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The Quality Imperative

Universal primary enrolment and quality education for all: a major challenge for every region of the world

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UNIVERSAL PRIMARY ENROLMENT AND QUALITY EDUCATION FOR ALL: A MAJOR CHALLENGE FOR EVERY REGION OF THE WORLD

The World Education Forum held in Dakar from April 26 to 28, 2000 reaffirmed the vision of the world declaration on education for all by adopting six goals:

- Expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children.
- Ensuring that by 2015 all children, particularly girls, children in difficult circumstances and those belonging to ethnic minorities, have access to and complete free and compulsory primary education of good quality.
- Meeting the learning needs of all young people and adults through equitable access to appropriate learning and life skills programmes.
- Achieving a 50% improvement in adult literacy levels, especially for women, by 2015, and ensuring equitable access to basic and continuing education for all adults.
- Eliminating gender disparities in primary and secondary education by 2005 and achieving gender equality in this area by 2015 with a focus on ensuring girls' unrestricted and equal access to and achievement in basic education of good quality.
- Improving all aspects of the quality of education and ensuring excellence so that recognized and measurable learning outcomes are achieved by all, especially in literacy, numeracy and essential life skills.

The goals Member States ratified in the Dakar Framework for Action are based on two basic ideas: universal primary school enrolment and basic quality education for all.

Universal primary enrolment mainly focuses on teaching basic skills: reading, writing and arithmetic. That involves 4 to 6 or 7 years of education depending on the conditions where it takes place. The Dakar goals go beyond basic skills education, aiming at a basic quality education for all.

Basic education means ensuring that everybody leaves the education system with all the skills they need to live in tomorrow's society. The United Nations organisations have identified three major categories of target skills considered in Monitoring Learning Assessment (MLA): (i) skills relating to the learning language, (ii) mathematical skills required for social and working life, (iii) social skills including elements of general knowledge, basic science, and awareness of environmental, education, health and citizenship issues. Those skills are considered the minimum basis required for adjusting to social and working life and upon which lifelong education can be built. Major international institutions tend to agree that basic education in an increasingly complex society requires approximately nine years of schooling.

Quality education is education that, in addition to creating the conditions that promote learning and the child's harmonious development, ensures command of the three target skills. Mastering them means not only acquiring the ability to replicate the knowledge and skills taught, but also learning how to take initiative, in other words, drawing upon that knowledge and those skills to cope with a specific situation. The aim, then, is to surpass the level of mere reproduction to achieve a level where children can solve problems that they will be faced with in the future.

Quality education **for all** means enabling all children to master the basic skills required for living in society (fitting in to society and pursuing their development there) and ensuring that those who can and want to continue their education may do so. This means that education system managers and teachers must be attentive to all children regardless of gender or social, geographical, ethnic, religious or other background. That requires focusing special attention on children with the greatest learning difficulties.

Universal primary enrolment and quality basic education for all give countries the challenge of combining and balancing: (i) effectiveness (the effective command of target skills); (ii) efficiency (a reasonable ratio between results and investment); (iii) equity (reducing the gap between children with fewer or greater advantages).

As this report recalls below, that challenge is far from being met, especially in certain parts of the world. Some countries have alarmingly low enrolment rates and must shift into high gear

between now and 2015. Where enrolment rates are satisfactory, quality is often lacking and a gap between various categories of students is often widening, leading to inequality.

But the challenge that the EFA (universal primary enrolment and quality education for all) signatory countries decided to meet in Dakar by combining effectiveness, efficiency and equity is based on a sufficient number of quality teachers. However, with regard to the 2015goals, most countries are or will be experiencing a shortage of quantity, quality or both.

In the rest of this report, we will attempt to address three basic issues: how to assess the teacher shortage; what form the shortage takes depending on the region; how it can be solved.

HOW TO ASSESS THE SHORTAGE

As we suggested above, the teacher shortage must be examined from both a quantitative and qualitative viewpoint. A review of the work that has focused on these issues shows that there are many quantitative and qualitative indicators, but they have very different meanings. They actually offer complementary angles of approach and, ideally, a sufficiently comprehensive, relevant vision would be based on the ability to systematically combine them.

First, let's review **the quantitative indicators** likely to be taken into account and examine their advantages and shortcomings. This aspect of the issue is an initial, indirect approach that will lead to finding strategies to fight the shortage.

Indicator 1: the ratio between the number of positions filled and the number of positions needing to be filled

This is the first indicator facing planners, whether on a national, decentralized or two-tiered level (first at the national, then the decentralized level). The challenge is to match supply with demand as successfully as possible. Problems arise when: (i) the number of positions to be filled is unknown, poorly known (underestimated or overestimated) or known when it is too late; (ii) the number of positions filled is inadequate because there are not enough teachers or a shortage of teachers with the required qualifications, or they are poorly distributed

throughout the country; (iii) the definition of the idea of "position to be filled" is likely to be contested, depending the perception planners have of minimum and maximum class sizes as well as the expected skills profile in relation to the assignment.

Field experience shows that problems frequently occur. The following examples are not isolated cases, but fairly representative of countries with comparable environments. In Gabon, the questionnaire sent out on teacher position needs always comes back late; assignments are therefore made to address an outdated situation. That also explains why young graduates wait at least one year before being paid and must often leave the classroom to find something to eat. On the other hand, there are countries like France, which instead of a shortage has more physical and sports education graduates than the number of available positions, sparking a major debate that is ongoing at the moment. The situation is not due to a lack of adequate central planning, but to an overestimate at the decentralized level combined with the degree's attractiveness and easy admission standards.

Indicator 2: the ratio between the number of teachers listed and the number of pupils enrolled

The indicator above is seldom used in international statistics because it is interpreted differently from one country to another; the ratio between the number of teachers listed and the number of pupils enrolled is used more often. At first glance, it might seem rather reliable, but a closer look reveals disparities in the way it is calculated and in what it actually means, especially in connection with the shortage and the problem of recruiting the number of teachers required to meet the Dakar goals. The main problem is that the number of teachers counted may include, in addition to those actually in charge of a classroom, teachers:

- with an administrative overload,
- assigned to another ministry,
- taking a long training course either in the country or abroad (examples include teachers who still receive their salaries but are training to become guidance counsellors or inspectors; teachers studying to obtain a graduate degree),
- assigned to a post in the area but requesting a transfer from senior officials,
- absent for health or personal reasons.

In some developing countries, it is hard to know which institution has an accurate inventory of the situation. The institution in charge of paying salaries is often incapable of saying

whether individuals with teacher status are actually still in the classroom, or to which school or institution they are assigned. Many revealing anecdotes illustrate this confusing situation. When we were trying to compile a representative sample for a teacher motivation survey in Burkina Faso, not a single department at the Ministry of Education was able to provide a list of teachers and their locations in the country, despite a genuine eagerness to help. In Mauritania, teachers leave their posts to besiege ministerial officials and Ministry of Education directors every day, asking for transfers or favours. Culturally, it is hard for the managers to turn the supplicants away, especially if they come from the same village, clan or tribe. These two examples are not isolated cases, but illustrate common operating methods.

Indicator 3: the average number of pupils per classroom following a count in the field

The average number of pupils per classroom after a count taken in the field is probably a more reliable indicator, helping to offset the problems with the previous one. Unfortunately, statistics are not available for every country. Most of the time, they have been gathered through international evaluation surveys such as TIMMS, PISA, MLA or the PASEC. However, the countries that care most about their education systems or are able to manage them best are the ones that participate in such surveys. And the shortage, especially with 2015 looming on the horizon, is more severe in countries that have not participated in them.

The average number of pupils per classroom is a desirable indicator, but it would be improved by breaking the figures down according to region. Relying solely on an average figures masks many realities, which can be observed only by making frequent field visits.

Indicator 4: taking the idea of full-time equivalent into account

This indicator is increasingly important in the developed countries, where wages are strongly correlated to the number of hours taught and teachers are increasingly attracted to part-time careers. More and more of them consider full-time teaching too burdensome or unappealing. Most are older teachers who care more about quality of life, female teachers who want to look after their children, or teachers who have found part-time employment in a higher-paying or less stressful field. This indicator will become increasingly important in the developing countries.

It is much less important in developing countries because wages are more closely linked to a position that is automatically considered full-time, even if the teacher does not actually work full-time. The question is whether, in the future, it will be possible and reasonable to take an indicator like this one into account to reduce the shortage in countries where enrolment rates are low and there is a strong desire of UPE. Assigning teachers to double duty in high-density areas is possible and has achieved some results: Tunisia, for example, won the UPE battle by implementing this strategy on a massive scale. But it would be unfair to financially penalize teachers in a remote rural areas under the pretext that they could not be given a full-time job (this case often comes up in countries where teaching is in two languages and where teachers master only one of them well enough).

Indicator 5: taking into account teachers who teach part time or not at all

International statistics seldom provide this kind of information, even though it is one possible way to fight the shortage is to ensure that the greatest number of teachers actually take over a class. One cause lies in the fact that teacher payment mechanisms differ depending on the country, and that in many countries the Ministry of Education neither manages salaries itself and nor controls the flow of teachers.

Madagascar is a case in point. A 2004 Cornel University survey conducted at the World Bank's request shows that of 60,000 people registered and paid as teachers, approximately 10,000 are "ghost teachers" (nobody knows where they are) and 14,000 do not teach at all.

Another phenomenon is also worth mentioning: the number of hours actually taught compared to the official number of hours. By cross-checking various indicators (absence of teachers during unannounced visits, complaints from parents, non-respect of official back-to-school dates, advancement of the first day of major vacations, extension of various vacations at the beginning and end, absence on market days, the need for labour at certain times of year, the impossibility of placing pupils in training programmes at certain times of year, the time necessary to pick up paychecks, etc.), we estimate that in some areas far from big cities, actual teaching time is half the official number of hours.

Many developed countries have a different problem. Job-related stress is on the rise, especially in some priority education areas. More and more teachers want to work part-time or go into pre-retirement, sometimes even taking an unpaid leave for a determined period.

The shortage is not just quantitative, there is also a lack of teachers with the qualifications necessary to ensure quality education for all. Several **qualitative indicators** are worth taking into consideration and treating systematically.

Indicator 1: the level of teachers' education.

"The qualifications required to have access to the teaching profession often help to measure the quality of education acquired"[1] (Siniscalco, BIT/UNESCO, 2002, p..21). The same report (p. 1) states that "tertiary qualification is now required for new teachers in all the countries of the OECD and WEI" (countries that are not OECD members but take part in the OECD/UNESCO World Education Indicators Programme). For primary-school teachers, prior training would require between 3 and 5.5 years of tertiary training, "but current prior training standards do not necessarily match the qualifications of the existing teaching force" (p.2). For example, fewer than two out of 10 Chinese or Tunisian primary-school teachers have had tertiary training (benchmark year: 2000). In many sub-Saharan African countries, teachers in rural areas are recruited by local communities and often have approximately 9 years of education. A case in point is Madagascar, where roughly 60% of primary school teachers are in that situation: they have had no specific training to become teachers and their basic education has major shortcomings by the Ministry's standards. Another example is Senegal, where the State has circumvented strict structural adjustment rules by recruiting volunteer teachers who are paid half the salaries of statutory teachers.

Education level is a very relative indicator in that it corresponds to situations that vary widely from country to country. In some cases, education level refers only to the number of years of academic training; in others, the number of years of specifically teacher training is added; in yet others, it is hard to tell the difference between academic and teacher training in the last years (the proportion of both can vary widely from one country to another, or even between

[1] perhaps this doc exists in English

institutions inside a single country). Volunteer teachers and teachers recruited by local communities usually have no initial teacher training.

Indicator 2: the length of professional training (training for the teaching profession or pedagogical training)

The many reports published under the aegis of the United Nations or other bodies stress the need for teacher training. Research carried out in developing countries (Mingat and Suchaut, 2000) shows the primacy of pedagogical over sociological factors in their education systems' performances: the teacher's skill is vital in places where few families have members who have been to school. In developed countries, the relationship between pedagogical factors on the one hand, and social and family characteristics on the other. However, if other criteria are taken into account (citizenship education and the need to motivate children from difficult environments), it is clear that academic training is not enough and future teachers must develop new skills, for the profession is changing and becoming particularly difficult in certain contexts.

As we suggested in the previous section, this indicator is particularly hard to pin down because academic and professional training are so closely entwined. The situation becomes even more complicated if the issue of whether teachers actually master the skills required to work in specific contexts is taken into account. For example, after taking a series of separate and juxtaposed theory courses and a few hours or months of training in small classes, will a future teacher be skilled enough to handle a classroom of 100 or 150 pupils?

Indicator 3: the resources necessary for the profession

This is another very relative indicator. Can the teachers in the State of Geneva, who have among the world's smallest classes (**chiffre)** and comfortable working conditions (large, flexible spaces, plentiful teaching materials, a broad spectrum of continuing training, close supervision) be compared to their counterparts in developing countries, where they do not even have their own copy of the programme, much less teaching documents or aids, classrooms are overcrowded, the children do not always have places to sit and often lack

textbooks? Yet this indicator is crucial if we take into account the idea of qualitative shortage, which has an effect on the shortage's quantitative aspects: the parents' doubts about the usefulness of such a school, effects on the teachers' status.

Scientific research, relayed by international bodies, has demonstrated how important some teaching resources are. Mingat and Suchaut (2000) have shown how important the use of a reading textbook is in African countries for all the pupils starting primary school and how important a teachers' guide is for teaching mathematics. However, despite numerous campaigns, field visits show that few students and pupils in the rural areas of some countries have such basic materials, which are sometimes sold on parallel markets instead of distributed as planned.

Indicator 4: teacher salaries

Teacher salaries are an especially important factor because teacher motivation and recognition of the profession largely depend on them. Salaries, the biggest item in education budgets, depend on different variables relating to remuneration policy, and can therefore vary sharply from one country to another. Siniscalco (BIT/UNESCO, 2000, p. 2) points out that "among the OECD and WEI countries, mid-career primary-school teacher remuneration ranges from under 10,000 US dollars in Brazil, the Czech Republic, Hungary, Indonesia and Peru to 40,000 US dollars in Switzerland.". Teachers in some countries of sub-Saharan Africa find themselves in an alarming financial plight: low salaries compel them to seek additional sources of income (sometimes to the detriment of pupils and their parents), salaries are unpaid long periods of time, teachers need to take several days off from work each month to pick up their paychecks, etc.

Although wage levels are an important indicator, they must be put into perspective by analysing the circumstances in which they are obtained. It is also important to take into consideration salary increases over the course of a career, the payment of bonuses, financial incentives awarded for accumulating professional experience, skills acquired through continuous training, and the general public's perception of teacher salaries compared to those of other professions.

Indicator 5: the distribution of teachers throughout a country depending on the level of education and professional experience

If the goal is basic quality education for all, with a particular focus on "the most vulnerable and disadvantaged children" (Dakar Charter), one of the most meaningful qualitative indicators is the distribution of teachers depending on their level of education and professional experience in areas where disadvantaged populations are concentrated. Few developed or developing countries have successfully implemented strategies that help to provide priority education areas with the most qualified and experienced teachers. For example, in Madagascar most accredited teachers (the most qualified) are concentrated in areas with the best living conditions. In Tunisia, teachers with the best evaluations are in a better position to request and receive transfers to coastal areas, avoiding the hinterland, where the pupils in need of their skills are concentrated. In France, despite assignment mechanisms, the most qualified teachers are developing strategies to avoid priority education areas and see to it that their children are not enrolled in schools there. Examples running counter to quality education for all abound. Both quantitatively and qualitatively, the shortage is more serious for the populations that need well-trained, motivated teachers the most.

What can be concluded from this non-exhaustive review of the indicators that help assess quantitative and qualitative shortages? Basically, two main ideas: the idea of shortage is a relative concept; the indicators must be put into perspective. What is the meaning of "all enrolled children are assigned to a classroom to which a teacher has been officially assigned" if teachers are absent, confronted with overcrowded classrooms but have not been trained to deal with them, or left to their own devices in remote areas where supervisors never set foot and living conditions are harsh? If teaching time is significantly shortened, basic teaching materials are lacking, and the pay is too low to make a decent living or does not arrive regularly? What is the meaning of national indicators—averages that, in addition to being based on methods that cannot bear closer scrutiny in many cases, fail to take account of gaps between sub-regions? What is the meaning of indicators such as the following from Madagascar, which has 60,000 teachers for a school-age population of 2,635,000 children but only 36,000 teachers actually in classrooms?

HOW THE SHORTAGE LOOKS IN THE WORLD'S MAIN REGIONS

In the following paragraphs, we will attempt to provide a brief glimpse of the form the shortage takes in the world's main regions. The division into regions is based on the MINEDAF VIII's statistical document ("Universal Primary Education: A Goal for All"). Our statistical data will be drawn from that document and rounded out by the Siniscalco report (BIT/UNESCO, 2002), which mainly focuses on the OECD and WEI countries; occasionally, we will use other sources to relativise them or put them into perspective (which will be indicated in due time). From each world region, we will only take a few countries that give a sufficiently representative idea of what is happening in all the countries of the region. We will focus more attention on regions where the shortage is having the greatest affect on whether or not they will achieve the Dakar goals.

North America and Western Europe

This region includes Andorra, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Israel, Italy, Luxembourg, Malta, Monaco, the Netherlands, Norway, Portugal, San Marino, Spain, Sweden, Switzerland, the United Kingdom and the United States.

This part of the globe achieved universal primary education decades ago. However, political and education officials are concerned with the issue of functional illiteracy and the expected shortage of teachers.

In a special Education International magazine dossier (May 2001), Robert Sikkes mentioned two factors, which could have been anticipated, accounting for the teacher shortage: the ageing of the teacher population and the negative effects of booming economies. Two tables back up his prognosis.

Table 1: Ageing of the teacher force: shortage risk grows when more than half of teachers are over 40.

Primary education	**40-49**	**50 +**	**Total 40 +**	**Shortage**
Austria	37%	13%	50%	None
Flanders (Belg.)	30	22	52	Moderate
Netherlands	38	14	52	Severe
France	39	18	57	None
England	42	17	59	None
United States	37	22	59	Severe
Germany	47	32	79	None
Secondary education	**40-49**	**50 +**	**Total 40 +**	**Shortage**
Austria	35%	11%	46%	None
England	43	17	60	Severe
United States	42	23	65	Severe
France	39	26	64	None
Netherlands	42	27	69	Severe
Flanders (Belg.)	40	33	73	Moderate
Germany	49	34	83	None

This table shows that, despite comparable ageing rates, situations vary from one country to another and from one level of education to the next. For example, Austria, France and Germany have no trouble recruiting for any education level. On the other hand, the Netherlands and the United States have reasons to be worried about both primary and secondary education. For England, the main problem lies in secondary education, especially in certain geographical areas and subject areas. John Stapfe's prognosis (2001, p.11) for Canada is alarming: "The teacher supply and demand and situation is exacerbated by retirements, teacher burnout, a reduction in school support services, deteriorating working conditions and the negative public perception of the teaching profession generated by governments with confrontational agendas[2]".

Robert Sikkes (2001, p. 9) argues that economic growth worsens the shortage, as the following table shows.

Table 2: Economic growth accelerates teacher shortages.

	Growth 95-99	**Shortage**	**Growth outlook 2000**
Germany	1.5%	None	2.9%
France	2.2	None	3.7
Flanders (Belg.)	2.4	Moderate	3.6
England	2.6	Severe	2.9
Netherlands	3.3	Severe	4.3
United States	3.8	Severe	4.9

This table shows that countries with higher-than-average growth have trouble finding teachers, because in societies with booming knowledge-based economies, the public education sector has trouble vying with companies that have an unquenchable thirst for university graduates.

Central and Eastern Europe

This region includes the following countries: Albania, Belarus, Bosnia-Herzegovina, Bulgaria, Croatia, the Czech Republic, Estonia, the Federal Republic of Yugoslavia, the former Yugoslav Republic of Macedonia, Hungary, Latvia, Lithuania, Moldova, Poland, Romania, the Russian Federation, Slovakia, Slovenia, Turkey, Ukraine.

Table 3: Some indicators helping to analyse the situation in the countries of central and eastern Europe (source: Siniscalco, 2002; benchmark year: 1999; level: primary)

	40 +	No./post-secondary years	No./legal teaching hours.	Pupil/teacher ratio	Avg. class sizeTIMMS (OECD)	Annual salary in $ (in GDP)
Czech Rep.	57.9%	4.5	739	23.4	24 (19)	9,032 (.69)

[2] do not change anything in this quote, it's taken directly from the source

Slovakia	53.1	4		19.6	25	
Hungary		4	583	10.9	21	8,252 (.72)
Poland		4				
Turkey		4	720	30.0	43 (24)	1,0327 (1.37)

Statistical data are so scattered and sketchy that it is very difficult to measure teacher shortages for this region. The situation is even harder to foresee because some of the countries in this area will enter the European Union, leading to unpredictable effects between now and 2015.

One problem the countries of eastern and western Europe are likely to have in common is an ageing teacher population. With the exception of Turkey, it can be estimated that average class sizes (TIMMS being the most realistic indicator) are similar to those in western countries. So is the number of years of post-secondary training required. On the other hand, yearly salaries in percentage of per-capita GDP are half those of western level, with the exception of Turkey, where the percentage of GDP is comparable. Hungary stands out with a particularly low number of legal teaching hours.

East Asia and Oceania

This region includes the following countries: Australia, Cambodia, the Cook Islands, the Democratic People's Republic of Korea, Fiji, Indonesia, Japan, Kiribati, the Lao People's Democratic Republic, Malaysia, the Marshall Islands, Myanmar, Nauru, Nioue, Papua-New Guinea, the People's Republic of China, the Philippines, the Republic of Korea, Samoa, the Salomon Islands, Thailand, Tonga, Tuvalu, Vanuatu, Viet Nam.

Table 4: Some indicators helping to analyse the situation in the countries of East Asia and Oceania (source: Siniscalco, 2002; benchmark year: 1999; level: primary)

	40 +	No./post-secondary	No./legal teaching	Pupil/teacher ratio	Avg. class sizeTIMMS	Annual salary in

		years	hours.		(OECD)	$
Australia		3.5	996	17.3	27 (15)	$3,6971
Japan				21.2	36 (21)	
Korea (S)	46.9		658	32.2	42 (37)	$39,411
Indonesia	13.3	3	1260	23.1	21 (33)	$2,938
Malaysia	28.2	3	762	21.6	38 (30)	$17,001
Philippines	65.2	4	1176	34.4	50 (50)	$14,609
Thailand		4	760	20.7	42 (42)	$27,098

An analysis of this table shows that these countries are gradually moving closer to the western nations, with some gaps. The annual salary in $US is revealing: salaries in Australia, Japan, South Korea and Thailand are comparable to or higher than the OECD average ($27,525). They are lower only in Malaysia, the Philippines and, especially, Indonesia. The ageing rate in first category of countries is comparable to that of western countries, while Indonesia and Malaysia have a young teaching force. It should also be pointed out that Indonesia's and the Philippines' education systems require more teaching hours for particularly low pay and high class sizes (especially in the Philippines).

Latin America and the Caribbean

This region includes the following countries: Anguilla, Antigua-and-Barbuda, Argentina, Aruba, Bahamas, Barbados, Belize, Bolivia, Brazil, the British Virgin Islands, the Cayman Islands, Chile, Colombia, Costa Rica, Cuba, Dominica, the Dominican Republic, El Salvador, Ecuador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Montserrat, the Netherlands Antilles, Nicaragua, Panama, Paraguay, Peru, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, Surinam, Trinidad and Tobago, Turks and Caicos Islands, Uruguay, Venezuela.

Table 5: Some indicators helping to analyse the situation in the countries of Latin America and the Caribbean (source: Siniscalco, 2002; benchmark year: 1999; level: primary)

	40 +	No./post-	No./legal	Pupil/teacher	Avg. class	Annual

		secondary years	teaching hours.	ratio	sizeTIMMS (OECD)	salary in $ (in GDP)
Brazil	28.9%	3.5	800	28.9	(34)	$7,191 (1.10)
Chile	67.4	4	860	33.4	34 (39)	$15,868 (1.84)
Peru		5	752	23.5	(24)	$4,752 (1.05)
Uruguay		3	732	20.6	(22)	$11,675 (1.39)
Mexico			800	27.2	(50)	$13,294 (1.52)

This table shows that these are emerging countries gradually moving towards the developed nations. In fact, they have already reached the developed world with regard to these indicators: number of years of required post-secondary training (3 to 5 in the developed world, depending on the country), number of legal teaching hours (OECD average = 801) and pupil/teacher ratio and class sizes according to the TIMMS survey (fairly similar to many European and OECD countries). As the salary indicator shows, the biggest gap with the OECD countries is probably in working conditions: even Chile (the most westernised country) has a long way to go before it can reach OECD salary levels (US $27,525). However, it should be pointed out that in terms of per-capita GDP, Chile's and Mexico's results are similar to those in the OECD countries (average = 1.46).

Sub-Saharan Africa

This region includes the following countries: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, the Central African Republic, Chad Comoros, Congo, Côte d'Ivoire, Democratic Republic of Congo, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tomé and Principe, Senegal,

Seychelles, Sierra Leone, Somalia, South Africa, Swaziland, Uganda, the United Republic of Tanzania, Zambia, Zimbabwe.

The MINEDAF VIII report contains particularly interesting indicators to analyse the shortage, from both a quantitative and qualitative point of view, in this region of the world, where the situation is most alarming. The following table features the most significant indicators for a sampling of countries that are fairly representative of the region.

Table 6: Some indicators helping to analyse the situation in the countries of sub-Saharan Africa (source: MINEDAF VIII; benchmark year: 2000; level: primary)

	Net enrolment rate	% repetition	Survival rate in 6th year	Pupil/teacher ratio	Salary in per-capita GDP unit	Per-capita GDP unit cost	Per-capita GDP in US $
South African		9.90%	74%	35.00			$2,907
Botswana	84	3.70	85	27.00			$3,429
Swaziland	93	17.90	78	33.20			$1,599
Mauritius	94	4.02	100	24.90			$3,773
Madagascar	66	33.00	33	48.00	4.00	10.80	$243
Comoros	55	26.00	55	68.00			$286
Central African Republic		32.50	39	78.90	4.90	8.70	$259
Burundi	44	27.50	62	56.80	5.30	12.40	$108
Gabon				44.00			$4,009
Cameroon		25.90	49	69.40	3.40	9.50	$597
Burkina Faso	35	17.70	57	48.90	8.00	23.60	$190
Senegal	62	13.90	60	50.90	4.90	14.20	$464
Djibouti	31	11.29		32.00			875

Eritrea	40	19.40	52	47.50	7.70	22.20	166
Ethiopia		10.50	29	61.30	6.80	14.00	1,021

The table clearly shows two categories of countries: the countries of southern Africa and Mauritius; the countries of central, west and east Africa.

According to its calculations, the MINEDAF VIII report forecasts that the countries of south Africa and Mauritius will not experience a shortage between now and 2015. Those countries also have significantly higher per-capita GDP compared to the rest of Africa. It should be pointed out that the pupil/teacher ratio is lower than the standard set by the MINEDAF (ratio of 40) for these forward-looking calculations. That is probably one of the factors accounting for the good net enrolment, repetition percentage and sixth-year survival rates. Mauritius is an especially interesting case because it boasts a 100% sixth-year survival rate.

Results in the other regions of sub-Saharan Africa are very alarming. The MINEDAF's calculations point to a shortage in all those countries. For example, the teaching force will probably have to be doubled in Madagascar and increased fivefold in the Central African Republic to meet the UPE requirements (based on the standards set by MINEDAF VIII). Net enrolment rates in those countries are particularly low, ranging between 31% (Djibouti) and 66% (Madagascar). Pupil/teacher ratios are high (from 32.00 for Djibouti to 78.90 for the Central African Republic). Teachers are confronted with overcrowded classrooms. It is therefore not surprising to also see high repetition rates, reaching 33% for Madagascar; only Ethiopia and Djibouti come close to the 10% set by the MINEDAF VIII report. Nor is it surprising to see very low sixth-year survival rates: from 29% for Ethiopia to 62% in Burundi. With the exception of Gabon, which has sub-Saharan Africa's highest GDP ($4,009) but has failed to take advantage of the oil windfall, as the table's indicators show, all the countries in central, west and east Africa have very low per-capita GDP (from $102 for Ethiopia to $464 in Senegal) and the cost of education is very high, in terms of both salaries and unit cost. For example, a country like Burkina Faso, with a per-capita GDP of $190, must make a salary effort of 8.00 GDP units per inhabitant and has a per-pupil unit cost of 23.60 GDP units per inhabitant. MLA evaluation studies show that the situation with regard to the quality of skills acquired by pupils is equally alarming. If the long-term effects of such a situation are examined, the result would be equally alarming. An example is the Central African Republic's

literacy rate (22-44 year-olds): adults with three, four, five and six years of enrolment have literacy rates of 13%, 30%, 50% and 61%, respectively.

In summary

Two extreme situations coexist. North America, western Europe and some other OECD countries have (almost) achieved UPE and developed quality basic education that, on the whole, is superior to that of other countries; however, the quality of basic education needs to improve for the socially and economically underprivileged parts of the population. The countries of sub-Saharan Africa are at the opposite end of the spectrum, except for the nations of southern Africa and Mauritius. Those countries can be described as having been hit by an education catastrophe. They will not achieve the Dakar goals of basic quality education and universal primary enrolment unless there is a major drive to recruit more qualified teachers. The countries of the world's other regions lie between these two extremes: the emerging countries (such as some Latin American nations), countries with long education traditions (such as the nations of eastern Europe) and some countries in Asia and North Africa (Tunisia, for example) are gradually moving towards the first-category countries. Other countries (such as Indonesia and Mauritania, to mention just two prototypes) are still closer to the second category.

HOW TO COPE WITH THE SHORTAGE

As we have shown in the previous sections, the shortage is a complex phenomenon that takes different shapes depending on the country. There is no single solution. It is necessary to act on many factors, which are not necessarily the same depending on the situation. Those factors interact with each other. For reasons of clarity, we group them into five major categories: (1) the need for aggressive national and international policies, (2) forward-looking administrative management, (3) more efficient financial management, (4) personnel management that boosts teachers' image and makes them feel better about their work, (5) better curricula and teacher training. Possible leads that might help solve the problem are suggested for each of the five major categories. Some are applicable in most of the countries, while others are relevant in

specific contexts. In identifying these directions, we have mainly thought of the countries where the shortage is particularly alarming (especially central, west and east sub-Saharan Africa).

The need for aggressive national and international policies

Political will reflected in relevant communication policies

Most of the countries mentioned in this report have agreed to achieve the Dakar goals. However, that has not yet led them to develop a problem-solving plan in which communication plays a significant part because, in addition to the indispensable financial resources, all the forces of the countries concerned must be mobilized. One way or another, every citizen is affected: parents and grandparents because of their children and grandchildren, young people because of their future, teachers and future teachers because of their position on the front lines of the battle to ensure quality basic education, school officials because of their responsibility in managing the education system in the short and long term, political authorities because of their role in developing human sustainable development policies.

A communication drive must be carefully thought out and orchestrated to explain the issues, progressive goals spread out over time, results achieved, strategies used, everybody's responsibilities, successful field experiments, the value of careers in education, and the ethics required of each and all. The campaign must be designed to avoid the pessimism that is all too often associated with education. Instead, it must set all a country's life blood into motion. It must be constantly repeated and updated, and convince all the players that the challenge can be overcome.

Political will reflected in a "credible financial plan"

At the Dakar conference in April 2000, the financial partners made a pledge: no country with a credible plan to achieve UPE and EFA will be left out for financial reasons. Still, the

meaning of "credible" had to be defined. The World Bank suggested a simple, empirical answer by taking the seven African countries closest to achieving UPE as a benchmark. They are Gambia, Ghana, Kenya, Lesotho, Nigeria, Uganda and Zambia. The benchmark values used by the World Bank are identified in the following table.

Table 7: Extract of benchmark values for the EFA 2015 fast-track procedure initiative (Source: WB)

Factors	**Average of 7 benchmark countries**	**Indicative values for 2015**
Mobilisation of resources		
Domestic income in % of GDP	18.8	14-18
% of running public expenditure allocated to education	19.3	20
% of education expenditures allocated to primary education	44.4	42-64
Student flow indicator		
Repetition % among primary school pupils	9	10
Education service production indicators		
Pupil/teacher ratio in public primary schools	39	40
Average salary of primary-school teachers in GDP units per inhabitant	3.8	3.5
Current expenditures for items other than teacher remuneration in % of total running expenditures for primary education	18	33
% of pupils enrolled in privately-funded schools	5	10

Based on these indicative benchmark values, which must be adapted to specific national circumstances and conditions, the WB (Mingat, Rakotomalala, Tan, 2002) has calculated the annual share of national resources and the share of necessary outside funding. The percentage of outside needs for African countries varies widely, from 14% for the Republic of Congo to 77% for its neighbour, the Democratic Republic of Congo. Determining which countries have

or will have a "credible plan" will be among the obvious indicators of national political will. Still, they will need help developing those plans because national political officials believe they lack some of the necessary skills to do so.

Clearly expressing the desire to cut repetition rates and keep pupils in the education system

Some countries, especially in French-speaking Africa (though the phenomenon can also be observed in some European countries), have what could be called a "repetition culture". In those places, repetition is mistakenly perceived as an indicator of quality and high standards in the education system. Advocates invoke the sequential nature of learning, the need to keep pupils at the same level together in the same classroom and the incentive effect of sanctions. Those arguments fail to hold up upon closer analysis. Reviewing a wide range of research, Crahay (2003, 2nd ed.) shows that in over three out of four cases, repeating does not help the pupil progress; in fact, the opposite is true. PASEC's research in Côte d'Ivoire, Senegal and Burkina Faso shows that pupils who repeat CP2 (grade 2) catch up to and even surpass the average level of their new class by the end of the second CP2, but that the effect is short-lived: the next year, the same pupils in CE1 (grade 3) are often working below the class average. PASEC also bears out Crahay's conclusions: the pupil's level alone fails to account for the decision to repeat. For example, in Côte d'Ivoire, 30% of repeating pupils are not in the lowest third on the national level. Repetition is also related to the teacher's background (teachers with several years of tertiary training are more likely to keep pupils back) and the class's make-up (the probability of repeating is 4 to 5% lower in double-flow classes). There is enough research to justify opposing teachers who go to great lengths to ensure that all the pupils in their classes are on the same level. The research also shows that if a teacher has a homogeneous class early in the school year, he or she will ensure that by the end of the year it is divided into tiers of good, average and poor pupils.

Reducing repetition rates must be a clearly expressed policy because it has many negative effects on the education system (in addition to harmful effects on the pupils themselves). First, repeating prompts many pupils to drop out before achieving the Dakar goals (UPE and EFA). Second, the practice is very expensive because each pupil kept back is an additional unit cost. Third, high repetition rates exacerbate the teacher shortage. Based on that observation, Tunisia has carried out an exemplary policy, cutting the repetition rate from 14

or 15% in 1993 to approximately 5% today. The financial gain generated by that policy has been focused on improving teachers' working conditions and raising education quality.

Clearly expressing the desire to develop more equity in the education system

The teacher shortage and, in a broader perspective, the shortfall in achieving the Dakar goals, particularly affects remote rural areas in developing countries and, in the developed countries, priority education zones where ethnic and underprivileged minorities are concentrated. But these populations are precisely the ones that need the most attention from public officials if they take the goal of education for all seriously. They are also the populations with the greatest need for skilled teachers and an environment that promotes learning. During the 20th anniversary of the ZEPs and REPs in France (Zones et Réseaux d'Education Prioritaire), the importance of the two following factors among those that distinguish successful schools (pupils performing above the national average) from under-performing schools was brought up. First, successful schools have created environments that are very different from the social and family environment: the building is clean, well-kept and enjoyable to be in; teachers have tools that motivate their pupils to learn; the setting is professional. Another major factor is the teachers' faith in all their pupils' ability to learn and their ability to teach them (instead of giving up on some and paying more attention to the "best" members of the class), despite the fact that the schools are located in disadvantaged areas.

It is therefore important for political and school officials to clearly express their will and that it be reflected in specific decisions and actions. They must also focus particular attention on schools in areas where working conditions are difficult and teachers are reluctant to tread. Those areas are precisely where teaching skills are needed the most. In the rest of this chapter, we will mention a broad array of possible directions for taking action. But first we would like to discuss two strategies in two different countries. One is positive, while the other has caused unwanted effects.

For several years, Chile conducted a large-scale project focusing on over 800 underperforming schools in disadvantaged areas (see the paper by Chile in the proceedings of the 20th anniversary of ZEPs in France). Thanks to a set of support strategies (additional material aids, teaching tools, help for children in trouble from young people under the supervision of guidance counsellors, etc.), the programme has helped to improve, in a

statistically significant way, the performances of pupils in those schools and enabled a substantial proportion of those schools to leave the programme (by devising imaginative methods to ensure that they resist the temptation to stay in the programme in order to keep receiving additional material aid).

The second example, in Tunisia, is based on a teacher evaluation system (the same one can be found in many countries). In this system, the teacher's rating changes with age and experience. A good rating gives them priority in transfer requests, meaning that the most experienced teachers leave areas and schools with the greatest need of their experience and skills. That is only human, so political officials must find strategies that can counter the trend.

A policy to boost teacher morale

In a research project conducted by Sane (2003), and which we directed, we sought to take a snapshot of teacher morale in Senegal. We based the concept of teacher morale on two combined indicators: job satisfaction level and staying power ("If I had to do it all over again, I'd make the same choice"). Here are the results obtained from a sample of 166 teachers of both sexes and different ages.

Table 8: The morale of teachers in 9 areas as reflected in staying power (in rows) and job satisfaction (in columns). (SANE, 2003, p.124).

		Satisfaction			
		Low	**Mixed**	**High**	**Totals**
	High	A = 10	B = 30	C = 6	**46**
Staying power	**Mixed**	D = 27	E = 46	F = 1	**74**
	Low	G = 35	H = 10	I = 1	**46**
	Totals	**72**	**86**	**8**	**166**

The table shows that 52% of the teachers (boxes C, E and G) are consistent in the sense that job satisfaction and staying power are closely related. But only six out of 166 teachers have high morale (3.6 %), while it is mixed for 46 (27.7%) and low for 35 (21.1%). However,

despite low satisfaction rates, the teachers represented by boxes A, B and D (67 in 166, or 40.4%) show little sign of wanting to leave the profession. Deeper analysis shows that they find sufficient reasons (free time, other jobs to supplement their income, benefits relating to civil service status) in their socio-economic environment to offset dissatisfaction with their professional environment. That shows how important it is to set up strategies to make up for shortcomings, as long as they do not harm teaching quality.

Implementing national reward policies

Some western countries have developed reward strategies, accompanied by communication campaigns, to try and stem the tide of demoralisation. Examples include Great Britain with its Teaching Awards, Belgium with the annual Queen Paola Foundation awards bestowed on teachers or teams of teachers who have developed innovative initiatives that are easy to adapt to other places, and France with its innovation commission and days.

Applying the "ILO/UNESCO recommendation concerning the condition of the teacher work force" by all countries

In a dossier of Education International magazine (May 2001, pp. 15-22), Sheena Hanley says that in many countries where teachers have civil servant status, their collective bargaining rights are severely curtailed. For example, "In Francophone Africa, union rights in the education sector are limited... despite ILO rulings that teachers should have full unionisation rights including the right to strike". In Peru, officials continue to deny teachers the right to exercise trade union responsibilities. In Djibouti and Ethiopia, persecution of elected trade union officials, transfers to the most remote corners of the country, dismissals and even jail sentences have been imposed on those who believe in exercising their rights. Similar examples abound, but there has also been some progress. In 1975 in Canada's Ontario province, the School Boards and Teachers Collective Negotiations Acts gave teachers the right to bargain over all issues relating to terms and working conditions, including class sizes and preparation time.

For these reasons, Education International presented a report to the triennial meeting of the CEART (the joint ILO/UNESCO Committee of Experts on the Application of the Recommendations Concerning Teaching Personnel) enjoining countries to apply the recommendations, emphasizing the importance of six points in the definition of education policies: (1) the teacher shortage and recruitment of unqualified teachers, (2) teacher salaries, (3) consultations with teachers' organisations, (4) academic freedom and teacher tenure, (5) decentralisation, (6) privatisation, (7) HIV/AIDS. Those points are developed in close connection with the articles of the Recommendation.

Developing a culture of evaluation to ease the shortage and achieve the Dakar goals

All too often, political and school officials announce far-reaching goals and make sweeping declarations at international meetings, but after the last speeches are over and the delegates return home, there is little or no operational and planning follow-up. When there is, continuous evaluation of the implemented policies is often non-existent. Easing the shortage and achieving UPE and quality education for all requires setting up a "culture of evaluation" among everybody in charge of managing and monitoring the education system.

The culture of evaluation involves (1) translating goals into observable indicators located on a time line, (2) creating methods to gather information about those indicators while meeting validity criteria and information-gathering deadlines (the latter is a major challenge and a priority for developing countries), (3) communicating with the managers concerned within the desired deadlines, (4) effectively using the indicators and translating them into operational decisions, (5) communicating quickly and adequately with the players involved by applying decisions.

The culture of evaluation should focus on two kinds of indicators: management indicators and results indicators. The first mainly have to do with financial resources, equipment and human flows (teachers, pupils, others). The second are basically quantitative and qualitative indicators of effectiveness (observed effects compared to expected effects), efficiency (relationships between observed effects and investments), equity (observed effects better distributed among social strata according to sex, geographical origin, social, ethnic, religious and other characteristics).

Our experience shows that many African countries still need technical assistance in setting up a culture of evaluation. It also reveals that meeting deadlines is a major problem for many countries. Gabon's experience is a good case in point: thanks to technical assistance funded by the European Union in 2003-2004, for the first time the Ministry of Education will be able to plan for the start of the next school year with current data instead of two-year-old information.

Implementing a watchdog committee to ease the shortage and achieve the Dakar goals

In many countries, managers become bogged down in administrative details and loose sight of the big picture; they are harassed by supplicants who do not even leave them enough time to read important reports and think about the longer term, or consumed by political squabbles that have nothing to do with managing the education system. In these cases especially, it is a good idea to set up a sort of watchdog committee to independently monitor the strategic plan to ease the shortage and achieve the Dakar goals by 2015. The committee's members should be experts helped whenever necessary by technically skilled people to enlighten them on certain issues. They should have access to all the information deemed necessary, the power to order further studies and the ability to report on their work to members of parliament and the officials or institutions concerned.

Forward-looking administrative management

Teacher recruitment incentive policies based on a forward-looking study of flows and in view of achieving the goal of UPE

Each country should be able to set up an annual teacher recruitment plan to reach at least the UPE goals (a top priority for some countries) by 2015 and, as far as possible, the criteria for basic quality education for all (an essential target for countries that have already reached UPE objectives). Methodologies for that purpose already exist. The countries of sub-Saharan Africa can draw inspiration from work presented by the WB on the extension of the Dakar

EFA meeting (Mingat, Rakotomalala, Tan, 2002). Here again, some lending institutions should be able to provide technical assistance.

After they are in possession of the data, and depending on the size of recruitment needs, incentive policies should be implemented. Many ideas can be considered; adopting them depends on the context. Here is a list of those ideas:

- Track down ghost teachers, in other words individuals who are on the payroll but have dropped out of the Ministry of Education's sight.
- Diminish the number of teachers not teaching and reassign superfluous teachers to administrative or supervisory tasks. One management law says that productivity in companies is inversely proportional to the number of white-collar employees in the central administration. That law would be verified by a senior civil servant working in large institutions dealing with education: the internal efficiency of national education systems seems to be inversely proportional to the number of civil servants in the central administration.
- Implement incentives to raise the proportion of women teachers in countries where there is a lack of parity.
- Bring in foreign nationals who can speak the teaching language to offset the shortage of native-born teachers. Several countries have benefited from this strategy. In Gabon's rural primary schools and middle schools (especially for subjects such as mathematics and science, where there are not enough teachers), positions are often filled by citizens from neighbouring countries; some have fled war, others have been attracted by more attractive salaries.
- Scout talent in ethnic and social minorities in urban areas and help them rise up the social ladder through a teaching career. During the first half of the 20th century, that policy helped the western countries achieve UPE and offer all their citizens a quality education. Most primary and lower secondary-school teachers were bright pupils from the working and middle classes who lacked the economic or psychological wherewithal to pursue a university education. In countries where the training of primary and secondary-school teachers does not require long years of university education (such as Belgium), the situation has utterly changed: a large number of students in teacher training institutions have failed repeatedly at university, which seems to have lowered teacher qualification levels.

- Offer bright secondary-school graduates scholarships to pay for their teacher training, subject to certain conditions (such as the obligation to teach a set number of years under penalty of having to pay back the scholarship). That strategy is used in many countries to recruit military doctors. The US is also envisaging such steps to recruit more teachers.
- Extend careers wherever possible or necessary. However, job-related stress is particularly high in some places and steps involving career length should be accompanied by supportive measures or a diversification of tasks, even a reduction of certain tasks.
- Increase teaching hours in countries where they are comparatively low. That requires collective negotiation and often, compensation or salary raises.

The need for centralized teacher recruitment and assignment

Robert Sikkes (2001) argues in favour of centralized teacher recruitment. "More effective is centralised recruitment through bodies like Recruiting New Teachers (RNT, United States) and the Teacher Training Agency (TTA, England). The combination of campaigns, call centres, databases of people who requested information, direct mail and organised 'taster' courses is necessary and only possible with professional organisations for recruiting teachers." Sikkes puts forward two major ideas: the importance of centralized recruitment procedures; and the need for a professional definition and operationalisation of recruitment guidelines. Our experience shows that recruitment guidelines are unclear or irrelevant in many countries.

Decentralized post-assignment experiments can have considerable unwanted effects if they are not accompanied, upstream and downstream, by certain indispensable assignment procedures and guidelines. Central officials must be able to keep the power to apply the policies they have defined and planned, which does not rule out (and even requires) negotiations with the local authorities, or even a certain margin of manoeuvre for the latter. We will have the opportunity to identify assignment guidelines that seem important to us for achieving the Dakar goals.

Controlling subsidized private schools

The percentage of pupils enrolled in private schools varies widely from one country to another (8 to 38%, according to MINEDAF VIII statistics). So does the idea of "private schools". They can be entirely, partly or not at all subsidized; approved by the Ministry of Education or not; completely, partly or not all use the same official, standard teaching programme and/or materials as public schools; may or may not send their pupils to take examinations held by the Ministry of Education. An analysis of the situation gives rise to several leads:

- The Ministry of Education must be able to keep its right of inspection over private schools.
- That right is all the more imperative if those schools receive subsidies or other forms of assistance.
- Private schools can help contribute to a spirit of healthy competition, but the Ministry must ensure that they do not widen the gap between rich and poor.
- Private schools can help fight the teacher shortage, but their number should not exceed a certain limit, which would vary from one country to another; in the area of basic education, the WB suggests an average of 10%.

The need for disaggregated statistics to reflect different situations within a country

As we pointed out in the previous sections, the Ministry must be able to rely on a competent central service, managing and distributing to the appropriate people the statistics necessary for managers, political leaders, funding institutions and the monitoring committee. There is a long way to go, especially in some countries, before adequate, reliable and internationally comparable statistics become available. To ease the teacher shortage, Siniscalco (2002, p.3) emphasizes the need to collect comparable data about the following points:

- Direct steps to evaluate the qualifications of the existing teaching force.
- Continuous training programmes for teachers.
- A teacher's total workload.
- Class sizes.
- The competitiveness of teachers' working conditions.
- Teacher training results.
- Teacher participation in school decision-making processes.

In addition to national statistics on pupil and teacher flows, as well as on the above-mentioned items relating to teachers, it is important to have some disaggregated statistics, because national figures may not reflect local situations in a single country (an average might be the aggregation of two opposite situations). Right now, many developing countries are unable to compile disaggregated statistics for all their regions. In that case, it is important to be able to have disaggregated statistics available for two or three regions that represent the other regions fairly well. The disaggregated statistics should be accompanied by case studies in order to provide a sufficiently relevant picture of reality and enable officials to make relevant, realistic decisions. For example, if certain regions without paved roads, far from a country's capital city, are to be taken into consideration, it is important to have sufficiently accurately data, such as:

- How much time does a teacher take to pick up his or her salary or meet the official in charge of the district?
- What are the periods of the year when the region is almost inaccessible to supervisors (the rainy season)?
- What are the periods of the year when parents need their children for work?
- What are the market days, when teachers and pupils may not go to school? Etc.

Without this kind of data, the only management system that can be set up will be bureaucratic, unrealistic and unfair. However, if this type of information is available, it is possible to conclude goal-based contracts with regional officials.

Coherent management of single-grade, multi-grade and double-flow schools

In some sparsely-populated rural schools, the higher the grade, the lower the number of pupils, especially when repetition (and therefore drop-out) rates are high. To ease the teacher shortage and aim for the Dakar goals, it is important to simultaneously conduct a two-pronged policy in these schools:

- Pupil management through a policy of multi-grade and double-flow classes.
- A drastic reduction of repetitions.

The Tunisian Ministry of Education's policy has been exemplary in this regard. It implemented this double-barrelled approach to cope with low student numbers in rural schools and reached UPE goals in a few years. The policy has stood up to pressure from

teachers demanding single-grade classes, even while assessments show that pupil performance in multi-grade or double-flow classes are at least as good. This kind of policy requires the availability of sufficiently accurate disaggregated data and qualitative information on the characteristics of the regions concerned.

Improving assignments in difficult areas

In developing countries, the teacher shortage is particularly severe in rural areas, especially when they are far from the capital city. Roads are poor and living conditions harsh. Teachers with low education and skill levels are often assigned to areas where the school-going population is the most underprivileged and highly experienced teachers are needed most. Evaluation procedures according to which the teachers with the highest notes can chose where they want to be assigned exacerbates the imbalance between regions.

New assignment criteria and incentives must be developed to ensure that experienced teachers are sent to work where children need them the most. They can include:

- Decent housing.
- A bonus for being assigned to a remote area.
- The possibility of working at other jobs offering an additional source of income or social recognition.
- An activist commitment to helping the most disadvantaged members of the population.

In developed countries, the teacher shortage is increasingly severe in areas that are sometimes called "priority zones". They are often located in urban and suburban areas with high concentrations of socially, economically, ethnically and culturally marginal or marginalized populations. Working conditions there are particularly difficult because the local populations' frustration often breeds violence, which is sometimes accentuated by the school itself. The work is much more complex in these neighbourhoods, where teachers cannot limit their roles to the mere transmission of knowledge. They must harbour the deep-seated conviction that these children are "educatable" and that they have or can develop the necessary skills to ensure that they learn. It also requires real teamwork.

The situation is very alarming in many countries; vicious circles are setting in that are hard to break. Working conditions are psychologically difficult, teacher burn-out is more widespread than elsewhere, the number of sick days and requests for part-time work and pre-retirement are very high, turnover prevents the development of stable teaching teams that are reassuring for the children. Young, inexperienced teachers are shocked to discover a situation for which they were not prepared. School officials in many countries are trying to deal with this situation. Canada's school boards have suggested the following leads (Stapfe, 2001):

- Work to improve the conditions in which teachers teach and children learn.
- Maintain supportive programmes, resources and competitive remuneration packages.
- Use the pool of substitute and part-time teachers to fill full-time positions.
- Provide greater opportunities for on-the-job training.
- Raise investments in public education and the provision of education resources.

In the United States, one in three teachers newly assigned to schools in disadvantaged neighbourhoods leaves his or her post after one year, and half leave after five years. A major recruitment drive ("Recruiting New Teachers") is under way to deal with the situation. The following are the main points (Sikkes, 2001):

- Attract talented members of minority groups in underprivileged neighbourhoods and provide them with access to housing in their neighbourhood of origin.
- Enable young teachers who want to live and work in city centres to do so.
- Provide an income during the training period to future teachers who want assignments in schools in disadvantaged neighbourhoods.
- Set up (as in England, Belgium and the Netherlands) special programmes for adults that provide direct access to the teaching profession by attracting adults who wish to change careers (after years of dull office work, for example) or are driven by a commitment to social change.

The programme has been successful: in 1998, 24,000 people took fast-track teacher-training courses, but the number was five times higher the following year.

More efficient financial management

Improving control of wage costs

Especially in developing countries, easing the shortage requires controlling the cost of education, particularly wage costs. That is all the more necessary because in most countries, it is difficult for the increase in the share of GDP devoted to education to benefit from spectacular rises. In some countries, the percentage of expenditures allocated to primary education has already surpassed the EFA 2015 benchmark figures calculated by the WB (Mingat, Rakotamalala, Tan, 2002). Fourteen of Africa's 33 target countries are in that situation: Angola, Benin, Burkina Faso, Cameroon, Chad, the Central African Republic, the Democratic Republic of Congo, Eritrea, Gambia, Guinea, Madagascar, Mozambique, Niger, and Sierra Leone.

Although those countries have shot past the benchmark percentages, the WB calculations show that all of them need major external contributions from international funding institutions. With the exception of Angola (15%), the planned external contribution is equal to or over 30% in all the countries. It even exceeds the 50%-mark in Burkina Faso (58%), Niger (55%), the Democratic Republic of Congo (77%) and Chad (52%). Funding institutions will require them to carry out sweeping reforms to curtail education costs. Many of these countries will probably need technical assistance to bring the reforms to a successful conclusion. That requires setting up mechanisms to manage information and the exact calculation of costs per pupil depending on salaries, class sizes and workloads. Considering the wage bill's share of the budget, rigorous wage calculation requires thorough, up-to-date knowledge of a broad range of parameters: precise definition of responsibilities (the definition of teacher is far from clear in some countries), identification of assignments, tracking down of ghost teachers, reduction of the number of teachers not teaching, clarification of bonuses and various benefits based on a coherent policy aimed at easing the shortage.

Improving knowledge and distribution of non-wage costs

Salaries account for a major share of the education budget and require particularly rigorous management. However, basic quality education for all largely depends on better knowledge of the impact of various school and non-school factors and, consequently, better management of certain non-wage budget items.

UPE requires the building of schools, but that is a non-recurring item often paid for by funding institutions or rural communities. In the latter case, the basic infrastructure provided is often insufficient or inadequate for quality education. Some funding institutions (such as the European Union in Gabon, for example) have understood that and are carrying out programmes to identify those schools and set up rehabilitation projects. But there is still no agreement on the definition of basic infrastructure. Shouldn't levels of basic infrastructure also be defined on the one hand for basic education *for all* (equity is the priority) and on the other for *quality* basic education for all (effectiveness in addition to equity is the priority)? And shouldn't a policy of gradually raising infrastructure quality be defined? The first things an EFA programme must try to provide are a roof, four walls and a table, but benches should not be far behind. After that, it is necessary to increase comfort by providing amenities such as latrines (and therefore water). It is necessary to spell out such a policy by 2015, because it is one of the factors likely to reduce the teacher shortage.

In addition to non-recurring investments, one of the major challenges some countries encounter is maintaining their infrastructure in decent condition. That requires drawing up a forward-looking budget of recurring items, which is either non-existent or poorly managed in most of the 33 African countries involved in the "EFA 2015 Fast-Track Procedure" programme. In-depth studies and experiments in different contexts are necessary to define a realistic, inexpensive and rigorously managed maintenance policy, which would also play an educational role for pupils and the local community by involving them in the budget allocation process.

Another annual recurring item is the teaching and administrative tools required for the school year to successfully proceed. Once again, it is necessary to identify the content of three "basic kits"—one for each pupil, teacher and head teacher—and to distinguish between their various quantitative and qualitative levels in the framework of a gradual policy to implement UPE and quality basic education for all. Many developing countries have a considerable amount of work to do in this area in, as the studies by Mingat and Suchaut show (2000). There is a long way to go before the basic goal of one reading textbook for each student is achieved. Where that has been planned, strategies to make them available have been inefficient or inequitable (the pupils who need them the most are the ones who do not have any). And it is not uncommon to see those much-needed textbooks for sale at the country's markets, or even abroad. The same observations have been made of the teacher's and head teacher's kits.

Extensive planning is still necessary in this area, which affects four aspects touching on each other: identification of the kits' contents in the framework of a progressive policy, calculation and adaptation of costs, implementation of effective, fair strategies to make them available, monitoring of availability. Obtaining those kits is likely to be another factor in reducing the shortage of teachers assigned to disadvantaged areas.

Implementing more effective payment procedures for teachers in remote areas

Teachers in remote rural areas often go through a great deal of trouble to receive their salaries, which makes it hard to fight the shortage. As we have already pointed out, distance, road conditions and the consequent lack of bush taxis, and insecurity are major problems. Each month, many teachers must undertake long, arduous journeys to the district capital, which in some cases requires a month. The best way to solve the problem is to make major investments, especially in the building of paved roads. Infrastructure improvements would also stimulate the local economy make the area more attractive for the teachers assigned there.

The case of Madagascar is worth examining more closely because it currently combines a gradual road improvement programme (the needs are staggering because the paved road network does not reach most of the country) and a reorganisation of the school year into six-week periods alternating with one week of continuous teacher training in the district capital, when teachers can also pick up their salaries and buy provisions at the market. This could be an interesting solution, as long as the money arrives safely and on time without being embezzled. Those conditions are not always met, which sometimes means teachers stay out of school longer than planned. Securing the transportation of funds is a problem in some areas. To make matters worse, many remote districts have neither a bank nor a post office. Perhaps several ministries (finance, post and education) could start considering a system where teachers could perform double-duty as couriers of mail, administrative papers and postal orders. If the system is well-designed, implemented and monitored, those responsibilities, accompanied by additional remuneration, could improve teachers' lives and make their jobs more attractive.

Personnel management that enhances teachers' status

Developing an ethic of the teaching profession

Of course, schools and teachers are needed. Of course, pupils and teachers must have decent working conditions. Of course, teachers are needed whose know-how matches the needs in the areas where they are assigned. But all those conditions will not help achieve basic quality education for all without the development of a teaching ethic through recruitment procedures, initial and continuous training, assistance and support, evaluation and motivation.

It is therefore important to develop an ethics policy among teachers focusing on several areas. The first concerns the communication policy mentioned above. The rewards and benefits of UPE and quality basic education for all, the strategies developed by 2015 and the important role that teachers play in it must be demonstrated. The second area focuses on beliefs and convictions. The goal is to combat fatalism and pessimism and forge the beliefs that pupils are "educatable", teachers have or can acquire the skills they need, weaknesses can sometimes be turned into strengths thanks to the power of faith and teamwork. There is a close link between teachers' ethics and morale. The third area is the development of a certain "knowing-how-to-be". Research (De Ketele, 1986; De Ketele and Roegiers, 1993) shows that, if know-how is a matter of "being able to", "knowing-how-to-be" is a question of internalised habit. "Knowing-how-to-be" conducive to the development of quality education is based on the combination of three interacting factors:

- If, in the situations encountered, teachers spontaneously acquire the habit of selecting stimuli that will help their pupils progress instead of stimuli that contribute to their personal comfort, a favourable professional ethic will result.
- The same thing will happen if, in the situations encountered, teachers spontaneously acquire the habit of basing their opinions and judgements on a value system that deeply respects the pupils.
- Even more important, a favourable professional ethic will develop if, in the situations encountered, teachers acquire the habit of behaving with integrity, becoming role models for the students.

Human development psychologists are fond of an aphorism that summarizes a basic law involving the construction of personal identity: "I am what the other's gaze has made of me."

The teacher's gaze is so fundamental in the construction of the pupil's personal identity that it should be a pillar of a professional ethics.

An incentive and recognition policy, especially for teachers working in difficult areas

Some people harbour the naive belief that developing a purely altruistic teaching ethic is enough. Of course, there will always be a small fringe of social activists whose primary motivation is a heartfelt desire to serve the noble causes of UPE and quality education for all. But achieving those goals requires a much bigger critical mass. The first thing on teachers' minds is the welfare of their own families. So there will be no satisfactory easing of the teacher shortage unless they are offered a package of sufficiently attractive rewards to attract them to difficult areas. However, in addition to material and financial incentives, it is important to set up morale- boosting policies that increase the recognition of teachers working in difficult areas, who need more motivation and skills. Those policies could be based on public recognition of teachers who have obtained above-average performances from their pupils. Following the example of some countries, teachers working in disadvantaged areas could have the mission of scouting particularly bright children and helping them obtain scholarships. In addition to helping worthy pupils, that would raise teachers' social status in the local community. The strategy has already proven successful in some countries.

A support and monitoring policy, especially for teachers in difficult areas

Oddly, teachers who need closer and more intense monitoring the most are the ones who receive it the least. We have already mentioned a set of explanatory factors and leads to explore, including building roads when possible and grouping teachers together.

But another stumbling block is that the people in charge of supporting and monitoring teachers often have neither the motivation nor the skills required to help them cope with problems they have often never experienced themselves. They might take refuge in administrative work or in merely dispensing information and instructions that have nothing to do with the problem at hand. Support for teachers requires modesty and good listening skills on the part of the supervisor. Teachers confronted with a problem can understand that

supervisors might not have a ready-made solution, but they cannot accept the problem's being brushed aside or ignored. On the other hand, they are grateful if the supervisor clearly displays a heartfelt willingness to seek a solution with them or other teachers. In some countries, including Tunisia, we have attended meetings where teachers and supervisors coping with problems they perceive as difficult have exchanged their views and experiences. Those sessions have proven to be an interesting form of support and monitoring. A supervisor training policy is indispensable to reduce the teacher shortage in difficult areas.

Integrating teachers into the local environment better

Recognizing teachers and improving their morale depends on integrating them into the local environment. In many remote rural communities, the teacher is the only educated person, and therefore called upon to do many favours. Local community and regional officials should emphasize and use the service aspect of their work. This policy has been a factor of development in countries before universal enrolment was achieved. As we pointed out above, experts from several ministries should put their heads together to develop and implement a service-based policy relying on teachers in remote areas.

Enhancing the head teacher's supportive role

In schools with several teachers, one of the head teacher's top priorities should be to set up a team that can manage problems under his or her responsibility and leadership. In schools with only one teacher, it would be a good idea to group schools together and hold meetings on a regular basis, enabling teachers to overcome their isolation, exchange experiences and information, offer one another support and, if need be, learn more skills.

Assigning experienced teachers to difficult classes

The most experienced teachers are traditionally assigned to upper-lever classes, especially classes to prepare pupils for examinations or competitions. However, research shows that their skills are put to better use teaching basic learning skills during the first two years of

primary education. Many pupils can be kept from repeating, and therefore dropping out, if the tradition were changed.

Reducing class sizes in grades 1 and 2

Especially in developing countries, teachers avoid the lowest grades because the classrooms are often overcrowded and it is therefore harder to obtain good results. To attract teachers to first- and second-year classes, decrease repetition and drop-out rates and lay the groundwork for quality education, to us it seems important to reduce class sizes, even if that means increasing them in the higher grades, where teaching is easier.

On a recent mission to Madagascar (March 2004), we analysed class sizes and interviewed local officials. Here are some of the data gathered for schools in the Brickaville district, which is not the most disadvantaged one on the island. The following table shows how the number of classes is broken down by pupil categories.

Table 9: The number of classes in the Brickaville district (Madagascar) broken down according to the number of pupils in 2004.

Class size (number of pupils)	**CP1 only (number of classes)**	**CP2 only**	**Multigrade class CP1 and CP2**
< 50		13	3
51-75	8	5	11
76-100	10	7	7
101-125	5	2	8
126-150	6	1	5
151-175			3
176-200			1
>200	2		
TOTAL	**31**	**28**	**38**

Class sizes vary from 25 to 214 pupils. CP1 classes are overcrowded, with sizes ranging from 60 to 214: most have 60 to 150. CP2 classes are less crowded, with their sizes varying from 25 to 146 pupils; 13 classes have less than 50 pupils and 13 others from 51 to 100. Class size

continues dropping in the higher grades. The situation in multigrade classes is especially alarming because sizes range from 36 to 193 pupils, with 17 classes having more than 75. Young teachers and teachers who are paid by the community and have had no teacher training were assigned to CP1 and multigrade classes. It was not surprising to see high repetition and drop-out rates in those classes. National statistics fail to reflect that reality: CP1 class sizes in the Brickaville district are much bigger than the average of 48 pupils appearing in the national data. This example shows that disaggregated statistics are indispensable for having an accurate view of problems.

Improving teachers' living and working conditions in difficult areas

The Brickaville example shows that diminishing class size, especially in the lower grades, can be a start towards improving teachers' working conditions. But other improvements are necessary to address the teacher shortage in difficult areas. One of the most basic ameliorations that can be made for teachers working in remote communities is housing. We saw some unbelievable situations in the field. Some teachers have four walls and a mattress in a tiny space, while others live in their classrooms. It is easy to understand why they cannot wait to flee the workplace. We often met teachers who would rather undertake long, arduous journeys than live in the communities where they work.

Other improvements could also upgrade living conditions. Some, such as distance bonuses or bonuses proportional to the length of service in disadvantaged areas, could be offered by central officials, while local officials should be able to offer others. A policy of remunerating services rendered to the community and organized by several ministries (see above) should also help to improve teachers' living conditions in these areas.

Improving teacher-training curricula and methods

Teacher-training curricula focusing more on problem-solving

Analysis of teacher-training curricula reveals that they are often designed and produced in the following way:

- They often juxtapose separate courses next to each other.
- Courses can be broken down into three categories: acquiring a command of the subjects taught, general and specific teacher-training courses, basic education science disciplines (education psychology, education sociology, etc.).
- Observation and teacher traineeships coexist with courses that have no relationship to theory courses.
- Teacher trainers work independently and do not know what their colleagues are doing.
- Most courses are lecture courses (including courses on active methods!).
- Some teacher trainers either have never taught a class or lost touch with the classroom long ago.

These problems occur with most frequently in many developing countries, especially in French-speaking Africa. This type of curriculum develops what Edgard Morin calls "ignorant knowledge", in other words immobilized, unused and unusable knowledge.

This type of curriculum might raise the general level of education, but it does not train professionally skilled teachers capable of solving learning and education problems in the environment that will be theirs. The more teachers are confronted with a difficult environment, the more important it is to develop initial and continuous training curricula based on a problem-solving approach or on a "pratice-theory-pratice" paradigm. This type of curriculum:

- is always based on problems and case studies drawn from the actual working environment,
- analyses them using already existing cognitive and experiential methods to realize that a deeper analysis and effective problem-solving process requires the use of additional theoretical and methodological knowledge,
- applies them to the problems and case studies presented.

Too many intellectuals and teachers have developed "ignorant knowledge" because of the type of curriculum used. More than ever, developing countries need intellectuals and teachers who are agents of development: their training must be based on a problem-solving approach.

Fast-track training for teachers without professional credentials

The shortage has led many countries to use teachers who are either volunteers or on the local community's payroll. Their education level is frequently lower than that of their accredited counterparts, and many have never received any professional training. What's more, these teachers are usually found working in underprivileged rural areas. They must not be left to their own devices and deserve special attention from school officials. A two-pronged policy must be implemented:

- A fast-track training policy focusing on classroom subjects (which are often poorly mastered, according to the field observations we were able to make) and professional skills stressing effective, equitable teaching methods.
- A policy to help these teachers gradually acquire a recognized, image-enhancing status based on the fulfilment of certain conditions, in particular, taking supervised training courses and meeting the terms spelled out in goal-based contracts (for example, the pupils they teach will be required to show results in basic skills).

Experts agree that if training is not immediately put into practice in the field, it is almost a waste of time. Two conclusions can be drawn from this:

- Training must be accompanied by monitoring, but that would be difficult in remote, hard-to-access areas.
- More than ever, fast-track training and monitoring must be based on a problem-solving approach and a comparison between practices developed and results achieved among pupils.

Workshops for exchanging experiences

Workshops for exchanging experiences should be the cornerstone of continuous, monitored training. They should be organized on four levels:

- On the local level, in a school or grouping of schools close to each other, workshops help ensure a support network that inspectors and guidance counsellors living in a regional or district capital are unable to provide (on account of distance, absence of transportation, too many schools and teachers to manage).
- On the regional level, workshops can be scheduled at key times in the year. Here are some possible examples: early in the school year if teachers are invited to a

school-year planning meeting; or late in the year if they sit on a board of examiners; or during a major holiday, when they might gather in a certain place. The workshops should focus on needs that teachers consider a priority. Effective, realistic and transposable experiences must be identified beforehand.

- On the national level, between now and 2015 it is a good idea to plan several major, high-profile experience-exchange meetings. That planning could be part of a communication policy spelled out by senior school and political officials and should publicly commend the work of particularly innovative teachers while publicizing effective, equitable practices to help solve priority problems encountered in the field.
- On the international level, exchanging experience by visiting countries that have successfully developed effective strategies to achieve UPE and improve quality basic education has proven very useful for national managers, helping them become more creative in solving problems through contact with people from other nations. Institutions such as UNICEF and the World Bank learned that sending national managers to Tunisia to see how and with what results that country set up a basic education programme focusing on a skills-based approach was a particularly profitable experience.

Listening to teachers at the highest level

Teachers, especially those working in difficult circumstances, need to be listened to; they often feel that they are not. To successfully meet the challenge of UPE and quality basic education for all by 2015, school and political officials must make it clear that they hear and understand teachers. The policy of organizing exchange workshops on several levels can address that problem, as long as it shows and publicises how much officials care about teachers' problems and how attentive they are to promoting successful solutions crafted by teachers themselves.

The desire to show and publicise that school officials' uppermost concern is teacher welfare (promoting, and not obstructing, the creation of an effective, equitable workplace) and that the teachers' uppermost concern is the pupils' welfare (promoting, and not obstructing, the creation of conditions where they can learn and thrive) should so constant that it gradually

becomes a shared feeling. Especially in some countries, people must work to make the shift from a culture of command and control towards a culture of well-understood evaluation focusing on results and on the means that can be identified together to achieve them.

On many missions to countries that still have a long way to go to achieve the Dakar goals, we were struck by the damage caused by a culture of command and control. During classroom visits, we were struck by the behaviour of the managers and inspectors accompanying us. They sat in back of the classroom to observe the teacher's behaviour, and after the lesson was over lectured him or her, making remarks such as "You said this or did that, but should have said or done something else." What mattered to us was not so much what the teacher did but how well the pupils performed. Sound research has determined that there is little relationship between models of teaching practices and pupil performance: teachers can use different ways to achieve good performance. Our focus was how all the pupils performed in the classroom. We listened to their answers, examined their notebooks, picked up a piece of chalk to suggest an activity having to do with an important bit of knowledge that they were supposed to learn. We established a dialogue with teachers, without passing judgement on them, based on observed pupil performance in order to examine what might have been causing the children's problems in acquiring the knowledge and skills required to pursue effective, equitable learning in the future. The managers and inspectors accompanying us were surprised by our focus on pupils rather than teachers and by our humble attitude when discussing problems (not "you should have done this" or even "if I were you, I would..." but "I saw another teacher do that successfully, perhaps it would work here"). A change in the culture of accompaniment is definitely in order.

Open career plans

Research by organization experts shows that a lack of career prospects leads people to withdraw and regress in the long term. That is especially true of organisations characterized by what Mintzberg calls "the bureaucratic logic" instead of "the professional logic" (1990). One of the main ways to avoid the unwanted effects of bureaucratic mind-sets, especially in educational institutions, is to establish a policy of open career-development plans.

An open career plan assumes that institutions and individuals can evolve (De Ketele and Roegiers, 1993) and involves possible career advancement on at least three levels.

- Status: teachers must be able not only to rise up through the ranks, but also enter positions of supervision and responsibility depending on experience and additional training.
- Remuneration: promotions to higher positions must be accompanied by salary raises; goal-based contracts should be accompanied by bonuses when the results achieved are deemed particularly important and a priority for the education system.
- Social recognition: the teaching profession is a "calling" or attracts individuals with a passionate concern for society's welfare. It therefore fulfils an important symbolic function that deserves to be emphasized and strengthened by visible recognition strategies.

An open-ended conclusion

We must never take our eyes off 2015, the target date for achieving UPE (an imperative for all countries) and quality basic education for all (an ideal that is important for everybody to try and reach, even if it might be understood differently depending on the context). The main prospects have been spelled out for all the world's major regions, though they must be refined and specified because those regions are so different from each other. Many possible solutions based on carefully-analysed field experience have been put forth. That does not mean they are transposable as is. Experts thoroughly familiar with the areas where they might be applied must study them and make any adjustments deemed necessary.

Above all, we need vision and conviction. That requires politicians who are genuine "statesmen", in other words who have a vision and can reconcile their personal ambition with the belief that UPE and quality basic education for all are essential factors in promoting the country's sustainable development. It also requires a mobilisation of the entire local, regional, national and international education community to examine, on their levels, how UPE and quality basic education for all can be achieved. The leads discussed in this report are not a set of instructions; they are a toolbox that, after making the necessary adjustments, can be adapted and used just about everywhere in the world.

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