens of girls who want to learn literacy and some skills they can use to secure their future. This is a UNICEF-supported scheme, one of several ways the NGO is trying to reach the children, especially girls, left with no hope of an education in a country blighted by a quarter of a century of war - and the Taliban's ban on girls setting foot in class.

Crammed into a tiny room with a large mirror, ten of them are watching Noorzia, 15, taking tips from Kokabar as she prepares the face of Samia, 14, with heavy make-up for a "Night of Henna" ceremony, when the groom's family visit the bride's home before the wedding.

"I've not been to school," says Noorzia, and neither have any of her peers. Her family was forced by fighting to move three times during the war years - once when a rocket hit their house.

Preparation for the henna ceremony

© Brendan O'Malley, London

The scheme is run by another NGO, Aschiana, on a strict commitment to provide 50% of places for girls. The 500 learners are a mixture of refugees, street children and demobilised fighters, who have all been deprived of education by war or poverty or both. Aschiana gives them a year's literacy classes and ten months' vocational training, plus a placement in income-earning activities such as beauty treatment, tailoring, carpentry or livestock management. They will then be able to enter formal school by sitting an exam to determine their grade, or go off and make an income.

"The priority is their literacy training," says Mohammad Israel, project supervisor.

Inventing new solutions

It's an unconventional approach, but then new models of learning are needed in a country where the school age population is increasing by a million a year as refugees return and so many schools are in ruins. In the Salang Valley just north of Charikar, 15 of the 19 schools don't even have a tent to house them.

UNICEF representative Bernt Aasen says that despite a massive campaign to get girls into school, boys have benefited more. "In nine provinces less than 10 % of pupils are girls and in two or three there are virtually none at all."

High on the Salang slopes is one possible solution. In a cliff-edge hamlet of stone cottages, two girls are teaching a class in their home - two dozen girls and a handful of boys sit on an Afghan carpet covering the mud floor. It's the last of three shifts.

Parwin, 18, and Nasreem, 15, are returnees from Iran where they reached grades 11 and 10 respectively. They have been given 15 days' intensive training in child-centred methods and accelerated learning techniques, under a community school scheme run jointly by the government and UNICEF. The community is meant to provide a room and salary, but in this case the father has received nothing. He is investing in hope that one day his girls will become professional teachers. It means the girl pupils don't have to walk an hour to the nearest school with the attendant risk to their

honour, one of the main reasons why parents keep them at home. The training of 70,000 religious leaders across the country to convince parents that it is not a sin in Islam to send girls to school will tackle another barrier. "We are planning to cover half a million children, most of them girls," says Mohammad Rostam Faqirzada, national director of primary education. There are 10,000 schools so far, reaching 170,000 pupils. "The idea is that they will study there for three years, during which time the government will be able to build a school close to their community or children will be able to travel further," he says.

Only 15% of Afghan teachers are qualified. If UNICEF were to borrow an idea it is advocating in Ethiopia - the development of a paraprofessional teaching workforce that is trained on the job over ten years - a village-based teacher workforce could liberate a mass of rural girls in this country from the constraints of custom and isolation on their schooling.

But even in the cities there are many social obstacles to overcome. At the Charikar training salon, Noorzia says her real hope is that when she finishes the training course she will be able to attend formal school. "But I am already engaged," she says. "It depends if [my fiancé] will allow me to go or not." ◆

Brendan O'Malley in Charikar, Afghanistan

School for Girls: Creating Equal Opportunity

For the last three years, the United Nations has implemented a programme in Asia aimed at bringing girls back into the classroom

Many ministry staff battling to improve girls' education in Asia are highly motivated but isolated within their own countries, as their governments barely acknowledge the importance of "mainstreaming" gender issues into all aspects of policy. "Often officials say we don't have gender problems because all girls are in school but in terms of equality and opportunities there are many problems," says Ochirkhuyag Gankhuyag, from UNESCO's Bangkok bureau. Girls must not only be given the chance to finish school, they must be able to get jobs without facing discrimination, he says. The UN's Gender in Education Network in Asia (GENIA) programme was launched in 2002 to provide support and training to those who can make a difference. Based in Bangkok, GENIA identified "Gender Focal Points" (GFPs) – ministry of education officials responsible for promoting equality - in 11 Asian countries* and organises workshops for them so that they can learn from each other.

"GENIA has strengthened our capacity to respond," says Yangxia Lee, head of the Gender and Ethnic Minority Education unit of the Laos Ministry of Education.

Before, Laotian officials were dismissive about gender mainstreaming, but with UN involvement, senior officials are more likely to come to meetings, she says. "We are able to show them there is a problem of gender equality, for example through analysis of textbooks, where few girls are represented in key roles," she says.

Now officials realise that unless the government tackles the tradition of girls shouldering the burden of housework, few will attend school, and that simple interventions such as providing adequate toilet facilities for girls in all schools could make a huge impact.

Taj Mohammed Qureshi of the Pakistan Ministry of Education said simply erecting a boundary wall around a school has helped ›

Girls in school

- 104 of 180 countries for which 2002 data are available have reached gender parity in primary education
- Significant gender disparities - favouring boys - are concentrated in the Arab states, South and West Asia and in many Sub-Saharan countries
- Despite overall progress between 1998 and 2002, gender parity in secondary education is the exception rather than the norm.
- In fourteen Sub-Saharan countries where less than one in three teachers is a woman, 20 % fewer girls go to school than boys. But in several southern African countries, where three out of four teachers are women, more girls go to school than boys.

Source: 2006 Education For All Global Monitoring Report

© UNESCO/Mireille Vauthier

In Pakistan, special measures are taken to incite parents to send their daughters to school

increase the number of girls attending. "Parents feel girls are insecure without a boundary wall because passers-by will gaze at their daughters," he said. Hence, two provinces of Pakistan have erected some 64,000 boundary walls around schools in recent years.

Early marriage – sometimes as young as 12 to 14 – is common to both Laos and Pakistan. "Married girls must be brought back to school," says Lee. "Even if there are just two classes with mixed age groups. There should be a school close by." The further away the school, the greater the fear of parents that their girls will be sexually molested; the longer the walk, the less time the girl has from domestic duties, she says.

In Laos, creating a "Grade Zero" has enabled girls to bring their small siblings for whom they have responsibility, or their own children, to be cared for while the girls learn in the upper classes. This is being extended to all schools by 2010. In Pakistan, providing girls with a midday meal gave parents an added incentive to send girls to school. These are just some of the ideas that other Asian countries can draw from. The GENIA workshops have helped develop the UNESCO toolkit for promoting gender equality in education, particularly helpful on how to explain the issues to senior officials. Translated into many languages and much in demand, the toolkit also helps monitoring and evaluating of gender equality. ◆

Yojana Sharma

*Cambodia, Laos, Viet Nam, Thailand, Mongolia, Pakistan, Tajikistan, Uzbekistan, Kazakhstan, Kyrgyzstan

Uganda: The Price of Free School for All

Increasing enrolment is one objective, but the quality of learning must be preserved at the same time. An illustration in Masindi, Uganda.

Although seven-year-old Fred Sekayingo cannot see, his hand shoots up regularly to answer Harriet Myendwoha's questions. Each time he speaks, his 103 classmates burst into thunderous applause. Fred beams.

This is primary 4 class in Kamurasi Demonstration Primary School in rural Masindi, 130 miles from Kampala, Uganda. It boasts 145 disabled children on its 1,091 pupil roll, which has tripled since the government abolished primary school tuition fees in 1997.

Despite having a teacher: pupil ratio of 1:110, sparse learning resources and a shortage of qualified special needs teachers, headteacher Byoona Ntairaho is determined to deliver primary education for all - ensuring girls, orphans and disabled children are in his fold. Myendwoha, who self-funded her course in special educational needs, visits parents to encourage them to send their disabled children to school. She is training Kamurasi's other teachers to teach Braille and has taught all pupils to sign so the special needs children feel included.

"Although it is government policy, most headteachers don't even attempt inclusive special needs education because it's a bother, but I have an interest," explains Ntairaho.

With funding from UK charity Farmer's Overseas Action Group, he is building a special needs boarding house so the children can receive an inclusive education even if they live miles away. He already has a special needs resource centre, funded by charity Sight Savers International. Last year the school achieved a 100% pass rate in primary leaving exams (PLE), with six girls scoring grade 1 passes.

When countries rapidly expand primary enrolment by abolishing school fees in one stroke, the class sizes can rocket, weighing heavily on the quality of learning. In Uganda, which now spends a quarter of its budget on education, the number of primary 6 pupils achieving national numeracy and literacy competencies has halved since 1999.

So what is Ntairaho's secret? "Kamurasi is really shining because it has a visionary headteacher," says district education officer Derek Nkata, who oversees Masindi's 186 primary schools. But a closer look shows the school also has support from a visionary district office.

The quality imperative

"The general attitude towards universal primary education is 'it's always there, even if I don't come in today,'" Nkata says. "We are now getting headteachers to sign performance contracts to eradicate this laisser faire attitude. We hope this will have a positive impact on teachers as well."

Ntairaho employs several strategies to ensure his pupils come to school and focus on work. He conducts home visits to promote girls' education, and even self-funds surprise pregnancy tests for girls - to deter men from defiling his female pupils, which might force them to drop out.

Concerns are shared at regular parents' meetings. "I keep reminding parents of their duty to provide exercise books for their children," he says. "Because they have survived without education, they don't understand its worth and would rather use their children as a source of income." Other schools that have won over skeptical parents have seen a dramatic increase in resources, through community fundraising, and also in results.

Like all Masindi schools, Kamurasi is benefiting from a five-year-old partnership between the district and Link Community Development, a non-governmental organization that sends British teachers to Uganda, Ghana and South Africa to gain and share leadership experience, boost numeracy and literacy teaching, and help schools with development plans.

Since 2000, PLE results in Masindi have jumped from near bottom of the 56-district league to ninth place. And in 2003, it was the highest performing rural district in the country. Nkata attributes this success to a combination of Link's support and an influx of more highly qualified teachers, because the government has raised the minimum entry requirement to six O Levels, which must include English and Maths. The government this year has also allocated time to numeracy and literacy in the lower primary curriculum to combat the national decline in results.

Nkata is now doing research at London's Institute of Education to establish whether the quality of teaching can be raised by adopting alternative teaching methods and using existing resources differently. "Large classes are here to stay so we need effective teaching methods for big groups," he explains. He believes co-operative learning among peer groups and interactive teaching would make learning more effective in over-crowded classrooms.

In the meantime, he is trying to find funds to train 200 unqualified primary teachers in service and is building 1,000 classrooms – helped by British government aid - to reach the pupil: teacher ratio target of 1 to 55. At the rate of 50 classrooms per year, this could take 20 years. That's a long time for education for all to become a reality. Sekayingo is lucky that he has Ntairhao on his side. ◆

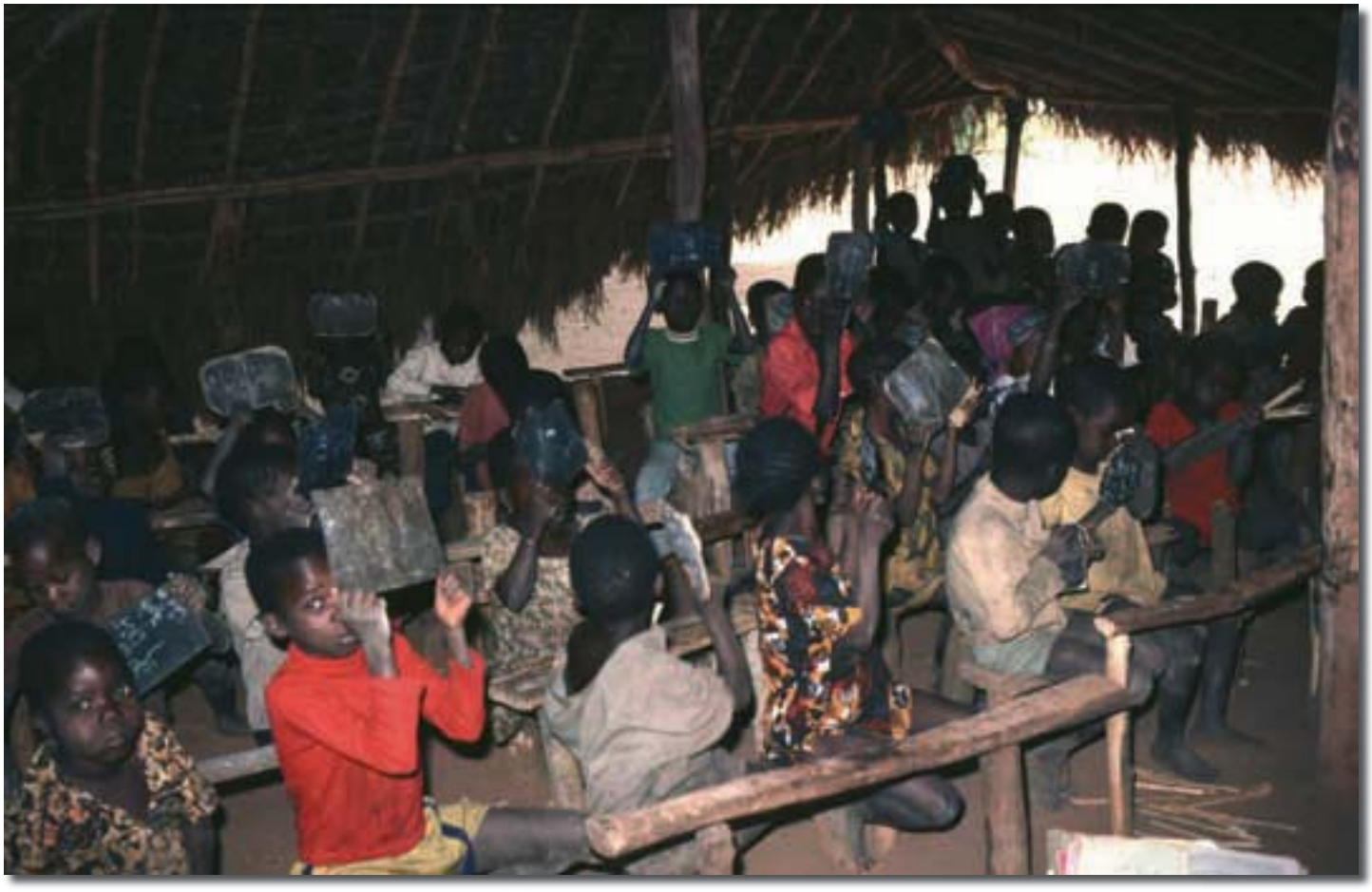
Abi Newman

© Derek Nkata, Uganda

Abolishing school fees has caused skyrocketing numbers of pupils

Big Classes, a Threat to Standards

Faced with inflation in the number of pupils, teachers have no choice except to adapt their methods.



© UNESCO/ S. Schwarz

Primary school class in the Central African Republic

"Many teachers are only teachers on paper," says Georges Hedad, Director of UNESCO's Division of Higher Education. Many countries are indeed reducing the years of training as the demand for teachers rises.

UNESCO is focusing on trying to redress the balance with a strong push to increase the capacity and quality of teacher training in Sub-Saharan Africa. "If quality of education is to be reformed, the best approach is to start with reforming teacher education, which itself will change primary education," says Virgilio Juvane, of the Commonwealth Secretariat, which is working with UNESCO to study the problem of teacher education in both English and French-speaking African countries.

"Large class-sizes are unlikely to be reduced in the next 10-15 years, so it is more realistic to provide teachers with the techniques to teach in a better way," Juvane says.

Teachers learning new roles

In Namibia and Uganda and in several districts of Tanzania, multigrade classes where pupils are divided into small groups, each with separate activities, have been an effective way to improve learning at primary level. But first, teacher training has to be changed from the

widespread chalk-and-talk teacher-led model towards a more child-appropriate model where teachers act as facilitators.

Initially, 17 countries* have been selected to help set up a national plan of action for teacher training, beginning with Angola, Niger, Zambia and Ethiopia, says Hedad. Another 30 countries will join within 5 years.

With rising enrolment and huge classes, teachers need support and mentoring. Zambia has set up teacher resource centres in school areas, where teachers can update and refresh their skills. Mozambique and Tanzania are providing in-service education through distance education, which includes the use of radio, television and videos. It is cost-effective and includes a small group of tutors and educators to provide assistance.

The training of school principals is key for improving secondary education quality. "If school leaders do not support teachers' training, it will not have an impact on teaching quality," says Sonia Bahri, UNESCO's Chief of Section for General Secondary Education. The UNESCO-linked International Institute for Capacity-Building in Africa, based in Addis Ababa, has been running programmes for principals, while workshops are being conducted in the Democratic Republic of the Congo and other countries. ◆

Yojana Sharma

*Angola, Burkina Faso, Burundi, Cape Verde, Central African Republic, Chad, Congo, DR Congo, Ethiopia, Ghana, Guinea, Madagascar, Niger, Nigeria, Sierra Leone, Tanzania and Zambia.

The Success of Private Schools in Zambia: A Dirty Secret

Public schools are free in Zambia, but many parents prefer to send their children to private schools.

The Ngoma community school in southern Zambia is private, but there is nothing grand about it. Its makeshift new classroom is missing walls and there are holes between the empty canvas fertiliser sacks that make up its roof. Inside it is easy to spot the many pupils who have lost their parents, usually to AIDS or malaria, because they are allowed to attend classes without wearing the school's simple blue uniform.

The Zambian government may have made primary education free in all its schools three years ago, but some state schools still turn away students whose families cannot afford uniforms, books or Parent Teacher Association fees. Parents who work on the sugar plantations that surround Ngoma say they choose the private school because it is more practical and cheaper for them to pay its 62 pence monthly fees than to send their children to the nearest state-funded school 10 kilometres away.

James Daka, an irrigation supervisor with three children, says: "It's a good school. The teachers are not all trained like at the government school, but community schools are cheap."

Success for unregistered schools

Headteacher Emily Mwembe says her pupils outperform pupils at the nearest state school when they bus them there to sit reading and writing tests.

Ngoma is far from unique. Researchers led by James Tooley of the University of Newcastle (United Kingdom) have found hundreds of similar private schools doing successful work in the poorest areas around the world. The schools are often unregistered and their pupils missing from official data. In the Indian city of Hyderabad, the researchers found that 35% of the schools were state-run, 23% were private ›

Public schools are free in Zambia, but many parents choose private schools

schools recognised by the Government, and 37% were private schools that did not officially exist.

The researchers tested 9,000 children from government and fee-paying schools in India, Ghana and Kenya. They found, once they controlled for background variables, that the children at the unregistered private schools performed 14 percentage points better in maths and 20 percentage points better in English.

"No one suspected that private slum schools would be better," says Tooley. His findings raise the question of whether international agencies should consider giving financial backing to the fee-paying schools.

The priority should be to help governments provide a free education for all, says the World Bank, but it also recognises that fee-paying schools can play a crucial role.

Bob Prouty, an education advisor to the World Bank, says that many children in the Democratic Republic of the Congo would have missed out on education altogether during the last 15 years of political upheaval and civil war if they had not been able to attend private community schools. "It's kind of a dirty little secret," he says. "But where private schools are providing an education for the very poorest communities, it has to be seen as an indictment of the existing system." ◆

Michael Shaw in Ngoma, Zambia

More than reading, writing and counting

UNESCO will have a demanding role to play over the next ten years in co-ordinating efforts to achieve Education for All, according to Abhimanyu Singh, UNESCO's Director for EFA Co-ordination and Monitoring. "We must keep everyone working towards the EFA goals," he says.

UNESCO's research institutes will attempt to focus more sharply on helping countries form effective national education plans and improving the effectiveness of regional support networks and country programmes.

Initiatives have also been launched on three key issues: training for teachers in Sub-Saharan Africa, adult literacy for empowerment and the fight against HIV/AIDS, which is doubling teacher attrition rates in some countries. The ambitious training programme will attempt to raise the quality of teaching in 17 countries from 2006. UNESCO is already coordinating the international UN effort on HIV/AIDS, but will also expand its preventive education work. The ten-year adult literacy programme, LIFE, will operate in 34 countries that have 10 million illiterates or an adult literacy rate below 50 %.

"Literacy is no longer about the 3Rs but about human development, community development and country development," says Shigeru Aoyagi, Chief of UNESCO's Literacy Section, adding that programmes must go beyond the basics. Ann Therese Ndong-Jatta, a former Minister of Education in Gambia and now the Director of the Basic Education Division at UNESCO, says the Organization must also work more at the country level to share expertise, improve governments' ability to use aid effectively and increase their ability to negotiate with international donors. "When they want an accord, developing countries tend to agree with partners," Ndong-Jatta says. "UNESCO must help them respond better to get a better outcome for themselves."

Yojana Sharma

1945-2005: Worlds Apart

UNESCO was founded following the Second World War.
Sixty years later, the world is not quite the same. Examples.

	1945	2005
World population *(billions)*	2.2	6.5
Urban population *(% of total)*	less than 29	49
Adult literacy *(%)*	less than 50	81.7
Life expectancy at birth *(years)*	less than 46	65
Countries with parliaments	26	186
Women in parliaments *(% of total)*	3	16
Fertility rate *(children per woman)*	more than 5	less than 3
Child mortality *(children per 1,000 not surviving to age 5)*	≃ 224	≃ 86
Forest area *(million km^2)*	50	39
Annual water consumption *(km^3)*	797	2,425
Annual oil consumption *(million tonnes)*	less than 470	more than 4,000
Tourists *(millions)*	less than 25	808

Sources : Encyclopaedia Britannica, Inter-Parliamentary Union, United Nations system, Worldwatch Institute.

NB : In general, the collection of data on a global scale only began in the 1950s, which explains the approximate figures before that time.

Monitoring the Oceans

Oceans, vital to the planet's survival, are being misused. Overpopulated coastal areas have suffered damage due to marine pollution that causes the proliferation of algae capable of poisoning ecosystems. The 19 million tons of carbon being injected daily by human activity could permanently upset the marine environment. For 45 years now, UNESCO's Intergovernmental Oceanographic Commission (IOC) has been busy getting to know the ocean. Regular global monitoring and data sharing constitute the essential two-fold challenge, whether the task is sending tsunami warnings or creating reliable predictive models, keys to adapting to future disturbances.

Off the coast of Mauritius

© JCOMMOPS

Argo network, September 2005

2,041 active floating sensors

- Australia (62)
- Brazil (3)
- Canada (76)
- Chile (2)
- China (10)
- European Union (31)
- France (162)
- Germany (99)
- India (75)
- Ireland (1)
- Japan (300)
- Republic of Korea (52)
- Mauritius (2)
- Mexico (1)
- Netherlands (7)
- New Zealand (4)
- Norway (8)
- Russian Federation (2)
- Spain (9)
- United Kingdom (86)
- United States (1049)

"It's every oceanographer's dream! In real time, the Argo network lets us measure water salinity and temperatures throughout the world's oceans," says Mathieu Belbeoch, technical coordinator of the Argo project. Aided by the Intergovernmental Oceanographic Commission (IOC), this is a project devised to help understand the ocean's role in climate. Since 2000, floats have been cast from boats and even airplanes at a steady rhythm of around 80 per month. Coverage is not yet uniform but already worldwide, after the installation of 1,955 devices out of an expected total of 3,000. This is the first time in history that we have been able to observe the superficial layer of oceans to such an extent.

But even if knowledge has progressed, the oceans still hold many secrets. They occupy 71% of our earth's surface and also play an essential role in the regulation of the climate. Because they cannot be reproduced in a laboratory, they must be observed. Oceanography, however, is a young science and doesn't yet have the measuring network of meteorology. Created 80 years after the World Meteorology Organization, the IOC came into being at UNESCO in 1960 to coordinate research on oceans, an essentially international subject of study. Its objective: encouraging the collection of scientific information in the marine environment and sharing it with the 131 Member States.

Improving models for forecasting

The stakes are enormous. More than half of the world's population lives less then 200 kilometres from the coast. That type of high concentration is the origin of coastal zone pollution, 70% of which comes from water waste and household and industrial refuse dumped directly into the sea. Fishing, upon which many developing countries depend, is also a problem. Between 50 to 90% of the largest predatory fish have disappeared in the last 15 years because of the over-exploitation of fish resources. On top of that, marine currents are spreading climatic abnormalities on a large scale. Take for example El Niño, whose disastrous effects (scarcity of fish, drought and torrential rains) have been felt from Alaska to Australia and from East Africa to Brazil. The phenomenon affected some 125 million people and cost 30 million euros in damages due to flooding, forest fires and cyclones in 1997.

To forecast the arrival of El Niño, a type of natural disturbance that generally occurs every three to five years, 72 floating sensors were installed in the tropical Pacific Ocean in the beginning of the 1990s. This network enabled the forecasting of the 1997 episode six months in advance. Today the system has been extended to all the oceans. "The major challenge now is to establish and perpetuate the Global Ocean Observing System called GOOS. Argo is one of the components" explains Patricio Bernal, IOC executive secretary. GOOS coordinates the efforts of 61 Member States participating in the collection and unrestricted exchange of data on the marine environment. The *in situ* measuring network is already half-installed, and is complemented effectively by satellites. These provide a picture of all the oceans, in essentially real time.

The information is the basis for models describing the sea's condition. Improving the models, and thus the ensuing predictions, is essential for tracking climate change. "But we also have to worry about developing countries having access to data and being able to use it," Patricio Bernal points out. For these predictions allow us not only to anticipate phenomena such as the rising of sea level, coastal erosion and the decrease in fish resources, they also enable us to determine the ideal moment for harvest or the location of shoals of fish. ◆

Mathilde Elie

A network of data for Africa

Marine Institutions from 25 African countries have come together in the Ocean Data and Information Network for Africa (ODINAFRICA), supported by IOC and the Government of Flanders. Designed to provide access to the latest oceanographic information, the network has developed the necessary infrastructures and competencies for archiving and management. Each Member State is now equipped with an Information Centre and a National Centre of Oceanographic Data.

Predicting the Sea's Anger

Strengthened by its experience in the Pacific, the Intergovernmental Oceanographic Commission is encouraging the installation of an early warning system in the Indian Ocean.

On July 23, 2005, Tokyo (Japan) was hit by the most powerful earthquake to occur since 1992. This time, as it does every time there is a tremor, the computer of the Japanese Tsunami Warning Centre automatically informed the Japanese media. Meanwhile, seismologists were determining whether the earthquake detected could cause a tsunami, trying first to locate its epicentre and measure its intensity from information sent around the clock by the 200 seismic stations that monitor the country. If an earthquake is likely to provoke a tsunami, an evacuation order is sent out. This time it wasn't necessary. The alert was canceled.

In all, these operations took less than five minutes. "Combating tsunamis is a fight against time," notes Masahiro Yamamoto, director of the Warning Centre. The interval between an earthquake and its warning signal has been divided by five since the 1970s. That is still not fast enough, however, for tsunamis as rapid as the one in Hokkaido in 1993 whose 30-foot wave swept over the town three minutes after the quake.

According to experts, if such a system had existed in the countries affected by the tsunami that hit Asia in December 2004, numerous lives could have been spared. Which is why UNESCO's Intergovernmental Oceanographic Commission (IOC) is pushing for the installation of a Tsunami Warning System in the Indian Ocean.

Installing an alert system

In the meantime, a temporary alert system has been put into place in the region. The Pacific and Japanese Tsunami Warning Centres communicate information about tsunamis to the 25 Member States. Warning time will be reduced thanks to 23 real-time sea-level stations, modernized by the IOC. Right now it takes one hour, which would have been fast enough for Sri Lanka, hit two hours after the earthquake, but not for Indonesia.

Each country is working out ways to alert its population: sirens, bulletins to the media, mobile phone text messages, police patrols or even using the minarets in Malaysia and Indonesia. The system should be fully operational by 2007, but there is still much to do. Even though Thailand has started evacuation drills in tourist resorts, the task of informing the population remains a challenge. Evaluation of the exposed areas is also necessary, in order to make appropriate evacuation plans and organize coastal zones. After the Indian Ocean, the IOC has decided to install the same type of system for the Caribbean, North-east Atlantic and Mediterranean seas. ◆

M.E

The town of Banda Aceh (Indonesia) the day after the tsunami

What Atmosphere!

Oceans absorb a large quantity of the greenhouse effect gases that are emitted. But how long can they go on acting as carbon reservoirs?

An inseparable couple runs the earth's climate: the ocean and the atmosphere. By constantly exchanging their energies, they carry and distribute the heat the earth receives. If the atmosphere seems to have «forgotten» disturbances it underwent 15 days prior, the ocean can remember climatic variability for decades, and even centuries.

The ocean, then, sets the rhythm. "The most obvious sign of the increase in temperature recorded since the beginning of the industrial era is an elevation in sea level," explains Guy Jacques, marine ecologist and co-author of a book about climate change (1). Since the end of the 19th century, the average temperature at the earth's surface has gone up a little less than one degree. The superficial layer of the oceans, down to about a hundred metres in depth, heats up and dilates, making the water level rise. The 20th century has recorded a yearly increase of 1.8 mm, a rate that has been accelerating since the beginning of the 1990s.

Increased acidification

Paradoxically, oceans reduce global warming. Indeed, they largely absorb the most important of the greenhouse effect gases: carbon dioxide or CO_2. But their storage capacity has its limits. "The only way to get a definite idea about how oceans function is by modeling this phenomenon," says Maria Hood, programme specialist at the IOC. Especially since decreasing concentration of the greenhouse effect gases is not all that is at stake: water acidification caused by the dissolution of CO_2 threatens the chemical balance of the ocean's superficial layer. This phenomenon could cause damage to marine ecosystems. In more acidic water, coral, calciferous phytoplankton and shellfish have more difficulty secreting the carbonate that forms their skeletons. Fifty years from now, coral reefs, already weakened because of an increase in water temperature, could disappear faster than they form. And they make up one of the richest and most vital ecosystems known to man. ◆

M.E.

© Peter Scooney/Science Photolibrary/Cosmos, Paris

Rising water temperature is a direct threat to coral reefs

Figures

- The average depth of the ocean is 3,800 metres. The deepest part, located in the Pacific, attains a depth of 11,000 metres.
- Oceans contain 1,370 million km^3 of saltwater; the Pacific alone represents half of that amount.
- Oceans and the ice floe make up in volume almost 98% of the planet's water.
- Each year 380,000 km^3 of water evaporate from the earth's surface.
- The oceans have absorbed approximately 120 tons of carbon since 1800.
- Average global sea level has risen by probably 18 cm during the 20th century.

Sources: NOAA, Satellite Topex/Poseidon

1. Jacques, G. and Le Treut, H. 2004. "Climate Change" (Le changement climatique). UNESCO Publishing (IOC Ocean Forum Series.)

Senegal: Coastal Zones at the Mercy of the Waves

With more than 700 kilometres of seashore, Senegal is one of the countries that suffers most from coastal erosion.

Children cast their fishing lines into the sea. At their feet waves break against enormous cement blocks. The blocks are all that remains of a wall built between the sea and the fishermen's houses lining the coast. Loosened by the swell, the wall collapsed.

The ocean is advancing everywhere in Rufisque, situated 25 kilometres south of Dakar. Standing in her doorway, in a traditional African robe, Tiébama can't stop talking about the problem. "The wall just in front of my home fell down," she complains. "When it rains, the sea moves forward. In two weeks my house will be flooded." The rainy season is approaching, and the inhabitants are worried.

Currents sweep away the sand from Rufisque's coast and deposit it further south. The beach is slowly being hollowed out and the shore is receding. Abdoulaye Ndiayhe, an old fisherman who offers his services as guide, insists that more than 100 metres once separated the sea from a house whose ruins are now being lapped by the waves. Some fishermen's shacks have already been partially claimed by the sea.

© Frédéric Naudon/Alsace Media Science

Battered by the waves, Rufisque's wall collapsed

Erosion of the coastline is one of the most critical environmental problems facing the coastal countries of West Africa, according to the "African Process", a project supported by UNESCO's Intergovernmental Oceanographic Commission (IOC). Initiated by 11 sub-Saharan countries, the "African Process", launched in 1998 during the Pan-African Conference on Sustainable Integrated Coastal Management (PACSICOM), analyzed the situation. In Africa, the Atlantic Ocean carries away an average of one or two metres of beach per year, and up to 20 metres in certain areas. Senegal, with its 700 kilometres of coastline is particularly affected. More than half of the population lives on the coast where 85% of industry and services are located, in particular the country's two most important resources, fishing and tourism. The threat is very real. Already, in Mbao, to the south of Dakar, a mosque has fallen into the water. A little further, in Sally, tourist facilities have had to be abandoned.

Crucial need for data

People are mainly responsible for the erosion. The natural transportation of sediment by currents is definitely compounded by human activity such as sand extraction. The rise in sea level is another factor that accounts for 20% of the phenomenon. And for the last twenty years, the swell seems to have become more powerful. Climatic changes that modify winds from the West may be the cause. "There are indications but we don't have enough data to prove it," says Isabelle Niang-Diop, a specialist in coastal geology at the University of Dakar.

In such a context, access to oceanographic data is crucial: the understanding and prediction of oceanic phenomena depend on it. That is why the ODINAFRICA project (see box p. 13) has started making existing data available. Information centres have been connected to the Internet for access to worldwide bases and specialized electronic newspapers. Scientific publication catalogues about Africa have been put online and oceanographic data available for each country has been referenced and digitized. "We are also centralizing data compiled in countries originating from the satellite network of the IOC, from oceanographic campaigns, and our seven coastal stations," specifies Anis Diallo, the administrator of Senegal's Centre of Oceanic Data. Dakar's tide gauge, which ODINAFRICA will modernize between now and the end of the year, will once again measure sea level, an important element in understanding coastal erosion.

In the meantime, Tiébama worries about the wall that collapsed. She has been trying to call attention to her problem for a year now, in vain. Soon her house too will be lapped by the inexorable waves. ◆

M.E

UNESQUIZ

United Nations Educational, Scientific and Cultural Organization

So you really think you know UNESCO? Here are 10 questions to test yourself. The answers appear below.

1 Which artist did not sign his work at UNESCO's Fontenoy Headquarters?

a. Picasso
b. Miró
c. Calder
d. Vasarely

2 What was the name of the forerunner of UNESCO founded in Paris in 1925?

a. Conference of Allied Ministers of Education
b. International Institute of Intellectual Cooperation
c. International Council of Scientific Unions
d. League of Nations

3 The Director-General is elected by the General Conference for a term of office of what length?

a. 4 years
b. 5 years
c. 6 years
d. 7 years

4 Which statesman said, "Wars begin in the minds of men….", a phrase that made its way to the preamble of UNESCO's Constitution?

a. Winston Churchill
b. Jacques Maritain
c. Clement Attlee
d. Franklin D. Roosevelt

5 The above sentence from the preamble continues, "…it is in the minds of men that the defences of peace must be constructed." These words were written by which poet?

a. Pablo Neruda
b. William B. Yeats
c. Archibald MacLeish
d. Paul Valéry

6 We could have ended up with the acronym UNECO, UNSCO or UNESO? One of the three fields of competence was the subject of a campaign and was added the last. Which one is it?

a. E for Education
b. S for Science
c. C for Culture

7 Who is the most widely-translated individual author in the Index Translationum database?

a. Jules Verne
b. Barbara Cartland
c. Lenin
d. Agatha Christie

8 According to UNESCO's *Atlas of the World's Languages*, how many languages are spoken in the world today?

a. 6,000
b. 4,000
c. 3,000
d. 7,000

9 UNESCO played a key role in the conception and construction of an ancient library, which its country unveiled in 2002. Which library is it?

a. Academy of Sciences Library in Saint Petersburg, Russian Federation
b. Bibliotheca Alexandrina, Egypt
c. Czech National Library, Prague
d. Lithuanian Academy of Sciences

10 The working languages of the General Conference are Arabic, Chinese, English, French, Russian and Spanish. But it has three other official languages. Which ones are these?

a. German, Italian and Portuguese
b. Italian, Japanese and Portuguese
c. Hindi, Italian and Portuguese
d. German, Japanese and Portuguese

ANSWERS. **1** : *a.* Picasso, whose mural, "The Fall of Icarus" hangs outside the main conference hall. **2** : *b.* The International Commission for Intellectual Cooperation of the League of Nations. **3** : *a.* 4 years (amended in 2001). **4** : *c.* Clement Attlee, UK Prime Minister at UNESCO Constituent Conference, London, November 1945. **5** : *c.* Archibald MacLeish, American poet, later completed the phrase. **6** : *b.* S for Science. During the Preparatory Commission in 1945, the campaign was led by British biologists Joseph Needham and Julian Huxley, British Minister of Education Ellen Wilkinson was also a staunch supporter. **7** : *d.* Agatha Christie (5,700 references in the database). Jules Verne has 3,700, Lenin 3,500 and Cartland 3,200. **8** : *a.* About 6,000. **9** : *b.* Egypt's Bibliotheca Alexandrina, inspired by the library founded by Ptolemy in 290 BC. **10** : *c.* Hindi, Italian and Portuguese (Rules of Procedure, General Conference, Rule 54).

A Tribute to the Past

© Martin Parr/Magnum, Paris

Certain sites, like the Acropolis in Athens, are victims of their own success

Signatories to the World Heritage Convention on November 16, 1972 were not fully aware of the far-reaching implications of their action. But now, over 30 years later, the UNESCO label on remarkable sites represents national pride combined with substantial benefits from tourism. Each year new sites are added to the World Heritage List. Further efforts are needed, however, to make the list more representative. Long-term protection from war, looting, natural catastrophes, tourist overflows and climatic change represent other major challenges to the survival of these sites.

"Come discover over 2000 years of history," promises a Chinese on-line travel agency, offering tours to several World Heritage sites including the Summer Palace in Beijing and the Great Wall. Obviously, being on the List is a selling point that tour operators are eager to tout.

The success of the World Heritage List has not flagged since 1972. With 180 States Parties, the Convention is one of the world's most ratified international instruments. Each year, new sites are added to the list, which has expanded from a dozen in 1978 to 812 in 2005.

Over the years, inscription on the World Heritage List has become synonymous with national pride and non-negligible windfalls in tourist revenue. "As a result the pressure applied by elected officials at nomination time has increased; it is proportional to the stakes," says Léon Pressouyre, a UNESCO expert and professor at the University of Paris I-Sorbonne. "There is no doubt the candidacies are becoming more politicized," confirms Mechtild Rössler, Chief of Europe and North America at the UNESCO World Heritage Centre.

While it is difficult to measure the exact repercussions of a nomination on the number of visitors, it clearly has an impact on the image of the site. "Visitors to Lyons increased in number by about 20% in 1998 after the city was inscribed," says Bruno Delage, official in charge of heritage issues for the city of Lyons (France). "It is very difficult to attribute this rise directly to the listing. But Lyons, which before was essentially a city for business tourism, has recently seen cultural tourism develop."

Growing interest in heritage

The general public, fond of old stones and large parks, has become the most vocal defender of the quality of sites. "Heritage, which originally was the privilege of experts, has become everybody's business," says Dinu Bumbaru, Secretary-General of ICOMOS, the International Council on Monuments and Sites.

Each day, the UNESCO Heritage Centre receives dozens of emails, postcards or letters, often to warn of degradations noted on a site. "One morning, I was unable to open my desk, there were too many letter bags. In a few days, I had received 30,000 letters," says Mechtild Rössler. It was just after the 1999 campaign against the expansion of a salt production plant at Laguna San Ignacio, near several whale sanctuaries at El Vizcaino, Mexico. The Mexican government finally refused to authorize the expansion project, bowing to pressure from the World Heritage Committee and the intergovernmental body that every year examines the state of conservation of sites and nominations.

Not all such stories have a happy ending. "I can think of a number of monuments that are in very bad condition," says Henry Cleere, of ICOMOS. Some sites are overrun by tourists and become victims of their own popularity. One example is Machu Picchu in Peru. Since it was inscribed on the Heritage List in 1983, the number of visitors to the Inca citadel has soared from 9000 in 1992 to 150,000 foreign tourists pouring in ten years later. Under these conditions, preserving the integrity of the sites becomes a difficult task.

Dealing with degradation

"Today the Convention has reached the age of maturity," says Francesco Bandarin, Director of the Heritage Centre. "In the early years, the priority was to identify the sites. Today the emphasis is on conservation. We can impose high standards." In theory, at least. With a budget capped at US$ 4 billion annually (with an additional US$ 11 million of extra-budgetary funds designated for specific projects), the possibilities for action are limited in face of damage caused by war, looting, natural catastrophes, excessive tourism and even climatic change (see article p. 22). Yet the lack of resources is but one aspect of the problem. The means to incite countries to fulfil their commitments to conservation are also lacking. "We sometimes get the feeling that just getting on the list is the goal for certain countries," says Guy Debonnet, of the Natural Heritage Section of the World Heritage Centre. In theory, the Convention allows the removal of a neglected site from the list, but this provision has never been applied. The only mechanism used in case of site degradation is to put the site on the World Heritage in Danger List, which countries tend to see as a sanction. As a result there are only 33 sites on the In Danger List when ›

› probably many more are eligible. Countries with neglected sites often do not respond to pressure to comply with World Heritage site criteria. "Yet, as long as there is no efficient monitoring," warns Raphaël Souchier, an anthropologist and co-author of "Le patrimoine mondial",[1] "it is the market that will impose its law". And rarely does that work out for the best.

Agnès Bardon

1. *Le patrimoine mondial,* Dominique Audrerie, Raphaël Souchier, Luc Vilar. Editions PUF, 1998, Paris.

Last but not List

The World Heritage List gets longer each year but is this to the detriment of the "exceptional universal value" attributed to the sites?

The city of Brasilia, inscribed in 1987, is an outstanding example of modern architecture

When certain sites are mentioned, some experts frown; in their eyes, these places do not merit the World Heritage label. True, the List has become inflated over the past 30 years, a victim of its own success. Is it good or bad for the concept of world heritage to expand as nominations multiply? "What we are definitely seeing is a shift away from the original, exemplary list of symbolic sites," says anthropologist Raphaël Souchier.

Key to the debate is the notion of "exceptional universal value", one of the criteria applied to the candidate sites. In the early days, many of the sites were synonymous with "wonders of the world", and were not subject to controversy. No one would consider questioning the universal appeal of the Pyramids at Giza (Egypt) or of the Galapagos Islands (Ecuador), but more recent additions have raised eyebrows.

Comparing the city of Brasilia (1987) and the home of Luis Barragan in Mexico (2004), Christina Cameron, Research Chair on built heritage at the University of Montreal (Canada), points out that the Brazilian capital was presented as "an exceptional global example of modern architecture and urban planning. As for the Barragan house, it was considered the modernist building having had the greatest influence on Latin America. These are different interpretations of exceptional universal value," she says[1]. She estimates that in fact not more than 5% of the sites listed in the past five years

© UNESCO/Felipe Alcoceba

The universal importance of sites such as the Pyramids of Giza is almost beyond question

are "unquestionable", in other words going beyond "cultural affiliation" because they are "unique and recognized by all", compared to 20 to 30% of sites in the early years.

Restricting nominations

Given that there is a waiting list of over 1,500 sites, the process is not going to be reversed any time soon, although some measures have been taken to curb countries' enthusiasm. Since 2003, countries can only present one site per year and, since 2004, only one cultural and one natural site can be nominated per State Party. But the number of listings continues to grow. There were 34 additions in 2004, compared with 31 in 2001 and 33 in 1993.

A possible solution is to close the list once and for all, or to set a moratorium. But these measures would contradict another priority set by the Heritage Committee, to make the list more representative. Despite consistent efforts to include more countries from the South by recognizing non-built sacred sites or cultural landscapes, Western aesthetic values continue to dominate the selection. Out of 812 sites, 410 are located in Europe or North America. "Countries still prefer to list certain types of sites such as historic town centres. Who even knows that France has the fourth largest coral reef in the world in New Caledonia?" points out Mechtild Rössler, Chief of Europe and North America at the UNESCO World Heritage Centre.

The list is heavily loaded with religious monuments, mostly Christian, to the detriment of other categories such as examples of modern or industrial architecture. The 160 natural sites are also in the minority. In a report published in 2004, the World Conservation Union (IUCN) examined all the natural sites on the Heritage List. The results show that tropical savannahs, tundras, temperate prairies and cold-winter deserts are clearly under-represented. In this context, it would be difficult to close the list in the near future.

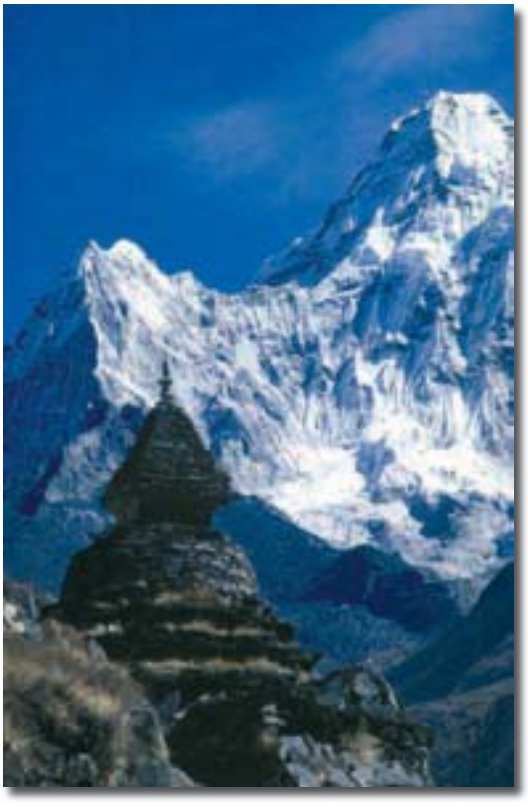
More pragmatic experts are betting on a natural slowdown of nominations. "I am convinced," says Henry Cleere of ICOMOS, the International Council on Monuments and Sites, "that if the inscription criteria were rigorously respected, the list would reach a natural cut-off point of 1,200 within a decade." ◆

A.B

1. Paper for an Experts Meeting of the World Heritage Convention held in Kazan, Russian Federation, April 2005.

Natural Sites Under Pressure

The effects of climate change are already being observed on several World Heritage sites. Some environmentalists are calling for them to be placed on the endangered list.



© UNESCO/J.M. Gassend

The snow cover on the Himalayas has been reduced by 30% in 30 years

From corals that are bleached due to a rise in water temperature, to glacier caps that are shrinking more and more each year, not to mention species that are becoming increasingly rare such as snow leopards, marine turtles or the manatee: the effects of global warming on the environment are now known. World Heritage sites, especially the natural ones, have obviously not been spared from this global phenomenon.

Some environmentalists have taken the next logical step and requested that certain sites be placed on the List of World Heritage in Danger. In November 2004, Pro Public (Friends of the Earth, Nepal) and the Climate Justice Programme delivered several petitions to UNESCO requesting that the barrier reefs of Belize and Australia, the Huascaran National Park (Peru) that has the tallest tropical mountain range, and the Sagarmatha National Park (Nepal), over which looms Mount Everest, be included on the In Danger list. This is the first time climate change is invoked as a reason for such a move. "The Convention is an appropriate tool to cope with the degradation of the sites due to global warming," says Peter Roderick, co-director of the Climate Justice Programme. "It is also a way to attract attention to the fact that these invaluable and exceptional sites are under threat," he added.

Experts to study effects

The facts are undeniable. The snow cap of the Himalayas has shrunk by 30% in 30 years. In some areas, glacier lakes have formed and run the risk of one day flooding valley communities. The same is true of the mountains in the Huascaran National Park, which have lost 20% of their glacial cap since the end of the 1960s. As for the barrier reefs, they are threatened by rising water temperatures and the increase in CO_2 concentrations in the ocean. "In the future, climate change could eclipse other threats weighing on heritage sites, especially in vulnerable zones such as small coastal states, glaciers, coastal zones or coral reefs," says David Sheppard, head of the Programme on Protected Areas for the World Conservation Union (IUNC). To remedy the situation he calls for the creation of buffer zones around the most threatened sites so that the ecosystems can be restored.

But the petitioners want to go even further. "We must not limit our efforts only to the effects

but also to the causes of the phenomenon," says Peter Roderick, who is calling for the World Heritage Convention to be used as a means to pressure States Parties into reducing their greenhouse gas emissions. To support this demand he points to the article recognising the need for States Parties to "ensure the transmission of the cultural and natural heritage to future generations". But this interpretation is erroneous, according to Francesco Bandarin, Director of UNESCO's World Heritage Centre. "Global warming is a global problem," he explains, "but the Convention, which deals with individual sites, rests on a very local vision. There is, therefore, a gap between the problem and the available tools." And an ad hoc tool is already available, the United Nations Framework Convention on Climate Change.

Nonetheless, the idea is gaining ground. Due to the petitions, the question was added to the agenda of the World Heritage Committee meeting in July 2005 in Durban, South Africa. Although the Committee did not follow the environmentalists' suggestion by putting the four sites on the In Danger list, it did call for a group of experts to be convened and to provide a report on the issue next year. ◆

A.B

The Rebirth of Kunqu Opera

Proclaimed by UNESCO in 2001 as a Masterpiece of the Oral and Intangible Heritage, this traditional Chinese art, once threatened with extinction, is now the object of renewed interest.

© Hervé Bruhat/Rapho, Paris

Shi Hong Mei in a performance of "The Peony Pavilion" at the Huguang theatre in Beijing

A young girl appears as soon as the first notes of music are heard. Draped in a richly embroidered costume, she performs graceful hand movements. The elegance of her gestures is enhanced by her long silk sleeves. Accompanied by a flute, she begins to sing and the audience holds its breath.

The scene is an excerpt from "The Peony Pavilion", one of the classic plays of the Kunqu Opera. It tells the tragic tale of Du Liniang, who dreams during a walk in the park that she meets and falls in love with a young man. Unable to live her dream in reality, she falls mortally ill and, as she is dying, asks to be buried in the garden where she met her beloved. Later, Lui Mengmei, a student on his way to the capital, passes in front of Du Liniang's house and asks to spend the night there. As he sleeps, he dreams of the young girl. Revealing to him that he is the one her heart desires, she asks him to open her coffin. Liu Mengmei does so and Du Liniang comes back to life.

Since 2004, this updated version of the play, produced by Bai Xianyong, one of China's best-known contemporary authors, has been staged in a dozen universities in China. Teachers and students can buy tickets for as little as 10 yuan. Each time the performance attracts a large audience. "The opera is so sweet, so graceful that I ›

› was profoundly touched," admits Hu Chunni, a political science student at Nanking University.

This traditional art form, whose beginnings can be traced to the 16th century Ming dynasty, is one of the oldest types of opera in China. Originating in the eastern province of Jiangsu, it combines singing, dancing, gesture and recitation. Its influence on Chinese theatre and opera is undisputed.

Ongoing revival and new museum

But this golden age is long gone, and the art has been declining since the 18th century. Provincial operas, notably that of Beijing, ended up replacing Kunqu. The performances, often very long—some could last several days—were soon only being staged for a handful of scholars. "Historically, this art was kept alive by the intellectual elite. It is considered too difficult for the general public to understand," explains Bai Xianyong. In fact, in the second half of the 19th century, most of the actors had joined troupes engaged in other forms of opera. "There are only about 600 professionals left in China," laments Ke Jun, vice-president of the Jiangsu Kunqu Opera Theatre. As a result, of the 800 plays in the repertoire at the end of the Qing dynasty, less than 200 remained in the 1950s and several dozen only have survived to the dawn of 21st century.

Proclaimed a Masterpiece of the Oral and Intangible Heritage in 2001, kungqu has experienced a rebirth in the past few years. Four classical plays, including "The Peony Pavilion" or "The Palace of Eternal Life", have been restored and updated. A Kunqu Opera museum was opened in 2003 in Suzhou, in Jiangsu Province. The exhibits include masks, costumes, manuscripts and ancient instruments.

In 2004 the Chinese government decided to devote 10 million yuan per year to revive this traditional art form. The money will be used mostly to collect librettos and ancient materials, to stage new plays and to train professionals. Some fear the allotted funds are insufficient to fulfil this enormous task. "Nonetheless, today this art form has been brought back to life," notes Ke Jun. Just like Du Liniang, the young girl in "The Peony Pavilion". ◆

Wang Li

The Conventions

Cultural Heritage and Armed Conflict

The Convention for the Protection of Cultural Property in the Event of Armed Conflict was adopted in The Hague, Netherlands, in 1954 following the massive destruction inflicted to cultural heritage during the Second World War It was the first universally applicable international instrument aimed exclusively at protecting the cultural heritage. It applies to monuments, archaeological sites and also manuscripts and scientific collections.

Protection of World Heritage

Adopted on November 16, 1972, the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage protects not only cultural sites but also natural and mixed sites. With 180 States Parties, it is one of the world's most ratified international instruments. Signatories commit to preserve the sites on the World Heritage List as well as heritage sites of national or regional import.

Intangible Cultural Heritage

The Convention for the Safeguarding of the Intangible Cultural Heritage was adopted on October 17, 2003. Its goal is to preserve oral traditions and expressions, the performing arts, social practices, rituals and festive events as well as traditional craftsmanship. It commits States Parties to taking the necessary steps to safeguard this heritage and calls for inventories of the national elements needing protection to be established. It will go into effect once ratified by 30 States. Twenty states have already signed it.

Underwater Heritage

The UNESCO Convention for the Protection of the Underwater Cultural Heritage was adopted on November 2, 2001. Its goal: fight against the increase in underwater pillaging, facilitated by the development of technologies permitting unprecedented access to shipwrecks. No multilateral international treaty aimed exclusively at the protection of this heritage existed until 2001. It will go into effect once ratified by 20 States; only five have signed so far.

Illegal Trade in Cultural Goods

Three multinational treaties have been drawn up to fight against the illegal trade of cultural goods:

- The Protocol to the Convention for the Protection of Property in the Event of Armed Conflict (1954)
- The Convention Concerning Measures to Forbid and Prevent the Illicit Import, Export and Transfer of Ownership of Cultural Property (1970)
- The UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects (1995)

UNESCO IN FILMS

UNESCO has been featured in a number of films as a setting or by way of a character. Here are some of them:

Charade

(Stanley Donen, 1963)

© DR

In this romantic comedy cum thriller set in Paris, Audrey Hepburn is a EURESCO interpreter whose husband is murdered in mysterious circumstances. Lost and lonely, she meets Cary Grant, a knight in shining armour - or is he? There is an establishing shot of what looks like the Fontenoy building, then Hepburn in a booth interpreting for delegates at an international conference.

All Fired Up (Tout feu, tout flamme, Jean-Paul Rappeneau, 1981)

Isabelle Adjani, a *polytechnicienne* from the French Ministry of the Economy, maintains a tempestuous relationship with her irresponsible father Yves Montand, intent on opening a casino. She decides to sabotage his project, but in comes an imbroglio with gangsters. This comedy features a scene where she attends a meeting actually shot in one of UNESCO's conference halls.

Naked Love (L'Amour nu, Yannick Bellon, 1981)

Another film shot in the Fontenoy building, this romantic melodrama stars Marlène Jobert as a UNESCO interpreter. In the course of an international scientific conference, she meets oceanographer Jean-Michel Folon. Romance is soon in the air but she discovers she has breast cancer.

© Coll. Prod DB©Gaumont/DR

© coll. Prod DB © Films du Carrosse/DR

Bed and Board (Domicile conjugal, François Truffaut, 1970)

In this fourth episode of the Antoine Doinel saga, Jean-Pierre Léaud now plays the role of a young married man. Bored with his new job, bored at home where his wife devotes her time to their newborn baby, he soon succumbs to the temptation of an affair with an exotic Japanese woman, played by Hiroko Berghauer. One of their meetings was shot in UNESCO's Japanese garden.

Seeking the Right Balance

Writers, musicians, photographers, painters, computer programmers, translators….Without copyrights, none of these occupations could claim remuneration. But because culture must be accessible to the greatest number, UNESCO is engaged in seeking the right balance between the interests of the artist and those of the general public. New techniques of pirating musical recordings or DVDs, however, are threatening this fragile equilibrium. Not only the rich countries have to pay the cost.

Many of us do not realize to what extent copyrights are a part of daily life. When we read a book, watch a film or listen to the radio, use a computer or go to the theatre, we are consuming goods protected by copyright. At this very moment, you can read this magazine or look at its photos by browsing on internet. This is possible thanks to international legislation that established authors' and artists' right to compensation for the use of their work, allowing them to continue working and to publicize their creations.

UNESCO is already 60 years old, but international copyright protection is much older. The first international document on the subject, the Bern Convention for the Protection of Literary and Artistic Works, today implemented by the World Intellectual Property Organization (WIPO), was signed on September 9, 1886. Even further back, in the 18th century, Diderot was already advocating for remuneration for artistic endeavour. In earlier times, artists offered their talent to the court,

the church or the local grandee who financed their activities. In return the patron appeared in the painting or had a book dedicated to him, in the manner of the Duke of Bejar for "Don Quixote".

In the 20th century, copyright gained in importance to the point of being mentioned in the Universal Declaration of Human Rights. The second paragraph of Article 27 stipulates that "everyone has the right to the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author." The first paragraph of the same Article stipulates that "everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits," an argument used in favour of freer, and sometimes simply free, access to cultural goods.

Pirate market

"There is no contradiction," explains Petya Totcharova, expert from UNESCO's Division of Arts and Cultural Enterprise, "since the idea is to find just the right balance between the rights of the author and public interests." Totcharova notes that "copyright does not override all other considerations because, when a higher public interest is at stake – education, scientific advancement etc.— international treaties such as the Universal Copyright Convention, of which UNESCO is depository, provides for exceptions to the rule." Being allowed to quote a few lines from an author without paying him royalties is one example.

This is not pirating, which is usually motivated by greed. "Most people are unaware that some of the most sophisticated forms of organized crime are involved in pirating because it generates easy money, and because it is more acceptable and punished less harshly than drug or arms trafficking," says Darrell Panethiere, a London lawyer who represents several private companies. Also, contrary to popular belief, victims are not only big London recording companies or Hollywood film production companies but also cultural industries in developing countries. "Many Latin American singers record in Miami, and those from French-speaking Africa in Paris," explains Panethiere, the author of a recently published report on the subject. "Their music is then sold worldwide and this money allows them to go on tour, to become known, to be paid royalties...If pirating were more tightly controlled, local labels could also make these recordings".

© Bruno Barbey/Magnum, Paris

The Indian film industry is the one that produces the most films

Mexico is a case in point. The culture industry, with over one million works copyrighted, generates approximately 6% of Mexico's gross domestic product, and the country was listed for years among the world's top ten music producers. Today the pirate market sells 76 million records a year in over 50,000 sales outlets, out- ›

There once was a ©

The © symbol became the globally-accepted abbreviation for "Copyright" at the Universal Copyright Convention of 1952, a legislative text implemented by UNESCO that includes 99 States Parties.* The 1971 revised version includes 64. The © protects the creators of original works, who are thus granted the exclusive right to forbid or allow their reproduction, interpretation, public performance, recording, transmission, translation or adaptation.

More recently came along the opposite idea: the *copyleft,* symbolized by a ↄ. The *copyleft* indicates the author's permission for others to use, copy, study, modify or distribute his work, with the proviso that all subsequent versions also be copyright-free. The growth in free software, based on decentralized co-operation and free access to common databases, proves that the *copyleft* concept has millions of supporters in the cyber-world. Last June, the *Wikipedia* Encyclopaedia, based on this principle and refusing all stolen or copied articles, beat the record previously held by the Encyclopaedia Britannica, with 600,000 entries in 50 languages and 400 million pages consulted per month.

It is worth noting that from the beginning of the copyright movement, artists have always been free to renounce their copyright or to donate royalties to their favourite cause.

*In June 2005

Twelve months and a day for copyright

Every April 23, on the anniversary of the deaths of both Miguel de Cervantes and William Shakespeare, a global tribute is paid to books and copyrights. In 1995, the UNESCO General Conference proclaimed April 23 as World Book and Copyright Day, a day to promote reading and the protection of intellectual property. In addition, besides promoting legislation supporting copyright, the Organization publishes the online Copyright Bulletin and participates in campaigns to raise public awareness of the importance of copyrights. And to fight pirating, UNESCO has since 2004 organized training workshops involving police, customs and judicial authorities, notably in southern Europe and sub-Saharan Africa. UNESCO is also considering the creation of an observatory to follow pirating issues and serve as an electronic information centre.

› weighing the legal market that can only sell 56 million. "We are studying the possibilities of legal reforms to increase the sanctions, because besides the loss of investment and jobs in the country, pirating is hurting our exports, which were significant in the region and in the United States," says Victor Manuel Guizar Lopez, Director of the Copyright Violations Protection Department of Mexico's National Copyright Institute (INDAUTOR).

Same story in India, which boasts the world's most prolific film industry. With 1,100 films produced in 2003, it far outstrips Hollywood's output. According to data provided by the Confederation of Indian Industry (CII), India's film industry loses US$ 70 million per year to pirating, mostly because of illegal sales abroad. It is estimated that four out of ten Bollywood-produced CDs and DVDs sold in the United Kingdom are counterfeit copies. These figures are even higher in Bangladesh or Sri Lanka— not counting films broadcast on cable television networks that don't pay royalties. And as music is a major ingredient of any self-respecting *Bollywood* drama, the musical rights can represent up to 15% of profits—or losses—on certain films.

Counterfeiting cuts into profits and jobs in other places besides India. In Gabon, film theatres have all but disappeared. In certain countries, 90% of available recordings are pirated. But the most serious ills are sometimes the least visible. "Recorded music represents the musical life of a society at a given point in time. If the best musicians of a nation are not commercially recorded, their works will not be preserved and the losses that represents to local culture are incalculable because, with them, an essential element of the country's historical memory disappears," says Darrell Panethiere. If this doomsday prophecy, which holds for literature as well as cinema, were realized, where would one have to go to find the "right balance"? ◆

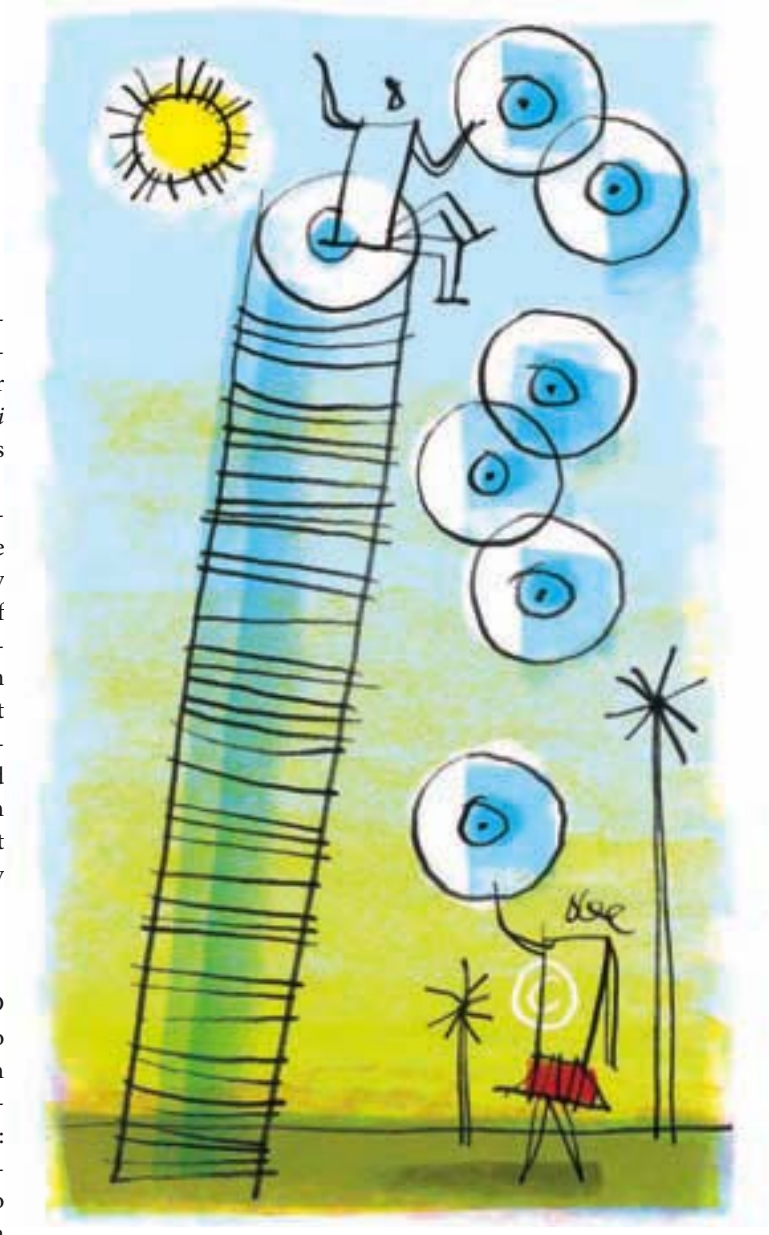
Lucia Iglesias Kuntz

MORE INFORMATION…

"The Persistence of Piracy: the consequences for creativity, for culture and for sustainable development"
see:
http://unesdoc.unesco.org/images/0013/001396/139651e.pdf

Paraguay and the Pirate's Song

Sadly, for geographic and economic reasons, Paraguay has become the world capital of pirated music.



In Ciudad del Este, 330 kilometres from Asuncion, the joke going around is that when director Michael Mann arrives in town later this year to shoot a few scenes of his latest film, *Miami Vice*, he'll be able to buy illegal copies of his own movie – the finished version.

Joking aside, the most recent report published by the International Federation of the Phonographic Industry (IFPI) calls Paraguay the world's leading music pirating country. Of 100 records sold in Paraguay, 99 are illegal copies. Paraguay tops the list of 31 countries in which illegal sales outstrip legal sales. The report also shows that Paraguay is a major transit station for blank CDs, particularly those that end up in Brazil and Argentina. In a country with unemployment at 7.3% and under-employment at 24.1%, the IFPI figures are corroborated by the harsh reality of the street.

Cracking down

In Asuncion, it is easy to buy a film in DVD format or VCD (a format which can stock video or audio data and still photographs, although with poor resolution) before it opens in theatres. Pirated films and discs sell like hot cakes: at stoplights, at street corners, and even at cinema entrances where a ticket can cost up to 10,000 guaranis or US$1.50, the price of a pirated CD. Street vendors of illegally copied music, films or electronic games can often be found in the vicinity of high schools, and sometimes set up shop a few metres from the courthouse or the customs office.

The IFPI report was not appreciated by local authorities: the Director of Intellectual Property at the Trade and Industry Ministry, Astrid Weller, called it exaggerated. Nonetheless, the government has put in place a National Plan on Intellectual Property to create a Special Technical Unit comprised of various authorities, including the armed forces, charged with apprehending those responsible for the production and sale of pirated products, an offence punishable under Paraguayan law.

Carlos Gonzalez Rufinelli, director of the national intellectual property agency, announced measures to tighten border controls, including the creation of a list of importers of magnetic, optical and other support materials used to make counterfeit copies. In ›

addition, the authorities will launch a campaign in schools to explaining the harm pirating inflicts on the country and its artists.

But on the street, not even the poor quality keeps the buyers at bay.

On a bad VCD, the picture and the sound are not always synchronized, or, since the film was made in a theatre, the person sitting in front is visible. Often only half the film has been recorded. And many of the CDs are defective and can't be played. But the most compelling argument for buying pirated works isn't quality, it's the low price.

Yet Paraguay's main source of revenue from the pirated products doesn't come from local sales but from massive export. In the border regions, particularly Upper Parana, the police are constantly dismantling large production units equipped with the most sophisticated technology. Yet, these arrests are insufficient to put an end to this "industry", which flourishes, often with the complicity of authorities and local criminals. According to the 2005 Commercial Piracy Report, 11 million blank CDs were already confiscated this year, twelve indictments were handed down in two major cases linked to pirating and 57 import licences were withdrawn from suspect firms.

Living from one's art has never been easy, but pirating complicates the situation even more. David Arriola, manager of Kamikaze, a record label that has been launching young Paraguayan talent for the past five years, still can't get over what happened to the nationally-known rock group Paiko. "When we produced the first CD, "Al natural", it took a year before it was pirated. For the second, illegal copies were on the streets the day after the official release.... We were stunned," he says.

We have to put a stop to these practices, in the name of Shakespeare and Cervantes. ◆

Natalia Daporta

Facts and figures

- The film industry in the United States loses 3 billion dollars a year because of pirating.
- In 2004, 34% of computer software was pirated, one per cent less than in 2003. Financial loss, however, increased at the same time from 29 to 33 billion dollars.
- A 10% reduction in software pirating would allow the creation of 1.5 million jobs and generate globally 64 billion dollars in taxes.
- In Colombia, authorities confiscated 37,000 pirated books in 1998 and 180,000 in 2003. In 2005, the publisher Norma advanced the release date of Gabriel Garcia Marquez's latest book, "Memories of my Melancholy Whores", because pirated versions were already in circulation.

Sources: Motion Picture Association, Business Software Alliance, Norma Publishing

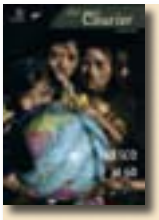
MORE INFORMATION...

http://www.ifpi.org

HAPPY ANNIVERSARIES!

United Nations Educational, Scientific and Cultural Organization

In August 1947, the UNESCO Monitor *appeared, ancestor of the* Courier.
Today, the magazine is becoming an on-line publication.

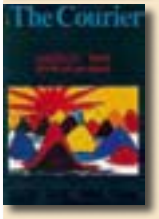


60th, November 2005, published in 6 languages.

With the printing of this anniversary issue of *The UNESCO Courier*, another page is turned in the history of the magazine since its first appearance in 1948. This is the last on paper; henceforth, *The New Courier* will be available exclusively online, completing the transition begun in 2002. Here is a glimpse of past anniversary issues:

50th, July-August 1996, published in 30 languages.

What does UNESCO's 50th anniversary mean to you? Instead of calling on intellectuals and specialists in the Organization's various fields of competence, the magazine gave twenty cartoonists a free hand to express their opinions and judgments. Their reactions comprise a series of subjective impressions rather than objective evaluation, a blend of approval and criticism, in this double comic-strip issue.



40th, October 1985, published in 32 languages, with Braille selections in 4 languages.

As part of an ongoing modernization programme, this is the first fully computerized issue of the English, French and Spanish editions, prepared entirely in-house up to the final photogravure and printing stage. Instead of taking stock of UNESCO's achievements, the issue leads readers on a journey back to the world of 1945, to witness the birth of UNESCO and the efforts of the men and women whose commitment brought it to life.

30th, March 1976, published in 15 languages.

Julian Huxley, UNESCO's first director-general in 1946, is the issue's main subject, with excerpts from the historic document he drafted on the Organization's purpose and philosophy and a tribute to the man by Paulo E. de Berrêdo Carneiro, eminent Brazilian scientist. A collective text on the roots of a world crisis, penned by 18 of the world's leading figures in education, science and culture, is the other main feature in the issue.

25th, August-September 1971, published in 13 languages.

For this issue, UNESCO opened its doors to a 25-year-old Canadian student who spent months probing and delving into the Paris headquarters. The result is a lively assessment of UNESCO's activities, viewed with the objectivity of an outsider mixed with the critical candour of youth. It also demonstrates how UNESCO's approach towards young people has evolved over 25 years.

20th, July-August 1966, published in 9 languages.

Proudly announcing 8 pages in colour, the issue examines major changes in education, science, culture, mass media and social science in the world during the past 20 years and what UNESCO has achieved in each domain. Other stories focus on the publication of the six-volume *History of Mankind* in science and culture and a compilation of quotations on peace by leading personalities involved in UNESCO's creation.

10th, November-December 1956, published in English, French and Spanish.

UNESCO's first *World Survey of Education*, published in 1955, revealed that some 250 million children in the world, one out of ten, were out of school. The cover, featuring three children dwarfed by a huge globe, is symbolic of their plight. Other main subjects in the issue include an assessment of the havoc left by the Second World War; and a feature on the construction of the soon-to-be-completed Fontenoy headquarters.

These issues are available online at www.unesco.org/courier.

Giving Science a Conscience

Cloning, using genetic data, pre-implantation diagnosis, research on embryonic stem cells... All these scientific advances are a double-edged sword: promising for patients and problematic from an ethical point of view. In order to guide states in considering the issues, UNESCO has for many years played the role of ethical watchdog. After texts on the human genome (1997) and on human genetic data (2003), the Organization has just adopted the Universal Declaration on Bioethics and Human Rights.

Seoul, February 2004. Professor Hwang Woo-suk has just cloned a human embryo for the first time. The aim is not to obtain a genetically perfect baby, but rather embryonic stem cells, which could eventually treat diseases that are incurable at present. Unlike many countries, the Republic of Korea allows therapeutic cloning.

As the first scientist to successfully carry out such a feat, Hwang Woo-suk had something to celebrate. But his overriding concern was to discuss the meaning of this discovery with the Archbishop of Seoul, Nicholas Cheong Jin-suk. The two men met on June 15, 2005. For an hour, the professor and the man of the church spoke of the beginning of life, respect for human dignity and human rights, the status of the embryo, the powers of science and the duties of conscience... in a word, bioethics.

Faced with the speed of scientific progress, governments from now on must give their verdict on these issues, as well as on medically assisted procreation or the choice of a child's gender before birth. Some have already established legal mechanisms, while others have not.

In line with its mandate as an ethical watchdog, UNESCO took an early interest in the progress of scientific research. The Organization has already adopted two declarations, in 1997 and 2003, to respond specifically to the problems posed by biology and genetics (see box below). The third phase of this consultation process is the Universal Declaration on Bioethics and Human Rights, and its adoption by UNESCO's General Conference in autumn 2005. This text is designed as a "global response to the ethical implications" arising from "rapid developments in science and technology".

In reality, the Declaration gives no definitive response to the questions raised by therapeutic cloning or stem cell research. Its role is more to nurture a wider debate. "The status of the embryo, euthanasia and abortion are not included in it because they are too controversial," UNESCO's Director of Ethics, Henk ten Have, explains.

The willingness to find a consensus between Member States on this difficult subject has been paramount at each stage of the drafting process. For example, some States are upset that the Declaration makes no mention of the "right to life". It is the most sensitive question of all: does life begin at birth? Or at conception? Or at the fetal stage? The experts eventually decided to talk about "respect for the life of human beings". It is up to each State to decide what is meant by "human being".

Social function of science

However, at the initiative of developing countries, the scope of the Declaration has been widened to include social and environmental issues. The text says that progress in science and technology should make it easier for the destitute to have access to proper care, medicine, food and water. Additionally, some Latin American countries have insisted that the Declaration includes a mention of the "illicit trade" in "genetic resources", an allusion to bio-piracy, the exploitation of natural resources by private companies without the profits being fairly shared (see article p. 36). "Science must also be conscious of its social function," said one Latin-American delegate, explaining why the scope of the text needs to be widened. "Research into stem cells and cloning does not for now affect the lives of most people. They remain a hope for the future, but right now, people are dying because of poor health conditions. We must concentrate on this problem," Henk ten Have added.

The two previous UNESCO declarations

To safeguard the principles of personal dignity and freedom against risks of abuse in bio-medical research, UNESCO set up the International Bioethics Committee (IBC) in 1993. This consultative body comprises 36 independent members from different cultures who are eminent figures in varied disciplines: doctors and geneticists work with chemists, lawyers, anthropologists, philosophers and historians. In 1998, UNESCO also set up an Intergovernmental Bioethics Committee (IGBC), bringing together 36 representatives of UNESCO Member States who act as a bridge between the independent experts and the government bodies dealing with bioethics.

The work of the International Bioethics Committee (IBC) led to the Universal Declaration on the Human Genome and Human Rights, which was adopted in 1997 by the UNESCO General Conference. In 1998, the United Nations General Assembly adopted the text, which already at that stage condemned human cloning for reproductive ends. Since then, many countries have incorporated the principles set out in this Declaration into their national legislation.

In 2003, UNESCO adopted an International Declaration on Human Genetic Data. The aim was to ensure that the dignity, rights and freedoms of individuals are respected in the "collection, treatment, use and preservation" of genetic data obtained from blood, skin, bones, etc. The Declaration states that "the identity of the person will not be reduced to genetic characteristics".

› "We have filled a legal, political and ethical void," said Uruguay's Ambassador to UNESCO, Pablo Sader, who chaired the governmental experts' meetings to discuss the draft convention developed by the International Bioethics Committee (IBC). "This document must inspire legislation and guide the debate in each country." Its role is indeed to inspire and not to coerce: it is a declaration, which is not compulsory, rather than a far more constraining convention. It may be too early for the latter. The 21st century has only just begun. ◆

Samir Tounsi

Born to Cure a Brother or Sister

Brought into the world to save a member of their family, the "life-saving babies" raise a number of ethical issues.

Six-year-old Ian* suffers from a serious blood disease. To save him, his parents, from Leeds in the United Kingdom, had only one option: to conceive another child with the same cell tissue as his. The tissue is removed at birth from the umbilical cord, or later from the bone marrow. Ian's mother became pregnant, but the fetus was carrying the same disease. She did not keep the baby. A second child was born and its tissue was compatible with Ian's.

To avoid the risks inherent in genetics, it is now possible to select the embryo of the "life-saving baby" that could save Ian. In 2001, the Human Fertility and Embryology Authority (HFEA), the government body that supervises clinics conducting in vitro fertilization, authorized pre-implantation diagnosis. A group called Comment on Reproductive Ethics (Core) immediately took the case to the courts. After several more twists, Britain's highest court, the Law Lords, finally confirmed the HFEA's decision in April 2005.

Core is still furious. "We think it is fundamentally wrong to conceive a child just to help another, regardless of how serious a disease they have," said its director and founder, Josephine Quintavalle. Her fear is that it will lead to "the creation of babies who are the right sex and have the right hair colour."

"The use of such technology is morally justified when it is strictly regulated," retorts the doctor who treated Ian. The HFEA stresses that it grants permission for pre-implantation diagnosis only on a case by case basis. And it points out that 80% of Britons are opposed to choosing the sex of babies without a medical reason. ◆

S.T.

*The name has been changed

The Cells of Discord

While they hold out the hope of curing some serious diseases, embryonic stem cells raise the question of the moral status of the embryo.

"One day, I will walk again." Paralysed from the age of 16, Jim Langevin, a United States Congressman from the state of Rhode Island, is pinning his hopes on research into embryonic stem cells (ESC). He spoke in support of the research at the US Congress in May 2005.

Like him, many researchers think that these cells can be used to regenerate organs and diseased tissue. Not yet assigned a function, they can play any role. They are "pluripotent" – meaning that they can become any sort of cell, whether blood, muscle or nerve. Their regenerative capacity appears to be superior to that of adult cells taken from the spine or the umbilical cord.

But do we have the right to use and then destroy human embryos in order to obtain the embryonic stem cells? Even if these are 'extra' embryos, which would not be used for in vitro conceptions? Most religious authorities are opposed to the idea, on the grounds of respect for human embryos.

Cloning for research

The research on ESCs also raises the issue of so-called "therapeutic" cloning. Researchers have in fact already cloned embryos from the cells of a patient, in order to obtain stem cells with the same genetic characteristics as the patient. But even when it is done for therapeutic reasons, cloning inspires fear. In March 2005, the General Assembly of the United Nations adopted a Declaration which invites all Member States to "ban any form of human cloning insofar as it is incompatible with human dignity". UNESCO, for its part, prefers to refer not to "therapeutic cloning" but to "cloning for research purposes".

For the time being, laws and practices vary from one country to another. The Republic of Korea allows cloning for research purposes but bans human cloning. The United States recently considered relaxing the restrictions it put in place in 2001 on research into ESCs. Germany and Costa Rica ban the destruction of embryos for research purposes. In France, ten researchers signed a petition calling for therapeutic cloning to be made legal.

As the debates continue, so does the research. A privately-owned American company, Geron, announced that, providing permission is granted by relevant authorities, it would carry out the first tests of ESCs on humans in 2006 to treat lesions to the spinal cord. But there's no question yet of a cure. ESCs are, at best, a hope for the future. ◆

Samir Tounsi

Plant Pirates in Costa Rica

Several years ago Costa Rica began taking action to fight bio-piracy and to put to better use the richness of its flora, which is highly prized by the pharmaceutical industry.

Some of the Ngobe, indigenous people who live in Costa Rica and Panama, still remember how, in the 1990s, foreign doctors arrived among them – not to give them medical care, but to take samples of their blood and study their genes. A professor of environmental science at the University of Costa Rica, Silvia Rodriguez, says that during this period scientists collected DNA from indigenous communities in several countries, as part of a programme called "Human Genetic Diversity", involving scientists from America, Europe and Japan. This

genetic information was supposed to explain the resistance or the vulnerability of these ethnic groups to certain diseases.

Two doctors even attempted to patent cellular information from a Ngobe woman in Panama without her knowledge, in order to study her supposed resistance to certain types of leukemia. In the face of opposition from indigenous organizations, environmental campaigners and academics, the two American doctors, Jonathan E. Kaplan and Michael Dale Laimore, dropped their project.

But this use of genetic information from individuals without their clear consent is not the only type of bio-piracy. Costa Rica, which has a wealth of biodiversity, also has to defend itself against the illicit exploitation of its flora. Much is at stake: the plants are heavily used by the pharmaceutical industry. "Drugs made from plants generate business worth US$78 billion a year," said the president of the Costa Rican federation for nature conservation, Isaac Rojas.

To ensure that the exploitation of its natural resources benefits the country itself, Costa Rica has created an almost unique institution: the National Institute of Biodiversity (Inbio). Founded as a private venture in 1989, Inbio has signed more than 30 agreements with local and foreign laboratories. It is currently working in partnership with the American biotechnology firm Diversa to develop new textile products using micro-organisms that are "made in Costa Rica". Inbio has also allowed a Costa Rican laboratory, Lisan, to develop drugs to treat digestive and renal problems using the Quassia Amara bush, whose medicinal virtues have been familiar to Central American people for centuries.

Sharing profits

"Research and prospecting are expensive and we believe they should be undertaken in partnership with big companies who have the technology while we have the knowledge of biodiversity," said Ana Lorena Guevara, one of Inbio's directors.

But this approach does not satisfy everyone. Some environmental campaigners denounce what they see as "privatisation of biodiversity". "We are at the mercy of a few laboratories. We don't know how much they earn and how much they give back to us," says Professor Rodriguez. Inbio defends itself against such accusations by stressing its compliance with a 1998 law on biodiversity.

At the request of countries from the southern hemisphere, the Universal Declaration on Bioethics and Human Rights, adopted by UNESCO in autumn 2005, states that "scientific research is only to be carried out with the prior, free, express and informed consent of the person concerned". In future, the Ngobes will be able to turn to that article for protection. ◆

Juan Roman Rojas

UNESCO's First and Latest

Did you know that some of UNESCO's present institutes and programmes actually predate the Organization's creation? Such is the case of the International Bureau of Education, established in 1925. Likewise, Index Translationum *was initiated by the International Institute of Intellectual Cooperation in 1931. In its 60 years of existence, UNESCO has had its share of "firsts". Here are some of them – with updates on the latest developments.*

Member States

In 1945, 37 countries signed the UNESCO Constitution, which came into force a year later after ratification by 20 signatories. They became the first founders of the Organization. With the entry of Brunei Darussalam in March 2005, the Organization now comprises 191 Member States and 6 Associate Members.

National commissions

Brazil was the first Member State to set up one in 1946, followed by six others the same year. The latest to establish its national commission for the first time was Solomon Islands in 2002, bringing the current total to 192.

Field offices

The first to open was in New York in 1946. The latest was in 2004, the UNESCO Office for Iraq, currently based in Amman.

Associated Schools Project Network

Launched in 1953 with 33 secondary schools in 15 Member States, the latest to join are five schools in Libyan Arab Jamahiriya in 2004. The current total for 2005 is 7,900 institutions in 175 countries.

Non-governmental organizations

The first agreement with an NGO was in 1946 with the International Council of Scientific Unions (ICSU), now known as the International Council for Science. To date, 230 NGOs maintain official relations with UNESCO and many others cooperate on an occasional basis.

Clubs

The first to be established was in Sendai, Japan in 1947. In 2005 the movement includes 3,600 clubs, centres and associations in 90 countries.

Fellows

Thirteen fellows from six countries were the first awardees in 1947. Between 1948 and 1968, some 11,000 people received fellowships and study grants, 17% of them women. Today, about 20 awards are given monthly. The Fellowships Section distributed awards to some 350 people from 123 countries during the period 2004-2005, 56% of them women.

Prizes

The Kalinga Prize for the Popularization of Science, created in 1951, was the first. Today, the number of prizes stands at 33, the latest being the UNESCO/Jikji Memory of the World Prize, established in 2004. Funded by the Republic of Korea, it commemorates the inscription of the Jikji, the oldest known book of movable metal print in the world.

Laureates

French physicist and Nobel Prize laureate Louis de Broglie was UNESCO's first prize winner in 1952 when he received the Kalinga Prize. The latest laureate is Indian artist Ashok Sukumaran, winner of the main Digital Arts Award, "City and Creative Media".

World Heritage sites

The nomination of the Galápagos Islands in Ecuador was the first to reach UNESCO in 1978, followed by 11 others in seven countries. Twenty-four new sites were inscribed in 2005, the latest being the Urban Historic Centre of Cienfuegos in Cuba. Today, the list comprises 812 sites from 137 States Parties to the World Heritage Convention.

Goodwill Ambassadors

The diplomat and businessman Sheikh Ghassan I. Shaker was first to be appointed in 1990. Nelson Mandela, the former South African president, is the latest to join the ranks in 2005.

Artists for Peace

Céline Dion, the popular Canadian singer, was the first appointee in 1999. The latest is French sculptor and poet Gérard Voisin in 2005.

Commemorative medals

UNESCO issued its first medals, a set of three, in 1961 to celebrate its 20th anniversary. The newest medal was issued in October and commemorates UNESCO's 60th anniversary.

Taking the Pulse of the Planet

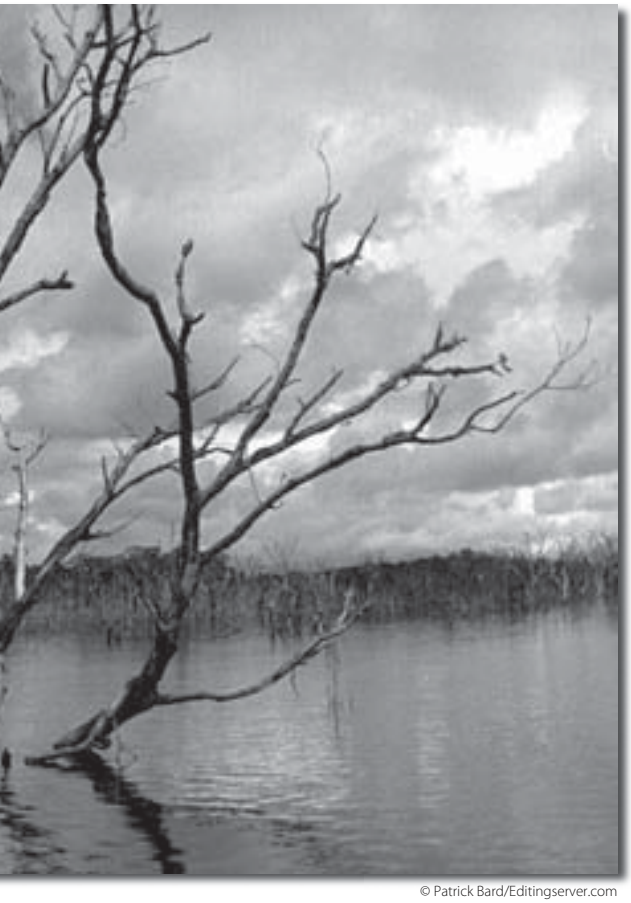
In French Guyana, a forest flooded by the installation of a dam

With a population due to number 9 billion people by 2050, dwindling resources and ever-increasing threats to biodiversity, the Earth is suffering from disquieting symptoms. Some of the damage is already irreversible. But all is not lost. Certain changes linked to global warming may even be beneficial, if we can manage them.

On the eve of World Environment Day (June 5) this year, the BBC news website showed a number of 'before and after' images of various places around the globe, taken several years apart. The message is clear. The images tell a story of dramatic, accelerating loss over the past decades: loss of forests, wetlands, fauna, glaciers, air quality, fresh water, beaches, sea ice.... The list is long. And the question the images raise no longer seems to be 'what can we do?' but 'is it too late?'

Some refuse a 'doom and gloom' scenario. Urbanisation, for example, may be paradoxically the best solution to rising population in the face of finite resources. Some argue that a city's environmental impact *per capita* is lessened, as people may be packed into a relatively small space, compared to individual houses surrounded by lawn. Others argue that while this may be true locally, cities have an unseen impact on the ecology of places hundreds, even thousands, of kilometres away that supply them with water, energy, food and clothing.

Urbanisation does not only destroy biodiversity, either, even if it leads to the disappearance of certain plants. Alien species may not always be unwelcome, if they succeed in surviving in this environment. "The most important thing is that plants continue to function,



© Patrick Bard/Editingserver.com

whether they're from China or Siberia," says Charles Peters, Curator of Economic Botany at the New York Botanical Garden (USA), speaking at a 2003 meeting on urban ecology co-organised by UNESCO.

Ecosystem approach

According to the World Conservation Union (IUCN), the spread of invasive alien species is nevertheless a threat to biodiversity. Out of their native context, they destroy whole ecosystems. And biodiversity is the best buffer against change, constituting a vast reservoir of evolutionary possibilities.

In South Africa, white settlers introduced several species of fast-growing Australian acacia for timber, and to stabilise dunes. In the Cape region (see p. 43), the introduced species became more successful than the indigenous vegetation, rapidly replacing thousands of hectares of one of the world's richest floral kingdoms with water-thirsty shrubs that support few of the native birds, insects and reptiles. Today, across South Africa, alien invasive plants use an estimated 3.3 billion cubic metres more water than indigenous plants, in a region that is already prone to drought.

In 1995, the South African government introduced its Working for Water programme and legislation to clear invasive alien species and replant indigenous species. It has since provided over 40,000 jobs nationally, through some 300 programmes, most of them for the poorest of the poor, and is one of the most successful examples anywhere that environmental change can be reversible.

Meanwhile, the Convention on Biodiversity, signed by 150 government leaders at the 1992 Rio Earth Summit, acknowledges that the traditional conservation ideal of preserving pristine nature from the destructive influence of people is no longer viable. Instead, it adopts an 'ecosystem approach', which it defines as "a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way." UNESCO's Man and the Biosphere programme (MAB), launched 21 years before Rio in 1971, anticipated this inclusive approach.

Recently, in partnership with UNESCO's International Hydrological programme (IHP) and the Mountain Research Institute (MRI), MAB set up a network of biosphere reserves in mountain areas to monitor global change – both ›

Biosphere Reserves

UNESCO launched its Man and the Biosphere programme in 1971. Five years later, it named the first 53 Biosphere Reserves in 8 countries. This network has since grown to include today 482 sites in 102 countries.

Biosphere Reserves are areas of land or coast where the aim is to reconcile the conservation of biodiversity with its sustainable use. They are internationally recognized, yet nominated by national governments and remaining under sovereign jurisdiction of the states where they are located.

As a rule they are organized into three interrelated zones, known as the core area, the buffer zone and the transition area. Only the core area requires legal protection, as it is intended to give long-term protection to the landscapes, ecosystems and species it contains. The transition area contains human settlements, agriculture, etc, while the buffer zone helps limit human impacts on the core. Some Biosphere Reserves straddle several countries.

social and climate-related. "Mountain areas are very sensitive to climate change," says Greg Greenwood, Director of MRI. "Higher elevations are expected to warm faster than lower elevations in the global circulation models that we have."

Natarajan Ishwaran, Director of UNESCO's Natural and Earth Sciences Division, is not a 'doom and gloom' supporter either. "The challenge is to identify examples of what works and to replicate them, ideally with short-term results that people can see," he says, stressing that it is essential to be pragmatic. Using the example of illegal logging, he asks: "How do you stop it? It's not just an enforcement issue. First of all you have to start talking to the local logging industry and see if you can win friends and converts who can help make the changes happen in the short term. This can mean some radical approaches, like encouraging the poacher to turn gamekeeper." This has literally become reality in several ecotourism projects.

Perhaps it's time to remember Wendy Campbell-Purdie, a British woman who, in the 1960s, planted 130,000 trees on the edge of the Sahara in Bou Saada (Algeria) as a 'green wall' against desertification. Even if her choice of tree was not ideal, it worked, with crops soon growing in their shade. And 2006 is, after all, the International Year of the Desert. ◆

Peter Coles

The Inuit, First Witnesses of Climate Changes

In the Arctic, Inuit people have been noticing the signs of global warming for years.

As a child, Shari Fox Gearheard used to dig snow caves around her house in Ontario (Canada), crawl inside and fall asleep, "because it was so peaceful". A couple of decades later, now a postdoctoral researcher with the National Oceanic and Atmospheric Administration (NOAA) based at Harvard University, she lives with the Inuit people of Clyde River, Nunavut, on the eastern shores of Baffin Island (Canada). In line with the work of UNESCO's LINKS and MOST programmes that document and promote indigenous knowledge, she is recording the Inuit's observations of climate change.

According to one of the elders Gearheard has interviewed, the weather has become *uggianaqtuq*, which, roughly translated, means 'like a familiar friend behaving strangely'. About 40 or 50 years ago, a snow storm would last for four or five days. On the sixth or seventh day the weather would improve, and remain good for the rest of the season. Nowadays the storms come suddenly with no warning, and more often. This means it is hard for Inuit to know when it is safe to set off on long hunting trips. "Some people from my community lost their lives because they got stranded in a storm that happened unexpectedly," says Norman Attungala, an elder in Baker Lake, several hundred kilometres inland.

Wind patterns have also changed, adding a new danger to hunting trips. "The wind is packing the snow too hard to build igloos," Gearheard explains, "making it impossible to build a shelter and wait out unexpected bad weather." Meanwhile, the motorised skidoos that most hunters now use are less reliable than traditional dog sleds. "Dogs always knew how to get back to their home camp, even during a storm or at night," says Thomas Qaqimat from Baker Lake.

MORE INFORMATION...

Indigenous knowledge best practices: See http://www.unesco.org/most/bpindi.htm

© Shari Gearheard, Nunavut

Peter Paneak, Clyde River, Nunavut.

For Gearheard, the Inuit observations can complement scientific knowledge and vice versa. "As remote sensing, climate models and weather models move to finer scales, Inuit should be partners with scientists, because they can provide 'ground truth' to test remote findings." But, she says, the two cannot always be mapped directly onto one another. "In science," she says, "weather is separated into temperature, pressure, wind, snow depth, and so on. For the Inuit it is a complex whole."

Exchange projects

It is also instructive when science and local observations don't match. For the Inuit, Gearheard notes, *aniuvat* – snow patches that never melt – have "always" been there. But scientific studies of lichen on rocks show that once upon a time, further back in history than Inuit memory goes, the snow was not there. So the melting *aniuvat* "is not necessarily a sign of global warming, but of the environment going back to normal." The Inuit find this interesting, she adds.

The Inuit may not know that the temperature of permafrost has risen by two degrees over the past decades (see box), but they do see their rivers and lakes drying up, as the no longer frozen ground becomes porous, while roads buckle and houses and trees collapse or lean over at bizarre angles. Meanwhile, in Baker Lake, an island to which locals used to canoe in summer can now be reached on foot.

Indigenous peoples from the region are now getting together to pool their experiences, as in the exchange project between the Inuit of Clyde River and Iñupiat of Barrow (Alaska). And, through the Inuit Circumpolar Conference (ICC), they have even formed a pressure group to sue the United States, which they accuse of destroying their way of life by polluting, while being unwilling to reduce greenhouse gas emissions through the Kyoto Protocol. ◆

P.C.

Famine or feast?

Average temperatures have risen in the Arctic over the past few decades at twice the rate of the rest of the world, according to a massive 1,400-page analysis put together by over 250 scientists. Snow cover has shrunk by 10% over the past 30 years, and is expected to decline by a further 10 to 20% by 2070. Sea ice – which, to all intents and purposes is 'land' for the Inuit, polar bears and walrus – has reduced 5% - 10% in extent and 10 - 15% in thickness, says the report, and is expected to decline 10 - 50% by 2100.

One of the reasons the rate of change is faster in polar areas is that, as the snow cover disappears, it exposes bare black rock, which radiates more heat, rather than reflecting it. The report points the finger at human activity outside the region – the emission of greenhouse gases in industrialised countries.

The warming of the Arctic may threaten the traditional way of life of the region's 400,000 indigenous people (in eight nations), drive the polar bear extinct, and switch off ocean currents that warm Europe. Yet it could also bring benefits, says the report, at least in the short term. As permafrost melts, forests become viable further north – a potential source of new revenue and employment, and also a 'sink' to absorb carbon dioxide. Freshwater fish and berries may become more abundant, while new opportunities for agriculture appear. Meanwhile, new shipping lanes could open, gas and oil fields could become exposed for drilling, and new fishing grounds appear as migration patterns change.

But, warns the report, the knock-on effects of such changes are unpredictable, and not limited to the Arctic. As ecosystems get shaken up, new forms of disease could emerge, while sea level from melting snow and permafrost could swamp low–lying coastal areas from Bangladesh to Florida.

Selling the Air We Breathe

Starting this year, countries can now trade a new commodity: greenhouse gases

Clemens Hüttner is no ordinary trader. Since April this year, he has been trading on a brand-new kind of commodity market. He is not dealing in coffee or minerals, though, but industrial emissions of carbon dioxide, one of the so-called greenhouse gases thought to be contributing to a global rise in temperature since the industrial era began.

Under the Kyoto Protocol, which came into force on February 16 this year, 38 industrialised countries, of the total 55 signatories, committed themselves to reduce by 2012 their combined emissions of greenhouse gases to at least 5 percent below the levels they were emitting in 1990. The European Union, as a whole, has committed itself to do even better, reducing its overall emissions by 8% below 1990 levels.

To reach these goals, each of the 38 countries has set target emissions for their polluting industries. At the end of the year, industries that come under target will get "carbon credits" – a sort of pollution allowance – while those that come out over the limit will either have to pay a fine – around 40 euros for each tonne of CO_2 over limit – or will have to buy credits from cleaner industries. Several "carbon exchanges" already exist, the largest being the International Petroleum Exchange in London, where Clemens Hüttner trades. Only European industries are trading until 2008, when the global emission market opens.

So far, says Hüttner, who trades on behalf of a major cement producer, Heidelberg Cement, the market has mostly attracted finance houses and banks, speculating on future rises in the value of carbon credits. "When I started to do this job in early April the price was something like 12 or 13 euros per tonne. Within three months it has become 25 euros. So you can easily make a huge amount of money," he says. But this was not the aim. "The scheme was designed to reduce the emissions of industrials and utilities," he explains.

Under the Kyoto Protocol, industries can also gain emissions credits by "greening" industries in developing countries. At their plant in Indonesia, explains Hüttner, Heidelberg Cement is replacing coal with biomass. "We have a project using coconut shells, or palm oil kernels or palm oil, which is pure biomass and has a very high heating value. Then we invest heavily in the energy efficiency of the plant in general," he says.

The scheme also allows countries or industries to gain carbon credits by investing in reforestation – the trees act as "sinks" for carbon dioxide. But, says Natarajan Ishwaran, Director of UNESCO's Division of Ecological and Earth Sciences, environmentalists are sceptical of the scheme, not least because, he says, "The error is too high in calculating how much carbon dioxide forests, coral reefs and the oceans absorb." This makes it hard to put a value on the credits that industries should earn through planting trees. Meanwhile, critics fear that it will lead to further degradation of the environment if fast-growing, non-indigenous trees are planted in monoculture plantations just to gain credits. ◆

P.C.

Cloud of pollution above India and Bangladesh

Cape Town: Garden Wonderland in the Midst of Urban Sprawl

Instead of building fences around its unique floral heritage, Cape Town (South Africa) explores new ways to involve inhabitants in conservation

The Cape's townships adjoin the Rondevlei Nature Reserve

Despite their romantic names, Cape Town's tough townships like Lavender Hill are not places many Capetonians are likely to venture. Yet, a few hundred metres away, down a surprisingly quiet, tidy street, is the Rondevlei Nature Reserve. Once inside the gate, a haven of tranquil beauty opens up. A kingfisher dives off a tall reed; pelicans, spoonbills and pink flamingos mass on the banks of a *vlei* (lake), and, as night falls, a couple of hippos rise like submarines to wallow and graze.

In Cape Town 'urban' and 'natural' worlds often coincide – or collide. Table Mountain, the heart of the city, is slap in the middle of business and up-market residential areas. Yet it is home to *Fynbos* (pronounced *fain-boss*), a unique vegetation, and the main component of the Cape Floristic Kingdom – the world's richest, and geographically smallest, floral kingdom (plants confined to a geographical area). Some 9,600 species can be found in an area the size of Portugal, 70% of them endemic (found nowhere else), while 1,406 are listed in the World Conservation Union's (IUCN) Red Data book of endangered species. While the Cape floral region was inscribed on UNESCO's World Natural Heritage List in 2004 for its unique flora and fauna, the region also has no less than two biosphere reserves – Kogelberg, just to the east of the city, and the West Coast Biosphere Reserve.

The proximity of this plant biodiversity 'hotspot' to an urban area poses obvious conservation problems, especially given Cape Town's open access policy to its national park – which means no fences and few pay points. ›

› Conservation challenges are multiplied many times over by an explosion of economic migrants from the rural Eastern Cape in search of jobs, arriving at a rate of about 45,000 every three months. Under apartheid, black Africans were not allowed to live in central Cape Town and were confined to townships on the urban edge. Since the late 1980s, though, almost a million (mostly Xhosa people) have settled on the city's outskirts, many in the township of Khayelitsha. These vast slums of tiny houses and tin shacks stretch as far as the eye can see, across the fragile dunes and seasonal wetlands of Cape Flats.

Involving communities

But the Cape Flats are also part of the Cape Floristic Kingdom. Yet, to the new arrivals, it looks like 'scrubland' - an ideal place to put up a makeshift home. "How do you look after biodiversity in a context of extreme poverty, where local communities have little history of involvement in conservation?" asks Tanya Goldman, Project Manager of Cape Flats Nature.

One response, she explains, is the City of Cape Town's Integrated Metropolitan Environment Policy (IMEP), adopted in 2001, according to which "there doesn't have to be a choice between environment and people. You can protect the environment in a way that supports peoples' needs." At the heart of the IMEP is a Biodiversity Strategy, implemented through a network of 261 areas that should preserve a minimum of Cape Town's unique biodiversity. For the moment, Cape Flats Nature is concentrating on four experimental sites.

One, the Edith Stephens Wetland Park, is a modest but promising start. "The City has started to get the message that they won't find support for conservation in the Cape Flats by fencing people out," says Tanya Goldman. "Sustainable conservation management has to win the hearts, involvement and understanding of the surrounding communities." Two of the other three pilot sites are more of a challenge, though. Both the Wolfgat Nature Reserve and Macassar Dunes are sensitive areas. Spectacularly beautiful, and studded with arum lilies, they are also where gangsters dump their victims' bodies.

While Cape Flats Nature is working with traditional healers at Macassar Dunes to grow medicinal plants between the shacks and the dunes – to act as a buffer against further sprawl – Brett Myrdal, Manager of Table Mountain National Park, has a more controversial proposition – housing. He wants to see "a middle class community from the townships overlooking the coastal area." But, he says, "Environmentalists don't see housing as part of a conservation solution. They see it as a threat." What if, in the end, both were right? ◆

P.C.

© Peter Coles, Paris

The Cape Floristic Kingdom is the richest in the world

Facts and figures

- In 2005, 49% of the world's population is living in urban areas. In 2030, that figure is likely to reach 60.8%. The proportion is higher in industrialized countries (74.9%) than it is in developing countries (43.2%). By 2030, those figures will have risen to 81.7% and 57% respectively. And by 2007, for the first time in history, more than half the world's population will be living in urban areas.
- In 2004, forests covered 29.6% of the world's total land area. But between 1990 and 2000, 9.4 million hectares of forest per year were lost to deforestation.
- In 2004, 2,791 species were listed as endangered, 1,490 of them plants and 1,301 animals.

Sources: FAO, United Nations, World Conservation Union, World Bank

THEY WORKED AT UNESCO!

Maria Montessori (1870-1952)


© UNESCO

She revolutionized the childhood education methods of her time and originated a new one which today bears her name. The first woman in Italy to earn a medical degree, she began her career in education as a teacher of handicapped children. To this day, her philosophy of education – meeting the physical, mental, spiritual and emotional needs of children – continues to be of paramount importance to all those who believe in the overwhelming influence of the first six years of a child's life. Member of the Italian delegation to the 5th session of the General Conference in 1950, she received the conference's homage 40 years later when it passed a resolution to commemorate the 50th anniversary of her death in 2002.

Amadou Hampâté Bâ (1901-1991)


© UNESCO/Claude Bablin

This Malian diplomat made an outstanding contribution to winning international recognition for African oral cultures, notably at UNESCO on whose Executive Board he served between 1962 and 1970. While he revealed the wealth and value of these cultures, he also drew attention to their precariousness and played an active role in safeguarding them. His manuscript archives, the *Fonds Amadou Hampâté Bâ*, is the product of half a century's research into African oral traditions. His story *L'étrange destin de Wangrin* (The Fortunes of Wangrin) won him the "Grand Prix littéraire de l'Afrique noire" in 1976. He is credited with the famous quotation: "The death of an old man is like the burning of a library."

Cu Huy Cân (1919-2005)


© UNESCO

This poet was an Executive Board member from the Socialist Republic of Vietnam from 1978 to 1983. During the period of literary effervescence in the 1940s, when he was 23, he published his anthology of poems, *Lua Thiêng* (Sacred Fire), which placed him at the forefront of a new poetry movement. During this same period, he was active in the independence movement, after which he occupied several ministerial posts, in agriculture and culture. Prolific throughout his life, he received the Ho Chi Minh Prize in 1996 from the State. A collection of his poems was translated into English in 2001, under the title *Tides of the Oriental Sea*.

Julio Cortázar (1914-1984)


© François Lehr/Gamma, Paris

Born in Brussels of Argentine parents, Julio Cortázar spent his childhood and youth in Argentina, where he worked at the book chamber. In 1951, when Juan Domingo Peron was in power, he received a grant that allowed him to come and live in exile in Paris. He started working for UNESCO in 1952, as a freelance translator. He then became translator for the General Conference in Montevideo in 1954, and met Mario Vargas Llosa, who was also a translator, at the General Conference in Athens. Cortázar never abandoned his allegiance to the Latin-American leftists (Cuba and Nicaragua). In December 1982, already a famous writer, he spoke at the world conference on cultural policy organized by UNESCO in Mexico. His numerous stories, brimming with humor and imagination, and the innovative structure of such books as *Marelle* and *Libro de Manuel* make him one of Argentina's greatest writers.

Alva Myrdal (1902-1986)


© UNESCO

She was a major influence in the promotion of social welfare in her native Sweden in the 1930s. In the aftermath of the Second World War, she turned her efforts towards international questions, first heading the United Nations' section on welfare policy from 1949 to 1950, then directing UNESCO's Department of Social Sciences from 1951 to 1955. She later served as her country's ambassador to India, Ceylon and Nepal, then led the Swedish delegation to the UN Disarmament Conference in Geneva in 1962. She was also instrumental in the establishment of the Stockholm Peace Research Institute (SIPRI). In 1982, she received the Nobel Peace Prize.

Pablo Neruda (1904-1973)


© UNESCO

Neftalí Ricardo Reyes Basoalto adopted his pseudonym in 1917: Pablo Neruda. A Communist party activist in Chile, he energetically supported Salvador Allende's government, which sent him to Paris in 1970 as Chilean ambassador and Permanent Delegate to UNESCO. In that capacity, he served on UNESCO's Executive Board in 1972 and 1973. Works such as *Canto general*, *Twenty Love Poems and a Song of Despair* and *The Captain's Verses* were translated world-wide, and Neruda won the Nobel Prize for literature in 1971. In 2004, UNESCO's General Conference made a decision to participate in the celebration of the 100th anniversary of his birth .

Taha Hussain (1889-1973)


© UNESCO

Considered a founding father of modern culture in the Arab world, Taha Hussein was appointed Minister of Education of his country, Egypt, in 1950. He instigated the creation of Ayn Sham University and led the country to institute free primary education. Hussain, who had lost his sight at the age of three, studied at Al Azhar University in Cairo and the Sorbonne in Paris. As a novelist, writer of essays, literary critic and university professor, he influenced several generations of intellectuals all over the Arab world. He concentrated his creative energy on helping to bring the Arab countries into the modern world. He was a member of UNESCO's Executive Board and vice-president of the General Conference in 1950-1951.

Edouard Glissant (1928-


© Ulf Andersen/Gamma

A major author of West Indian literature, Glissant produced an abundance of works including poems, essays, a play and novels. In 1967, he created the *Institut martiniquais d'études* to promote West Indian studies before becoming the editor of UNESCO's *Courier* magazine (1982-1988). A student of Aimé Césaire at the Schoelcher *lycée* in Fort-de-France, he took up the anti-colonial cause, demonstrating in favour of Algerian independence, among other issues. From *Un champ d'îles* (1953), and *La Terre inquiète* (1954) to the long poem *Les Indes* (1956), his writing evokes the West Indian people's long oppression. His novels – *La Lézarde* (1958) or *Malemort* (1975) – also evoke a people haunted by its painful history, in search of its identity.

René Depestre (1926-)


© UNESCO

The Haitian author and poet's work is inspired by Caribbean magical realism. Exiled from his country since 1946, he lived in Cuba, Chile, Italy and France, where he joined UNESCO in 1979, first as a member of the Director-General's cabinet (1979-1982), then as a consultant in the Culture Sector. A prominent figure in contemporary Haitian literature, Depestre is a Communist, and his first works reveal his revolutionary doctrine *Pour la révolution, pour la poésie*, 1974 ; *Poète à Cuba*, 1976). At the same time, he was writing "solar love stories" like *Alleluïa pour une femme-jardin* (1973) that mingles poetry and eroticism. He received France's Renaudot literary prize in 1988 for his novel *Hadriana dans tous mes rêves*.

José Ángel Valente Docasar (1929-2000)

University professor, poet and writer of essays, José Ángel Valente Docasar was born in Orense (Spain) and studied law in Santiago de Compostela as well as romanesque philology in Madrid. In the 1950s, he taught at Oxford University (UK), and in 1958 moved to Geneva to teach and work at the United Nations. Between 1982 and 1985, he was head of the Spanish Translation Section at UNESCO in Paris. He made his mark on Spanish literature as of 1954, when he won the Adonais prize for his collection of poems *A modo de esperanza*. Particularly noteworthy among his many works: *Poemas a Lázaro* (*Premio de la Crítica* 1960), *Interior con figuras* (1976), and *El fin de la edad de plata* followed by *Nueve enunciaciones* (1995).

Indira Gandhi (1917-1984)


© UNESCO

Her father, Jawaharlal Nehru, was independent India's first prime minister, while she herself was the first woman to hold the post in 1966, serving four terms. Assassinated in 1984, she left behind a legacy as a champion of issues affecting the world's developing countries. Elected president of India's National Congress Party in 1959, she served as a member UNESCO's Executive Board from 1960 to 1964. She paved the way for environmental protection policies and self-sufficiency in food grain production in India.

A Burst of Creativity

Books, like films and records, are vehicles of identity and meaning

In the course of impassioned debates, the Convention on the Protection and Promotion of the Diversity of Cultural Expressions was adopted during the 33rd session of UNESCO's General Conference. Its purpose: to protect goods and services that are vehicles of identity, values and meaning. Back in 2001, the Universal Declaration on Cultural Diversity had already raised cultural diversity to the level of "common heritage of humanity". But this time the Convention, a binding legal instrument, commits the States that sign it.

May 2005, a meeting is convened in St Petersburg (Russian Federation) to prepare the World Summit on the Information Society (WSIS). September 2005, academic exchanges are organized in Ouagadougou (Burkina Faso). October 2005, a large advertising company sponsors a photography prize. What do these events have in common? All of them, in different ways, claim to relate to cultural diversity.

This not a new idea. The "fruitful diversity of cultures" is already mentioned in the 1945 UNESCO Constitution. But it has taken on particular prominence since globalization came along. Given that now all cultures are able to mingle (about 175 million people live outside of their countries of origin, and one person out of ten living in the industrialized countries is an immigrant, according to the United Nations' 2002 International Migration Report), we need to remember that all forms of expression, value systems, traditions and beliefs are unique, fragile and irreplaceable. Their fragility is best illustrated when we look at languages. Out of 6,000 known languages, nearly 50% are estimated to be threatened with extinction. On the internet, 90% of languages are not represented. Right there, many cultures are threatened. In bridging the digital divide, defending copyright, collecting data on local and indigenous knowledge or safeguarding tangible and intangible heritage, UNESCO has been actively promoting cultural diversity since its creation.

Ethical imperative

"Cultural diversity has become pivotal to the future of societies and requires renewed action," declared Director-General Koichiro Matsuura on May 21, 2005 (1). The unanimous adoption in November 2001 of the Universal Declaration on Cultural Diversity demonstrates how important the issue has become to the international community. For the first time, it created a normative instrument that raises cultural diversity to the rank of "common heritage of humanity… as necessary for humankind as biodiversity is for nature", and makes its safeguarding an ethical imperative indispensable to respect human dignity. A year later, at the Johannesburg World Summit on Sustainable Development in September 2002, a Declaration was adopted that recognizes cultural diversity as a collective force that must be promoted to ensure sustainable development (para. 16). But a decisive step was taken when the 33rd session of the UNESCO General Conference adopted in October 2005 the International Convention on the Protection and Promotion of the Diversity of Cultural Expressions, "considered to have been greatly undermined by current processes and not as yet enjoying any particular protection" (2). This time, unlike the Declaration, the Convention is a binding legal instrument and represents a commitment by the States that ratify it.

Its adoption was not a foregone conclusion. Three aspects were particularly controversial. The first has to do with definitions, notably of cultural goods and services: should they be considered products like any other goods? Finally, in the preamble, they are defined as having "both an economic and a cultural nature… " and "must therefore not be treated as solely having commercial value". And the aim of the Convention, expressed in Article I, is "to give recognition to the distinctive nature of cultural activities, goods and services as vehicles of identity, values and meaning". Simply put, that means that films, CDs, or books are not only subject to the rules of the marketplace, but, as vehicles for identity, values and meaning, they may benefit from protection, i.e. preservation, safeguarding or promotion, as specified in the definitions. The second article affirms that States Parties may formulate cultural policies to support creativity. They may, for instance, subsidize arts and culture, or grant tax reductions to encourage and protect their national cultures, taking into consideration human rights and the free flow of information. Finally, the third point concerns Article 20, which indicates that the Convention will not conflict with other treaties, but will work on the principle of "mutual supportiveness, complementarity and nonsubordination". Less ardently discussed, the point concerning international cultural cooperation (Articles 12 to 19) sets out the conditions for a new form of solidarity that places culture at the heart of development.

Finally, at the close of the passionate debates, the Convention was adopted. It will go into effect as soon as it has 30 States Parties. ◆

1. Message of the Director-General of UNESCO on the occasion of the World Day for Cultural Diversity for Dialogue and Development, 21 May 2005
2. Ibid

The Global Alliance on All Fronts

Launched by UNESCO in 2002, the Global Alliance helps the countries in the South to boost their cultural production.

Reinforcing the independent music industry in Colombia, sponsoring a competition of digital short films in Jordan, developing copyright in Namibia, promoting traditional Tibetan weaving on the global market…These are examples of the projects implemented by UNESCO through the Global Alliance for Cultural Diversity. The initiative, launched in 2002, aims to strengthen the capacity of cultural industries in developing countries in production and distribution. The challenge is major: as vehicles of identity and meaning, cultural goods and services hold significant symbolic value and form a powerful component of cultural diversity. But many countries lack the means necessary to develop these industries. Only rarely can they remunerate their artists so that they can make a living from their art, much less attract international attention to their works.

The Global Alliance therefore works to create new partnerships between the state, the private sector and civil society, in order to create conditions favourable to the expression of creativity and the plurality of ideas, as well as making them available and accessible to all.

Economic dimension

Meanwhile, cultural goods and services comprise an important economic dimension. In the last few years, in fact, cultural and creative industries represent one of the most dynamic economic sectors. To help boost cultural enterprise, the Global Alliance works in three directions: normative action (regulations, legislation, employment benefits, copyright); capacity building in production; and access to funding. The Alliance mobilizes some 500 partners in 90 countries: government agencies, businesses, NGOs, artists. The proliferation of partnerships between the state, the private sector and civil society make it possible to increase significantly the sums needed for each project. In the last three years, these projects have raised nearly three million dollars.

Other initiatives are planned, such as the organization of a large forum on cultural diversity in China at the end of 2005, the establish-

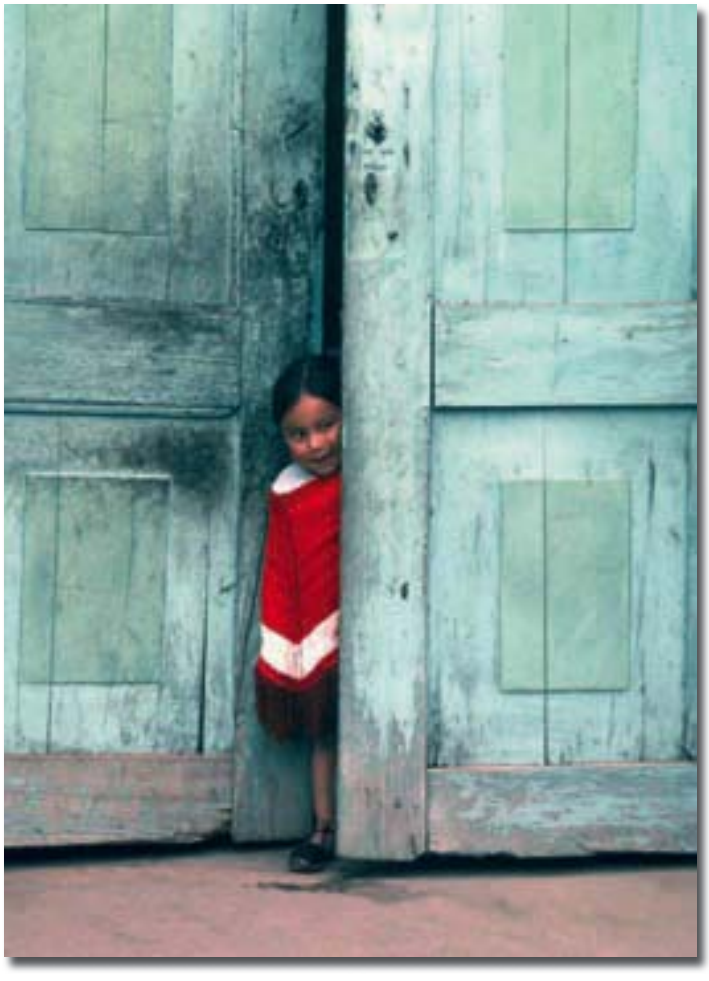
© UNESCO/Dominique Roger

The poorer countries are rarely able to help artists make a living from their art

ment of government policy concerning books in Gambia, Guinea and Senegal, as well as measures to protect copyright and fight piracy in Lithuania, Bulgaria or Zimbabwe. In 2006, the Motion Picture Association (MPA), which brings together the Global Alliance and Hollywood studios, will stage workshops on production. The Alliance has also initiated a network of "creative cities" that links cities possessing a rich tradition in literature, cinema, music, design or gastronomy. ◆

"Cultural Diversity can neither be decreed nor improvised"

For the first time in 2001, UNESCO recognized cultural diversity as the "common heritage of humanity".



© UNESCO/Andes/CZAP/ASA

We have come a long way from the equal dignity of cultures to the diversity of cultural expressions

The UNESCO Constitution mandates the Organization both to respect the "fruitful diversity of (...) cultures" and to "promote the free flow of ideas by word and image". Since the Constitution was adopted, UNESCO has spared no effort to fulfil this double mission. Its progression between 1946 and 2005 is easily followed.

Diversity remains the central issue, but it has been a long road in a rapidly changing world from recognizing the diversity between cultures, to affirming that they are of equal dignity, then to recognizing cultural diversity in itself and, finally, the diversity of cultural expressions. In fact, cultural diversity can neither be decreed nor improvised. It constantly raises new challenges and calls for new forms of action.

The UNESCO Universal Declaration on Cultural Diversity (2001), for the first time, recognized cultural diversity as "the common heritage of humanity"; its defence is considered as an ›

› ethical and concrete imperative that cannot be dissociated from respect for the dignity of the individual.

A relative notion

Because of its sweeping force, the Declaration gave rise to wide debate: often used as a slogan, cultural diversity remains a relative notion. This explains that various, and often divergent, definitions can be proposed in economic circles, the academic community, the world of politics, and by culture professionals or civil society. The Declaration did not end the recurring debate on the role of the State in determining cultural policies: some believe that culture belongs to the private sector and, as a consequence, reject all intervention in this field. Others believe that a democratic state must be the guarantor of a national and international environment favourable to the blossoming of local and global cultural diversity. Finally, the developing countries, often expressing themselves through the Group of 77 (today 130 countries including China), refuse to be the providers of global cultural diversity while being denied access to the symbolic and economic benefits derived from it.

In this context, in which a series of new questions were raised, particularly because of the acceleration of globalization, discussions were opened in 2003 to draft a Convention on the Protection and Promotion of the Diversity of Cultural Expressions, to be examined by the 33d session of the General Conference in October. This new standard setting instrument is linked to precise aspects of the Universal Declaration on Cultural Diversity as stipulated in Articles 8 through 11. That is, the need to recognize that cultural goods and services have an identity, values and meaning and cannot be considered in the same manner as manufactured or consumer goods; the need for States to take all measures necessary to protect and promote diversity of cultural expression while ensuring the free flow of ideas and works; and finally the need to redefine international cooperation, the keystone of the Convention.

By drafting a Convention within UNESCO, the Member States intend to contribute to the recognition of creative diversity, the driving force of development, of international solidarity, and of mutual comprehension. A wide availability of this creative diversity, whether emanating from interior or exterior sources, offers cultural and social advantages far beyond its strictly commercial dimension. Particular care was taken to avoid certain pitfalls: a polarized debate between the "all cultural" and the "all commercial"; cultural relativism that, in the name of cultural diversity, recognizes cultural practices contrary to the basic principles of human rights; and a narrow conception of culture as simply entertainment and not as a source of identity and dignity for individuals and societies.

Diversity and development

This shows that the Draft Convention was conceived as a means to link "culture and development", the latter term being understood in both its tangible and symbolic sense: economic growth combined with the fulfilment of human beings enjoying their basic rights, open to the world without losing their bearings. It is also a sign that the Convention was conceived as a means to link "culture and international solidarity", by favouring exchanges and partnerships that are particularly beneficial to countries whose cultural expression has been damaged. Finally, it is a sign that the Convention was conceived as a means of tightening the ties between "culture and mutual comprehension": each type of creation carries the seeds of the discovery of oneself and of others. In this, it is part of the mysterious alchemy of interaction and releases the tremendous energy of cultural diversity, which does not consist of a fixed inventory of variations or variables but which carries the hope, forever renewed, of a more human future.

We all contribute to and we all benefit from cultural diversity, and we are therefore all responsible for safeguarding it. ◆

Katerina Stenou
Director of the Division of Cultural Policies and Intercultural Dialogue

CULTURAL DIVERSITY AND HERITAGE

MUSEUM INTERNATIONAL N° 227

This issue of *MUSEUM International* proposes to study the notion of heritage's cultural diversity starting with the relation to time. The different articles explore how the diversity of heritage can be envisaged as the expression of the diversity of time in the history of cultures. Furthermore, they attempt to analyze how this diversity of time is reflected in the global project of safeguarding heritage.

Major Works

Braille uniformity

UNESCO's concern with Braille dates back to 1949 when, upon a request from India, it undertook the pioneering task of surveying the world situation of the Braille system. This resulted in the establishment in 1953 of the World Braille Uniformity Programme, which standardized literary codes, enabling blind people around the world to read the same Braille books, learn foreign languages, exchange ideas and experiences. This expanded later to include science, mathematics and music notations. UNESCO also launched the World Braille Council, thus providing an international venue for Braille matters to be discussed. Again in 1953, UNESCO published *World Braille Usage*, as well as the *Braille Courier* in English, French, Spanish and Korean.

Index Translationum

This is the only international index of translations in the world, a bibliographic database that contains references to 1.5 million books translated and published in all subjects in 100 countries. To date, some 250,000 authors are listed and over 500 languages included, and the list is updated annually with at least 100,000 new references, thus becoming the largest of UNESCO's databases. Today, it is available on CD-ROM and online.

More information: http://portal.unesco.org/culture/

International safeguarding campaigns

If not for UNESCO's international campaign, the Aswan High Dam would have flooded the Nile valley, site of the most important Nubian temples. Following an appeal from the governments of Egypt and Sudan, an international team began dismantling the temples in 1960, then reconstructed them on higher ground, a massive operation successfully concluded in 1980. The Nubian campaign showed the importance of international solidarity and shared responsibility. In addition to the 26 campaigns, operational projects have also been launched, protecting monuments and sites such as those in Angkor, Mostar and Ethiopia.

More information: http://portal.unesco.org/culture/

© UNESCO/Nenadovic

International Safeguarding Campaign of the Monuments of Nubia.

Multiple History book series

Among the most important publishing projects UNESCO has undertaken is the historiography series on Africa, the Caribbean, Central Asia, Latin America, and humanity. Comprising several volumes each, some of these have been translated into ten languages. These books are considered major reference works, providing a comprehensive approach to the history of ideas, civilizations, societies and institutions in their respective regions.

More information: www.unesco.org/publishing

Roads of Dialogue

© UNESCO

On the Silk Road, Uzbekistan.

To find out more about the interplay between cultural influences and people's movements from one region to another, UNESCO launched a series of projects to study the routes that have connected the world's peoples. Scientists and scholars the world over have been mobilized in a far-reaching enterprise of research and several expeditions by land and sea. This began with the Silk Roads in 1988, the Iron Road (African metallurgy) and Roads of Faith (Jerusalem) both in 1991, *Vaka Moana* – Ocean Roads (South Pacific) in 1992, the Slave Route in 1994, and the Routes of al-Andalus (Muslim Spain) in 1995.

More information: http://portal.unesco.org/culture/

UNESCO Collection of Representative Works

This collection was launched in 1948 as a direct subsidy programme to encourage the translation, publication and distribution in major languages of works of literary and cultural importance not well-known outside their original national boundaries or linguistic communities. Thanks to this collection, Nobel laureates like Yasunari Kawabata and George Seferis have been accessible to a wider public. The current catalogue includes some 1,400 works.

More information: http://www.unesco.org/culture/

The Rush for Water

In September 2000, countries participating in the United Nations Millennium Summit pledged to reduce by half the number of people in the world deprived of clean water, between now and 2015. This is a highly ambitious goal, considering it means every day providing access to running water to another 300,000 people. Given the circumstances, how should the world respond to anticipated shortages? Do we need more science and engineering, or is the first priority to change the way we use this vital resource?

The Yangtze, great river that irrigates southern China

Water is set to define our new century in the way that oil defined its predecessor. Across the world there are disturbing signs that the world is running out of water. In 2015, according to current estimates, 40% of the world's population will experience difficulties in obtaining a supply of water sufficient for daily needs. Already certain regions – northern China, the western United States, North Africa and western Asia – are pumping water faster than aquifer sources can be replenished. Some of the world's largest and best-known rivers – the Indus and the Nile, the Yellow River and the Ganges, the Colorado and the Rio Grande – no longer reach the sea in any volume for part of the year. All are being exhausted by the demands of irrigating water-hungry crops and taps in burgeoning cities.

Among other examples, Lake Chad has decreased in size by four-fifths in the last 40 years. Wells too are emptying as we pump out underground reserves that have survived for thousands of years. The loss of these resources is a hidden holocaust on a par with the destruction of rainforests; yet it is barely remarked upon.

Worldwide, we are 'mining' some 200 cubic kilometres of water a year. Half a billion people are consuming wheat and rice irrigated with water reserves that are not being replenished.

Moving water

Can science come to the rescue? This is highly unlikely. True, ever-bigger engineering projects can move water round the planet. In 2003 at the World Water Forum a coalition of governments and industry leaders called for a doubling in the number of large dams across the world. But many would be on rivers already running dry.

Another idea is to move water between river basins. China is currently spending tens of billions of dollars on three giant transfer schemes to take water from its great southern river, the Yangtze, to relieve the artery of northern China, the Yellow River. India has an even bigger plan, currently under discussion, to divert part of the flow of its great northern monsoon rivers, like the Ganges and Brahmaputra, to its arid south and west – at a cost some believe could reach US$200 billion. There are schemes too to divert Congo River water into the Sahara and divert Australia's northern tropical rivers into its desert interior.

But these schemes are hugely costly, and cheaper solutions are available. One way of relieving local water crises is by moving water in the form of food. There is a huge hidden trade in what is being called "virtual water", defined as the water needed to grow crops or produce other products that would have used large amounts of water if grown at home.

"In recent years, water has become a hidden part of world trade," says Arjen Hoekstra, until recently at UNESCO's Institute for Water Education, in Delft, the Netherlands. "Whenever we buy a T-shirt made of Pakistani cotton, or eat Thai rice or burgers made of meat from Central America, we are influencing the hydrology of those countries – taking a share of the River Indus, the Mekong or the Costa Rican rains."

Hoekstra estimates the global virtual water trade at around 1,000 cubic kilometres a year, mostly in crops like grains, vegetable oil, sugar and cotton. "About 15% of the water used in the world for human purposes is not used for domestic consumption but for export in virtual form," he adds.

This trade is essential for the survival of some countries, especially in the Middle East. Iran, Egypt and Algeria could starve otherwise. Water-stressed Jordan effectively imports between 60 and 90% of its water in the form of food. More water flows into the Middle East each year as a result of imports of "virtual water" than flows down the River Nile.

The price of virtual water

But, he says, virtual water is sold as a virtually free resource: "Water is generally priced far below its real economic, social and environmental cost." Pakistan, for instance, consumes a third of the flow of the River Indus in order to grow cotton for export. When the Soviet Union transformed the deserts of Central Asia into a vast cotton plantation, it sowed the seeds of the destruction of the Aral Sea. Hoekstra estimates the European market for cotton alone is responsible for a fifth of the emptying of the sea.

If on the contrary virtual water were properly priced, it could act as a global market to help the world make better use of its limited supply of water. And it would be much more efficient than moving water round in bulk. But, besides this route towards the globalisation of water supplies, UNESCO's water scientists have taken more interest in the subtler and cheaper arts of reviving traditional water systems – water systems that give communities greater control over their own water supplies.

Often these have the advantage of being cheaper, and of making better and more sustainable use of local water resources. They represent one route towards solving water crises. We need to find others, to help prevent water from becoming a luxury available only to a privileged few. ◆

Fred Pearce

Back to the Future

Dams are not the only way to capture water. Certain traditional water-gathering technologies have proven efficient.

Typically, if governments want more water, they invariably demand a new dam. But there are other ways – ways that are often more efficient, cheaper and give control of water supplies back to the communities who use them. Some believe it is time for a revival of ancient techniques in a modern setting – techniques that were forgotten during the 20th century could make a comeback in the 21st.

Take the long underground water tunnels known as qanats. They are one of the great engineering treasures of the Middle East, Central Asia and North Africa. In these arid regions, rain falls only sporadically and mostly in the mountains. The water swiftly percolates underground. The Persians long ago learned to excavate these springs, 'chasing' the water back into the hillside by digging horizontal tunnels.

In Iran alone there are an estimated 50,000 qanats. Assembled end to end, they would reach two-thirds of the way to the moon. Wherever the Persians went, they took the secrets of qanats. Consequently, the technology spread along the Silk Road to Afghanistan and China, through Arabia and along the North coast of Africa as far as Spain.

As recently as the 1960s, their total discharge in Iran was equivalent to the flow of twelve River Niles. In the hot desert of central Iran, the ancient city of Yazd still uses qanats up to 60 kilometres long to bring water from the snow-covered Mount Sir. When an earthquake struck Bam in eastern Iran in late 2003, one of the first discoveries made by aid workers was that the town was entirely dependent on qanats for water – and most of the tunnels had collapsed in the quake.

Reinvesting in old methods

Qanats are in decline because in many places, boreholes powered by modern water pumps have lowered water tables, drying up many qanats. But Andras Szollosi-Nagy, director of UNESCO's Division of Water Sciences, says they have hydrological qualities that should be in great demand. They are self-regulating because, unlike electric pumps, they tap the aquifer only up to the limit of natural replenishment. If properly designed and maintained, they are, as they call them in Yemen, "unfailing springs" that keep going in all but the worst droughts.

Some modern water engineers believe that the difficult and dangerous work of qanat digging could be mechanised. But meanwhile, says Szollosi-Nagy, there is a good case for making better use of existing qanats; and for protecting them by placing restrictions on pumped boreholes nearby.

This is already the case in Oman, where the government has paid for extensive repairs to 6,000 aflaj. In the Turfan basin in western China, more than a thousand qanats dug during the Han and Qing dynasties were renovated in the 1990s.

"It is also vitally important to conserve and research the basic skills and technologies of

Terraced rice paddies in Java, Indonesia

Restoration of qanats in Yadz, Iran

qanats," says Szollosi-Nagy, "as well as the structures themselves." In an effort to do that UNESCO has sponsored the creation of an international museum and centre in the Iranian 'qanat capital' of Yazd.

Terraces for mountain farming

Qanats are not the only technology worth revitalising for sustainable water use in arid zones. The terraced hillsides of Asia could play a similar role. These huge and sophisticated earthworks turn mountain slopes into towering 'staircases' of narrow fields. Each step is irrigated by water brought down the mountainside from springs or reservoirs, using a network of canals, sluices, and pipes.

Among the most spectacular examples are the rice terraces of northern Luzon, the largest island in the Philippines, which are now ›

Rainwater harvesting

This technology is as old as the hills: catching and storing rainwater. Communities that still use it today have greater control over water resources than those that rely on distant dams or state-run irrigation systems. In India in particular, rain water harvesting is becoming more and more widespread.

Vedic scholars, local politicians and environmental activists have all played their part. One initiative, set up in western India, persuaded tens of thousands of villagers to construct low mud walls on their fields to divert the monsoon rains directly down some 300,000 specially adapted wells.

"Cities can do it, too. Many Indian cities have water reservoirs known as tankas and other structures for collecting the rains," says Sunita Narain, director of the Delhi-based Centre for Science and the Environment, an outspoken advocate. In Bangalore, in India's 'Silicon Valley', they are trying to boost the aquifers by rehabilitating the city's 60 ancient lakes.

Why not develop these concepts on a much larger scale? There are proposals for the large-scale diversion of the monsoon floodwaters of the Ganges into the aquifer beneath its plain by pouring river water into unlined irrigation canals and let it seep underground – thus turning conventional notions of irrigation efficiency on their head.

› UNESCO World Heritage Sites. Growing rice on hillside terraces is one of the most characteristic activities of the whole of Asia. Certainly no other societies have proved capable of sustaining such dense populations in mountain areas for century after century. But the sheer hard labour involved in maintaining and farming the terraces and irrigation channels has caused many to be abandoned. The steep terraces and narrow access paths mean that most modern farm machinery cannot be used.

The stories of qanats and terraces seem remarkably similar. Can the world afford to lose the skills and insights that they contain? This is a critical issue to be resolved if the hilly areas of the world are to remain productive. ◆

F.P

The Mekong: an Exception to the Rule

Unlike most great rivers, which have lost their natural fecundity, the Mekong has succeeded in preserving its resources.

© John Vink/Magnum, Paris

Once the world's rivers teemed with fish. Then during the 20th century, most of them were barricaded by dams that tamed their wild waters. Almost everywhere this has caused a drastic decline in wild fisheries. One of the few places this has not happened is the Mekong River, the great artery of Southeast Asia, where half a century of warfare kept the dam-builders away.

Maintaining natural fecundity

Here, without barriers, the fish have prospered, especially in a vast forested basin off the main river that still floods in the monsoon season, called the Tonle Sap, or Great Lake. The lake is a UNESCO Biosphere Reserve. Its complex hydrology, in which the flow of the river that connects it to the main river reverses its direction twice a year, maintains it as the nursery of the world's largest inland fishery, and the source of livelihood for more than a million local people, according to a joint study by UNESCO scientists and Columbia University in New York.

The Tonle Sap in Cambodia is an enormous fishing reserve

The lake has a long history of sustaining large populations. On its shores sits the World Heritage site of Angkor Wat, one of the great jungle civilisations 1,000 years ago, which fed itself on fish from the lake and rice from the paddies that it watered.

Today the Mekong is threatened by increasing demands on the river's resources, from hydroelectric power companies, cities who want water supplies, and navigators who want to dredge its rapids. UNESCO scientists are working with the Cambodian government and the intergovernmental UNESCO-backed Mekong River Commission on proposals to integrate uses of the river to maintain its extraordinary fecundity.

This forms part of a wider UNESCO initiative that encourages research on how best to maintain and revive the natural fecundity of river systems, often by concentrating on the wetland fish nurseries within their catchments. Other examples include the Sudd wetland on the Nile, the Iquitos floodplain in Peru and the wetlands of the Yellow River. But the Mekong, as the least domesticated, is a good place to start.

"The Mekong is not just another river," says Chris Barlow of the Mekong River Commission. "It is the least modified of all the major rivers of the world. The fisheries are a source of natural wealth for the poor. If they were destroyed, people's only alternative would be a job in a factory making textiles for the West." ◆

F.P

Water Wars and Peace

If we do not establish the means to ensure international cooperation, water could become a major source of conflict.

If water is set to dominate our 21st century world, then do we risk water wars? Many believe so. One vital necessity is a global reconciliation service, set up this year by UNESCO and the World Water Council. The Water Cooperation Facility is based at UNESCO in Paris. Its mission is to "promote cooperation, peace and prosperity in developing and managing transboundary waters."

The task is potentially huge. Almost half the world's population lives in international river basins. Two-thirds of these basins have no treaties for sharing their water. The River Nile passes through ten countries. The Danube, Rhine, Niger and Congo all pass through nine, and the Zambezi through eight.

Africa – a continent of haphazard boundaries mostly created in the chaos of imperial rule – has 80 transboundary rivers. In Asia, Bangladesh and Pakistan receive more than 90% of their water from India. A meeting organised by UNESCO in Greece late last year heard how the fracturing of the former Yugoslavia has created seven new shared river basins. ›

© Laurent Monlaüi/Rapho, Paris

In Bangladesh, a woman collects water from the Ganges

› Increasing numbers of countries also share underground water reserves. Jordan shares with Saudi Arabia the Disi aquifer that represents its "last substantial unexploited water resource", according to a UN study. The vast Nubian basin aquifer straddles the borders between Libya, Egypt, Sudan and Chad.

Lack of knowledge about underground water resources is a major cause of tension. So UNESCO is currently undertaking a project to create the world's most detailed map of Internationally Shared Aquifer Resources (ISARM). The African phase of the survey mapped 20 cross-border aquifers never delineated before. Ghanaians discovered they share an aquifer with Cote d'Ivoire. Benin learned that the aquifer providing water for the city of Cotonou extends across the border into Togo.

ISARM is helping these countries draw up rules for sharing the water. It has also serves as a meeting place where Israeli and Palestinian hydrologists share data about the much-disputed mountain aquifer that straddles the West Bank. ◆

F.P

Half an Olympic-size swimming pool per person

Few of us realise how much water it takes to get us through the day. On average, we drink no more than five litres. Even after washing and flushing the toilet, we usually consume no more than 150 litres. But when we add in the water needed to grow what we eat and drink, the numbers soar.

It takes between 2,000 and 5,000 litres of water to grow one kilo of rice, over 1,000 litres for a kilo of wheat, between 2,000 and 11,000 litres to grow the feed for enough cow to make a quarter-pound hamburger, and between 2,000 and 4,000 litres for that cow to fill its udders with a litre of milk.

Every teaspoonful of sugar requires 50 cups of water, and every cup of coffee 140 litres. Hoekstra calculates that his fellow Netherlanders require the virtual-water equivalent of 4% of the flow of the Rhine to produce the coffee they drink in a year. To feed and clothe a typical meat-eating Westerner for a year takes around 1,500 cubic metres – rather more than half the contents of an Olympic-size swimming pool.

UNESCO IN NOVELS

UNESCO is featured in a number of novels with fictional characters working there. Some examples:

"Stanley had a job at UNESCO; he travelled to unexpected places like Turkestan or the Philippines."

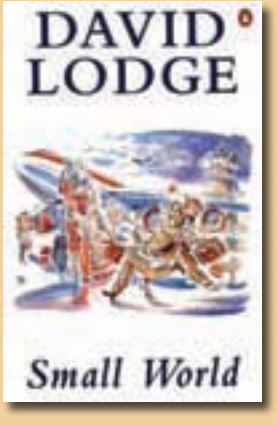
The Prone Gunman
Jean-Patrick Manchette, 1981.

"I sat down in my old seat and, in order not to be disagreeable, told him I was concerned in TECHNICAL AID TO UNDERDEVELOPED COUNTRIES (…). He seemed to be impressed by UNESCO, as he was by anything international, he stopped treating me as a "Switzer" and listened as though I were an authority, with positive reverence, interested to the point of subservience (…)"

Homo Faber. A Report
Max Frisch, 1957.

"But I was really very lucky. Teaching Spanish at the Berlitz School in Paris, writing news bulletins at France-Presse, translating for UNESCO, dubbing films in the studios at Gennevillers, or preparing programs for the French national radio-television network, I had always found jobs that brought in enough to live on, yet allowed me to devote at least half of each day exclusively to my writing."

Aunt Julia and the Scriptwriter
Mario Vargas Llosa, 1977.



"And what else," said Morris, with studied casualness, "do they say about this chair?" He did not really have to wait for her reply to know that here, at last, was a prize worthy of his ambition. The UNESCO Chair of Literary Criticism! That had to carry the highest salary in the profession."

Small World
David Lodge, 1984.

Bridging the North South Divide

Poverty can be measured not only in economic or social terms. In these times of globalization, the planet is now also divided between those who have mastered new information and communication technology (ICT) and those who have not. This "digital divide" is at the heart of the World Summit on the Information Society (WSIS), held in Tunis on November 16-18, 2005.

When it first appeared, the internet seemed a most auspicious tool. It would enable the planet to become the "global village" envisaged by Marshall McLuhan. Through the Web, the poor countries would be able to benefit, with unprecedented ease, from a myriad of databases, from training, from online courses, all of which would provide access to the knowledge society and allow these countries to catch up progressively with the pack of prosperous nations. In 2001, a United Nations Development Programme (UNDP) report stated that technological networks are "transforming the traditional map of development" and "creating the potential to realize in a decade progress that required generations in the past."

Now that a few years have passed, this euphoria has somewhat subsided. The tool that provides immediate access to huge quantities of information remains as promising as ever, but there is now a greater awareness of the obstacles to be overcome in order to provide access for all. In fact, the digital divide, the term applied to describe the technological gap between the North and the South, has widened. A few figures suffice to prove this assertion: in the rich countries, one person out of three owns a computer compared to one out of 130 in Africa; in 2003, 19% of the planet represented 91% of internet users; one third of the world's population is not connected to an electricity supply.

Information summit

It was in this morose context that the World Summit on the Information Society (WSIS) was held in Geneva in December 2003, with a second phase held in Tunis in November 2005. At the WSIS, sponsored by the International Telecommunication Union (ITU), UNESCO, governments, non-governmental organizations (NGO) and the private sector, participants all came to the same conclusion: the digital divide can be bridged if there is consensus on the means to bridge it. The Summit adopted a Declaration of Principles and a 28-point Action Plan calling for universal access to information, cultural and linguistic diversity and the free exchange of ideas on the net.

Taking concrete measures, the participants adopted the proposition of Senegalese President, Abdoulaye Wade, and, in March 2005, created a digital solidarity fund. Based in Geneva, it has already collected several hundred thousand euros. "The WSIS is an historic international discussion allowing the mobilization of numerous partners. Many of the principles upheld by UNESCO were included in the final document," says Elizabeth Longworth, Director of UNESCO's Information Society Division. The texts adopted in Geneva consolidated the idea of the "knowledge society, which encompasses more than just the information society because it also includes the issues of development, of content and of diversity," adds Axel Plathe of UNESCO's Information Society Division.

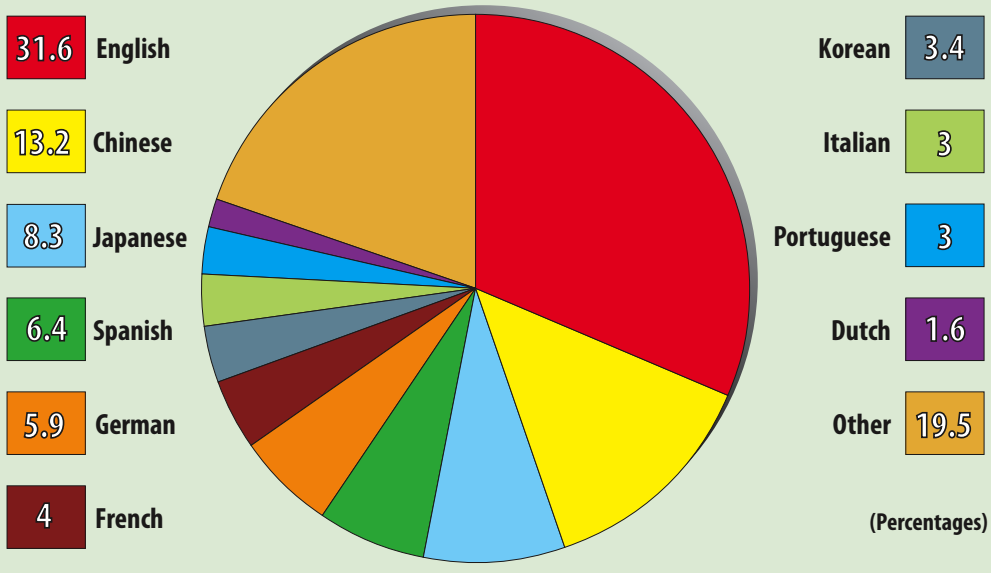
The distinction is important: a knowledge society is concerned not only with the transmission of information but also with its content and use. Bridging the digital divide is not simply a question of providing equipment. "It's hard to imagine that someone who doesn't know how to read will know how to look things up in a library or that a person will become a mathematician simply because they have been offered a digital television," explains Eric Guichard of the National Institute for Research in Computer Science and Control in an article ›

Information for All: eradicating "information poverty"

An incongruous gathering of women with power and responsibility was held in September 2005 in a country, Uganda, where men generally hold the reins of power. The group of elected officials and of managers of small farms or businesses, young women all, were invited to come sit in front of a computer and acquaint themselves with the most recent information and communication technologies (ICT). The initiative originated with the Kampala-based non-governmental organization (NGO) Forum for Women in Democracy (FOWODE). In addition, with funding from UNESCO's Information for All Programme, FOWODE will computerize its library and acquire up-to-date materials. That is a first step in the process and a second step, to train the women to use the new tools and to search online, will ensue.

The IFAP is an international co-operation programme aimed at reducing the gap between the "information rich" and the "information poor" through regional and international partnerships. Another project on libraries and copyrights was created in September 2005. Benefiting from a US$34,000 grant, the project, implemented by the international foundation eIFL.net, provides librarians, mainly in the former Soviet Union, with political and legal training.

Languages Used on the Internet



Source: Internet World Stats, 2005.

entitled "Does the 'Digital Divide' Exist?" (1). Owning a computer is a first step, but one "also requires a social capital in order to get help when one doesn't understand the (dys)functioning of a software programme, of an online service or of one's computer; and, finally, one needs cultural capital to know where to look for the information one is seeking," adds Guichard. UNESCO's Information for All Programme (IFAP) was launched with these ideas in mind in order to develop "digital literacy" in countries where access to the web is limited (see box on p. 61).

To achieve this "literacy," however, language-use on the web must be diversified and improved. In 2003, 90% of internet users had access to only 11 languages (see chart above). English is the language most used by far (31.6%), followed by Chinese (13.2%) and Japanese (8.3%). For Annie Chéneau-Loquay, founder of Afric'anti, an observatory studying the impact of ICT on West Africa, there is a need to develop content adapted to developing countries. "Beyond the transfer of technology issue, we must think about creating programmes that better respond to the specific needs of their economies and of their educational systems which often combine modern and traditional methods," she says.

But the battle may not yet be lost if the general trend toward a regular increase in internet users is any indication, although this varies from one continent to another. There were 23,000 internet users in Sub-Saharan Africa in 1995, and there are nearly 9 million in 2005, according to the International Telecommunications Union. The number of mobile telephones per inhabitant has also skyrocketed in the same region. According to Chéneau-Loquay, "the acquisition of a cell phone in societies with a strong oral tradition is a positive sign, if not a definite indication." ◆

Samy Mouhoubi

1. Article published in *Globalization and Its New Divides: Malcontents, Recipes, and Reform*, Dutch University Press, Amsterdam, 2003.

Radio Ada, the Voice of Those Without a Voice

A small radio station 120 miles from the Ghanaian capital is transformed into a community multimedia centre

The traditional *apatam*, the external reception area, serves as a recording studio at Radio Ada. This small radio station, heard on 93.3 FM, and located in Ada, 120 km east of Accra, the capital of Ghana, broadcasts "The Voice of the Dangme People," the country's third largest linguistic group. It is also the first of a dozen stations in the country to become a UNESCO-funded community multimedia centre (CMC).

"The CMC gives the population access to useful information about global warming, for example. In recent years, the sea has gained four metres on the shoreline," says Radio Ana's Manager, Kofi Lamweh. He sees the station as the "voice of those without a voice". His "community service" mission consists of providing information on international events or on the price of fish in the local markets, as well as in promoting national cohesion and protecting the Dangme cultural heritage.

Starting operations

Radio Ada broadcasts from a gleaming little house. The renovation work is almost completed, the smell of fresh paint lingers in the air. As soon as the centre gets its internet connection, its five computers will be operational. With its staff of 15 paid employees and 50 volunteers of all ages, the centre has the long-term goal to "create a team of trainers for the four local stations" implanted in the area to service a potential audience of 500,000. "It's like a self-reproducing cell," says Kofi Lamweh.

For now, he says "the priority is digital production", which means training in basic computer skills, from scanner to desktop publishing. The responsibility of this task rests on 18-year-old Chinedu, self-taught computer expert who is in charge of training. "He has even developed a software programme that we use for music programming," says the station manager. For the moment, six of Chinedu's eight students are adults, but younger people are starting to follow. "Through the music, through reggae, they are becoming interested in what we do," Chinedu says shyly.

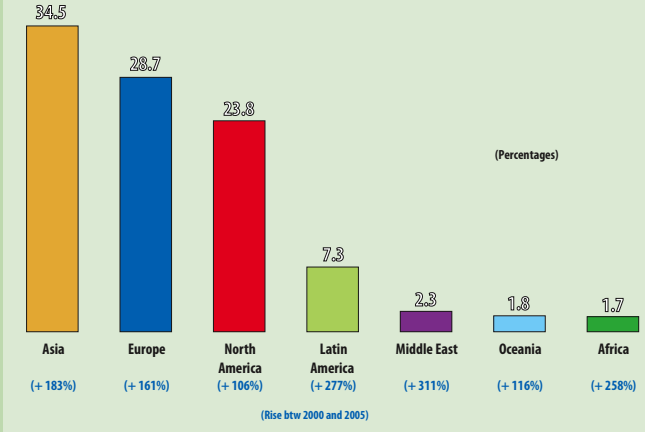
"In terms of training, the community centres are more efficient than regional or national workshops, because follow-up can be problematic," says Hezekiel Dlamin advisor for communications and information in the Accra UNESCO Office. He says that "nearly 20 centres per country will be established soon." This initiative will supplement the one and only cybercafé in Ada, which opened this summer, and it will save future web surfers a 60 km trip to find the nearest internet connection. ›

› But in a country where 40% of the population over the age of six has never been to school and only 3% has attended university, where the informal economy dominates, the priority for education policy remains "achieving literacy and teacher training" rather than "specific internet training," explains Boubacar Camara, education specialist at the UNESCO Office Accra. In order to provide "equitable access to quality education," he says, education policy must include information and communications technologies (ICT). The government is striving to meet this goal and even organized, in Accra in February 2005, the Second Africa Preparatory Conference, a regional conference preparing the World Summit on the Information Society (WSIS).

Together with the Education Ministry and the Universities of Cape Coast and Winneba, the UNESCO Office in Accra, in 2004, implemented a training programme for trainers with an emphasis on computer skills. "Over a thousand people have already benefited from it," says Boubacar Camara. In December 2004, a workshop was also held at the University of Ghana at Legon on the free operating system Linux, bringing together about 15 universities. Further initiatives include a programming contest for secondary school students organized on February 26, 2005 by the Ghana-India Kofi Annan Centre of Excellence in ICT, flagship of the Ghanaian educational system. The winner was presented with a mobile phone while the winner's school gained a computer. These types of initiatives should, in coming years, contribute to training new battalions of Chinedus. ◆

Stéphane Auvray

Internet Users in the World



Source: Internet World Stats, 2005.

In-house art

Over the years, UNESCO's Member States have generously donated to the Organization some of the best examples of their country's treasures. Here are some of the lesser-seen ones which today adorn the Headquarters buildings.

Detail showing an early stage of cuneiform writing, from a slab of baked clay containing an administrative text, Sumerian period, 2038-1985 BC, donated by Iraq.

© UNESCO/Bonsirven-Fontana, M.L.

© UNESCO

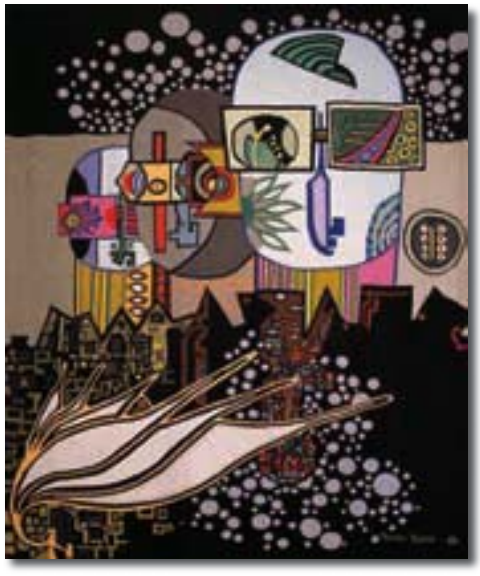
Mummy shroud from Puruchuco, cloth, pre-Columbian period, 1350-1450, 2.27 × 1.48 m, donated by Peru.

© UNESCO/J.-C. Bernath

UNESCO, tapestry based on a sketch by Le Corbusier (1887-1965), 3.50 × 6.80 m, 1962, donated by Switzerland.

© UNESCO/Niamh Burke

A *devata*, Buddhist female divinity, from Prasat Srange at Angkor, Bayon style, end of 12th – beginning of 13th century, sandstone, 0.86 m, donated by Cambodia.



© UNESCO/Niamh Burke

N'Daanaan, tapestry by Modou Niang (1945-), 3 × 2.28 m, donated by Senegal.

© Alexis Duclos/Gamma, Paris

Somalian refugee in a camp in Jordan

Coping with Emergencies

Devastating floods, brutal wars, deadly hurricanes – conflicts and catastrophes are competing for the news headlines. And in every case those liable to suffer the worst consequences are the poorest. Seven times as many people are likely to die if a natural disaster strikes a developing country than if it hits a rich country. When it comes to safeguarding freedom of the press, providing the means for education in emergencies or protecting cultural heritage, UNESCO does its part.

The images of desolation from New Orleans (United States), ravaged by Hurricane Katrina in September 2005, were seen around the world. An exceptional occurrence? Unfortunately not. Between 1994 and 1998, 428 natural and technological disasters were recorded. Between 1999 and 2003, the figure climbed to 707 annually. These are the numbers cited in the 2004 World Disasters Report published by the International Federation of Red Cross and Red Crescent Societies.

And the most pronounced increase is noted in the poorest countries. Another indicator: in 2004, according to the United Nations High Commissioner for Refugees, there were more than 9 million refugees around the world. And millions more are victims of the damages caused by floods, droughts, earthquakes, landslides, storms and other natural disasters.

Though emergency aid professionals have acquired real expertise in the last 20 years, coming up with the appropriate response to such daunting challenges is not easy. Emergency response is more than truckloads of high-protein survival bars, blue plastic tents

and mobile health centres. The post-crisis recovery requires planning. "Many crises we can in fact prepare for. Most importantly, when a war breaks out or a disaster strikes, the relief efforts must be placed within a long-term strategy for the country" says Louise Haxthausen, Coordinator for post-conflict operations within UNESCO's Bureau of Field Coordination.

Holistic approach

UNESCO has traditionally not been classified as a humanitarian agency, but reconstruction is more than physical rebuilding. "A core objective is to advocate for a more co-ordinated and holistic approach to emergencies in the international community," says Haxthausen. UNESCO does not focus on providing services, but on creating strategies for transition and capacity-building of local staff and institutions.

Its activities range from setting up tsunami early warning systems to security training for media professionals. In Iraq, for instance, currently the most dangerous country in the world for journalists, UNESCO runs training programs through the International News Safety Institute. The Organization is also concerned with providing access to education to children living in areas hit by crises and conflicts, and with preserving cultural heritage. One example is a two-year project in Afghanistan to safeguard the Bamiyan site, where two gigantic Buddha statues were destroyed by the Taliban in March 2001.

UNESCO's work often goes unnoticed. Other UN agencies such as UNHCR, UNICEF and the World Food Programme tend to take the lead roles. Haxthausen admits that coordination within the UN system and with other agencies remains one of the Organization's main challenges in situations of emergencies and reconstruction. "UNESCO's mandate is in fact very clear. The challenge relates to the conditions on the ground," she says, and explains how tasks and responsibilities in emergency situations are in reality often assigned on a 'first come first serve' basis. "UNESCO has not made enough early investments. We do not have the necessary field presence or the capacity to deliver fast enough. It is clear that humanitarian intervention and development are not the same," she notes.

On UNESCO's part, one new initiative to improve its emergency response is the plan to draw up a personnel roster for rapid deployment of staff in crises and reconstruction situations. The roster would not consist of relief workers in the classical sense, but advisors who are experts in UNESCO's fields of competence. This system is already widely used by aid organizations. One of the biggest rosters, managed by the Norwegian Refugee Council, lists 600 civilians of different professions who are on standby, ready to go and lend a hand within 72 hours in case of emergency. "In its core areas, UNESCO has strong competencies. These should be made available as soon as possible in crises," says Marcus Volker at the UNESCO Bureau of Human Resource Management.

Foundation for the future

But are these rapid deployment emergency actions compatible with long-term development efforts? Those in favour of them see no contradiction between the two. What is done in an emergency must lay the ground for long-term development, they argue. Take Sierra Leone, where 70% of schools were destroyed in the civil war that ended in 1972: the substantial amount of aid brought by NGOs and UN agencies in the immediate post-war period was crucial to later reconstruction (see article p. 69). "In 2000, 300,000 children had no school to go to, and many of them were traumatised. We would never have made it without international aid," says William Taylor, General Director of Education in Sierra Leone. It is a testimonial that should influence donors. ◆

Eli Wærum Rognerud

© Nivière/Sipa, Paris

Two months after the tsunami, school starts again in Hikkaduwa, village in Sri Lanka

Education: a Priority Response

Contrary to the traditional approach, education is as crucial in emergencies as food or shelter.

"In emergency situations, many still view education as a low priority. This is an extremely short-sighted approach. As if lack of education could not kill you!" exclaims Christopher Talbot, Programme Specialist at UNESCO's International Institute for Education in Emergencies. He suggests starting by asking the simple question: 'where are children if they are not in school?'

"Schooling can protect against recruitment into military forces," he continues. "It prevents exploitation in dangerous professions. When life is chaos, it gives structure and stability. Learning and play can for example help children deal with serious traumas. School is also a great place to pass on life-saving messages and skills. Health and hygiene, HIV/AIDS prevention, landmine awareness and peace and conflict management can all be promoted at school," says Talbot.

Traditionally, education has been seen not as a humanitarian priority, but as a long-term development activity. Awareness of the need for education in emergency situations is on the rise, but what is called the relief-development gap is far from closed. Humanitarian agencies still tend to focus on people's biological needs, whilst the development community prefer to see a peace agreement before they intervene in education.

Guidelines and standards

"In the real world, the division between relief and development makes no sense. People have only one life. They cannot afford to 'wait for peace' before investing in their children" underlines Talbot. "In the case of the Southern Sudan, for example, people had been 'waiting for peace' for 21 years. Still, in some areas, local and international agencies have pulled three generations of children through the whole cycle of schooling. Just because there is war, it does not mean you can do nothing."

But there is room for error between doing nothing and providing quality education. In conflict situations, the education system is often embroiled in the problems that spurred the emergency in the first place. In some cases, it has helped suppress the languages, traditions, art forms and religious and cultural practices of disadvantaged groups. "Schooling does not always translate into education – i.e. learning - or into good education – i.e. learning what is worthwhile. We know that schooling mirrors society and that it can reproduce the bad alongside the good," says Anna Obura, an educational consultant and the author of the book "Never again: Educational Reconstruction in Rwanda".

Refugee camp in Polataka, Sudan

Good practice guides and standards for education in emergency situations have now been developed. The Inter-Agency Network for Education in Emergencies (INEE), currently hosted by UNESCO in Paris, works to share and promote those standards (see box). "People out in the field *see* how vital education is for crisis prevention and recovery. Agencies and donors should no longer have any excuse not to prioritise education in emergency situations." says INEE Network Coordinator Mary Mendenhall. Yet given most of the rich countries' failure to provide adequate funding for Education for All, as reported by the Global Campaign for Education's 2005 report, it is not certain that this priority will be recognized. ◆

Eli Wærum Rognerud

The Inter-Agency Network for Education in Emergencies

The Inter-Agency Network for Education in Emergencies (INEE) is a global network of about 1,000 humanitarian and development non-governmental organizations, UN agencies, donors, practitioners, researchers and individuals from affected populations. Its goal: to ensure the right to education in emergencies, sharing information and disseminating best practices and lessons learned in the field. In 2003, a Working Group was formed to develop global minimum standards for education in emergencies. The resulting handbook, *"Minimum Standards for Education in Emergencies, Chronic Crises and Early Reconstruction"*, provides guidelines to help governments, donors and education providers to improve the design, implementation, development and administration of education programs.

See: http://www.ineesite.org

Learning for a Better Future

Mohamed was only five year old when he was forced out of his village in Sierra Leone by armed rebels. Today, as a refugee in Guinea, he is going to school to try and build a future.

"I was only five years old then, but I remember well. I still have nightmares about it," says Mohamed Camara. Every minute of that day in 1996, when his village was attacked by rebel soldiers, is an indelible memory. Now 14, the adolescent is one of the thousands of children who left Sierra Leone as civil war raged between the army and the Revolutionary United Front (RUF). He is now a refugee in Kabamoussaya, 130 km south of Conakry in Guinea.

"One day when I was playing outside with my friends, a gang of young people came on us in a surprise attack. They started firing on us from their jeep. My friends and I panicked and ran to reach our homes. I found my parents. My dad was caught by a machete, and there was blood everywhere. My sister was killed. Some time afterwards they got back into their jeeps and drove away. The streets were full of dead people. After they had gone, my dad took us into the bush. For many, many days, we ate only fruit and wild roots, and drank muddy water" says Mohamed.

The fight between the government forces and the RUF lasted a total 11 years. Attacks like those experienced by Mohamed and his family were commonplace. Children as young as eight were forced to join the fighting forces – those who refused were killed or mutilated. Between 15,000 and 20,000 Sierra Leonean children fought as soldiers, most of them on the rebel side.

Mohamed and his parents managed to escape, and after weeks on the run, crossed the border to Guinea, where they were given shelter in the town of Kabamoussaya. There, for the past nine years, they have been trying to rebuild their lives, hoping one day to return. Shortly after arrival, Mohamed joined Wanifili, a makeshift school constructed out of wood and covered by plastic sheeting donated by UNHCR. ›

Mohamed Camara, 14, is one of thousands of children who fled Sierra Leone

© Alhassane Souare

Classes are still overcrowded with an average of 80 pupils per class, and teachers, many without formal training, are working with scarce resources. For Mohammed and his peers, school is nonetheless their main hope for the future and the place to learn essential life skills. In addition to traditional subjects such as science, maths and language, teachers use sports and music classes to help children cope with their traumas.

"Resources are hard to come by here," explains Mohamed Lansanah, a teacher who also comes from Sierra Leone. "But we are investing in the reconstruction and the peaceful future of our country through the education of these young people."

The efforts of Mr Lansanah and the community groups are paying off. In 2004 Wanifili achieved results above the regional average. Mohamed Camara ranks second in his class. He dreams of one day returning home: "When I finish my studies I want to be a professor. That way I can fight for peace and development in Sierra Leone." ◆

Alhassane Souare

Bhaktapur: Open-Air Museum

The Nepalese city attracts tourists, but also looters. Because the Kathmandu Valley is threatened by pollution, war and urban sprawl, it has been added to the List of World Heritage in Danger.

Fourteen kilometres east of Kathmandu, the capital, is Bhaktapur, 'the city of devotees' that is like an enormous open air museum. The city features thousands of religious art objects, not just in Hindu temples and Buddhist shrines, but also in public squares, scattered along the streets and narrow lanes, or on the facades and in niches of private homes. But while they delight tourists, these treasures also attract dealers who see them as sources of income in a lucrative Asian Art market.

"Looting and illicit trafficking have stripped this area of some of its most important art works and monuments. Sacred gods, worshipped and valued by generations of Nepalese, should not lie in glass cases in the West," says Aidan Warlow, Programme Director for the Kathmandu University Department of Art and Design.

Efforts to preserve cultural heritage in Nepal have increased in recent years. Yet stolen objects can still be found in museums, art shops, auction houses and private collections around the world. An Uma Mahesvara statue, stolen from Bhaktapur in 1984, is just one example. The statue is on display in the Guimet Museum in Paris, one of the world's leading museums of South East Asian art. Retrieval of such objects is difficult, because they often have been through a number of dealers who may even have obtained legal documents.

Fighting illicit trafficking is problematic. Increased documentation of valuable items, for instance, can have negative effects. A list of

objects to be protected can also be used by looters. Says Warlow, "It is actually a serious dilemma. To a professional art thief, a catalogue with the 'top ten' valuables in a village is like a treasure map."

Increasing awareness of danger

The Kathmandu Valley was added to the World Heritage List in 1978, and was already then a region threatened by rapid population growth, economic and social change, increasing pollution and high earthquake risk. "Looting of statues is a serious problem, but the biggest threat lies in the gradual deterioration of the 'urban texture' surrounding these monuments" says Giovanni Boccardi, Chief of the Asia and Pacific Unit at the World Heritage Centre. "Ancient architecture has for example been irreversibly damaged by uncontrolled building work and demolition".

The decade-long conflict between the Nepalese government and the Maoist rebels has added further difficulties to the site's conservation. "Large areas of the country are now outside formal control, and therefore open for anyone who wants to loot and traffic. As people get poorer, or flee their homes, the risk of theft or simply damage also increases dramatically," says Koto Kanno, Head of the UNESCO office in Kathmandu.

In 2003, the Kathmandu Valley was inscribed on the List of World Heritage in Danger.

Kanno explains how the labelling of the Kathmandu valley as 'endangered' caused strong reactions: "The inscription was a big blow to the government as well as the population - people felt it was humiliating." This is not uncommon; most countries with world heritage sites wish to avoid inscription on the 'endangered' list.

In Nepal, inscription has nonetheless increased awareness amongst officials of the need to take firm action in World Heritage sites. "The government is taking this work very seriously. A warning from the World Heritage Committee that Lumbini, the birthplace of the Lord Buddha, may also be moved to the 'endangered' list stimulated an immediate action plan and the involvement of both local and international conservation experts", says Kanno.

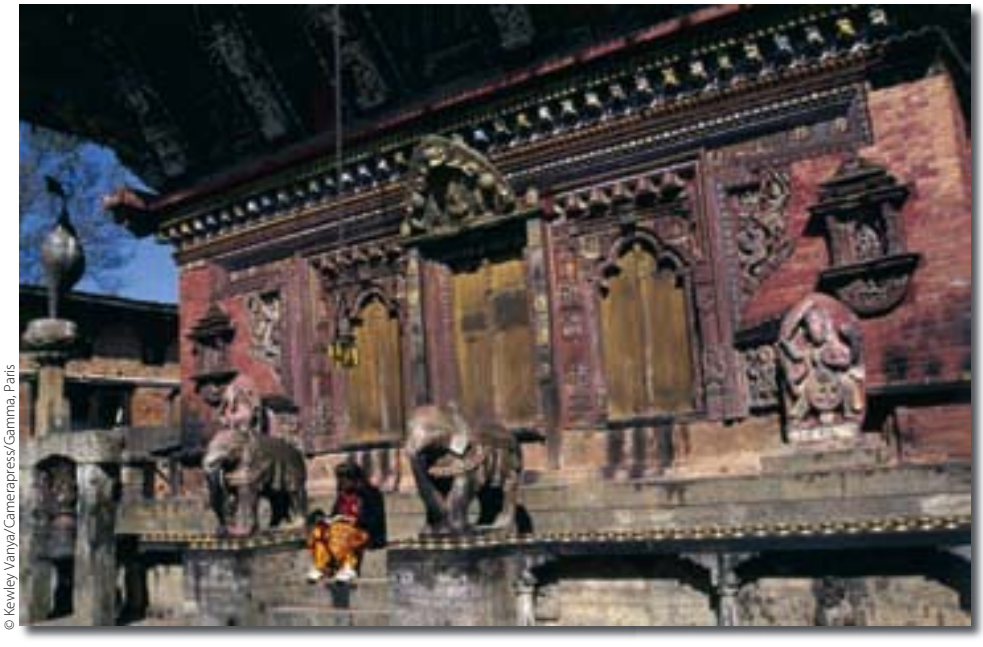
List of World Heritage in Danger

The walled city of Baku in Azerbaijan. The city of Bam (Iran). Garamba National Park in the Democratic Republic of the Congo. All three of these sites are inscribed on the List of World Heritage in Danger. A site can be inscribed on the List when armed conflict, natural disasters, poaching, unregulated urbanization or uncontrolled development threatens its integrity. The World Heritage Committee, intergovernmental body that every year examines the state of preservation of sites and nominations, can put on the 'endangered' list properties whose protection requires "major operations (…) and for which assistance has been requested". This allows the allocation of immediate assistance from the World Heritage Fund to the endangered property.

More important, however, is to increase the awareness in the communities. "In the Kathmandu Valley, the surroundings are as much part of the cultural heritage as the monuments themselves. Yet people are largely unaware of the treasures right there in front on them," says Kanno.

The export of art work is often also facilitated by locals. When impoverished individuals willingly sell a monument or a part of their house for a few dollars, it is generally because they do not understand its real worth. Once aware of the importance of preserving cultural heritage, the communities themselves become the best guard for their monuments and their surroundings. ◆

Eli Wærum Rognerud



© Kewley Vanya/Camerapress/Gamma, Paris

Bhaktapur, "the city of devotees"

United Nations Educational, Scientific and Cultural Organization

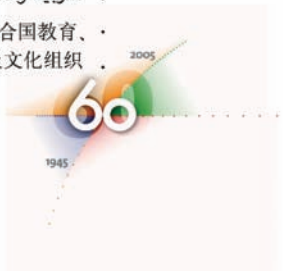
Organisation des Nations Unies pour l'éducation, la science et la culture

Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura

Организация Объединенных Наций по вопросам образования, науки и культуры

منظمة الأمم المتحدة للتربية والعلم والثقافة

联合国教育、科学及文化组织



UNESCO Offices

Afghanistan
United Nations Compound
P.O. Box 5, Kabul
Tel : (93-79) 344 229
Fax: 00 873 763 468 836; 004 724 126 902
E-mail: kabul@unesco.org

Bangladesh
G.P.O. Box 57
Dhaka 1207
Tel: (8802) 986 2073; 987 3210
Fax: (8802) 987 1150
E-mail: dhaka@unesco.org

Brazil
Caixa Postal 08563
Brasilia
Tel: (55 61) 2106 3500
Fax: (55-61) 3322 4261
E-mail: brasilia@unesco.org
http://www.unesco.org.br

Burundi
B.P. 1490
Bujumbura
Tel: (257) 21 53 82/84
Fax: 257 21 53 83
E-mail: bujumbura@unesco.org

Cambodia
P.O. Box 29, 38 Samdech Sothearos Blvd.
Phnom Penh
Tel: (855-23) 426 726
Fax: (855-23) 426 163
E-mail: phnompenh@unesco.org
http://portal.unesco.org/phnompenh

Cameroon
B.P. 12909
Yaoundé
Tel: (237) 22 257 63
Fax: (237) 22 263 89
E-mail: yaounde@unesco.org

Chile
Casilla 127, Correo 29, Providencia
Santiago de Chile
Tel: (56 2) 472 4600
Fax: (56 2) 655 10 46
E-mail: santiago@unesco.org
http://www.unesco.cl/esp

China
Room 1503, Bldg. 5,
Waijiaogongyu, Jianguomenwai
Beijing 100600
Tel: (86 10) 65 32 1725/5790/5883
Fax: (86 10) 65 32 4854
E-mail: beijing@unesco.org
http://www.unescobeijing.org

Congo
B.P. 90
Brazzaville
Tel : (242) 670 55 53
Fax : (242) 81 17 80
E-mail: brazzaville@unesco.org

Costa Rica
Apartado 220-2120
San Francisco de Guadalupe
Tel: (506) 258 7625
Fax : (506) 258 7458
E-mail: san-jose@unesco.org

Cuba
Calzada 551 – Esq. a D, Vedado
Havana
Tel: (53 7) 833 34 38; 832 2840
Fax: (53 7) 833 31 44
E-mail: habana@unesco.org
http://www.unesco.org.cu

Democratic Republic of the Congo
B.P. 7248
Kinshasa I
Tel : (243) 81 88 48 253
Fax : (243) 99 99 75 361
E-mail : kinshasa@unesco.org

Ecuador
Juan León Mera 130 y Ave. Patria,
Edificio CFN 6to piso
Quito
Tel: (593-2) 2529.085 / 2562.327
Fax : (593-2) 2504.435
E-mail : quito@unesco.org
http://portal.unesco.org/quito

Egypt
8 Abdel-Rahman Fahmy Street,
Garden City
Cairo 11541
Tel : (20-2) 79 50424
Fax : (20-2) 79 45 296
E-mail: cairo@unesco.org

Ethiopia
P.O. Box 1177
Addis Ababa
Tel : (251-11) 551-3953
Fax :(251-11) 551-1414
E-mail: addis@unesco.org

Gabon
B.P. 2183
Libreville
Tel: (241) 76 28 79
Fax: (241) 76 28 14
E-mail: unesclbv@inet.ga

Ghana
P.O. Box CT4949
Accra
Tel: (233-21) 765 497 ; 765 499
Fax: 233 21 765 498
E-mail: accra@unesco.org

Guatemala
Calle 4, 1-57, Zona 10
Guatemala City
Tel: (502) 2360 5659/73 65
Fax:(502) 2331 1524
E-mail: unesco@guate.net.gt
http://www.unescoguatemala.org

Haïti
19, Delmas 60, Musseau par
Bourdon, Petion Ville
Port-au-Prince
Tel : (509) 511 04 60
Fax : (509) 244-9366-7
E-mail: unescohaiti@hainet.net

India
B 5/29 Safdarjung Enclave
New Delhi 110 029
Tel: (91-11) 2671 3000
Fax: (91-11) 2671 3001/2
E-mail: newdelhi@unesco.org
http://unescodelhi.nic.in

Indonesia
UNESCO House, Jalan Galuh II,
No.5, Kebayoran Baru
Jakarta 12110
Tel: (62-21) 739 9818
Fax: (62 21) 7279 6489
E-mail: jakarta@unesco.org
http://www.unesco.or.id

Iran (Islamic Republic of)
Bahman Building, Saadabad
Complex, Darband Square
Tehran 19894
Tel: (98 21) 22740141-3
Fax: (98 21) 2740144
E-mail: tehran@unesco.org

Italy
Palazzo Zorzi, Castello 4930
Venice
Tel : (39) 041 2601511
Fax : (39) 041 5289995
E-mail: roste@unesco.org
http://portal.unesco.org/venice

Jamaica
The Towers, 25 Dominica Drive
Kingston 5
Tel: (1-876) 929 70 87-9
Fax: (1-876) 929 84 68
E-mail: kingston@unesco.org
http://www.unescocaribbean.org

Jordan
P.O. Box 2270
Amman 11181
Tel: (962-6) 551 4234/6559
Fax: (962-6) 553 2183
E-mail: registry@unesco.org.jo

Kazakhstan
67, Tole Bi Street
Almaty 050000
Tel: (7-3272) 58 26 37-42
Fax:(7-3272) 79 48 53
E-mail: almaty@unesco.org
http://www.unesco.kz

Kenya
United Nations Complex, Gigiri,
Block C
Nairobi
Tel : (254-20) 62 12 34
Fax : (254- 20) 62 27 50
E-mail : p.vitta@unesco.org
http://www.unesco-nairobi.org

Lebanon
B.P. 11-5244
Beirut
Tel : (961-1) 85 00 13-5
Fax : (961-1) 82 48 54
E-mail : beirut@unesco.org
http://portal.unesco.org/beirut

Mali
B.P. E 1763, Badalabougou Est
Bamako
Tel : (223) 223 34 92-93
Fax : (223) 223 34 94
E-mail : bamako@unesco.org
http://www.un.org.ml/snu/unesco.htm

Mexico
Pte Masaryk n.° 526, 3er piso,
Colonia Polanco
11560 Mexico, D.F.
Tel : (52-55) 5230 7600
Fax : 52-55) 5230 7602
E-mail : mexico@unesco.org

Morocco
35, avenue du 16 novembre, Agdal
Rabat 1777
Tel : (212) 37 67 03 72-74 ; 37 77 81 82
Fax : (212) 37 67 03 75
E-mail : rabat@unesco.org
http://portal.unesco.org/rabat

Mozambique
C.P. 1397
Maputo
Tel: (258) 0149 3434
Fax : (258) 0149 3431
E-mail : maputo@unesco.org
http://www.uem.mz/unesco

Namibia
Oppenheimer House, 5 Brahms Street, Windhoek West
Windhoek
Tel : (264 61) 291 7000
Fax : (264 61) 291 7220
E-mail : windhoek@unesco.org
http://portal.unesco.org/windhoek

Nepal
P.O. Box 14391
Kathmandu
Tel : (977-1) 5554 396 ; 5554 769
Fax : (977-1) 5554 450
E-mail : kathmandu@unesco.org
http://www.unesco.org/kathmandu

Nigeria
Plot 777, Bouake St. off Herbert Macaulay Way, Wuse Zone 6,
Abuja
Tel : (234-9) 461 8502 ; 461 8510
Fax : (234-9) 52 38 094
E-mail: abuja@unesco.org

Pakistan
P.O. Box 2034 A
Islamabad 44000
Tel: (92-51) 280 0083
Fax: (92-51) 280 0056
E-mail: islamabad@unesco.org
http://undp.un.org.pk/unesco

Palestinian Authority
P.O. Box 2154
Ramallah
Tel : (972-2) 2959740
Fax : (972-2) 2959741
E-mail : unesco@palnet.com

Peru
Apartado Postal 41
Lima 0192
Tel : (51-1) 476 98 71; 224 25 26
Fax : (51-1) 476 98 72
E-mail : unescope@amauta.rcp.net.pe
http://www.unesco.org/lima

Qatar
P.O. Box 3945
Doha
Tel : (974) 486 7707-8
Fax : (974) 486 7644
E-mail : doha@unesco.org
http://www.unesco.org/doha

Russian Federation
Mytnaya Str. 1
Moscow 119049
Tel : (7-095) 230 0554/1065/0643
Fax : (7-095) 230 6085 ; 956 3666
E-mail: moscow@unesco.org
http://www.unesco.ru

Samoa
P.O. Box 615, Matautu-uta Post Office
Apia
Tel : (685) 242 76
Fax : (685) 222 53
E-mail : apia@unesco.org

Senegal
B.P. 3311
Dakar
Tel : (221) 849 23 23
Fax : (221) 823 83 93
E-mail : dakar@unesco.org
http://www.dakar.unesco.org

Switzerland
Villa "Les Feuillantines"
CH-1211 Geneva 10
Tel : (41-22) 917 33 81
Fax : (41-22) 917 00 64
E-mail : geneva@unesco.org

Tanzania (United Republic of)
P.O. Box 31473
Dar es Salaam
Tel: (255-22) 266 6623/7165
Fax : (255-22) 266 6927
E-mail: dar-es-salaam@unesco.org

Thailand
920 Sukhumvit Road,
Bangkok 10110
Tel : (66-2) 391 0577/0879
Fax : (66-2) 391 0866
E-mail : bangkok@unesco.org
http://www.unescobkk.org

United States of America
2, United Nations Plaza, Room 900,
New York, NY 10017
Tel: (1-212) 963 59 95
Fax: (1-212) 963 80 14
E-mail: s.bilello@unesco.org

Uruguay
Casilla de Correo 859
Montevideo 11300
Tel : (598-2) 413 20 75
Fax : (598-2) 413 20 94
E-mail : orcyt@unesco.org.uy
http://www.unesco.org.uy

Uzbekistan
95, Amir Temur St.
Tashkent 700084
Tel: (998-71) 12 07 116
Fax : (998-71) 13 21 382
E-mail: tashkent@unesco.org

Vietnam
23 Cao Ba Quat St.
Hanoi
Tel: (84-4) 747 0275
Fax : (84-4) 747 0274
E-mail : registry@unesco.org.vn
http://www.unesco.org.vn

Zimbabwe
P.O. Box HG 435, Highlands
Harare
Tel : (263-4) 776 775-9
Fax : (263-4) 776 055
E-mail : harare@unesco.org
http://www.harare.unesco.org

UNESCO Institutes and Centres

UNESCO European Centre for Higher Education (CEPES)
39, Stirbei Voda St.
010102-Bucharest, Romania
Tel: (40 21) 3130839; 3130698; 3159956
Fax: (40 21) 3123567
E-mail: info@cepes.ro
http://www.cepes.ro

International Centre for Theoretical Physics (ICTP)
Strada Costiera 11,
34014 Trieste, Italy
Tel: (39 040) 2240111
Fax: (39 040) 224163
E-mail: sci_info@ictp.it
http://www.ictp.it

UNESCO-IHE Institute for Water Education
P.O. Box 3015
2601 DA Delft, The Netherlands
Tel: (31-15) 2151 715
Fax: (31-15 2122 921
E-mail: info@unesco-ihe.org
http://www.unesco-ihe.org

UNESCO International Institute for Capacity-Building in Africa (IICBA)
P.O. Box 2305
Addis Ababa, Ethiopia
Tel: (251-11) 5513796
Fax: (251-11) 5514936
E-mail: info@unesco-iicba.org
http://www.unesco-iicba.org

UNESCO Institute for Education (UIE)
Feldbrunnenstr. 58
20148 Hamburg, Germany
Tel (49-40) 448041-0
Fax (49-40) 4107723
E-mail: uie@unesco.org
http://www.unesco.org/education/uie

UNESCO International Institute for Educational Planning (IIEP)
7-9, rue Eugène-Delacroix
75116 Paris, France
Tel: (33-1) 45 03 77 00
Fax: (33-1) 40 72 83 66
E-mail: info@iiep.unesco.org
http://www.unesco.org/iiep

IIPE-Buenos Aires
Agüero 2071
1425 Buenos Aires, Argentina
Tel: (54-11) 4806 9366; 4807 5446
Fax: (54-11) 4806 9458
E-mail: info@iipe-buenosaires.org.ar
http://www.iipe-buenosaires.org.ar

UNESCO International Institute for Higher Education in Latin America and the Caribbean (IESALC)
Apartado Postal 68.394.
Caracas 1062-A, Venezuela
Tel: (58-212) 286.0555; 286.1020
Fax: (58-212) 286.0527; 286.0527
E-mail: iesalc@unesco.org.ve
http://www.iesalc.unesco.org.ve

UNESCO International Bureau of Education (IBE)
C.P. 199, 1211 Geneva 20,
Switzerland
Tel.: (41-22) 917.78.00
Fax: (41-22) 917.78.01
E-mail: director@ibe.unesco.org
http://www.ibe.unesco.org

UNESCO Institute for Information Technologies in Education (IITE)
8 Kedrova St. (Bldg. 3),
117292 Moscow, Russian Federation
Tel.: (7-095) 129-29-90
Fax: (7-095) 129-12-25
E-mail: Azat.Khannanov@iite.ru
http://is.iite.ru/html

UNESCO International Centre for Technical and Vocational Education and Training (UNEVOC)
Görresstrasse 15
53113 Bonn, Germany
Tel: (49-228) 2 43 37-0
Fax: (49-228 2 43 37-77
Email: info@unevoc.unesco.org
http://www.unevoc.unesco.org

UNESCO Institute for Statistics (UIS)
C.P. 6128 Succursale Centre-ville
Montreal, Quebec, H3C 3J7 Canada
Tel: (1-514) 343-6880
Fax: (1-514) 343-6882
E-mail: information@uis.unesco.org
http://www.uis.unesco.org

"Death Rites"

Gérard Voisin (1934)
Wood installation

Donated to UNESCO by the artist in 2005