The first Chapter, which examined teacher needs, ended on a relatively optimistic note with the observation that, in order to cover these needs, the great majority of African countries would have to maintain the rhythm of recruitment observed between 2000 and 2005 all the way through to universal primary education (UPE). However, the 2000-2005 period has

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

proved to be no ordinary time. Indeed, this period corresponds to the high mobilisation by governments and the international community further to the Dakar Forum, and to crucial changes in teacher management policy. The aim of these policies was to allow for a significant increase in recruitments while reducing the average salary cost. We shall focus here on the financial aspect of these policies and come back to their implementation and consequences on teacher status in Chapter 3.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

In order to understand the implementation of these new policies, it is relevant to explore the breakdown of government current expenditure on education, and more particularly the position of salary cost within that expenditure and its impact on enrolments. On examining the temporal evolution of relative teacher salaries and that of the recruitment of new teachers in the second section of this chapter, one can easily see that recent recruitment dynamics (as a whole since 2000) are, to a large extent, connected to these salary adjustments. As far as the conclusion to Chapter 1 is concerned, this justifies looking into the issue of maintaining these salary policies in the long term for the expansion in recruitments needed to reach UPE.

Beyond the simple arithmetical calculation whereby, for a given budget more teachers are hired for lower pay, it can be asked just how relevant these policies are in social, economic and, of course, pedagogical terms. The latter point deserves to be explored in length in the light of the results of research on the subject, and will be handled specifically in Chapter 4. The first two points to do with the social and economic relevance of these policies in terms of teacher salaries will be studied in the third and fourth sections of this chapter. We shall first analyse the current level of African teachers' salaries on the basis of international comparisons before tackling the attractiveness of the teaching profession in the different countries. Although little empirical data is available on the latter aspect, we shall try to establish where teacher salary stands today compared to that of similarly qualified working individuals on national labour markets.

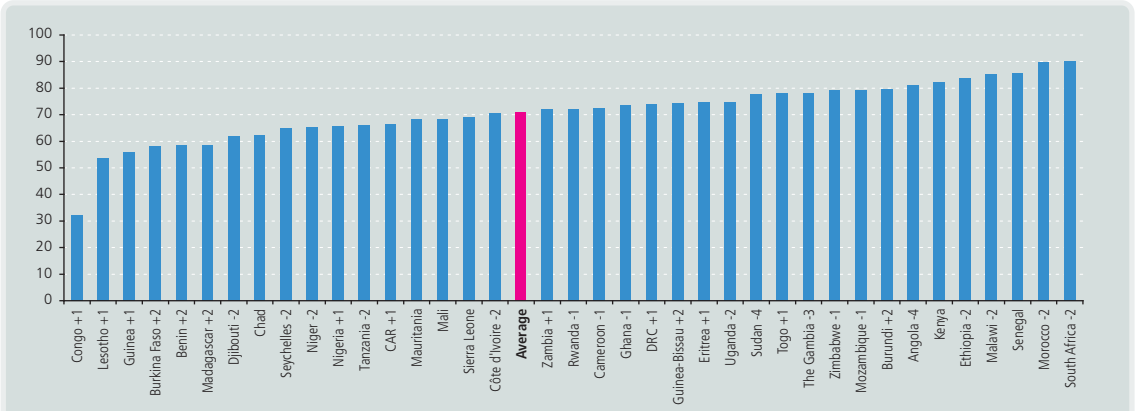
There are many constraints involved in setting teacher salary levels. Overall, the salaries proposed must be compatible with the objectives and financial resources of the education system yet at the same time ensure the recruitment of motivated, committed and competent professionals. Given the symbolic, strategic and numerical importance of the sector, setting salary levels is also the subject of much conflict. Placing this negotiation in the context of country priorities and the resulting trade-offs, especially financial ones, is thus without any doubt an important element in the success of national educational policies. In this respect, a financial simulation model estimated for the education sector constitutes a very useful instrument in facilitating the inclusion of the different stakeholders through a much wider vision of the issue. This point will be developed in the fifth section of this chapter.

1. Teacher salary level, a key parameter of educational policy

1.1. A factor that cannot be ignored due to its weight in the budget

In any education system, especially primary education, teacher payroll represents **the largest share of the education budget.** African countries are no exception to this rule. Recent data for around 40 countries illustrate this phenomenon. They demonstrate that in primary education in Africa, 70% on average of current public expenditure on education is devoted to classroom teacher salaries. Country situations are nevertheless contrasted in this respect as illustrated in graph 2.1. In most cases, the proportion fluctuates between 50% (Lesotho or Guinea) and 90% (South Africa or Morocco), and bears no relation to language or regional specificities.

Graph 2.1: Share of primary teacher payroll in current public expenditure on primary education, 2004 or nearest year (%)



Source: A variety of sectoral studies, World Bank, Pôle de Dakar, reports, UNESCO Institute for Statistics (UIS) for some countries, authors' calculations
Note: Data from 2004; however, (-t) refers to the year 2004-t; (+t) refers to the year 2004+t.

Congo appears very atypical in this graph, with only one third of current public expenditure in primary education devoted to classroom teachers. This example illustrates the case of a country that makes (explicitly or not) a budget trade-off that is more favourable to other items than teacher salary; we shall come back to this

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

trade-off later. The Fast Track Initiative (FTI) indicative framework for financing UPE recommends that around one third of current expenditure on primary education be devoted to teacher salary (Bruns *et al.*, 2003). However, for a similar share of current expenditure excluding teacher salaries, countries may well have selected different kinds of organisation and ways of operating[19]. This calls for further investigation, insofar as *a priori* the make-up of such expenditure is not without some impact on the quality of education actually delivered[20].

All in all, in view of the scale of the expenditure related to teacher salaries, determining the average level of teacher salary is a central aspect of any educational policy. This is particularly so since the level of salary conditions not only the number of teachers that can be recruited with available resources but also the characteristics of those teachers at the time of recruitment.

1.2. The degree of education system coverage is closely connected to salary policy

As demonstrated by Mingat (2004), on a sample of around 50 low-income countries throughout the world, teacher salary level proves to have an influence on the performance of education systems in terms of quantity and equity. The influence on quantitative coverage[21] is somehow mechanical: the higher the average salary offered to teachers, the lesser the possibility of massive teacher recruitment with a given budget, which limits the number of children that can be enrolled. By simulating the primary completion rate according to teacher salary level, the volume of public resources mobilised and the average primary repetition rate, the same author shows, with no shadow of a doubt, that for an average African country, the completion rate hardly exceeds 75% as long as the teacher salary level is over 3.5 or 4 times GDP per capita. Thus, high salary costs tend to lead to a contraction in the provision of public education and, as a result, of overall schooling coverage, unless the different countries resort to more private financing (especially to develop private education) in order to ensure the provision of educational services.

19 By way of example, while the relative volume of expenditure excluding salaries in current public expenditure on primary education is roughly the same in Benin and Burkina (42% in 2006), this expenditure is seen to be mainly made up of pedagogic or operating costs in Benin (60%) compared to only 40% in Burkina; this leaves 40% for non-teaching staff salaries in Benin, compared to 60% in Burkina.

20 In Congo, for example, it was previously noted that only one third of current public expenditure on primary education was devoted to classroom teacher salaries. Even so, this does not mean that the remaining share (62%) is mainly devoted to pedagogic expenditure. Indeed, over three fifths of expenditure excluding teacher salaries are seen to go towards non-teaching staff salaries (62%), compared to only 38% directly devoted to pedagogic expenditure.

21 Especially the primary gross enrolment rate (primary enrolments divided by the population of theoretical primary school age) or the primary completion rate (proportion of an age group that completes a full cycle of primary education).

1.3. An average salary cost resulting from a trade-off on the combination of factors that contribute to learning

It must be taken into account that salary level is connected to certain aspects (level of recruitment, motivation, etc.) which are not the only determining factors to be considered in school organisation both from a financial and a quality standpoint. Trade-off on expenditure in education cannot be restricted to teacher salaries. It also concerns other educational expenditure, with the supply of textbooks at the top of the list, but also pupil-teacher ratios (class size) and expenditure connected to the pedagogic and administrative management of primary education. Indeed, whether looking into the best way of allocating additional resources for the system or striving to make the best of dwindling resources, seeking the best possible trade-off between the different factors mentioned above cannot be avoided.

We can rapidly describe the context of this trade-off without going directly into too much technical detail. It does of course depend on the initial conditions, and therefore on the position of the different factors within current financing, but also on the improvements expected from an increase (or a reduction) of each of the factors compared to the initial situation. Trade-off is essential whenever these improvements are not proportional to allocation levels. For example, while it is evident that a teacher should have an adequate level of initial training in order to carry out his/her duties properly, this observation alone does not suffice to decide to raise this level beyond what is considered a minimum threshold once funds are available. In other words, the decision cannot be taken by considering each factor separately but must result from comparing the costs and advantages associated with the allocation of other factors and taking into account the joint effects of these. So, in some cases, it may be found appropriate to raise the level of teacher training, and in others, it may be preferable to reduce the average class size and/or increase the textbook allocation. As measuring the marginal losses or benefits connected to changes in allocation of the different factors of school organisation is a delicate matter and subject to some debate, one should not expect a purely scientific determination of these trade-offs even if a number of factual elements can be mobilised in justifying these choices. Even so, it is important to keep in mind this rationale on trade-offs; this prevails in the choice of the level of allocation of the different factors that contribute to learning, and so their financing.

The breakdown of expenditure per pupil (unit cost) presented in box 2.1 provides more detailed information on the trade-offs to be made. It can thus be observed that the expenditure per pupil rises along with the average teacher salary and the volume of other expenditure, and decreases along with the average number of pupils per teacher.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

Box 2.1: Breakdown of public unit cost

By naming *UC* the unit cost of operating expenditure for public education, *TPR* the payroll corresponding to classroom teachers, *OtherExp* the amount of operating expenditure excluding classroom teacher salaries and *Enr* the enrolments in public education, we obtain:

$$UC = (TPR + OtherExp) / Enr$$

If α now represents the proportion of expenditure excluding classroom teacher salaries amongst total current expenditure:

$$OtherExp = \alpha (TPR + OtherExp), \text{ which implies that } OtherExp = \alpha / (1-\alpha) \times TPR$$

And therefore:

$$UC = (TPR + \alpha / (1-\alpha) \times TPR) / Enr = TPR \times (1+\alpha / (1-\alpha)) / Enr = TPR / Enr \times 1 / (1-\alpha)$$

The classroom teacher salary in public education can be expressed as the product of the number of classroom teachers (*NbTea*) and of their average salary (*AvSal*), giving:

$$UC = NbTea \times AvSal / Enr \times 1 / (1-\alpha)$$

By calling the pupil-teacher ratio in public education *PTRp*, we arrive at the following breakdown for primary education:

$$UC = AvSal / PTRp \times 1 / (1-\alpha)$$

To clarify this systemic mechanism which has financial consequences as well as consequences on the quality of learning, we can neutralise one of the two dimensions and make an analysis through a given unit cost. In this case, an increase in the average salary of a classroom teacher will necessarily be to the detriment of either the average pupil-teacher ratio or current expenditure excluding teacher salary. By contrast, if we wish to increase expenditure excluding teacher salary, we shall have to choose between a decrease in average teacher salary and an increase in pupil-teacher ratio.

The different choices can be illustrated quite simply by taking the example of a country that, due to budget constraints, could spend a maximum of 600 Monetary Units (MU) over a period of one year for each child registered in public primary school. With this amount, the government must cover each pupil's learning needs, i.e. appoint a teacher, provide educational materials and ensure that the system as a whole is correctly administered and managed. Table 2.1 presents different option possibilities for teacher recruitment, number of pupils per class and expenditure excluding teacher salary.

Table 2.1: Impact of salary policy choices and choices of goods and services on the pupil-teacher ratio, for a given unit cost (600 MU)

		Number of pupils per class		
Type of teacher		**A**	**B**	**C**
Average teacher salary (MU)		15 000	20 000	25 000
Average goods and services expenditure per pupil (MU)	50	27.3	36.4	45.5
	100	30	40	50
	200	37.5	50	62.5
	400	75	100	125

Source: Authors' calculation based on UIS data

Twelve possible scenarios can be envisaged in this country. If the wish is to recruit only type C teachers, while guaranteeing a goods and services expenditure per pupil of 400, this will lead to an average class size of 125 pupils. On the other hand, if type A teachers are recruited, with a level of goods and services expenditure of 400 MU per pupil, class size can be reduced to 75 pupils. If the pupil-teacher ratio is still considered to be too high (it is an average so there will be many more pupils in some classes), then the recruitment of type B teachers can be envisaged, with a goods and services expenditure of 100 MU per pupil to arrive at 40 pupils per class.

Multiple choices are therefore possible for the same level of unit expenditure, but these choices are not neutral in terms of the quality of services provided. A goods and services expenditure of 50 MU per pupil may turn out to be quite insufficient to provide each pupil with the minimum pedagogical input required in order to learn properly. A combination leading to an average class size of 60 might also be considered detrimental to quality. Quality-specific components are listed in Chapter 4. The idea is not to have preconceived ideas about reference values, but rather to recall that the choice of salary level must be the result of a "conscious" trade-off and not a "passive" one to the detriment of class size or pedagogical expenditure for example.

Coming back to more concrete examples, we can study the different combinations of factors to be found in sub-Saharan Africa. Due to the significant differences in budget constraints and quantitative coverage from country to country, unit costs are extremely varied as shown by table 2.2, since they range from 5% of GDP per capita (DRC, Congo) to almost 20% (Lesotho, Niger) with an average of 11% for sub-Saharan Africa.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

Table 2.2: Characteristics and cost of public primary school organisation in sub-Saharan Africa (2004 or closest year)

Country	Primary				Country	Primary			
	Teacher salary (GDP/cap)	Pupil-teacher ratio	% expend. excluding teacher salary	Unit cost (GDP/cap)		Teacher salary (GDP/cap)	Pupil-teacher ratio	% expend. excluding teacher salary	Unit cost (GDP/cap)
Benin	4.2	52	39.5	0.11	Madagascar	4.4	57.7	42.8	0.09
Burkina Faso	6.4	52.8	33.8	0.18	Malawi	4.2	58.4	15	0.08
Burundi	6.8	51.7	13.2	0.15	Mali	6	63.5	37.8	0.11
Cameroon	3.9	63.7	30.8	0.07	Mauritania	3.3	44.2	31.8	0.11
Central African Rep.	7	91.6	34.3	0.07	Mozambique	3.9	55	22.6	0.09
Chad	5.4	70.3	37.8	0.05	Niger	5.5	42.9	35	0.2
Congo	1.8	75.7	68	0.05	Nigeria	4.9	51.7	34.2	0.14
Côte d'Ivoire	4.8	42.6	25	0.15	Rwanda	3.9	60.3	22.2	0.08
Dem. Rep. of Congo	2.2	37.7	26	0.05	Senegal	4.6	50.8	37.6	0.15
Eritrea	3.9	43.7	25.3	0.12	Sierra Leone	4.2	61	30.9	0.09
Ethiopia	6.8	73.9	16	0.11	Sudan	2.2	36	22.5	0.08
Gambia, The	4.5	36.5	21.8	0.16	Tanzania	3.8	46.2	34	0.12
Ghana	3.9	32.9	28.1	0.16	Togo	6.2	33.6	12.8	0.1
Guinea	1.7	51.3	44.2	0.06	Uganda	3.2	56.1	31.7	0.08
Guinea-Bissau	1.9	37.5	31	0.07	Zambia	3.1	57.2	28.2	0.07
Kenya	5.3	39.7	17.9	0.16	Zimbabwe	4.1	39	21	0.13
Lesotho	4.4	46	46.6	0.18	**Average**	**4.3**	**51.9**	**30.3**	**0.11**

Source: Mingat, Ledoux and Rakotomalala (2008)

The breakdown of unit cost is also extremely variable. Some countries, such as Congo or Democratic Republic of Congo (DRC) have opted for a relatively low teacher salary but the proportion of expenditure excluding teacher salary is very high in Congo (68% of current expenditure, a considerable share of which is devoted to salaries for non-teaching personnel) and relatively low in DRC (26%). This choice leads to an extremely large class size in Congo (75.7 pupils per class on average, which is one of the highest ratios along with Ethiopia, Chad and Central African Republic, CAR). Ethiopia, on the other hand, seems to have decided on a higher level of salary (6.8), resulting in a high pupil-teacher ratio (73.9) and low expenditure on goods and services (16%).

The different combinations of factors are seen to have a direct impact on how the classrooms operate on a daily basis. In order for the governments to achieve the goals they have set in terms of education, these combinations must be the result of conscious and well thought out trade-offs and not the result of a series of unchecked adjustments within the education systems.

2. Trends in salary and teacher recruitment

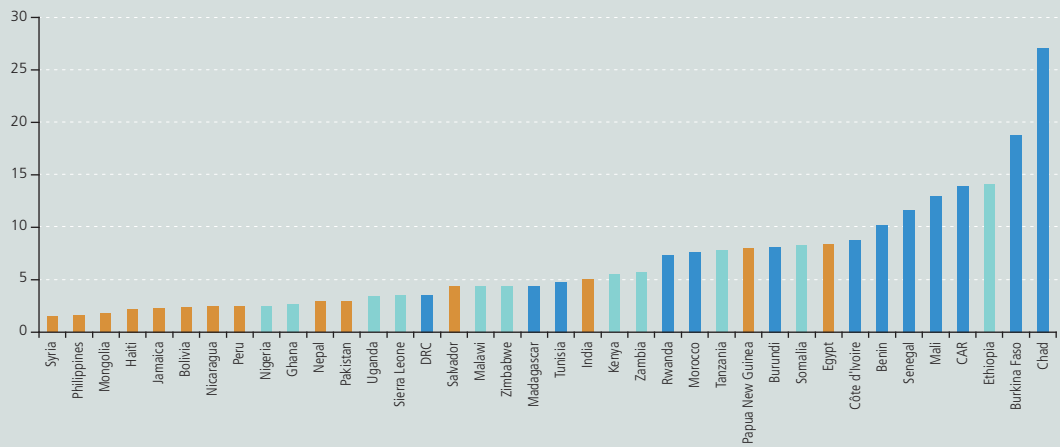
2.1. The downward trend in relative salaries of teachers[22]

2.1.1. Initial contrasting situations: colonial heritage

Teacher salary varies considerably across the different world regions, no doubt due to a multitude of reasons. However, historical context most probably plays a key role. It is difficult to obtain a series of reliable data for many countries for the distant past. Graph 2.2 presents data available for 1975 for around 40 comparable countries. Countries indicated in dark blue are French-speaking African countries, those in light blue English-speaking African countries while those in orange belong to the rest of the world, in geographic or language terms.

22 Relative salary is expressed in GDP per capita rather than in monetary value. This makes it more delicate to interpret salary trends, which are directly linked to variations in GDP. Thus, a fall in relative salary during a period of sharp increase in GDP may well correspond to an increase, rather than a decrease, in real salary.

Graph 2.2: Teacher salary in 1975 (GDP per capita)



Source: Mingat and Suchaut (2000)

It clearly appears that, at the time of this comparison, countries outside Africa, or at least those considered here, tended to have lower salary levels in units of GDP per capita than African countries. In addition, on the African continent, the average salary level in English-speaking countries was also lower than in French-speaking countries. Colonial heritage has indeed had noteworthy effects on education in Africa and distinctly shaped the way national education systems are organised and teaching staff managed.

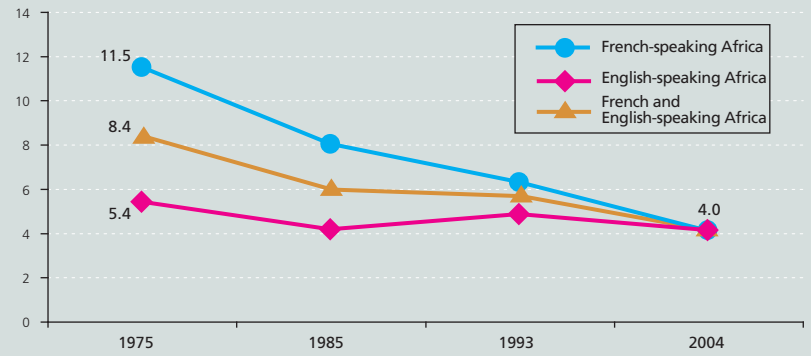
More precisely, unlike English-speaking countries where, during the colonial period, education was mainly delivered by British missionaries with the support of public subsidies, teachers in the French colonies were part of a homogeneous category of civil servants. Salaries for teachers in French overseas territories were defined by the Lamine Gueye II Law adopted in 1950, which stipulated that "Determining pay and incidentals of any kind for military and civil personnel serving in the territories (…) should in no case be based on differences of race, original personal status or place of recruitment." This law thus led to public service salary levels being indexed to those in force in Metropolitan France until the time of independence.

This is mainly the reason why the average teacher salary in French-speaking Africa was still practically twice as high (in relative terms) as that in English-speaking countries in 1975. Even in countries with a comparable level of economic development, salaries were around 60% higher in French-speaking Africa than in English-speaking Africa (Mingat and Suchaut, 2000). For Cogneau (2003), after independence, the French integration policy can partially explain the tendency of maintaining teacher salaries more in line with salaries practised in France than with the African countries' financial capacities.

2.1.2. A downward trend in average salary levels over the past 30 years in French-speaking African countries

The unique salary stand in French-speaking Africa could not hold out against national economic constraints in the long run, as made clear by the data in graph 2.3 describing the variations in average teacher salary in French-speaking and English-speaking Africa over the past 30 years. Teacher salary has fallen regularly over that period in French-speaking Africa to converge with English-speaking Africa.

Graph 2.3: Variations in average primary school teacher salary in Africa (GDP per capita)



Source: Mingat and Suchaut (2000) for 1975 to 1993; then, data compiled for this study for 2004. Grouping in this graph for 1975 to 1993 is slightly different to that in the source document. However, this does not affect the overall trends illustrated here.

Looking more particularly at average values for the continent, we can clearly observe, even if data are not perfect, a considerable drop in average relative salary for primary school teachers in Africa, since this was virtually divided by two (from 8.4 to 4 times GDP per capita) between 1975 and 2004. In relative terms, the drop was even greater in French-speaking Africa where average teacher salary was practically divided by three over the 1975-2004 period. Insofar as real economic growth was generally timid, or even negative, in most countries considered here, for the greater part of this first period, the strong drop marks a significant loss of purchasing power for teachers in this region. The overall trend does not reflect the same phenomena throughout the entire period; as we are to see in the following section, it corresponds to an adjustment in the economic situation of the countries for the major part of the period, and then, for the recent period, to an aggressive policy for reduction in salary expenditure with a view to significantly increasing the number of recruitments.

2.2. Budget austerity and large increase in status categories: explanations for the fall in real salary alongside the pace of teacher recruitment

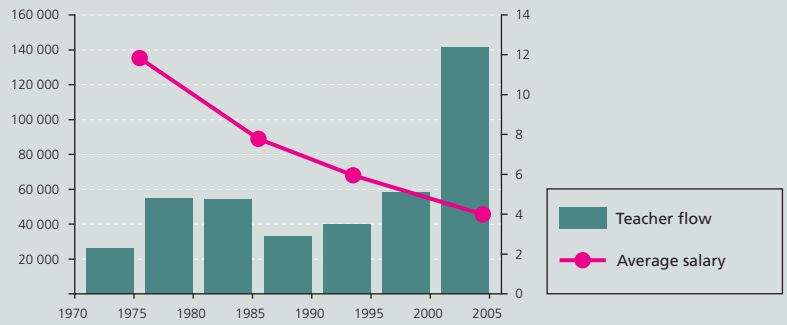
It is now appropriate to consider the rate of teacher recruitment on a parallel to salary trends. Nevertheless, it is difficult to document this for the African countries as a whole, as data are generally patchy for many English-speaking African countries. We shall therefore focus here on 15 French-speaking African countries[23] where this information is available.

23 These countries are Benin, Burkina Faso, Burundi, Cameroon, Chad, Côte d'Ivoire, Djibouti, Guinea, Madagascar, Mali, Mauritania, Niger, Senegal, Togo and Tunisia.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

Graph 2.4: Changes in average teacher salary (GDP per capita) in 15 French-speaking African countries and teacher recruitment flows



Source: Mingat and Suchaut (2000) for 1975 to 1993; then, data compiled for this study for 2004 for data relating to salaries; calculation based on UIS data for teacher flows

Graph 2.4 presents the fall in relative teacher salary, the scale of which, for this sub-sample, is close to that presented in graph 2.3, alongside the progress in teacher recruitment for each 5-year sub-period. This shows that teacher recruitment flow was multiplied by over 5 between 1970 and 2005 (with an unprecedented increase in teacher flow between 2000 and 2005) whilst average salaries in units of GDP per capita were divided by 3, falling from 12 to 4 on this sample of 15 countries.

We are to analyse each of these changes, distinguishing between two major periods: 1970 to 2000 and 2000 to 2005.

2.2.1. The economic crisis as an accelerator in the fall of teacher salaries

The salary adjustments made in a number of sub-Saharan African countries were accentuated by the economic crisis affecting the continent in the 1980's. Indeed, from the early 1980's, many African countries were confronted with macroeconomic disorders (budget deficit, balance of payments deficit, inflation), particularly following the oil crises in the previous decade. This led to structural adjustment programmes with the International Monetary Fund and the World Bank. These programmes started out from the idea that macroeconomic stability was a basic structural objective without which no development action would be possible. Moreover, the financial partners accepted to contribute in the short term but, as the volume of deficit implied vigorous action, they also wanted to see the introduction of national economic policies (structural reforms) since external financing for current expenditure could not be a sustainable option.

Thus, in the same way as for all social and economic sectors, substantial budget reductions placed a strain on education budgets. As teacher salary costs represented a predominant share of the overall civil service payroll, any attempt to control the latter led to drastic measures being taken against the teaching profession. As they were obliged to control and reduce the level of their public expenditure, some countries chose to freeze promotions for civil servants, or even to review the very basis of the salary scale. In some cases, these measures concerned all civil servants but, in others, they were specific to teachers.

In Benin, for example, between 1986 and 1992, government officials were paid on the basis of their 1986 index; in December 1999, they were still paid on the basis of their 1992 index (CSR-Benin, 2002b). In addition, the index point value was also used as an instrument for restricting teacher salary progress insofar as it was not in line with the cost of living and had only been adjusted from time to time (in Benin, point value increased from 2 100 FCFA to 2 310 FCFA in 1994, then to 2 425 FCFA in 1997 and 2 598 FCFA in 2007). Again in the case of Benin, all civil service recruitments were suspended between 1987 and 1994. In the same way, in the case of Cameroon, all civil service recruitments were suspended at the same time as the salary scale was revised sharply downwards by 66% in 1993, the consequences of which were made still worse by the devaluation of the FCFA. Teachers' real salary therefore fell sharply in the 1990's, and this can be linked to the macroeconomic crisis.

Drawing a parallel with the growth in teacher numbers, it can be observed that recruitment flows remained stable over the 1975-1985 period, with a growth of 50 000 teachers every five years, followed by a distinct slowdown linked to the restrictive measures made in the framework of the structural adjustment plans. Flows therefore fell to 30 000 between 1990 and 1995 to return to 1975-1985 levels starting 1995.

2.2.2. After 2000, the drop in relative salaries is to a great extent the result of a policy to relaunch teacher recruitments

The freeze on teacher training and recruitment within the civil service during a period of high growth in the demand for education enhanced by the Jomtien Conference in 1990, led to spontaneous adjustments by communities concerned about offering their children an education; on their own initiative, they recruited community teachers and paid for them. Governments in turn envisaged new solutions to increase teacher recruitment in the context of maintaining or even reducing the size of the civil service. These solutions varied depending upon the historical legacy and specific characteristics of each country.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

As of 1995-2000, adjustments were thus generally made in non French-speaking countries by the level of qualifications required to teach, teachers with no professional training being recruited at a lower salary than their trained counterparts. Former French colonies and a few other countries in the region chose two solutions: community teachers[24] covered by way of subsidies and/or the introduction of a new teacher status. No longer part of the civil service, this could be freely indexed on references other than the civil servant teacher salary scale.

An aggressive policy for lowering salary costs, with a view this time to a massive increase in recruitments, was therefore added as of 1995-2000 to the first "macroeconomic" type adjustment. This policy brought rapid results, with the massive recruitment of teachers between 2000 and 2005 (cf. graph 2.4, recruitment of almost 140 000 teachers compared to under 60 000 in the five previous years).

In order to more precisely separate the specific impact of these aggressive salary policies from other measures that may have affected teacher recruitment, it would have been necessary to mobilise other (especially macroeconomic) data sources and make a second parallel between growth in recruitments and trends in financing allocated to the education systems. It was not possible to mobilise exhaustive information on these other aspects. However, the absence of this additional analysis casts no doubt on the significant impact of these salary adjustment policies for the considerable increase in the number of teachers over the recent period.

It will probably be necessary to consider having recourse to, or maintaining, this type of policy in order to maintain the current rates of recruitment required to achieve UPE as shown in Chapter 1. It is appropriate to fully measure up this aspect by striving to assemble all available information on the economic relevance of these new teacher management policies. In this respect, the current situation will be examined in terms of salary and the consequences on the attractiveness of the teaching profession.

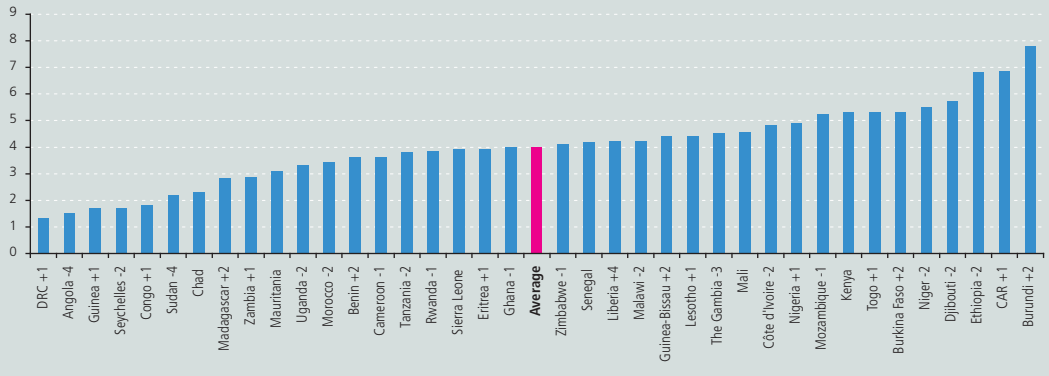
24 These are teachers recruited directly by the communities or by parent associations.

3. Current situation and evolution of average teacher salary

3.1. High variability in average salary levels from country to country

The most recent comparative data available for use were for the year 2004 (or a relatively close year). The average level of teacher salary is again expressed in units of GDP per capita in order to place the level of teacher salary in the countries' macroeconomic context. Thus, in the early 2000's, it is estimated that the average level of primary school teacher salary in Africa represents around four times the GDP per capita. Although many countries have salary levels close to this average, there are significant differences between countries, as shown on graph 2.5 below. The average salary level ranges from less than twice the GDP per capita (in DRC, Angola, Guinea, Seychelles and Congo) to over six times GDP per capita (in Ethiopia, CAR and Burundi).

Graph 2.5: Average primary school teacher salary financed either totally or partially by governments in Africa (GDP per capita, 38 countries, 2004 or closest year)



Source: Different sectoral studies, World Bank, Pôle de Dakar, a variety of reports, UIS for some countries, authors' calculations
Note 1: Salary levels indicated in this graph take community teacher pay into account when these teachers receive subsidies from the government. This is the reason for the differences with table 2.2 when the base year is the same.
Note 2: Data from 2004; however, (-t) refers to the year 2004-t; (+t) refers to the year 2004+t.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

Teacher salary levels can be compared either directly between countries (teachers in Mali who receive an annual salary equivalent to 4.5 times GDP per capita thus appear better paid than teachers in Benin whose salary represents 3.6 times GDP per capita in their country) or by referring to a reference value such as that recommended in the FTI framework which is around 3.5 times the GDP per capita for an "average" African country (that is to say where the average income per capita is in the region of 350 US dollars in 2000 value). These comparisons could be misleading if the countries differ in terms of income per capita or, in the case of the FTI indicative framework, if they are far from the country average referred to by the framework. Even within a given cultural or geographic context, African countries differ significantly in their level of economic development. The case of Mali and Benin mentioned earlier is an illustration of this: while belonging to the same geographic area (West Africa), to the same linguistic (French-speaking Africa) and economic (West African Economic and Monetary Union) community, the average income per capita is around one third higher in Benin than in Mali[25]. It therefore seems appropriate to take this into account when comparing teacher salary levels between the two countries.

We have followed this approach here and looked into the possible existence of strong structural connections between teacher salary levels and some economic and social development indicators likely to affect them. One initial assumption could be that these salaries are partly linked to the scarcity of human capital, with salaries being higher as the number of individuals likely to fill these positions is lower[26]. A second assumption, touched on in the previous paragraph, could be that these salaries depend upon the countries' stage of economic development. Analysis suggests that teachers' salary advantage in relative terms (their level of salary in comparison to the average wealth of their country) decreases as the economy grows. This phenomenon could be interpreted by the structural change that goes hand in hand with the economic development process, marked by a quantitative reduction of social groups commonly ranked as more modest than teachers (workers and employees) and the considerable expansion of categories generally ranked as being just as, or more, privileged than teachers (executives and intermediate occupations, especially in the private sector). The result is that, in a period of economic growth, teachers would generally see their relative income decrease or more precisely would experience an increase of their nominal salaries (expressed in money) lower than that of economic growth.

The empirical research conducted in the framework of this study shows that there is indeed a negative correlation between the average level of teacher salary in a country and the overall available supply of human capital. However this relation is relatively weak and only accounts for a tiny part of the differences in teacher salary observed across the different countries[27]. The impact of the level of economic development in explaining the differences in salary levels between countries[28] seems, on the other hand, more significant.

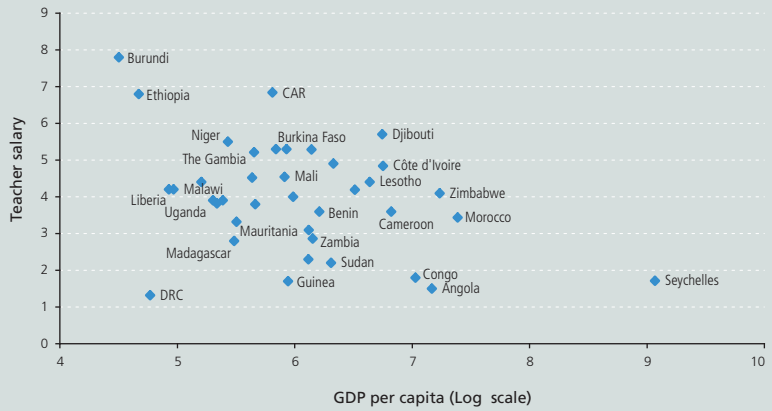
25 Data for 2004.

26 This situation of scarcity also endows teachers with a particular influence, teachers representing in these specific conditions a high proportion of elected representatives and political decision-makers (Mingat and Suchaut, 2000; Mingat, 2008).

27 There is no single variable for coming to terms with this supply, at empirical level. The analyses mentioned here show that taking into account the adult literacy rate, the secondary enrolment rate or the school life expectancy leads to qualitatively comparable results. Correlation coefficients (in absolute value) of teacher salary are 0.20 with the adult literacy rate and 0.28 with school life expectancy (which gives an approximation of the average duration of schooling for the adult population).

28 The supply of human capital does not contribute to explaining the salary differences between countries, when reasoning at a given level of economic development (GDP per capita).

Graph 2.6: Average salary of public primary school teachers (GDP per capita), according to the level of income per capita in their country[29] (38 countries, 2004 or closest year)



Source: Different sectoral studies, World Bank, Pôle de Dakar, a variety of reports, UIS for some countries, authors' calculations

Graph 2.6 illustrates this general trend while at the same time revealing its limits. The average relation between teacher salary and income per capita is on the decrease but country situations are relatively dispersed around this average tendency. More than the modest overall statistical relation characterising this dispersion, it is the low reliability of the relation that leads to the conclusion that teacher salaries bear little relation here to the level of the countries' wealth: omitting the Seychelles reduces the explanatory capacity of the model by one third and omitting Burundi as well (the two extreme situations) totally cancels out the relation.

The analysis conducted here highlights the variety of situations in African countries in terms of teacher salary. The salary gaps observed are not limited to structural differences in the countries' development and therefore have more specific causes. It is obvious that in this area and, contrary to a number of preconceived ideas, African countries are not all confronted with the same problems and have very distinct characteristics.

29 The equation of the curve trend is estimated by $y = -0{,}668x + 8{,}037$, with an $R^2 = 0{,}153$.

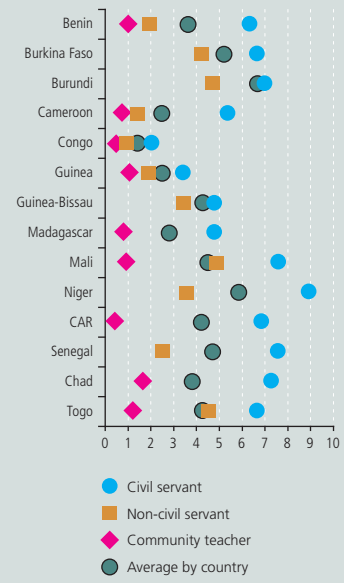
Chapter 2

Teacher salaries and the expansion of education: a fundamental link

3.2. A multitude of status categories and salary levels

We have just seen that average teacher salaries in units of GDP per capita are extremely varied on the African continent. These average salaries result from the coexistence of different salaries according to the status categories of teachers in each country, especially for the recent period, and so from a level of heterogeneity to be estimated.

Graph 2.7: Teacher salary (GDP per capita) according to status, in several French-speaking African countries (2004 or closest year)

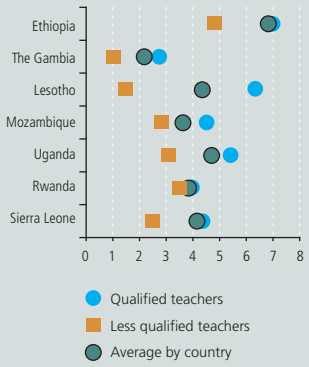


Source: CSRs, financial simulation models, authors' calculations

Graph 2.7 clearly shows the extreme variety of average salaries across French-speaking African countries (to which Guinea-Bissau, in a comparable situation to neighbouring French-speaking countries, has been associated) and the sometimes very high dispersion around this average value according to status. For countries like Cameroon and Benin, civil servant teacher salary is indeed three times higher than that of contract teachers, while the salary of both these categories of teachers is relatively close in Burundi and Guinea-Bissau. It can also be noticed that, for countries where this category exists and where data are available, community teacher salaries are indeed uniform, but at a much lower level than that of their public sector counterparts, at around one unit of GDP per capita.

English-speaking and Portuguese-speaking countries which have, for their part, generally opted for recruiting teachers with no professional training, also show very little uniformity in terms of their teacher salaries, although in a more limited range.

Graph 2.8: Teacher salary (GDP per capita) according to qualifications, in several English-speaking African countries (2004 or closest year)



Source: CSRs, financial simulation models, country reports on teacher situation, authors' calculations

There are noteworthy disparities in average salary in Lesotho and in The Gambia depending on qualifications (qualified teachers earning between three and four times more than the less qualified teachers) but the difference is relatively less significant in the other countries studied (below 1.7).

The variety of salaries for the different categories of teachers within the education system is a common observation in a large number of African countries, whatever the language or geographic aspects. This brings up issues of social equity and long-term sustainability, especially with regard to the situation of community teachers and the questionable decency of their level of salary.

3.3. A reverse trend in the recent period

The question as to the sustainability of these salary policies, which feature a wide variety of status categories and situations for a single activity, is particularly acute. For some time now, many governments have made more and more declarations on this point, in favour of a progressive improvement in teacher salary, particularly under the pressure of protest from social partners.

In this respect, different movements can be observed aimed at facilitating the integration of community teachers into the official contract teacher status. In Benin, for example, the government decided in December 2007 to place all community teachers under contract (around 10 200 in 2007, i.e. 38% of all teachers in public primary schools) whereas they had only received a modest subsidy from the government until then. Madagascar has also covered salary costs for the majority of its community teachers (FRAM teachers) since 2005, whereas parent associations are still in charge of managing these teachers. On its side, Cameroon decided in 2006 to contractualise all its temporary contract teachers (IVAC) paid a salary of 1.4 times GDP per capita, by granting them a contract status with a salary level close to the FTI reference of 3.5 times GDP per capita.

These adjustments are often the result of fierce discussion between the governments and social partners but also with development partners, since additional financial support is generally needed, at least in the early stages. Alignment on the FTI indicative framework makes the possibility of substantial external financing easier, and the integration measures possible and credible *a priori*. Contractualisation of the IVACs in Cameroon was negotiated so that government commitments towards education could enable all contract staff to be covered by the domestic budget in the medium term. Financing is therefore *a priori* sustainable since it is mobilised at national level.

Beyond the financial sustainability of this type of measure (long-term government commitment to increase financing of the education sector in order to take over from external aid, etc.), the integration process must also be examined in terms of how it is handled, how it can be generalised, and how it can be accompanied by additional measures such as type and duration of professional training. All these aspects must be determined sufficiently upstream in the process in order to correctly anticipate the consequences of this type of measure and prepare for it in the best possible way.

Beyond the integration of community teachers who are often seen to be on the fringe compared to the other teacher categories, the thinking in many countries now seems to be directed towards an overall adjustment of the payroll. This should be the subject of careful analysis in each national context since it could be detrimental to the progress recently registered in enrolments if the extent of the adjustments compromises the financial capacity of governments to recruit the number of teachers needed to reach UPE. On this aspect, it has already occurred that new payrolls, more favourable to teachers, adopted without due consideration being given to their financial impact, have simply not been applied due to budget constraints. A phenomenon of this kind was observed recently in Liberia and in Uganda (World Bank, 2007e; Mulkeen, 2008).

4. How relevant are current salaries in making the teaching profession attractive?

Over and above the set of factors mentioned previously, maintaining a high rate of teacher recruitments as required to reach UPE, justifies more prospective thinking. It is indeed important on the one hand to know how substantial the number of candidates with the desired academic qualifications for teaching is in each country and, on the other hand, to determine if salary levels on offer remain attractive with regard to other job opportunities. As far as the salary aspect is concerned, we explored earlier in this chapter the international comparative perspective of African teacher salaries (cf. Section 3). We now take a national standpoint, in reference to each country's labour market.

4.1. Are there adequate human resources in each country to recruit the future teachers?

It was possible to estimate a potential supply for 18 African countries where data were available (household surveys) to be looked at alongside teacher needs. In the analyses carried out, we have considered that the qualifications required to become a primary school teacher correspond to studies ranging from lower secondary school completion to upper secondary completion. This range does indeed cover the duration of study of the majority of primary school teachers in most African countries. Moreover, as we have focused on the young population liable to opt for a teaching career, we have restricted the analysis to individuals of between 25 and 34 years old. Table 2.3 presents the results obtained.

For the 18 countries as a whole, the estimated "pool" is constituted of around 2.7 million young people, three quarters of whom are already in employment, but in the informal sector; the other young people, who declare to be unemployed at the time of the survey, make up 27% of the potential candidates. For all the countries concerned, 1.1 million new teachers will be necessary with a view to achieving UPE. Even if the year selected for the estimation of potential candidates does not match with the base year for the projection of teacher needs, simply confronting teacher needs and the number of young people in the working population able to potentially fill this kind of job indicates that the needs have every chance of being covered, for most countries. For all 18 countries, the estimations suggest a figure of two to three potential candidates per teaching vacancy.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

Table 2.3: Estimation of the number of potential candidates (young people between the age of 25 and 34) for teaching positions in primary school and the average annual number of new teaching positions

Country	Potential candidates				Teacher needs			Ratio (1)/(2)
	Year	Total (1)	% informal sector	% unemployed	Period	Total (2)	Annual average	
Benin	2003	21 400	93.2	6.8	2006-2015	34 223	3 803	0.63
Burkina Faso	2002	27 600	64.8	35.2	2006-2020	69 435	4 960	0.40
Burundi	2002	10 500	60.7	39.3	2006-2020	42 738	3 053	0.24
Cameroon	2001	296 900	59.3	40.7	2006-2020	48 943	3 496	6.07
CAR	2003	26 300	74.7	25.3	2008-2020	15 167	1 264	1.74
Chad	2002	22 000	70.3	29.7	2005-2020	31 548	2 103	0.70
Congo	2005	147 600	60.1	39.9	2006-2015	8 009	890	18.43
Côte d'Ivoire	2002	266 800	70.1	29.9	2007-2020	69 786	5 368	3.82
Ethiopia	2004	291 800	67.6	32.4	2006-2020	312 298	22 307	0.93
Ghana	2003	466 800	90.1	9.9	2005-2015	54 078	5 408	8.63
Guinea	2002	50 400	63.3	36.7	2006-2015	32 326	3 592	1.56
Madagascar	2001	211 600	88.0	12.0	2006-2020	39 533	2 824	5.35
Malawi	2002	142 000	88.7	11.3	2007-2020	26 583	2 045	5.34
Mali	2004	44 800	64.5	35.5	2006-2020	34 268	2 448	1.31
Mauritania	2005	15 200	67.4	32.6	2006-2020	8 605	615	1.77
Senegal	2001	51 400	52.1	47.9	2006-2020	39 819	2 844	1.29
Uganda	2002	250 000	88.1	11.9	2005-2020	173 530	11 569	1.44
Zambia	2002	320 800	83.6	16.4	2006-2015	69 866	7 763	4.59
18 countries overall	**-**	**2 664 200**	**72.6**	**27.4**	**-**	**1 110 756**	**4 797**	**2.40**

Source: Calculations based on national data and those from table A1.3 in appendix

These results are reinforced by using real data on the number of applicants per vacancy in the official teacher recruitment examinations. In Malawi in 2005, for example, 28 000 candidates were registered for 2 900 vacancies in the pupil-teacher recruitment exam, i.e. about 10 candidates per position (World Bank, 2007d). In Benin in 2007, almost 6 candidates per vacancy registered at a similar exam (CSR-Benin, 2008) and there were 3.5 candidates per vacancy in Central African Republic (CSR-CAR, 2007).

It is however appropriate to qualify the above results, for two main reasons. Firstly, the pool is constituted primarily of individuals already in employment (although in the informal sector). It may therefore seem unrealistic to suppose that all these individuals would be spontaneously interested in teaching. The second reason is that some workers in the informal sector may possibly earn a higher income than teachers in the public sector or employees in the modern sector in general, as we shall see later in the case of Burkina Faso. Therefore, it is also essential to consider the financial attractiveness of teaching.

4.2. Attractiveness of teacher salary

If teacher salary in a given country is very much below the average salary in force on the national labour market, difficulties in recruitment and also possible early leaving from the profession are to be anticipated. If on the other hand the salary is much higher than the average salary, then resignations should be uncommon and the number of applicants much higher than recruitment needs. Knowing where current average teacher salary stands in relation to the situation on the national labour market is therefore important for the management of the system and at individual level.

4.2.1. Salary scale and overall structure of the labour market in sub-Saharan Africa

To have a better understanding of the relative position of teachers on their country's labour market, it is essential to keep in mind its structural components (types of employment available in the economy, average salary levels offered to individuals with comparable qualifications to those of teachers, etc.). In most African economies, two main employment sectors generally stand out due to their size and structure. The so-called "modern" employment sector, usually limited in terms of numbers of jobs, covers all formal kinds of public and private employment. As for the non-structured sector, it covers so-called "traditional" jobs, in agriculture in rural areas, as well as "informal" jobs in urban settings. This sector provides around 90% of all employment in a typical African country (cf. table 2.3) at the present time and it clearly transpires that this will still be the principal source of employment for the coming 10 to 15 years.

Table 2.4: Average structure of employment in sub-Saharan African countries (2004 or closest year)

Employment sectors	% of total employment
Modern sector	10.3%
Of which public sector	4.9%
Of which private sector	5.4%
Informal sector	89.7%
Of which agriculture	64.9%
Of which non-agricultural	24.7%
Total	100%

Source: Mingat (2006)

Since teachers belong to the modern employment sector, salaries practised in this sector must serve as a reference for appreciating their specific situation. Moreover, it is essential to draw comparisons with individuals who have academic qualifications that are comparable to those of teachers, in either of the two major employment sectors. As before, we have targeted young people between the age of 25 and 34 here, with a level of education ranging from lower secondary completion to upper secondary completion.

Table 2.5 provides the level of income (annual basis, expressed in units of GDP per capita) of individuals between the age of 25 and 34 who have completed lower or upper secondary education, according to the employment sector. The (rare) information available concerns nine countries for which it has been possible to distinguish between income from the public sector and income from the private sector, on the modern employment market.

Table 2.5: Annual income (GDP per capita) of individuals aged between 25 and 34 who have completed lower or upper secondary education, according to employment sector

	Modern sector		Informal sector	Average teacher salary
Country	Public	Private		
Burkina Faso (2002)	4.66	3.83	4.07	6.4
Cameroon (2001)	1.98	1.82	1.02	3.9
Chad (2002)	4.32	3.81	3.52	5.4
Côte d'Ivoire (2002)	3.38	2.84	1.49	4.8
Madagascar (2001)	2.65	2.06	1.22	4.4
Mali (2004)	5.00	2.48	2.36	6.0
Mauritania (2005)	2.18	3.26	2.68	3.3
Sierra Leone (2003)	5.35	6.27	4.37	4.2
Uganda (2002)	3.40	3.60	2.30	3.2
Average	**3.66**	**3.33**	**2.56**	**4.6**

Source: National data, authors' calculations and table 2.2 for salaries

For all nine countries, the level of declared income is higher on average in the public sector than in the private sector. Individuals with academic qualifications comparable to those of teachers but who have not managed to find a job in the modern sector are obliged either to work in the informal sector, or to remain unemployed[30]. For individuals working on a "stable" basis in the informal sector, the level of declared income is lower on average than the average level of income of individuals in the same age group with comparable qualifications but who have a modern public or private job.

This average structure varies depending on the country, as demonstrated by the situation observed in Burkina Faso where the average annual income of the young people targeted appears higher in the informal sector than in the formal private sector. In Mauritania, the informal sector seems to pay better than the public sector. In the vast majority of cases, modern private sector and informal sector salaries are lower than those in the teaching profession and also than the reference set for this type of employment in the FTI indicative framework (3.5 times GDP per capita). Although there are clear trends, there are also special situations, suggesting that hasty generalisation should be avoided. If data are available, then it is preferable to conduct analysis at national level in order to clarify this aspect.

4.2.2. Making a more subtle comparison between the situation of teachers and that of other members of the working population

There are two components to the degree of attractiveness of teacher salary: a "start of career" component and a "progress during career" component. Firstly, it is important to consider the salary offered to teachers in the early years of their career compared to salary conditions in other employment sectors for workers at the start of their career whose academic qualifications are comparable to those of teachers. Secondly, it is important to compare salary progress during the career, for teachers and for other workers in the modern sector (including teachers in the private sector, data permitting)[31]. In order to carry out this comparison, we can begin by comparing salary scales as in the case of Liberia, Malawi, Uganda and Zambia presented in box 2.2.

30 The distinction between the unemployed and workers in the informal sector is however not perfect since some individuals who declare to be unemployed do no doubt work on and off in informal activities.

31 Statistically, this simply means comparing the returns to one year of experience for teachers with the returns to one year of experience for the other workers in the modern sector.

Chapter 2

Teacher salaries and the expansion of education: a fundamental link

Box 2.2: Progress in the salary of teachers during their career in four countries

In Liberia, government-paid teachers fall under general civil servant status. Salary progress is related neither to seniority nor to teacher performance. Salary was set at around 55 US dollars per month in 2008. It differs very slightly according to the teacher's level of qualifications. A new salary scale has been prepared by the Ministry of National Education, but is not yet in force; it simply authorises more differences in salary according to the teacher's level of qualifications, but does not take into account the teacher's seniority.

In Malawi, teachers are also aligned on the civil servant salary scale, with automatic rises of around 2% per annum up to the maximum rung. Thus, a certified teacher starts his/her career at rank M with 45 US dollars per month (i.e. 3.4 times GDP per capita in 2007), and this figure increases up to a maximum of 13% if the teacher remains at the same rank (i.e. 3.8 times GDP per capita in 2007). The transition from one rank to another is made on a competitive basis, after a minimum of four years service. The maximum salary in rank L is 43% higher than the maximum salary in rank M. That said, the examinations for changing ranks are very selective. For example, the success rate for transition to rank L was only 13% in recent years.

In Uganda, the salary scale for teachers is the same as for the civil service. It is based on professional qualifications and automatically progresses with seniority. Thus, a qualified primary school teacher reaches the top of the salary scale after 10 years of activity; at this maximum point, his/her salary is then 15% higher than his/her starting salary. Once this level is reached, a salary rise is only possible if the teacher is promoted to the position of headmaster/ headmistress. However, unqualified teachers receive a constant salary throughout their career.

In Zambia, the majority of new teachers recruited have a minimum of 12 years schooling. These "certified" teachers receive an annual salary of 3 292 US dollars at the start of their career. Their salary rises to a maximum of 11% after seven automatic annual increases linked to seniority.

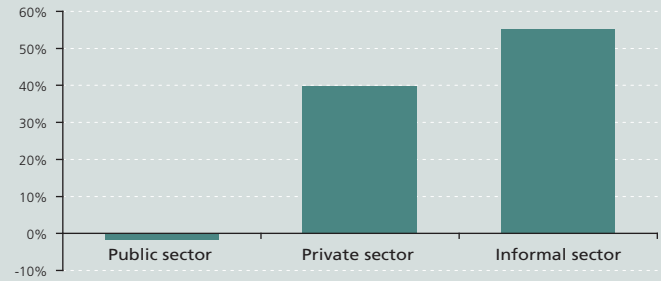
Source: Mulkeen (2008) and World Bank (2007d,e,f)

A more detailed analysis can be made using household surveys or more specific surveys on employment, which provide information not only on the level of education and training and the job filled but also on salaries or income. The sample used must be large enough to enable significant comparison between teaching jobs and other activities. Survey data used in the framework of this study do not fulfil all these conditions, with the exception of that for Mali (EPAM, 2004). The permanent household survey in Mali enables public sector teacher salaries to be distinguished from other workers' salaries (in the case of this country, it was also possible to distinguish public sector workers from those in the private sector and those in the informal sector). The analysis also targeted young people between the age of 25 and 34 and provides a sample of individuals who are comparable from the point of view of duration of their initial training and professional experience[32].

32 In concrete terms, we make a statistical analysis of the logarithm of the individual income according to the highest rank reached and seniority, with the employment sector and gender as additional variables.

On this basis, there is seen to be no significant difference between the income declared by teachers in the public sector (in the 25 to 34 age group) and other public sector workers belonging to the same age group. On the other hand, the analysis suggests that teacher salaries are higher (by 40%) than the average salary of those working in the modern private sector and who have a similar profile in terms of initial training and duration of their professional career. The gap is over 50% with the informal sector.

Graph 2.9: Salary gap between teachers in the public sector and other categories of workers, comparable in terms of professional experience and duration of schooling (Mali, 2004)*



Source: Authors' calculations based on individual data from the 2004 EPAM
** Simulations based on an econometric model (1 644 individuals between the age of 25 and 34; R^2=28%).*

Consolidated results of the investigations on the size of the stock of potential working population for the recruitment of primary teachers and of the degree of attractiveness of teacher salary suggest that, in the case of Mali (i) there is a very high number of people with the basic academic qualifications for teaching in primary school and that (ii) the level of teacher salary in the public sector is way higher on average than the equilibrium salary on the national labour market (if this salary is based on salary conditions in the modern private sector). Ideally, this type of analysis should be conducted in each country in order to better comprehend the situation of teacher salaries.

5. Placing the teaching issue at the heart of educational policy trade-offs

From the different analytical elements touched on above, the complexity and multidimensional nature of the teaching issue is clear as seen from the salary angle alone. Even so, this equally central and controversial aspect is, on its own, far from summing up a country's educational policy. As explored in detail in the first section of this chapter, the budget constraint faced by each government implies making trade-offs between the different major options of educational policy, in terms of quantity, quality and organisation, in each cycle of education, in order to maintain the coherence of the education system. Educational policy can indeed not generally be reduced to the sum of all that would in principle be ideal, since logistic, and above all financial, constraints play an important role.

Policy makers must therefore consider each of these aspects, define the genuine issues involved in developing the system and identify the options: from the most comfortable to the most constrained. They must then estimate the costs and finally compare them with available (domestic and international) resources. In this way, it will be possible to determine the best possible balance. It is generally helpful to use a sectoral financial simulation model for this type of issue, as it facilitates the trade-off process by testing the logistic feasibility and the financial sustainability of different scenarios. It also makes it possible to estimate the financial gap to be filled for implementation of the sector policy and so evaluate the rate of potential dependence on external aid, as far as the field of education alone is concerned.

Including all the sub-sectors in the same model makes it possible to check the "compatibility" of the sub-sector policies (the education sector is usually managed by several ministries, each with its own view of the development of the sub-sector for which it bears responsibility) and approve an overall coherent and shared policy for the development of the education system.

In addition, the logistic and financial consequences of some aspects (to do with salary issues for example) can be looked at separately and tested, and so allow for enlightened decisions. Nevertheless, it remains obvious that discussions around such a sensitive issue as teacher salary policy cannot be limited to analysis on financial sustainability. They must involve multiple exchange at different levels and between different stakeholders: 1/ between technicians and policy makers within the ministry, the former analysing the consequences of the measures envisaged by the latter, 2/ between the ministry and its national ministerial partners (ministry of finance, ministry of planning and departments in charge of establishing the Poverty Reduction

Strategy Paper (PRSP), who participate in inter-sectoral trade-offs or who are competing for the allocation of the country's public resources), 3/ between the ministry and social partners (parent associations, teacher unions, civil society) insofar as a sectoral development programme often involves conflicts of interest and rights between the different stakeholders and 4/ between the ministry and external development partners to enable the country to attract additional resources.

The final trade-offs will be the result of the negotiations that will take place between the different stakeholders involved in the system. They will have to take into account the often-diverging aspirations of each and everyone, but a balance must be found around explicit consideration given to the consequences of the different development scenarios envisaged. The shared and transparent recourse to this type of simulation model most certainly provides the possibility of establishing social dialogue at the heart of educational policy choices and thus of fostering consensus building, which is essential to the implementation of ambitious education system development policies.