

Working Paper Number 121

Causes of conflict in Sudan: Testing the Black Book

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The Black Book of Sudan claims to identify a pattern of political control – by people of its northern regions – which is unbroken during the post-independence period. This is the basis for the view of many of the rebels in the south and west of the country that the conflicts are the result not of racial or religious discrimination but rather of regional marginalisation. This paper uses the available data to evaluate the extent to which differences in regional access to power have resulted in differential human development progress. Indicators ranging from infant mortality to adult literacy, coupled with data on regional expenditure allocations, offer substantial support to the idea that policy has discriminated against the population of the southern and western regions, not least Darfur. The danger is that development community efforts that do not recognise the basis for the conflict may facilitate a continuation of the same distortions and sow the seeds for future conflict even before peace is achieved.

January 2005

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1. INTRODUCTION

Since February 2003, the government of Sudan has conducted a campaign of genocidal ethnic cleansing in Darfur, using both its military forces and militia proxies the Janjaweed. Estimates of fatalities have climbed steadily to 70,000 people while more than two million have been displaced.² Recognition of this violence has eventually brought significant pressure for a halt, and internationally brokered negotiations are underway.

Media coverage has been dominated by views of the conflict as racial ('Arab' against 'African') and religious (the Muslim north against the largely Christian and animist south). The main claims of rebel groups however have been of *regional* rather than racial or religious discrimination. The Black Book of Sudan, published secretly in the capital Khartoum in 2000 and then widely circulated through photocopying, had a major impact on political discussion. The book's first part (in English translation: Anonymous, 2004a) sets out the extent to which governments of different persuasions have disproportionately appointed citizens from the northern regions in all areas of government, at the expense of all others.

'Sudan was not ideal at its Independence in 1956. Resources were poorly divided among different provinces at the time. By the 1970s some progress was made and gaps between provinces started narrowing. The last two decades have been different. Resources were moved to concentrate in the Northern and Central Regions leading to impoverishment of other Regions. [...] Destruction of marginalized Regions has become a feature of Sudan, particularly during the reign of [the] current Regime' (p.31).

El-Tom (2004) sets out how northern Sudanese took their opportunity at independence in claiming a fitness to lead that stemmed from their scientific rationality, as opposed to the barbarism of other Sudanese. This was justified by a political discourse of 'Arabization', which over time became closely linked to Islam.³ Mamdani (2004) confirms the difference between understandings of 'Arab' as an ethnic, cultural and political concept in the Sudan, and the use made by at least the current government of the latter.

El-Tom highlights that the discourse is used to the extent that it supports the elite's claims to dominance; but not beyond this. Effectively following an Orientalism (Said, 1978) argument, he states that it was 'not the simple claim to Arab ancestry which elevated Northern Sudan to its hegemonic position... Rather, it was their opportunistic appropriation of modernity that was once the preserve of British colonial staff' (p.8). Darfur is 100% Muslim and many groups have better claims to 'Arab' identity than do the northern elite: 'Nomadic groups like the Kababish, the Ziyadiya, the Rashaida and the Zibaidiya can all profess Arab identity to an extent that cannot be matched by the

² The escalation of known and estimated fatalities can be seen clearly during 2004. The BBC in April used a figure of 10,000. By August, a report by UN Representative Francis Deng referred to 30-50,000. London Times (Rice, 2004) and AP journalists (AP, 2004) in December gave 70,000. USAID had said in early May that 100,000 casualties were probably inevitable, and that 350,000 were quite possible by the end of the year (Africa Confidential, 2004). Language also escalated as the international community began to fully recognise the nature of the conflict – Kofi Annan referred to ongoing 'ethnic cleansing' in April, Colin Powell to 'genocide' in September (Slim, 2004).

³ For example, El-Tom notes that a common word for the practise of circumcision (seen in Sudan as an Islamic practice) is *tareeb*, or 'Arabization'.

current hegemonic groups in the country. However, in the current discourse of power, they are classified as essentially backwards and at odds with modernity' (p.8).

The authors of the Black Book sought to show the effect of this discourse on access to power in the Sudan. To do this, they determined the regional origins of each minister appointed in each government from independence in 1956 until 2000, and compared it with the underlying population distribution. This data is summarised in table 1, and shows how the ministerial share of the northern region varied between 60% and 80%, with the sole exception of the second democratic period (1986-89) when the share fell to 47%. The northern regions' population makes up less than 5% of the total.

The claim of the authors, which is expanded upon to some extent in part II (Anonymous, 2004b; Arabic version 2002),⁴ is that this distortion had real and significant effects on the performance of government duties at every level – from the employment of outsiders to work on oil fields inconveniently located in marginalised regions, to the allocation of funds for public health expenditure. Disproportionate access to power brought disproportionate provision of government support, and unfairly reduced the human development opportunities of the marginalised.

This paper seeks to evaluate the validity of the Black Book's claim. The authors were later revealed to be associated with one of the two Darfur rebel groups, the Justice and Equality Movement, so it should in no way be seen as neutral in regard to the current conflict. As a basis for making greater demands in negotiations, claims of unfair treatment are of course likely to be helpful. If the claims are borne out however, there are important implications not only for the settlement eventually reached but for the conduct of the large-scale development effort that will follow.

Section 2 compares the basic economic and human development performance of Sudan with each of the neighbouring countries, and assesses the relative strengths and weaknesses. Section 3 sets out the available data on government and state finances, including deriving the regional pattern of central subsidy and contribution. The extent of development expenditure per capita is also calculated. Section 4 constructs and examines regional data on education and health indicators, to assess whether these patterns of expenditure and finance have results in terms of the human development opportunities for the inhabitants of different areas of the Sudan. Finally, section 5 draws conclusions about the validity of the claims made in the Black Book.

2. ECONOMIC AND DEVELOPMENT CONTEXT

Sudan has Libya and Egypt to the north, Chad and the Central African Republic (C.A.R.) to the west, the Democratic Republic of Congo, Kenya and Uganda to the south, and Eritrea and Ethiopia to the east. While Sudan is the largest country in Africa, its population is relatively small at around 32 million – similar to Kenya but less than half that of Egypt or Ethiopia.

⁴ Part II had apparently been intended to provide considerably greater detail on policy effects of the bias in ministerial selection, but in the event was largely devoted to an absolute proof of the truth of the first part. The government had contested the statistics summarised in table 1, so to remove doubt the names of individual ministers and their regional origin are detailed in part II.

As Table 2 shows, Sudan ranked 138 out of 175 in the 2003 Human Development Index, behind the two northern neighbours but ahead of all others. The same pattern is exhibited for GDP per capita and for life expectancy. In terms of the latter however, the absolute advantage that the Sudan had in 1970-75 has diminished over time and Egypt and Libya are now considerably advanced.

Figure 1 suggests Sudan has seen stable progress on basic indicators in recent years. Panel a shows only Uganda performing better in economic growth terms over 1997-2002, and the latter has since faced serious problems. In per capita terms (panel b), Sudan's progress has been slower but steady. Since 1997, an IMF-monitored macroeconomic stabilisation package has been in place, involving most of the standard elements – privatisation of state-owned enterprises, significant and valuable inflation reduction, reduced taxation of the corporate sector and incentives to foreign investment. The growth rates seen in panel a of figure 3 reflect some combination of the package's success and the important role of oil.

Looking at the country's economic structure (table 3) underlines the view of Sudan as primarily agriculture-driven, but since 1999 it has also exported oil. Agriculture remains responsible for more than a third of output, even in the face of this new strength in the economy. Crops alone account for 20% of output, livestock another 15%. Services are also important, with commerce and hospitality contributing towards 20% and the FIRE sector almost 10%. Manufacturing has grown with the advent of oil, though still accounts for less than 10% of GDP.

Panel c of figure 1 shows Sudan's progress in terms of life expectancy, while for many sub-Saharan African countries this underwent a reverse with the rapid spread of HIV/AIDS. The resulting difference between the sub-Saharan and Middle East/North Africa averages is stark. Table 4 shows some of the contributing factors to the life expectancy pattern. Skilled medical staff attended a relatively high proportion of births in Sudan, and the number of trained physicians is relatively high.⁵ Most importantly however, Sudan continues to exhibit relatively low prevalence of HIV/AIDS, while neighbours to the south suffer greatly.

As figure 2 illustrates, half of the variation in life expectancy within this small set of neighbours can be empirically explained by the rate of HIV/AIDS prevalence alone. Almost identical R² values can be obtained when the dependent variable is instead the change in life expectancy from 1970-75 to 2000-05, expressed either in years or as a percentage of the value for the first period. Thus Sudan's relatively strong performance on life expectancy may reflect the relatively low prevalence of this disease to date, rather than any particular policy success.

Table 5 shows some weaknesses that are masked by Sudan's relatively strong performance in economic growth and average life expectancy terms. On sustainable access to drugs, Sudan is in the poorest-performing category with more than half the population restricted. Immunisations are relatively limited, especially against tuberculosis, and cases of malaria are exceptionally high. Sudan appears to fare well on measures of average performance, but poorly on measures of the *extent* of provision. This suggests underlying inequality in distribution. The education measures – relatively

⁵ These are discussed further when the regional pattern is considered in section 4.

low literacy, and exceptionally poor primary school enrolment rates – are consistent with this view.

The aggregate and average data provide some reason then to consider the pattern of distribution in Sudan. As noted in the World Bank report (2003) however, the country faces serious economic inequality without recourse to any regional explanation. The report quotes a study by Ibrahim, Elobodi and Holi (2001) that finds extremely high Gini coefficients for wage labourers in 1996 of 0.74; 0.72 in urban areas and 0.65 rural. Earlier values are much lower but grow quickly: from 0.41 in 1967/8, 0.50 in 1978/80 and 0.61 in 1990. To begin now to understand whether there is an important regional characteristic to the distribution, disaggregated data is required.

3. REVENUE AND EXPENDITURE PATTERNS

Table 6 shows the pattern of total government expenditures – the sum of central government and states' actual expenditures, and gives some important evidence of why education and health measures might be poor. Average total expenditure on each of health and education is consistently only around 1% of GDP across 1998-2000, although oil revenues increases from zero to 5% of GDP over the same period. This latter explains the rise in total expenditure from 10.7% to 15.5% of GDP. During the same period, the total social services budget including health and education increased by 0.2% of GDP, while defence and 'Other' expenditures went up by 1% and 2.2% of GDP respectively.

The pattern of government revenue shares is shown in table 7. Before the advent of oil revenues in 1999 and more significantly 2000, indirect taxes make up the largest component, growing from twice to three times the size of either direct tax or non-tax revenues. The single largest sub-component has been import duties, followed by excise duties. Within direct tax, personal income tax has never been large (as is common in the region), while corporate tax revenues halved during the 1990s. Consumption taxes including VAT (introduced in 2000) have made up around 10% of total revenue.

To consider any claim of regional bias in expenditure allocation, it is necessary to understand first the distribution of regional revenues. Of the main sources of revenue, only corporate and consumption taxes have a precise regional allocation since import taxes and excise duties are levied on a national basis. Oil revenues – at least during the civil war – were controlled by the central government although extraction is carried out in the south. At least within the non-southern regions, no region can lay particular claim to this new source of revenue that has lifted the total from around 8% of GDP to over 11%.

Corporate, consumption and sales taxes including VAT account in total for a share of GDP that varies between 1% and 3%, and a share of total revenue between 15% and 40%. Figure 3 shows the generally downward development of these shares across the 1990s. It is clear from this that a quite unequal pattern of regional expenditures could be generated, *with a completely 'neutral' central government*, if the pattern of economic activity that produces these revenues was also unbalanced. To assess the Black Book's claim of bias in the allocation, it is necessary to account for these differences in the analysis.

The World Bank report (2003) contains state-by-state data on revenues and expenditures, for the years 1996-2000.⁶ These can be combined to generate regional values, according to the allocation of states used by the Black Book and the population data for 2001 (both given in table 1). To make a fair comparison between states of greatly different size, per capita values are used.⁷ The underlying state population data is used to avoid problems associated with the small number of gaps in the data.

Per capita total expenditure and total own revenue are shown in columns (1) and (2) of table 8a, in Sudan dinars. Both expenditures and revenues are notably larger in the North and Central regions than the East and – especially – the West. This could mean be the effects of ‘neutral’ central government but differential regional economic strength, as discussed above.

To see whether this is the case, column (3) shows the difference between the (own) revenue and expenditure values, which gives the effective per capita subsidy from central government. This last is positive in almost every case, the exceptions occurring in the Central region where states’ own revenues are typically highest. It is also notably lower in the West.

Significant inflation occurred during the period meaning cross-time comparisons are not straightforward. To show the effects more clearly then, table 8a also shows the per capita values for each region as a percentage of the value for the North, claimed by the Black Book to be unfairly favoured. Only the capital state Khartoum has consistently higher revenues, while the East is closest, followed by the remaining Central states, then finally the West.

The averages shown in the summary table 8b make this pattern clear. While the per capita revenues and expenditures of the West are around 44% of those of the North, the per capita subsidy of the West is also only 43% that of the North. In effect, the region least able to raise its own revenues⁸ nonetheless receives central government subsidies less than half that of the most able region. The East and Central regions receive lower per capita subsidies but are relatively well placed to raise revenues (compared to the West) and hence manage much higher expenditure levels.

Finally, data is available for the extent of specifically ‘development’ expenditure. This is essentially the forward-looking component of expenditures. The Ministry of Finance economic classification of expenditure lists the following categories: wages (34% in 2000), operation and maintenance (38%), debt service (9%), social subsidies (2%) and development (17%). Table 8b shows that the capital state Khartoum is the most well provided for in this category, with more than five times the level of expenditure in the North, but that the West manages just 17% of the latter.

The stance of the central government in regard to regional allocation has not been neutral over the period for which (their own) data are available. The subsidy to the West

⁶ There are notable gaps, not least every southern state except Western Equatoria. Data for 2001 are also available but only for three states, so these were discarded.

⁷ This inevitably adds some small element of inaccuracy, but the changes in population distribution between 1996 and 2001 are unlikely to be sufficient to introduce significant bias in the results.

⁸ This is presumably due to the relatively low level of economic activity, although unfortunately no regional data on this is readily available.

is less than half that to the North, despite the former's own revenues also being much lower. It has also been seen that the effect for the development budget has been to leave the West with less than one fifth of the per capita funds. The question this raises is whether the bias in allocation has been sufficient to generate real differences in development outcomes, or if the authors of the Black Book have exaggerated its actual impact.

4. REGIONAL HUMAN DEVELOPMENT OUTCOMES

Table 9 shows the population distribution across the regions, as grouped (under the old system of states) in the Black Book. Around a third of the total population lives in urban areas, and these are centred in Khartoum. Darfur is the most rural area, followed by Kordofan and then the North.

Table 10 shows how the key health outcomes of infant mortality and life expectancy differ from one region to another, for 1993 - the last year for which reliable data is readily available, as used by the World Bank in its June 2003 country report. Life expectancy for women varies from 49.2 years in the South, 53.6 in the East and 56.4 in the West, up to 58.8 in the North and 59.8 in Khartoum – women from 'marginal' regions *outside* the civil war in the south lived on average between two-and-a-half and five years fewer than those from the North.

The pattern is different among men, with the expected low values in the South where the war was entering its second decade, and the highest in the Central region. Those from the West were expected to just outlive those from the North, the East lagging a year behind.

Infant mortality shows a much clearer pattern, and the differences are considerable: male infant mortality is more than 20% higher in the West and East regions, and almost 50% higher in the South, than in the North. Only Khartoum fares better, and then only marginally. A similar pattern holds for female infant mortality.

Table 11 gives a strong clue as to what type of determinant this pattern is likely to have. It shows the presence (or otherwise) of medical personnel at the birth of children in each region, and here the differences are stark. While doctors attend half of births in the North, and more than 40% in Khartoum, the corresponding figure for the West is just 10%. A doctor or health visitor attended more than 70% of births in the North, but only a third of this number in the West. Almost 45% of births in the West are completely unattended, but only 15% of those in the North. This supports the view that differences in infant mortality can be traced back, at least in part, to the provision of medical care through public health expenditure – rather than through differences in some endogenous regional characteristic.

Vaccination rates (not reported in full here, but available in table A1.13 of the statistical appendix to the World Bank's 2003 report) support this also. For example, more than 60% of children aged 12-23 months in each of the Northern states have had measles vaccinations; the equivalent values in the West are North Darfur 46.8%, South Darfur 28.5% and West Darfur 21.5%. The value for the war-torn South is 51.1%.

In reference to the *relatively* low prevalence of HIV/AIDS in the Sudan noted in section 2 above, it seems reasonable to imagine that the danger of higher rates of infection (not least from the countries to the south) is significant. Bearing this in mind, and given the existing 2.6% prevalence rate, knowledge of HIV/AIDS is an important indicator of defence against the disease. The number of women who have heard of the disease ranges from 70% in Khartoum and 48-59% in the Northern states, down to 20.5% in West Darfur. In the South, a value of 67% was recorded. Other indicators of knowledge show similar disparities, which seem again to confirm a relative public health neglect for the West at least.⁹

These health data all refer to one point in time, and given the effective disengagement of the international community in the early 1990s it is difficult to find comparable data with which to measure changes. In the case of education data however, this is possible to a limited extent.

Table 12 shows regional averages for literacy and primary education enrolment rates, again calculated using the state-level data and the 2001 population data (source as per table 9). The first four columns of data are the most recently available, provided to the World Bank by the Ministry of Education in 2002 – before any fighting had occurred in the west of the Sudan, and hence showing pre-conflict comparable data.

What these data reveal is rates of adult literacy in Darfur and Kordofan which at around 38% of the population older than 15 years are barely half that of the North and Khartoum. The East fares somewhat better, with rates of around 43%. The values in each case are relatively similar for both male and female. Gross enrolment rates show a pattern likely to exacerbate rather than ameliorate the extent of this inequality. While two-thirds of possible school pupils enrol in the North, and three-quarters in Khartoum, less than half do so in the West and East and less than 40% in Kordofan.

Using earlier literacy data from 1993, it is possible to track (subject to differences in methodology) how this key educational outcome changed across regions over the following ten-year period. In this way, questions about the current government can be answered. If these data are taken as broadly reflecting the position inherited by the coup-leaders in 1989, and therefore the culmination of historical economic, social and policy-related influences, then the relative performance of regions over the decade will show the effect of policies pursued since then (and the period immediately beforehand, allowing for a lag).

With major donors withdrawing and various sanctions regimes imposed (e.g. by the US in 1997), the period 1993-2002 was a difficult one for the Sudan, even allowing for the economic upturn seen in figure 1. Against this backdrop, it is perhaps unsurprising that there was on average a fall in literacy rates. With a general push to improve gender equality in education, female literacy rates rose in every region; but at the same time every region also saw a fall in male literacy rates.

These common elements mask a clear regional pattern. For total literacy rates, the only region to see a rise was the North (10.6%). The Central region fell least (2.6%) thanks to a rise in Khartoum state, followed by the West (10.2%) and then the East (13.8%). Underlying this is a more complex pattern of gender differences. The West's overall fall

⁹ Data from table A1.18 in the statistical appendix of World Bank, 2003.

is lower because it achieved the greatest relative increase (from the lowest base) in female literacy rates. But the male literacy rate fell by more than a third, compared to a drop of just 2.9% in the North.

5. CONCLUSIONS

The Black Book of Sudan (Anonymous, 2004a and 2004b in English translation) sets out data showing the disproportionate access to power – since independence in 1956 – of the 5% of the population from the Northern states. It further makes the claim that this has led to distorted distribution of government resources and therefore of development opportunities. This paper has used the most recent reliable data, much of it provided by the current government itself, to explore this claim. The results offer overwhelming support.

Section 2 looked at the national performance of Sudan and the neighbouring countries, and found its performance to be generally strong in terms of average economic growth and life expectancy (although the latter was argued to be at least in part the result of relatively low HIV/AIDS prevalence). On measures of the extent of allocation (such as disease immunisations, or school enrolment rates) however, Sudan's performance was seen to be relatively weak. This suggested an uneven distribution within the country.

In section 3, state data on own revenues and expenditures was used to calculate regional averages. Two main results emerged. First, the Northern region and capital state Khartoum have much higher per capita expenditures and revenues than any other area, more than twice those of the West (Darfur and Kordofan). This is likely however to be due to existing differences in economic performance rather than government policy. The second result is that in spite of this large existing difference in the ability of regions to raise their own revenues, per capita levels of government subsidy to states are biased in the same direction: the northern states enjoy a subsidy more than twice that offered to the West. Unsurprisingly perhaps, per capita development expenditure in the West has run at less than a fifth of that of the North.

Section 4 then examined whether there were significant human development impacts of government favouring the North and Khartoum at the expense of the West (and, to a lesser extent, the Central region excluding Khartoum and the East). Such effects were found. Access to healthcare – in terms of e.g. presence of trained medical people during births, or provision of immunisation – was shown to be unbalanced, with the resultant patterns of infant mortality and female (but not male) life expectancy being clearly stacked against the population of the West. Less than a quarter of mothers in the West will have a doctor or health visitor present during birth, compared to more than two-thirds in the North; female life expectancy is 2.4 years shorter, and the chances of dying in infancy are 20% higher.

Education outcomes exhibited similar patterns, with literacy and enrolment rates notably higher in the North and Khartoum than elsewhere, indeed towards twice the levels in the West. Here it was possible to track changes in literacy from 1993-2002, and specifically assess the changes under the 1989 dictatorship. While literacy rates in the North rose by 10%, they fell everywhere else: in the Central region (even including Khartoum) by 2.6%, in the East by 13.8% and in the West by 10.2%. Male literacy fell by a third in the West, compared to just 3% in the North.

There can be no doubt that the current dictatorship has been pernicious for the human development of the regions outside of the North and Khartoum. There can be no question that the data support the claims made in the Black Book that the Sudan has been governed to benefit those regions disproportionately at the expense of all others – who account for 80% of the population, or around 25 million people. While data here has only referred to the more recent period, the Black Book data on access to power goes back to 1956, encompassing a range of governments from military and Islamic dictatorships to democracy, with the Northern bias a constant factor – the apparent robustness of this phenomenon to political change should not be overlooked.

There are a number of implications of the validation of the Black Book's central claims. In particular, the current negotiations should be required to take this into account. While speed is clearly essential to minimise the immediate casualties being inflicted and to ensure the safety of the millions displaced,¹⁰ it should not be a factor in allowing a flawed settlement. The determinants of the conflict must be addressed if any resolution is to create the conditions for a long-term peace.

The large-scale development effort that is awaiting the conclusion of negotiations and normalisation of relations should also make clear use of data on regional disparities and past regional treatment. While the African Development Bank, European Commission and World Bank reports on Sudan (ADB, 2004; EC, 2002; WB, 2003) all make some reference to regional differences, and the latter provides almost all the data used to carry out the regional analysis here, there is an understandable reluctance to take on what may be perceived as political questions. This attitude cannot however be allowed to affect the work which takes place after a resolution is reached, if the long-term conditions for peace (and balanced human development) are to be improved by the development community.

¹⁰ Worryingly, Kofi Annan's first 2005 report to the Security Council notes a new build-up of government forces and logistics, possibly freed up by the peace deal with the southern rebels.

Table 1: Sudanese governments – regional representation (%)

Region	States	Regimes Population share (2001)	Alazhari, Khallel, Aboud 1954-64	First democracy 1964-69	Nimeiri (military) 1969-85	Transitional Military Council 1985-86	Second democracy (Almahdi) 1986-89	Revolutionary Command Council (Albashir)		
								Jun 1989	Jul 1989-Dec 1999	Post-Turabi period Dec 1999
Eastern	Gadharif, Kasala, Red Sea	11.7	1.4	2.05	2.5	0	2.6	0	3	3.3
Northern	Northern, River Nile	4.7	79	67.9	68.7	70	47.4	66.7	59.4	60.1
Central	Blue Nile, Gezira, Khartoum, Sinnar, White Nile	36.9	2.8	6.2	16.5	10	14.7	0	8.9	6.6
Southern	Bahr Alghazal, Equatorial, Upper Nile	16.0	16	17.3	7.8	16.7	12.9	13.3	14.9	13.3
Western	Darfur, Kordofan	30.6	0	6.2	3.5	3.3	22.4	20	13.8	16.7

Source: Anonymous (2004a), collated from various tables, except population data from World Bank – see table 9 below.

Table 2: Sudan and neighbours – basic development facts

	Human Development Index, 2001		Population (millions) 2001	GDP (US\$ bn) 2001	GDP per capita (US\$) 2001	Life expectancy at birth (years)	
	Value	Rank				1970-75	2000-05
Sudan	0.503	138	32.2	12.5	395	52.8	55.6
C.A.R.	0.363	168	3.8	1.0	257	52.1	39.5
Chad	0.376	165	8.1	1.6	202	43.6	44.7
Congo, DR	0.363	167	49.8	5.2	99	50.9	41.8
Egypt	0.648	120	69.1	98.5	1511	46.3	68.8
Eritrea	0.446	155	3.8	0.7	164	44.3	52.7
Ethiopia	0.359	169	67.3	6.2	95	39.0	45.5
Kenya	0.489	146	31.1	11.4	371	45.8	44.6
Libya	0.783	61	5.3	34.1	6453	43.0	72.8
Uganda	0.489	147	24.2	5.7	249	41.8	46.2

Source: UN (Human Development Report 2003).

Table 3: Structure of Sudanese economy (sectors by share of GDP, %)

	1996	1997	1998	2002*
Agriculture	41.9	45.0	39.1	35.8
Crops	20.0	21.6	19.8	20.6
Irrigated	8.4	11.6	10.9	8.3
Rain-fed mechanized	4.1	1.7	1.9	6.3
Rain-fed traditional	7.5	8.3	7.0	6.0
Livestock	21.1	22.8	18.8	14.8
Forestry	0.5	0.3	0.3	0.3
Fishing	0.3	0.3	0.2	0.2
Industry	13.4	11.3	14.6	23.5
Petroleum	0.0	0.0	0.0	8.4
Other mining and quarrying	0.4	0.3	0.3	0.1
Manufacturing and handicrafts	7.9	6.2	5.8	8.7
Electricity and water	0.7	0.4	0.6	0.9
Construction	4.4	4.4	7.9	5.4
Services	44.7	43.7	46.3	40.7
Commerce, restaurant and hotels	18.2	15.7	16.2	18.8
Transport and communication	11.4	9.2	11.3	7.5
Finance, insurance, real estate	8.0	8.0	8.0	9.6
Government services	2.8	3.0	3.6	2.8
Other services	4.3	7.8	7.2	2.0
GDP at market prices	100.0	100.0	100.0	100.0

Source: ADB (2004); Central Bureau of Statistics, ADF's mission estimates.

Note: * 2002 values are estimates.

Table 4: Sudan and neighbours - contributing factors to life expectancy

	Births attended by skilled health personnel (%) 1995-2001	Physicians (per 100,000 people) 1990-2002	HIV/AIDS prevalence (% of adults) 2001
Sudan	86	16	2.60
C.A.R.	44	4	12.90
Chad	16	3	3.61
Congo, DR	61	7	4.90
Egypt	61	218	<0.10
Eritrea	21	5	2.80
Ethiopia	6	3	6.41
Kenya	44	14	15.01
Libya	94	120	0.24
Uganda	39	5	5.00

Source: UN (Human Development Report 2003).

Table 5: Sudan and neighbours – health and education outcomes

	Access to affordable essential drugs (%)	One-year-olds (%) fully immunized against:		Cases (per 100,000 people)		Adult literacy (%) 2001	Education: combined enrolment ratio (%) 2000-01
		Tuberculosis 2001	Measles 2001	Tuberculosis 2001	Malaria 2000		
Sudan	0-49	51	67	142	13934	58.8	34
C.A.R.	50-79	38	29	255	2207	48.2	24
Chad	0-49	44	36	168	197	44.2	33
Congo, DR	..	57	46	184	296	62.7	27
Egypt	80-94	98	97	23	(,)	56.1	76
Eritrea	50-79	98	88	249	3479	56.7	33
Ethiopia	50-79	76	52	179	556	40.3	34
Kenya	0-49	91	76	289	545	83.3	52
Libya	95-100	99	93	11	2	80.8	89
Uganda	50-79	81	61	187	46	68.0	71

Source: UN (Human Development Report 2003).

Notes: Column 1 gives the percentage of the population with sustainable access to affordable essential drugs, column 7 the combined primary, secondary and tertiary gross enrolment ratio.

**Table 6: Total government expenditure:
Federal and states' actual recurrent and capital expenditure, (% GDP)**

	1998	1999	2000
Administrative services	2.8	2.8	3.1
Defense and security	1.8	2.3	2.8
Social services	2.8	2.1	3.0
Education	1.5	1.0	1.1
Health	0.9	0.7	0.8
Social subsidies'	0.4	0.3	1.1
Economic services	2.6	2.1	3.4
Agriculture	0.7	0.6	0.7
Irrigation	0.4	0.5	0.9
Drinking water	0.3	0.3	0.4
Industry	0.3	0.1	0.7
Transport	0.5	0.3	0.6
Energy	0.3	0.4	0.4
Other	0.7	2.3	2.9
Total	10.7	11.7	15.5

Source: World Bank, 2003; from Sudan Ministry of Finance and National Economy.

Note: 1. 'Social subsidies' includes subsidies to the student loan fund, hospitals, and for electricity.

Table 7: Sudan government sources of revenue, 1991-2000

	1991-1993	1994-6	1997-99	2000
<i>Shares of total revenue (%)</i>				
Tax revenue	73.3	79.4	79.8	48.7
Indirect taxes	47.4	49.9	60.6	32.1
Sales tax**	5.7	2.5	2.3	1.1
Import duties	15.3	19.3	23.8	15.8
Excise duties	11.4	14.4	15.0	9.6
Export duties & royalties	2.7	2.7	1.6	0.1
Consumption tax*	10.6	9.1	9.7	2.9
Direct taxes	23.9	27.8	19.3	11.6
Personal Income taxes	1.2	1.9	2.0	1.6
Corporate income tax	18.9	20.2	7.5	7.1
Sudanese working abroad	1.7	2.6	3.1	0.8
Other tax	2.2	2.8	6.2	1.5
Development tax	0.0	0.2	0.4	0.6
Other taxes	2.0	1.7	0.0	0.0
VAT**	0.0	0.0	0.0	5.0
Non tax revenue	26.7	20.7	20.9	51.3
Proceeds from Govt enterprises, interest, rent & dividend	2.2	3.0	5.7	4.9
Fees & charges on public services	4.7	7.7	5.5	2.8
Commodity price differentials	8.5	5.8	0.0	0.0
Proceeds from sales of public enterprises & land	1.7	1.7	0.1	0.0
Pension contribution	0.0	0.0	0.0	0.0
Oil revenue	0.0	0.0	3.2	43.6
Loan repayments	0.8	0.3	0.0	0.0
Others	8.9	1.9	6.4	0.0
Total revenue	100.0	100.0	100.0	100.0
<i>Shares of GDP(%)</i>				
Tax revenue	6.2	6.5	6.1	5.4
Non tax revenue	2.3	1.7	1.6	5.7
Total revenue	8.5	8.0	7.7	11.2

Source: Calculated from World Bank, 2003; Ministry of Finance and National Economy and IMF estimates.

Note: Some subtotals do not sum accurately in original data. Consumption tax and defence tax have been used interchangeably.

Table 8a: Regional revenues and expenditure, 1996-2000

Region (no. states)	States with data	FY	Values in Sudan dinars				As % of 'North' values			
			Exp	Rev	Sub	Dev Exp	Exp	Rev	Sub	Dev Exp
North (2)	2	1996	1116.5	805.7	310.9	80.3	100.0	100.0	100.0	100.0
	2	1997	1932.6	1525.5	407.0	243.9	100.0	100.0	100.0	100.0
	2	1998	2861.3	2176.6	684.6	505.5	100.0	100.0	100.0	100.0
	2	1999	3369.4	2570.1	799.3	545.1	100.0	100.0	100.0	100.0
	2	2000	4426.8	2793.2	1633.6	928.1	100.0	100.0	100.0	100.0
Central (5)	5	1996	1223.9	1208.2	15.6	398.1	109.6	150.0	5.0	495.9
	5	1997	2096.7	2045.5	51.1	603.4	108.5	134.1	12.6	247.4
	5	1998	3165.4	3172.2	-6.8	1124.0	110.6	145.7	-1.0	222.4
	5	1999	3541.0	3381.5	159.5	1201.5	105.1	131.6	20.0	220.4
	3	2000	3821.4	3048.1	773.3	383.8	86.3	109.1	47.3	41.4
Khartoum (1)	1	1996	2028.3	1783.6	244.7	881.6	181.7	221.4	78.7	1098.1
	1	1997	3191.5	3166.5	24.9	1312.3	165.1	207.6	6.1	538.1
	1	1998	5005.9	5127.1	-121.2	2321.9	175.0	235.6	-17.7	459.3
	1	1999	5991.9	5994.0	-2.1	2705.7	177.8	233.2	-0.3	496.4
	1	2000	4767.9	4770.4	-2.5	671.2	107.7	170.8	-0.2	72.3
Central ex. Khartoum (4)	4	1996	644.3	793.7	-149.4	49.7	57.7	98.5	-48.1	62.0
	4	1997	1307.9	1237.9	70.0	92.6	67.7	81.1	17.2	38.0
	4	1998	1839.5	1763.8	75.6	261.0	64.3	81.0	11.0	51.6
	4	1999	1775.3	1499.3	275.9	117.8	52.7	58.3	34.5	21.6
	2	2000	2690.7	990.6	1700.1	40.5	60.8	35.5	104.1	4.4
East (3)	3	1996	912.2	943.1	-30.9	163.9	81.7	117.1	-10.0	204.2
	3	1997	1455.5	1521.7	-66.2	197.9	75.3	99.7	-16.3	81.2
	3	1998	1923.6	2279.8	-356.2	154.9	67.2	104.7	-52.0	30.6
	3	1999	2633.7	2240.6	393.1	298.2	78.2	87.2	49.2	54.7
	3	2000	2931.1	2323.0	608.1	246.3	66.2	83.2	37.2	26.5
West (6)	6	1996	521.6	389.1	132.5	22.2	46.7	48.3	42.6	27.6
	6	1997	742.3	691.1	51.2	56.9	38.4	45.3	12.6	23.3
	5	1998	1090.2	877.7	212.5	50.4	38.1	40.3	31.0	10.0
	3	1999	1815.5	1164.2	651.3	93.1	53.9	45.3	81.5	17.1
	2	2000	1922.2	1125.5	796.7	67.0	43.4	40.3	48.8	7.2
Darfur (3)	3	1996	546.5	423.0	123.5	28.2	48.9	52.5	39.7	35.1
	3	1997	730.0	701.3	28.7	72.5	37.8	46.0	7.1	29.7
	3	1998	965.8	733.1	232.8	28.4	33.8	33.7	34.0	5.6
	2	1999	1320.1	1024.3	295.8	80.4	39.2	39.9	37.0	14.7
	1	2000	1929.1	987.0	942.1	8.5	43.6	35.3	57.7	0.9
Kordofan (3)	3	1996	456.1	299.9	156.2	6.4	40.8	37.2	50.2	8.0
	3	1997	761.8	675.1	86.8	32.3	39.4	44.3	21.3	13.2
	2	1998	1370.7	1203.8	166.9	100.1	47.9	55.3	24.4	19.8
	1	1999	2631.1	1394.5	1236.6	114.0	78.1	54.3	154.7	20.9
	1	2000	1913.1	1307.4	605.7	143.9	43.2	46.8	37.1	15.5

Source: calculated from state finance data in table A6.4 in the Statistical Appendix to World Bank (2003); original source given as Ministry of Finance and National Economy, National Accounts Directorate General. Population data used to calculate the per capita values is for 2001, from World Bank, 2003; original source given as United Nations Population Fund, Sudan.

Note: Exp: total expenditure per capita, Rev: total own revenue per capita, Sub: implied subsidy per capita from central government, Dev Exp: per capita development expenditure, FY: fiscal year. Full details of calculations are available from the author.

**Table 8b: Regional revenues and expenditure,
1996-2000 averages (% of value for North)**

Region	Total expenditure per capita	Total revenue per capita	Effective subsidy per capita	Development expenditure per capita
North	100.0	100.0	100.0	100.0
Central	104.0	134.1	16.8	245.5
<i>Khartoum</i>	161.5	213.7	13.3	532.9
<i>Central ex. Khartoum</i>	60.6	70.9	23.8	35.5
East	73.7	98.4	1.6	79.5
West	44.1	43.9	43.3	17.0
<i>Darfur</i>	40.6	41.5	35.1	17.2
<i>Kordofan</i>	49.9	47.6	57.5	15.5

Source: Calculated from table 8a.

Table 9: Population distribution: Sudan, 2001

	Population		Urban pop.
	(000)	(% of Sudan)	(% of region)
North	1511	4.7	26.4
East	3746	11.7	37.3
Central	11787	36.9	52.2
<i>Khartoum</i>	4936	15.5	86.7
<i>ex. Khartoum</i>	6851	21.5	27.4
West	9753	30.6	20.9
<i>Darfur</i>	5976	18.7	17.9
<i>Kordofan</i>	3777	11.8	25.7
South	5116	16.0	19.6
Total	31913	100.0	34.5

Source: Constructed by the author using data from World Bank, 2003; sourced originally from United Nations Population Fund, Sudan.

Table 10: Infant mortality and life expectancy by region

	Infant Mortality rate, 1993		Life expectancy at birth, 1993	
	Males	Females	Males	Females
North	100.1	88.8	52.6	58.8
East	122.0	109.6	51.6	53.6
Central	104.8	88.8	55.1	59.0
Khartoum	98.0	85.0	56.1	59.8
ex. Khartoum	109.7	91.5	54.4	58.4
West	122.5	104.2	52.7	56.4
Darfur	120.1	102.6	53.2	56.8
Kordofan	126.5	106.9	52.0	55.8
South	147.5	126.5	46.5	49.2
Sudan	134.0	115.0	52.5	55.5

Source: Constructed by the author using data from World Bank, 2003; sourced originally from United Nations Population Fund, Sudan.

Table 11: Attendants for women giving birth, 1999/2000

	Doctor	Health visitor	Village midwife	Trained TBA	Untrained TBA	Other	Unattended
North	50.1	20.0	9.3	5.5	0.0	0.2	14.9
East	28.5	25.6	11.9	12.6	0.4	1.0	20.0
Central	37.2	20.8	16.4	11.0	0.3	0.3	14.2
<i>Khartoum</i>	42.9	22.3	10.8	16.8	0.3	0.1	6.8
<i>Central ex. Khartoum</i>	33.0	19.7	20.4	6.8	0.2	0.4	19.5
West	10.2	12.8	17.8	12.0	1.1	1.3	44.8
<i>Darfur</i>	9.1	10.4	16.1	6.3	0.9	1.0	56.2
<i>Kordofan</i>	12.1	16.6	20.3	21.0	1.4	1.9	26.7

Source: constructed using population data and World Bank, 2003; original source UNICEF, Multiple Indicators Cluster Survey, 2000, and Safe Motherhood Survey, 1999 – attendants to woman giving birth in ‘the last year’.

Table 12: Literacy and primary school enrollment rates and trends by region

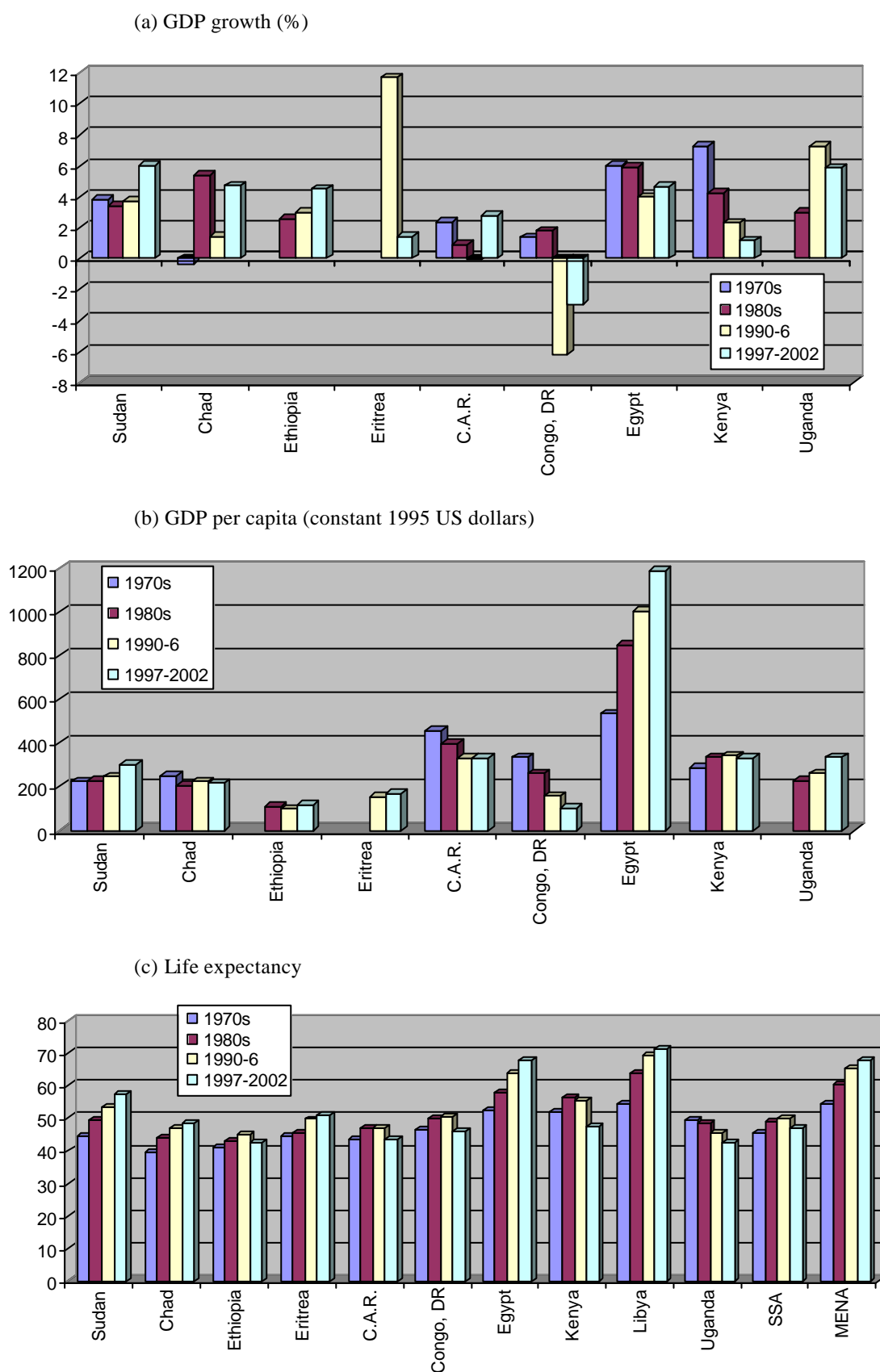
	Literacy, 2002*			Gross primary enrollment rate, 2002	Literacy, 1993			Percent change, 1993-2002*		
	Average (%)	Male (%)	Female (%)		Average (%)	Male (%)	Female (%)	Average (%)	Male (%)	Female (%)
North	71.6	72.0	71.3	82.4	64.8	74.1	56.5	10.6	-2.9	26.1
East	42.8	43.5	42.5	42.5	49.7	61.3	37.7	-13.8	-29.0	12.9
Central	62.4	64.7	61.8	74.9	64.1	73.4	54.6	-2.6	-11.8	13.1
<i>Khartoum</i>	74.9	75.9	73.9	82.8	73.6	81.1	65.0	1.8	-6.4	13.7
<i>Ex. Khartoum</i>	53.4	54.0	53.1	70.4	57.3	67.9	47.1	-6.6	-20.5	12.7
West	37.9	39.0	37.1	44.2	42.2	58.8	25.9	-10.2	-33.6	43.3
<i>Darfur</i>	38.6	39.8	37.4	45.5	44.4	63.2	24.0	-13.1	-37.0	56.2
<i>Kordofan</i>	37.0	37.6	36.5	42.3	38.9	51.9	28.9	-5.0	-27.4	26.3
South	na	na	na	11.6	51.3	64.6	38.7	na	na	na

Source: Constructed by the author using underlying data from World Bank, 2003; sourced originally from Directorate of Planning Ministry of Education, March 2002.

Note: No data are available for literacy rates in the South after 1993.

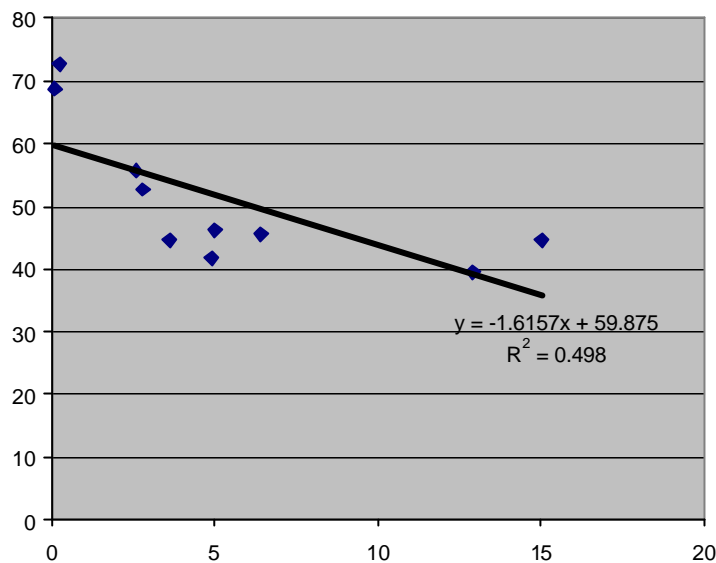
* Data are as provided by the Ministry of Education in 2002; the exact date is not given.

Figure 1: Performance of Sudan and neighbours, 1970-2002



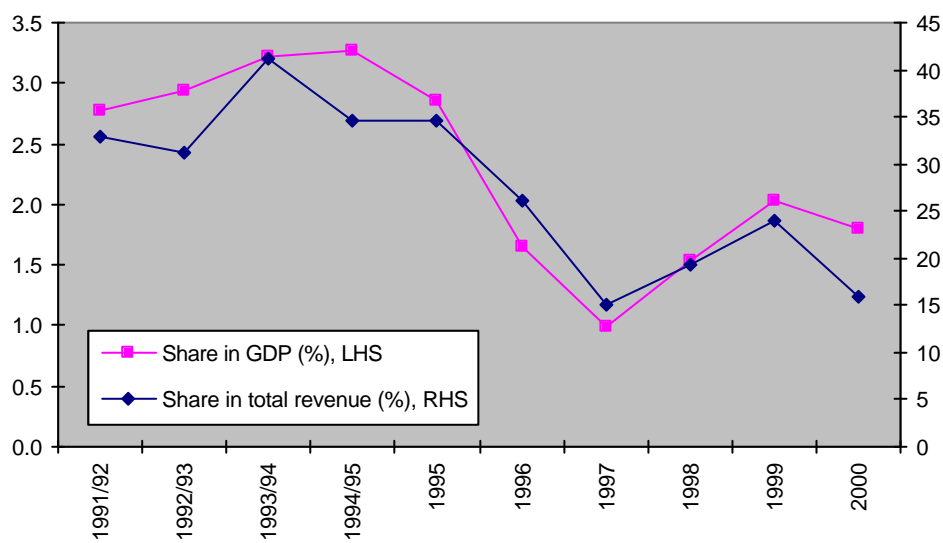
Source: World Bank (World Development Indicators 2004).

Figure 2: Scatterplot of life expectancy, 2000-05 vs HIV/AIDS prevalence



Source: own calculation from data in tables 2 and 4.

Figure 3: Share of consumption, VAT and corporate income tax in total revenue



Source: own calculation from World Bank, 2003; Ministry of Finance and National Economy and IMF estimates. Consumption tax and defence tax have been used interchangeably.

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