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**THE GOVERNMENT OF SUDAN:  
INTERGOVERNMENTAL POLICIES AND ISSUES**

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## **ABSTRACT**

The Government of Sudan and the Sudanese People's Liberation Movement have agreed to a framework for ending Africa's longest running civil war. As part of that agreement, there is a need to revise the intergovernmental grant system in Sudan. This paper describes the current intergovernmental grant system, concluding that it is only marginally redistributive. After discussing a general framework for designing intergovernmental grants systems, the results of alternative grant simulations are presented. Under virtually all of the simulations poorer states receive larger grants than under the current system. The final section of the paper identifies and discusses issues that must be addressed to successfully implement any intergovernmental changes. These issues include, for example, the need to strengthen local revenue mobilization and improve local revenue administration.

## **INTRODUCTION**

In 2004 the Government of Sudan and the Sudanese People's Liberation Movement (SPLM) agreed on a framework for concluding the longest running civil war in Africa. The framework for peace was spelled out in four protocols signed in Naivasha, Kenya in May 2004 – The Protocol on Power Sharing, The Protocol on Wealth Sharing, The Resolution on the Abyei Conflict, and The Resolution of Conflict in Southern Kordofan/Nuba Mountains and Blue Nile States.

The Power Sharing Protocol sets out guiding principles for the distribution of powers and the establishment of governmental structures. In this context, the most important feature of the Power Sharing Protocol is the statement that the signatories to the protocol agree, “decentralization and empowerment of all levels of government are cardinal principles of effective and fair administration of the country.” Section 1.5.1.1 states “There shall be decentralized system of government with significant devolution of powers, having regard to the National, Southern Sudan, State and Local levels of government.”

Such decentralization can improve the efficiency of government service delivery and better match the level and quality of services provided by government to the demands of local citizens. Bringing government closer to the citizen also promotes citizen participation in government thereby enhancing democracy and transparency. Moreover, there is also evidence that the process can lead to improvements in a nation's macroeconomic stability and economic growth.<sup>1</sup>

In this context, the Wealth Sharing Protocol states that one of the guiding principles in the agreement on an equitable sharing of common wealth is that “revenue sharing should reflect a commitment to devolution of power and decentralization of decision-making in regard to development, service delivery and governance.” Further elaboration of a system of revenue sharing in the New Sudan is discussed in the Protocol on the Resolution of Conflict in Southern Kordofan/Nuba Mountains and Blue Nile states. Specifically, Section 8.1 of the protocol says the national wealth shall be shared equitably between different levels of government so as to allow enough resources for each level of government to exercise its constitutional competencies. Section 8.10 makes reference to the development of comprehensive equalization criteria to be used in allocating intergovernmental grants.

The purpose of this paper is to present a framework for discussing the issues surrounding the development and implementation of alternative methods of allocating scarce resources through intergovernmental grants to achieve the objectives spelled out in the peace protocols. The next section briefly describes the current system of intergovernmental grants in the Sudan. That is followed by a discussion of a general framework for thinking about the design of intergovernmental grant programs. The next section summarizes several grant simulations designed to illustrate the impact of alternative grant allocation formula on the distribution of resources across states in the Sudan. The final section identifies and discusses issues that must be

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<sup>1</sup> Robert D. Ebel and Serdar Yilmaz, *On the Measurement and Impact of Decentralization*, The World Bank, Policy Research Working Paper, 2809, March 2002.

addressed to successfully implement the intergovernmental dimensions of the various peace protocols.

## **THE CURRENT INTERGOVERNMENTAL GRANT SYSTEM IN THE SUDAN<sup>2</sup>**

State and local governments in the Sudan depend heavily on intergovernmental transfers from the central government to meet their recurring and development spending requirements. In 2002, Khartoum state, the richest state in the Sudan, intergovernmental transfers from the central government accounted for 52.3 percent of total state revenues. That share declined to 43.7 percent in 2003. In 2003, North Kordofan state received 58.8 percent of its total revenues from the central government.

The situation is even more pronounced in relatively poorer states. Table 1 presents data on the dependence of state and local governments on central government transfers for four relatively poor states. Central government transfers, as a share of total state and local government revenues for the states reported, range from 62 percent in Kassala state to 80 percent in the Blue Nile state.

| TABLE 1<br>Total Central Government Transfers,<br>As a Share of Total State and Local Revenues, 2003<br>(Millions of Sudanese Dinars) |                   |                    |                                    |
|---|-------------------|--------------------|------------------------------------|
| State   | Total<br>Revenues | Total<br>Transfers | Transfers as<br>Share of Total Rev |
| Kassala   | 4,942             | 3,049              | 61.7%                              |
| Northern  | 4,461             | 2,918              | 65.4%                              |
| Blue Nile   | 3,306             | 2,646              | 80.0%                              |
| North Darfur  | 5,804             | 4,424              | 76.2%                              |

*Source: Ministry of Finance and National Economy calculations.*

These grants are typically earmarked to cover expenditures on wages and salaries.

Intergovernmental grants in Sudan are made through the National State Support Fund. Specifically, Article 116, Section 2, of the 1998 Constitution stipulates that

“A fund shall be established, under the supervision of the Federal Government Authority, to which the federal government and able state governments shall contribute to assist

<sup>2</sup> This section draws on material in Medani, Rahamtala and Bell, *Analysis of Fiscal Policies in the Sudan: A Pro-poor Perspective*, A Discussion Draft, Prepared for the UNDP, July 9, 2004 and Roy Bahl, William Fox and François Vaillancourt, *Intergovernmental Finance: Sudan in the 21<sup>st</sup> Century*, prepared for the World Bank, mimeograph.

needy states as determined by criteria fairness, taking into account the number of population and the level of development and in accordance with law.”

A Supreme Council that includes representatives from the Minister of Finance and National Economy, the National State Support Fund (NSSF) and state governors determine the size of the pool of funds to be shared with the states each year. The rate was 11 percent of federal revenues in 2000, 14 percent in 2001, 15 percent in 2002 and 10 in 2003. The vertical transfer is determined using all federal government revenues (including oil revenues) except for the central government’s share of the VAT, privatization and sales of government assets.<sup>3</sup>

The horizontal distribution of NSSF is made through two programs, Current Transfers and Development Transfers.

**Current Transfers:** The specific horizontal amount of Current Transfers budgeted for each state is determined by a formula that includes nine factors: financial performance, population density, natural resources, human resources, infrastructure condition, educational attainment, health status, security, and per capita income. All factors in the formula receive a 10 percent weight except for financial performance, which receives a weight of 20 percent. Each state (except Khartoum) is budgeted to receive a percentage of the total allocation based on its score divided by the sum of all state scores. But the failure to pay the full amount budgeted on a regular basis suggests that this horizontal transfer is determined, at least in part, by discretionary decisions.<sup>4</sup> For example, the Supreme Council identifies states for additional funding which are reflected in the total current transfers paid to each state.

**Table [A-1]** in the Appendix reports the amounts transferred to each of the 16 states in northern Sudan in 2003. Current transfers to the 16 states in northern Sudan totaled 27 billion Sudanese Dinars in 2003.

Khartoum and Red Sea states, two relatively wealthy states, did not receive any Current Transfers from the NSSF in 2003.

**Development Transfers:** Development transfers are made to finance specific development projects, and, together with Current Transfers, comprise the NSSF grants. Eight factors are used to evaluate state development projects. These criteria included

- Project Economic Response – the project feasibility study shows the economic response which plays an important role in the state’s resource development (10 percent weight);
- Project Social Target – the project contributes to promotion and development of social change (10 percent weight);

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<sup>3</sup> In addition, 10 percent of gross receipts paid to central government parastatal firms and joint venture companies are included in the pool to be distributed.

<sup>4</sup> The impression that grant amounts are, in large part, discretionary is supported further by the fact that we were unable to obtain from the NSSF any information on the individual factors that are supposed to be used to determine grant allocations for individual states.

- Size and Cost – the state is not capable of financing the project on its own (10 percent weight);
- Geographical Concerns – the project represents an addition to an area that suffers from marginalization (10 percent weight);
- Strategic Importance – the project has a direct effect on boosting development in the state (15 percent weight);
- Project Effect on Man and Animal – the project insures basic human needs like food and water (15 percent weight);
- Importance Degree of the Project – the project is vital to life (15 percent weight); and
- Project Coincidence Target – the project is consistent with national development plans (15 percent weight).

Data on development grants by state for 2002 are presented in **Table [A-2]** and for 2003 in **Table [A-3]** in the Appendix.

The data in **Table [A-2]** indicate that in 2002 development transfers to the 16 states in northern Sudan totaled 1,496 million Sudanese Dinars and that 33.0 percent went for water projects, 34.4 percent were for projects falling into the Other category, 15.3 percent were for health projects and 17.4 percent were for education projects.

Data for 2003 actual NSSF development grants by state are presented in **Table [A-3]** in the Appendix. The data in **Table [A-3]** indicate that 60 percent of the 10.5 billion Sudanese Dinars of development grants to the states in 2003 were for water projects. The next highest category was for basic infrastructure accounting for 26 percent of project funding, but 93 percent of these funds went to the state of Khartoum. The remaining categories – health, education, energy and other – together accounted for only 13.3 percent of project funding.

In addition to Current and Development Transfers, the National State Support Fund also distributes VAT and Agricultural Compensation transfers to the states. These data are presented in **Table [A-4]** of the Appendix.

The Value Added Tax (VAT) was introduced in Sudan in 2000 to replace the state sales tax and other similar excise taxes. The VAT rate is 10 percent on all goods and services with some exemptions. It is collected through the customs office as well as the VAT office in different parts of the country. The proceeds of the tax are deposited in the VAT account at the Bank of Sudan.

Because the taxes that were abolished when the VAT was introduced included a number of state taxes, the central government agreed that the VAT should be shared between the central government and the states on an agreed share – initially 35 percent of VAT collections were allocated to the states and 65 percent to the central government, but more recently the state share has increased to 43 percent of VAT collections. This sharing ratio can change annually after consultation with state ministries of finance. The tax chamber distributes the central government

share of the VAT to the central government and that is the only portion of VAT revenues that are reflected in the central government’s budget. The National State Support Fund distributes the state share of the VAT to each state based on the origin of the tax.

Data in **Table [A-4]** include the VAT and Ag Comp distributions for the 16 states in northern Sudan. The VAT distribution to each state is essentially based on its share of total taxes collected – i.e., the horizontal distribution of VAT collections to individual states is roughly based on point of origin of tax collections. As a result, three wealthier states – e.g., Khartoum, Gezira and Red Sea – received 78 percent of state VAT distributions in 2002 and 2003.

Similarly, the Ag Comp transfers are intended to replace the agriculture product tax, which was abolished in 1999. Prior to that time, farmers paid 15 percent of the value of their crops to the state in the form of an agriculture product tax. The federal government took action in 1999 to abolish the agricultural production tax and replace it with a transfer to each state intended to hold them harmless for revenues lost when the agricultural production tax was abolished. The trading sectors and the individual farmers benefited from the abolition of the agriculture production tax. This tax change can be thought of as benefiting the poor to the extent it reduced their tax burden, allowed them to keep more of the proceeds from the sale of their crop, promoted trade and lowered prices.

As a result of these transfers, the National State Support Fund distributed more than 84 billion Sudanese Dinars to states in 2003 under four programs – current and development transfers, as well as the VAT and Ag Comp allocations which were originally intended to compensate states for foregone revenues when various sales and excise taxes and agriculture production taxes were eliminated. See **Table [2]**.

| Table 2<br>National State Support Fund Grants and Transfers, 2003<br>(Millions of Sudanese Dinars) |               |               |
|--|---------------|---------------|
|  | Amount        | Share         |
| Current Transfers  | 27,020        | 32.2%         |
| Development Transfers  | 10,455        | 12.4%         |
| VAT Distributions  | 35,288        | 42.0%         |
| Ag Comp Allocations  | 11,236        | 13.4%         |
| <b>TOTAL</b>   | <b>83,999</b> | <b>100.0%</b> |

The largest single program is the VAT transfer, which accounts for 42 percent of total grants and transfers. The second largest program is the current transfer, which accounts for 32 percent of total grants and transfers. Thus, current transfers and VAT allocations account for three-fourths of NSSF allocations in 2003.

When examining the equalizing nature of grants and transfers to individual states, we must remember that the VAT and Ag Comp programs were initially intended to compensate state government for foregone revenues because of actions by the federal government to eliminate

certain taxes. As a result, they were not initially intended to be redistributive to the same extent that current and development transfers were.

To investigate the equalizing impact of the horizontal distribution of NSSF grants and transfers we want to relate a state's actual transfers received to measures of its capacity to raise own-source revenues (revenue capacity) and measures of expenditure needs. As a proxy for revenue capacity we use the percent of a state's population living in rural areas and for a proxy of expenditure needs we use the number of people in a state living in rural areas.

Table 3 presents a series of correlation coefficients that represent an initial effort to understand the equalizing impact of NSSF grants and transfers, given our measures of revenue capacity and expenditure needs.<sup>5</sup> The correlation coefficients in Table 3

| Table 3<br>Correlation Coefficients Between National State Support Fund Grants and Transfers<br>And Selected State Characteristics |                     |                       |                     |
|--|---------------------|-----------------------|---------------------|
|  | State<br>Population | Percent Pop.<br>Rural | Rural<br>Population |
| Current Transfer, 2003   | 0.159               | 0.463                 | 0.692               |
| Development Transfer, 2003   | 0.642               | -0.881                | -0.269              |
| Ag Comp, 2003  | 0.074               | 0.390                 | 0.508               |
| VAT, 2003  | 0.853               | -0.780                | 0.028               |

indicate that the 2003 allocation of current transfers across states was somewhat equalizing when compared to a state's revenue capacity and somewhat more equalizing when compared to a state's expenditure needs. The correlation coefficient between current transfers and percent of a state's population living in rural areas (our proxy of revenue capacity) was 0.463 and the correlation coefficient between current transfers and the number of people living in rural areas (our proxy for expenditure need) was 0.692 – a relatively strong relationship indicating that the more people living in rural areas of a state, the larger the current transfer to that state.

The case is much different for the pattern of development transfers in 2003, however. Specifically, these development transfers are inversely related to measures of revenue capacity indicating that the smaller the share of population living in rural areas the larger the development transfer. Similarly, these development transfers tend to be greater for states with smaller numbers of people living in rural areas. These results reflect the fact that more than one-third of total development transfers in 2003 went to Khartoum and Red Sea states which are relatively urbanized and relatively wealth states.

As mentioned above, the Ag Comp allocations were initially intended to compensate a state for revenues lost when the federal government eliminated the agricultural production taxes.

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<sup>5</sup> The correlation coefficients are computed using data for the 16 northern states of Sudan.



As such, they were not explicated intended to be redistributive. However, it is not surprising that the more important the agriculture sector is in a state the more the state will receive under the Ag Comp program. As a result, these allocations tend to be somewhat equalizing given our proxies for revenue capacity and expenditure needs – percent of population living in rural areas and the number of people living in rural areas, respectively. The correlation coefficient is close to 0.4 when comparing Ag Comp allocations to our proxy for revenue capacity, and close to 0.5 when comparing Ag Comp allocations to our proxy for expenditure need.

Finally, VAT distributions are intended to compensate states for revenues lost when the federal government eliminated the sales tax and certain excise taxes. Again, these distributions are not intended to be redistributive. This is confirmed by the correlation coefficients that indicate larger states tend to receive larger VAT allocations and states with higher revenue capacities (reflected by a lower percent of population living in rural areas) tend to get higher allocations. In fact, three states – Khartoum, Red Sea and Gizera – received 78 percent of VAT allocations in both 2002 and 2003.

Somewhat surprisingly, about 45 percent of NSSF grants and transfers in 2003 had a modest equalizing impact by channeling somewhat larger current grants and Ag Comp allocations to states with relatively less revenue capacity (higher percentages of population living in rural areas) and greater expenditure needs (larger numbers of people living in rural areas). There is a feeling on the part of many that these intergovernmental grant programs need to be revamped so they are more targeted on those most in need.

## **A CONCEPTUAL FRAMEWORK FOR INTERGOVERNMENTAL TRANSFERS<sup>6</sup>**

Every intergovernmental transfer program has two characteristics, a vertical component and a horizontal component. The vertical component determines how much revenue is transferred in total from the federal to state governments. The amount of vertical transfers can be determined in several ways including as a fixed percentage of national tax revenues (often termed revenue sharing), an annual discretionary amount or a formula. The horizontal component determines the distribution of the total transfer among the states. The amount provided to individual governments can be determined based on a formula, the amount of taxes collected in the jurisdiction, the intent to fill revenue shortfalls, or annual discretion. Transfers can also be used to fill gaps, i.e. for equalization purposes between expenditure responsibilities and the tax capacity of sub-national governments and to reimburse governments for certain costs.

There are three rationales typically given for intergovernmental transfers:

1. addressing vertical fiscal imbalances which result when the central government maintains access to major revenue bases and subnational

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<sup>6</sup> This section draws on material in Jun Ma, *Intergovernmental Fiscal Transfers in Nine Countries – Lessons for Developing Countries*, Policy Research Working Paper, 1822, The World Bank, Economic Development Institute, Macroeconomic Management and Policy Division, September 1997 and Roy Bahl, William Fox and François Vaillancourt, *Intergovernmental Finance: Sudan in the 21<sup>st</sup> Century*, prepared for the World Bank, mimeograph.

governments have insufficient fiscal resources for meeting their expenditure responsibilities;

2. addressing horizontal fiscal imbalances which result when some subnational governments have greater revenue raising capacity than others, or some subnational governments may have greater expenditure needs than others; and
3. addressing inter-jurisdictional spillovers that arise from expenditures by local governments which provide benefits outside the local jurisdiction. For example, water, wastewater treatment, and environmental policies often affect people in areas beyond a locality's borders. Intergovernmental transfers are necessary to ensure that appropriate levels of such services are delivered.

In designing an effective intergovernmental transfer system to address these objectives, the following criteria are important:

- a. subnational jurisdictions should have sufficient resources, after transfers, to meet their constitutional obligations in terms of service delivery responsibilities;
- b. intergovernmental grant formula should encourage local tax effort and expenditure controls;
- c. transfers should be equalizing in the sense that they vary directly with local expenditure needs and inversely with local fiscal capacity; and
- d. the allocation formula should be known and stable over time to promote transparency and stability in revenue forecasting and planning.

There are two basic types of grants – conditional and unconditional. Conditional grants place restrictions on the use of funds and are most often used to address inter-jurisdictional spillovers. Such grants can be

- a. matching, open-ended grants;
- b. matching, close-ended grants; and
- c. non-matching grants.

Unconditional grants place no restrictions on how the receiving government can use the funds.

The horizontal and vertical elements of the transfer system must be carefully structured to achieve these goals because states will respond to whatever incentives are created. The ability of governments to adapt to the incentives created by formulas requires the federal government to carefully consider any formulas used to allocate intergovernmental transfers. Failure to consider the incentives that are inherent in the formula design may result in a system that does not achieve the intended objectives, and possibly, a system that results in unintended outcomes. For example,

horizontal transfers that fill the gap between actual expenditures and revenues create an incentive for states to reduce revenues and raise expenditures in order to increase the grant amount received. Thus, grants that fill gaps between expenditures and revenues are normally poor policy. Similarly, a formula that reduces transfers by one Sudanese Dinar (SD) for every SD in additional revenues raised by a state eliminates the incentive for a state to raise own-source revenues. There is often at least an implicit element in grant systems that reduces the grant as a government collects more revenue, but the extent to which the replacement occurs must be limited if incentives to collect revenues are to be retained at the state level.

There are basically four types of intergovernmental grant formulas:

1. formulas for equalization transfers based on various measures of fiscal capacity and expenditure needs;
2. formulas for equalization of fiscal capacities only;
3. formulas for equalization based on some needs indicators; and
4. formulas that distribute grants on an equal per capita basis.

The data requirements for these various types of formulas vary substantially. Type 1 formulas are the most data intensive because they require information on both revenues and expenditure needs. However, they will provide the most powerful equalization across states/localities. Such formulas require data on actual revenues collected, the base of each revenue source and measures of need for a variety of expenditure categories including education, health, transportation, social welfare, police and fire, and other services. This, in turn, requires a detailed understanding of the budget and budget execution.

Formulas of type 3 are the second most demanding in terms of data needs. These formulas require indicators of expenditure needs, which might include the following:

- a. per capita income;
- b. poverty incidence;
- c. unemployment rates;
- d. population densities;
- e. area;
- f. infant mortality rates;
- g. life expectancy;
- h. school enrollment rates;
- i. number of school age children;
- j. length of roads; and
- k. other indicators as appropriate.

These indicators then need to be tied directly to expenditures by category or sector. This goes to the heart of the process of budget preparation and execution.

Type 3 grants require the next most detailed level of data, albeit much less demanding than equalization grants based on measures of need. Specifically, equalization grants based on fiscal capacity require information on revenues collected and the value of individual tax bases.

The data requirements for type 4 equalization grants are the least demanding, but this type of grant is the least equalizing.

### **ALTERNATIVE GRANT ALLOCATION SIMULATIONS**<sup>7</sup>

This section presents data and results from a preliminary set of simulations of intergovernmental transfers in Sudan. The purpose of the exercise is to demonstrate the distributional consequences of using four different approaches to allocating the distribution pool among the 16 states of northern Sudan. We begin by setting the amount to be transferred, the divisible pool, then present the various indicators used in the simulations to distribute this amount between the various states, the distribution key, and finally turn to the simulation results.

Table 4 summarizes the various grants and transfers made by the central government to the 16 states of northern Sudan by state in 2003. For the purposes of this exercise we will simulate the distribution of three alternative pools of divisible revenues:

- Simulation 1 assumes that the total transfers of 2003 are distributed across states according to a formula. Hence we distribute 83,999 millions of Sudanese Dinars (SD) according to a formula;
- Simulation 2 assumes that 50% of VAT revenues are distributed according to the derivation principle (place of collection); we do this by using the current distribution of VAT transfers. Hence we distribute 66 355 millions of SD according to a formula and half the VAT as per its current distribution;
- Simulation 3 assumes in addition that development grants are treated as conditional grants and not included in the divisible pool defined in simulation1. Hence we distribute 55 901 millions of SD according to a formula and half the VAT and all development grants as per their current distribution.

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<sup>7</sup> This section draws on material in Bell, Gianci and Vaillancourt, *Sudan Inter-Governmental Transfer Simulations for 2003* prepared for the World Bank and UNDP as part of the Intergovernmental mission to Sudan, July 19-31, 2004.

| Table 4 Distribution by state of transfers, by type and total, SD (000 000) and %, Sudan, 2003 |  |                           |                         |   |              |   |                           |                         |   |               |
|--|--|---------------------------|-------------------------|---|--------------|---|---------------------------|-------------------------|---|---------------|
| States   | SSF regular<br>(current+<br>additional)<br>(1) | SSF<br>development<br>(2) | VAT<br>transfers<br>(3) | Agricultural<br>tax revenue<br>replacement<br>(4) | Total<br>(5) | SSF<br>regular<br>(current+<br>additional)<br>(6) | SSF<br>development<br>(7) | VAT<br>transfers<br>(8) | Agricultural tax<br>revenue<br>replacement<br>(9) | Total<br>(10) |
| Blue Nile  | 1320   | 245                       | 292                     | 612   | 2469         | 4.9%  | 2.3%                      | 0.8%                    | 5.4%  | 2.9%          |
| Gadaref  | 1240   | 674                       | 948                     | 1695  | 4557         | 4.6%  | 6.4%                      | 2.7%                    | 15.1%   | 5.4%          |
| Gezira   | 5860   | 333                       | 6307                    | 1910  | 14410        | 21.7%   | 3.2%                      | 17.9%                   | 17.0%   | 17.2%         |
| Kassala  | 1760   | 420                       | 510                     | 365   | 3055         | 6.5%  | 4.0%                      | 1.4%                    | 3.2%  | 3.6%          |
| Khartoum   | 0  | 2714                      | 18957                   | 75  | 21746        | 0.0%  | 26.0%                     | 53.7%                   | 0.7%  | 25.9%         |
| N. Darfur  | 2390   | 814                       | 437                     | 311   | 3952         | 8.8%  | 7.8%                      | 1.2%                    | 2.8%  | 4.7%          |
| N. Kordofan  | 1740   | 642                       | 1094                    | 354   | 3830         | 6.4%  | 6.1%                      | 3.1%                    | 3.2%  | 4.6%          |
| Northern State   | 1660   | 377                       | 437                     | 805   | 3279         | 6.1%  | 3.6%                      | 1.2%                    | 7.2%  | 3.9%          |
| Red Sea  | 0  | 1131                      | 2078                    | 3   | 3212         | 0.0%  | 10.8%                     | 5.9%                    | 0.0%  | 3.8%          |
| River Nile   | 2480   | 435                       | 729                     | 1287  | 4931         | 9.2%  | 4.2%                      | 2.1%                    | 11.5%   | 5.9%          |
| S. Darfur  | 1440   | 401                       | 656                     | 923   | 3420         | 5.3%  | 3.8%                      | 1.9%                    | 8.2%  | 4.1%          |
| S. Kordofan  | 1490   | 520                       | 437                     | 483   | 2930         | 5.5%  | 5.0%                      | 1.2%                    | 4.3%  | 3.5%          |
| Sennar   | 1260   | 526                       | 656                     | 1052  | 3494         | 4.7%  | 5.0%                      | 1.9%                    | 9.4%  | 4.2%          |
| W. Darfur  | 1320   | 319                       | 437                     | 322   | 2398         | 4.9%  | 3.1%                      | 1.2%                    | 2.9%  | 2.9%          |
| W. Kordofan  | 1380   | 487                       | 365                     | 579   | 2811         | 5.1%  | 4.7%                      | 1.0%                    | 5.2%  | 3.3%          |
| White Nile   | 1680   | 416                       | 948                     | 461   | 3505         | 6.2%  | 4.0%                      | 2.7%                    | 4.1%  | 4.2%          |

*Source: NSSF data. See An Analysis of Fiscal Policies in the Sudan: a pro-poor Perspective by Medani M. Ahmed, Rahamtalla Ali Bakiber and Michael E Bell Discussion draft, July 9<sup>th</sup>, 2004*

*Notes: These numbers were verified against information obtained in July 2004 by the first author of the report above and found to be in broad agreement with them (deviations of less than 1% in the totals).*

*SSF regular includes both current and additional; teachers' salaries are found in both (normal wages and arrears)*

We then allocate each of these pools according to the following four criteria in turn:

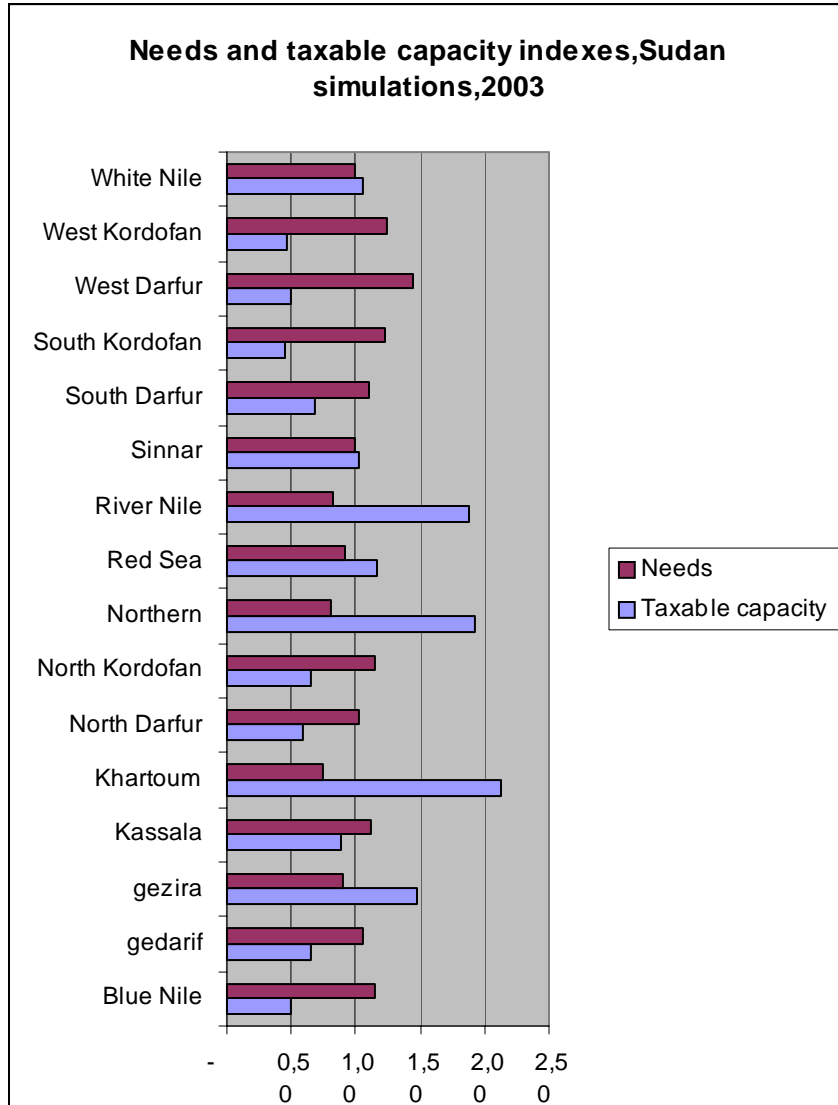
- a) 100% according to population;
- b) 100% according to taxable capacity. This requires using proxy information and the following calculations
  - divide the share of wealth of the highest two quintiles in each state by the average of these shares for all 16 Northern states;
  - calculate the index number (1/ the ratio calculated above) this yields an index number
  - multiply this index number by the per capita amount available for transfers (1b=2961,57, 2b=2339,49; 3c= 1970,91)
  - multiply this per capita amount by the population of each state to calculate the grant for each state
  - finally calculate a ratio of the sum of grants above/the divisible pool and multiply each state amount by this ratio to insure that the budget constraint is respected;
- c) 100% according to needs. These are established using school age population (0-14), older population (60+) and literacy as follows:
  - multiply the share of 0-14 population by 2 and add it to the share of 60+ population creating a weighted population;
  - calculate an index for this weighted population by dividing each state % by the average for the 16 states
  - calculate a literacy index by first dividing each state index by the mean value for the 16 states and then computing (1/ literacy ratio calculated above)
  - calculate the sum of these two indices and divide it by two
  - multiply this index number by the per capita amount available for transfers (1c=2961,57)
  - multiply this per capita amount by the population of each state to calculate the grant for each state
  - finally calculate a ratio the sum of grants above/the divisible pool and multiply each state amount by this ratio to insure that the budget constraint is respected;
- d) an average of b) and c) thus taking into account both needs and taxable capacity equally.

Hence we have 12 simulation results to report.

The data used in these simulations are discussed in detail in the Bell, Gianci Vaillancourt paper.

Figure 1 presents the needs and taxable capacity index used in the simulations. Examining it, one notes that needs are much more similar than taxable capacity across the 16 states in northern Sudan. This is a result of the similarity in the age structure of the population of the various states.

Figure 1



Source: Calculations by the authors

Tables A-5, A-6 and A-7 in the Appendix present the simulation results. The main findings are summarised below:

- whatever the criteria and divisible pool, Gezira, Northern State and River Nile loose; their losses are greatest when taxable capacity is used to allocate the divisible pools;
- Khartoum almost always loses except when population is used to allocate a divisible pool that includes only 50% of the VAT. This results from the skewed distribution of the

VAT transfers (receipts) across states with Khartoum state receiving 54% of the VAT transfer. Its losses are highest when taxable capacity is the distribution key used;

- Kassala, the three Kordofans and West and North Darfur always receive more transfers whatever the divisible pool and distribution key used. White Nile almost always gains (11/12).

These results raise the following issues:

- In the post-peace Sudan, is it reasonable to assume an unchanged divisible pool or is it likely that the peace dividend will be spent in part on transfers to states? If the second possibility holds, then losers lose less, and can even gain in absolute but not relative terms. This would facilitate transition from one set of transfers to another;
- The choice of the divisible pool is very important. The third option examined here (with 50% of VAT and development grants not included in the divisible pool) is probably the most appropriate since development grants are of a different nature than current transfers and since states have few taxes they can use (tax handles) to raise revenues in the short run to benefit from improved economic activity. Hence allocating the VAT on a derivation principle that is where it is collected, in part to the states is justifiable.<sup>8</sup> In the medium term, states should be given more fiscal autonomy by being granted the right to levy sales taxes either as VAT surcharges or as retail sales taxes. Use of PIT surcharges appears less promising given the high individual exemption and the full exemption of individuals aged 50+<sup>9</sup>; and
- The choice of the distribution key is also very important. The fourth set of criteria for allocating resources among states, which takes into account both needs and means (taxable capacity), strike a balance between needs and means and is thus probably more appropriate; of course the exact balance can be refined. To do this, efforts should be made to better measure taxable capacity through the preparation of state domestic product accounts (expenditure and income estimates) or other similar measures of economic activity and thus taxable capacity.

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<sup>8</sup> See Germany and the HST in Canada for a similar treatment of the VAT

<sup>9</sup> One can also free up resources by reducing state transfers to localities and promoting revenue mobilization by local governments. One plausible way of doing this is by increasing the property tax effort at the locality level. On this point, we note that the use of market-linked property values could be one avenue to explore to increase these revenues, but improved revenue administration would be a vast improvement.



## **FINDINGS AND RECOMMENDATIONS**

Implementing the peace protocols requires a modification and fine-tuning of the intergovernmental grant system in the Sudan. The peace protocols stress the need to distribute funds equitably across states and consider many factors in the allocation formula including the tax effort of state and local governments.

As discussed in the previous section, the two critical policy issues involved in the refinement of the intergovernmental grant system in the Sudan involves determining the pool of resources to be distributed and the allocation criteria to be used in determining each state's allocation. Resolving these two policy issues is necessary, but not sufficient, for strengthening the intergovernmental grant system in the Sudan to meet the challenges spelled out in the peace protocols.

Specifically, a system of intergovernmental grants is part of a larger, more comprehensive, system of fiscal decentralization. However, to realize the equalization and efficiency objectives of a revised intergovernmental grant system, the overall system of fiscal decentralization must be implemented effectively. In other words, to realize the potential benefits of a system of fiscal decentralization it is assumed that there is in place at the community level a certain enabling environment that facilitates the effective and efficient devolution of revenue raising and spending responsibilities to local governments. For example, research has shown that it is important to have a vibrant civic society at the local level. Putnam and others have shown that nurturing social connections among citizens and linkages among citizens, governments, and non-governmental organizations is a critical step in building the social fabric that under girds public and private institutions in robust democracies and strong economies. In order for the institutions of government to work effectively and efficiently, there needs to be a strong civic society at the local level.<sup>10</sup>

While initiatives should be undertaken to strengthen civic society at the community level as a prerequisite for successful devolution of revenue raising and spending responsibilities, there are other critically important elements of the enabling environment that also must be in place. Interventions need to be pursued which strengthen the enabling environment, at the same time that the intergovernmental grant system is being restructured to promote subnational revenue mobilization and cost containment. Specifically, a first step to be taken is to ensure that state and local governments are able to collect the maximum amount feasible from their current system of own-source revenues. A second step is to ensure that the limited funds collected by state and local governments from own source revenues are spent as effectively as possible. Step 1 requires strengthening revenue administration and strengthening the role of the local property tax. Step 2 requires strengthening the local budget development, execution and monitoring process.

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<sup>10</sup> For a fuller discussion of these issues see John Field, *Social Capital*, Routledge, London and New York, 2003.

Strengthening revenue administration has two dimensions. First, state and local governments must be given access to adequate levels of own source revenues. State revenues are explicitly listed in the Wealth Sharing Protocol. Local revenues are enumerated in the Local Government Decree of January 2003. However, the Power Sharing Protocol stipulates in Section 2.12.11 that the National Constitutional Review Commission is to prepare a model constitution for the states, which, in part, will spell out the organization and proper functioning of local governments. In this context, an important component of an enabling environment for the successful devolution of revenue raising and spending responsibilities is that local governments must have a powerful source of own revenue they control. Specifically, to fully realize the perceived efficiency benefits of fiscal decentralization, autonomous local governments require that they generate adequate own-source revenues to provide the level and quality of services demanded by residents and businesses. In short,

“To make local autonomy meaningful, subnational governments need adequate locally controlled revenues.”<sup>11</sup>

The power to tax is essential to sustainable, accountable local government. Although they can play a vital role, intergovernmental transfers are not sufficient if local government truly is to be a separate, independent, sphere of government. Without an adequate revenue source that it controls, local government lacks autonomy – it is merely an arm of national or state government. Ideally, for full autonomy, local governments should have discretion in determining the base of the tax and tax rate.

Bahl reviews the potential strengths and weaknesses of various tax instruments from the perspective of local governments. He concludes that “The *property tax* is a most appropriate source of local government revenue, and it is a revenue source used by local governments in most countries in the world.”<sup>12</sup> Similarly, Litvack, Ahmad and Bird conclude that in designing a system of fiscal decentralization economic and administrative efficiency concerns suggest that local governments should tax immobile factors such as land and real estate.<sup>13</sup> Similarly, Shah argues that efficiency in tax administration suggests that subnational governments should levy taxes on immobile factors, e.g., property taxes.<sup>14</sup>

State and local governments in the Sudan have access to real estate related revenue sources. For example, state governments have access to a capital gains tax on

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<sup>11</sup> Richard M. Bird, Robert D. Ebel, and Christine I. Wallich (editors), *Decentralization of the Socialist State: Intergovernmental Finance in Transition Economies*, The World Bank, Regional and Sectoral Studies, 1995, p. 13.

<sup>12</sup> Roy Bahl, *Implementation Rules for Fiscal Decentralization*, Economic Development Institute, World Bank, Washington DC, 1999.

<sup>13</sup> Jennie Litvack, Junaid Ahmad, and Richard Bird, *Rethinking Decentralization in Developing Countries*, Poverty Reduction and Economic Management Network, The World Bank, Washington DC, 1998, p. 11.

<sup>14</sup> Anwar Shah, “Issues in Tax Assignment” in *Decentralization Briefing Notes*, edited by Jennie Litvack and Jessica Seddon, Poverty Reduction and Economic Management Network, The World Bank, Washington DC, 1999, p. 26.

the sale of real estate. The capital gains tax is a 5% levy on the capital gains earned by individuals as a result of the transfer of land or buildings. A 2.5% levy is imposed on capital gains from the transfer of cars. Production equipment of firms is exempt. The states own 100 percent of the revenues. According to officials in both Khartoum and North Kordofan states, this tax has not been collected for the last two years because of a conflict between the ministries of finance from the various states and the national judiciary.

Even when the tax was being collected, however, it is not clear how it was being collected. In both states we asked to see the list of property sales used as the base of the tax. No list was produced in either case. It was also not clear where the information on the sales price of the property came from and how reliable it might be. In other words, there were questions about the nature of the administration of this tax.

Local governments have access to a real estate tax, generally referred to as the House Tax or House Rates. The Proceeds Act (1994) under-pins the house (real estate) taxes levied on houses, commercial businesses and other properties. This legislature requires that a rate of 1/12 of the total annual rent of the real estate will be paid in property taxes. However, we learned that once again, weaknesses in revenue administration severely limit the revenues collected from this tax. Specifically, after discussions with local officials in three localities – East Nile locality in Khartoum state and Shikan and Bara in North Kordofan state – it was clear that very modest levels of revenue, compared to potential levels of revenue, were being collected from this tax.

In the rural communities of Shikan and Bara no revenues were collected from the house tax from rural areas. In urban areas the situation was very much like that in East Nile locality in Khartoum state. In the East Nile locality the house tax was only being paid in two of eight administrative districts of the locality. The tax is supposed to be based on the number of rooms in the house and the quality of building materials, but when we visited one of the two administrative units collecting the tax they said it was based only on the type of building material – mud, red brick or cement. Land is not part of the base of the tax.

We asked to see a list of houses subject to the tax. In the East Nile locality we did see a book that seemed to list individual properties, but there was no information on the number of rooms or quality of building materials. The information in the book was not what one might expect to see in a physical cadastre listing each property and various characteristics that might be used in determining tax liability. The common complaint in all jurisdictions was that they did not have the resources – financial or human – to undertake a detailed collection of such information on a house-by-house basis. In fact, revenue officials in East Nile locality said that they relied on the Department of Housing at Khartoum state for a list of housing units subject to the tax. They then relied on neighborhood committees to provide other information about individual housing units, whether they were rented or owner occupied, and about the ability of owners/occupants to pay the tax. In fact, these neighborhood committees actually negotiate tax liabilities with individual property owners.

The house tax is poorly administered in communities we visited. In part, we were told, this is because the tax is only 5 or 6 years old and it is being phased in gradually. In part, we were told, it is because people in the community are poor and not able to pay taxes. These are issues that must be dealt with if the new intergovernmental grant system in the Sudan is going to use fiscal capacity and effort (as mandated in the peace protocols) to allocate limited resources across states.

In order to enhance the role of the property tax in local finances, the following steps need to be pursued:

1. the National Constitutional Review Commission needs to include a section in the draft state constitutions that addresses directly the need for local governments to have access to a local property tax;
2. a workshop, or series of workshops, should be conducted for state and local officials to go over the important role a property tax should play in local finance;
3. this workshop, or a parallel workshop, needs to address the revenue administration issues associated with implementation of a local property tax – e.g. the development of a physical cadastre through self reported information from homeowners like they do in the Czech and Slovak Republics;
4. property tax relief mechanisms need to be put in place to target relief on those most in need and not rely on negotiated liabilities that reflect ability to pay, but also ability to negotiate; and
5. a demonstration project should be started in selected localities – both urban and rural – to strengthen the administration of the local property tax.

Similarly, localities apparently do not regularly update their register of stores, shops, or other commercial enterprises in their community. There does not appear to be a specific unit (or body) at the local government level that is tasked with following up on business license collections by updating the business classification list. Therefore, it is difficult for localities to distinguish which businesses have licenses and which do not. Localities need to develop more effective lists showing all commercial services, industrial, and agricultural activities in their locality to determine the expected revenue to be derived from these sources. At the moment, the data presented by localities appears to be incomplete.

An example comes from the two rural localities in North Kordofan state. Because of their rural nature, both Shikan and Bara rely on a set of taxes applied to agricultural activities. For example, in both localities the animal tax is a major source of tax revenues. This is a per head tax applied to the animal population in the locality. The tax liability varies by type of animal – sheep, camels, goats, etc. We asked to see the list of

animals by type and owner, but it did not exist. Rather, the locality depends on the Native Administration to determine and collect the tax. But there are no data to verify the amounts being remitted to the locality.

Based on our visits to two state governments and three localities, these examples did not seem to be aberrations; rather they seemed to represent general practice. As such, we concluded there is a critical need for improving revenue administration because

- Taxes are not being collected according to the law;
- There was weak administration of existing taxes, e.g., the share of budgeted revenues actually collect is often extremely low;
- There was frequent reliance on others for determining tax liabilities and collecting taxes, e.g., neighborhood committees and native administrations;
- There was often lack of adequate personnel and available personnel needed additional training; and
- There was a lack of data on the base of each revenue source.

It is not surprising that revenue administration in the Sudan has not been well developed. The current intergovernmental grant system, with its focus on filling gaps between expenditure needs – especially wages and salaries – and available local revenue creates a soft budget constraint for state and local governments. Specifically, gap-filling grants create harmful incentives. State and local governments are given the incentive to reduce own source revenues, to pay for services for which the federal government will not provide additional funds, and to not pay for services for which the federal government is most likely to provide additional funding.

Strengthening revenue administration of state and local governments is a critical step in the process of revising and strengthening the system of intergovernmental grants in the Sudan. When a locality claims it is poor because its revenues are low, we need to be able to determine whether that is a result of the fact the jurisdiction is poor and has limited taxing capacity, rather than it has greater revenue raising capacity, but weak revenue administration. This is a critical distinction as we develop better measures of fiscal capacity and effort. We need to have a good understanding of the revenue sources available to state and local governments, but we also need good measures of the value of the bases of each revenue source, and we need detailed information on revenue administration and actual collections.

In this context, it is important to recommend steps be taken to start to develop the data base that the government will need to make grant allocations based on fiscal capacity, fiscal effort (as required in the peace protocols) and needs. This could be an initiative similar to the one undertaken by the National State Support Fund in 2000 that produced the material in the state encyclopedia. Following that example, what is proposed here could involve a series of regional meetings with state and local people to basically go over the IMF government statistics framework, send them home to start collecting the data in that framework, send some people out to help them, and then bring

them together to look at the results. The IMF is implementing its governmental statistics data system at the national level, but no one has taken the initiative to implement it at the state and local level. This could be a first step in that direction and in a years time reasonable data on the 16 states and 180 local governments in the north could be developed.

Revenue administration needs to be strengthened at the state and local level in the Sudan. The first step in this process should be a systematic and comprehensive diagnostic of two state and four local governments. Such a diagnostic will identify areas where performance problems are serious. This involves looking at the mandate of the organization, its workload, priority areas, organizational size, and geographical spread. This involves collecting information on

1. Qualitative and quantitative *indicators of the nature and scale of the operation* including such measures as the number of registered taxpayers, amount of taxes collected by type, amount of tax arrears, number of employees, overall organizational structure, number of regional offices, etc.
2. Qualitative and quantitative *indicators of the effectiveness* of the organization including such measures as total revenue collected relative to annual revenue collection target, revenues collected relative to GDP, perception of taxpayers regarding risk of detection for non-compliance, public perception of the degree of corruption in the revenue administration office, etc.
3. Qualitative and quantitative indicators of the efficiency of the organization including such measures as number of taxpayers per employee, administrative costs compared to collections, etc.

Collecting such information will help identify weaknesses in the revenue administration process and suggest where limited resources should be targeted to improve revenue administration. Once this diagnostic is complete, areas that require further training will be identified and new systems can be put in place.

In addition to strengthening revenue administration, in order to fully realize the potential benefits of a new system of intergovernmental grants that encourage revenue mobilization and cost containment, state and local governments must also ensure both efficient implementation of budgets and good management of limited financial resources.<sup>15</sup> Financial management within state and local governments involves various activities, including: formulation of fiscal policy, budget preparation; budget execution; management of financial operations; accounting; and auditing and evaluation. Within this broad financial management function, the treasury function is set to achieve these

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<sup>15</sup> This section is drawn from Schaeffer, Bell, Medani and Gianci, **Sudan Subnational Budgeting Process, Preparation and Execution**, Initial Draft, July 2004, mimeograph.

specific objectives mentioned above. In brief, the treasury function covers the following activities:<sup>16</sup>

- Cash management;
- Management of bank accounts;
- Financial planning and forecasting of cash flows;
- Public debt management;
- Administration of grants and transfers; and,
- Financial asset management.

To carry out these activities, organizational arrangements and distribution of responsibilities vary considerably across countries. The State of Khartoum apparently engages in the centralization of cash balances and a standard treasury single account.

It is generally accepted that state and local level governments must have an agency responsible for its financial management. However, a review of international experiences shows that treasuries assume a variety of responsibilities within the gamut of functions encompassed by government financial management. In general, the primary mandate of a treasury is to assure the optimal financial management of government resources, by ensuring that spending agencies are provided, in a timely manner, with the resources needed for a smooth provision of public services, while minimizing the cost of government financing.

The development of sound treasury systems, both at the central as well as at the subnational level of government, is seen as an integral part of transparent and accountable good governance practices. Sudan must engage in a discussion as to how it would like to organize its general treasury system in light of a (potentially) decentralized fiscal environment.

Brief observations with respect to State Level Treasury systems include:

- There does not appear to be a clear mechanism for the flow of funds to move from taxpayers to localities.
- There are limited medium/long term cash management tools and skills. This implies continuing difficulties with respect to managing smooth, and timely, transfers to localities. This exacerbates the problem of trying to achieve good/effective locality cash management and budget accountability.

The role of locality treasuries is limited to issuance of monthly limits, commitment control, and cash payments for locality budget expenditures. Current locality cash management practices (triaging payments) deliver effective cash outflow control, but to some extent undermine budget policies, adversely affecting suppliers and service delivery, and often lead to arrears. Measures to establish, develop, and improve

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<sup>16</sup> This specific discussion is based partly on Teresa Ter-Minassian, Pedro P. Parente, and Pedro Martinez Mendez, "Setting up a Treasury in Economies in Transition." IMF, 1995.

treasury operations are needed to better meet fiscal targets, support program service delivery, and gather better information for control and analysis. Through full implementation of a local government treasury, budget oversight will be improved to allow in-year management of spending, and budget classification will be enhanced to support transparency and the introduction of a performance orientation.

In short, state and locality level government budgeting and financial reporting systems face the following similar issues:

- i. Lack of strategic vision in the budget preparation process;
- ii. Inconsistent reporting and budgeting of activities of local budgetary institutions; and
- iii. Access to comparative information on comparable in-country locality-level finance(s) and service delivery is limited.

These issues are linked. In the absence of a clear strategy for state and locality service delivery, local and state government service performance criteria cannot be identified (without performance indicators). Hence, no measurable service goals and standards can be quantified.

Technical assistance will be needed in assisting state government and localities to:

- i. implement expenditure control procedures that include the use of the new procedures, treasury forms, and commitments;
- ii. adopt comprehensive general ledger accounting systems that are capable of tracking all cash and expenditures against budgets;
- iii. implement systems for receiving and disbursing public monies through the banking system; and
- iv. implement effective cash, investment, and asset management systems.

During this mission, the team visited the various finance and treasury departments in each representative state and locality to determine the scope of needs, current status of data collections, identify gaps, assess qualifications of potential personnel, facilities, software and hardware needs.

As part of a measurable output (or result), a document describing the desired functionality of a treasury system should be produced. In addition, project teams should assist states and localities in developing a work plan to modernize their treasury operations. The plan should specify and sequence the following tasks: the order in which local treasuries will be upgraded, installation and pilot test of hardware/software and data communication links, budgetary implications, and (re) training staff.



Best practices that we will apply when undertaking this task include:

- **Computerization of treasuries:** Treasuries should be computerized.<sup>17</sup> The benefits of computerization of treasury operations in terms of cost-savings, security, enhanced ability to query and monitor the database, and ability to consolidate treasury data are significant.
- **Develop easy-to-use systems:** This will improve data security, reduce the cost of handling the increased volume of vouchers, and allow for enhanced database queries for management information systems. The goal of this activity should be to re-invent the treasury system to improve the efficiency and efficacy of its operations rather than simply re-programming the current system in a superior programming language.
- **Establish a central treasury with connectivity to the local treasuries:** The procedural controls embedded within modern IT applications improve the financial management of departments by reducing opportunities for fraud; prevent departments from overdrawing their budget allocations; and permit real time monitoring of daily cash balances.

Revenue administration and budget processes/treasury functions must be strengthened in the Sudan if the potential benefits of redesigning the intergovernmental grant system are to be fully realized. Specifically, if an equalizing grant formula is designed to promote revenue mobilization and cost containment, subnational jurisdictions must have good revenue administration and budget processes and treasury functions. This section has outlined initiatives to address each of these dimensions of intergovernmental grant reform. However, this is a long-term process that will require confronting and resolving many difficult, albeit unanticipated, challenges. In order to deal effectively and efficiently with those challenges, there needs to be an institutional mechanism that provides and opportunity for representatives from federal, state and local governments to meet together to discuss and address such challenges.

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<sup>17</sup> Khartoum State treasury systems are already computerized and linked via a local area network (LAN). North Kordofan State finance and treasury systems are currently computerizing. The MOF purchased computers in May 2004 and is currently installing software and local area network systems. North Kordofan State is also beginning to customize accounting software to fit their needs. The team visited a number of local government treasury operations. There was no IT capacity in any of the localities. However, the journal, ledger entry system is perfectly suitable for their current needs. Treasury operations at the locality level is relatively minimal.

## APPENDIX

| <b>Table A-1</b>               |              |
|--------------------------------|--------------|
| Regular NSSF Support to States |              |
| 2003 Actual                    |              |
| (Millions of Sudanese Dinars)  |              |
| <b>State</b>                   | <b>2003</b>  |
| Khartoum                       | 0            |
| Red Sea                        | 0            |
| Kassala                        | 1760         |
| Gadaref                        | 1240         |
| Gezira                         | 5860         |
| White Nile                     | 1680         |
| Sennar                         | 1260         |
| Blue Nile                      | 1320         |
| N. Kordofan                    | 1740         |
| S. Kordofan                    | 1490         |
| W. Kordofan                    | 1380         |
| N. Darfur                      | 2390         |
| S. Darfur                      | 1440         |
| W. Darfur                      | 1320         |
| River Nile                     | 2480         |
| Northern State                 | 1660         |
| <b>TOTAL</b>                   | <b>27020</b> |

Table A-2  
Actual NSSF Development Support in 2002 by State  
(Millions of Sudanese Dinnar)

| State            | Water      | Health     | Education  | Other      | Total       | Pct.Total     |
|------------------|------------|------------|------------|------------|-------------|---------------|
| Khartoum         | 0          | 25         | 12         | 0          | 37          | 2.5%          |
| Red Sea          | 37         | 9          | 7          | 24         | 77          | 5.1%          |
| Kassala          | 15         | 14         | 24         |            | 53          | 3.5%          |
| Gadaref          | 43         | 15         | 10         |            | 68          | 4.5%          |
| Gezira           | 78         | 16         | 12         |            | 106         | 7.1%          |
| White Nile       | 17         | 17         | 5          |            | 39          | 2.6%          |
| Sennar           | 35         | 8          | 15         |            | 58          | 3.9%          |
| Blue Nile        | 25         | 14         | 18         | 40         | 97          | 6.5%          |
| N. Kordofan      | 14         | 11         | 22         | 45         | 92          | 6.1%          |
| S. Kordofan      | 55         | 19         | 18         | 60         | 152         | 10.2%         |
| W. Kordofan      | 36         | 13         | 24         | 50         | 123         | 8.2%          |
| N. Darfur        | 28         | 15         | 20         | 120        | 183         | 12.2%         |
| S. Darfur        | 26         | 13         | 30         | 75         | 144         | 9.6%          |
| W. Darfur        | 43         | 11         | 18         | 100        | 172         | 11.5%         |
| River Nile       | 27         | 13         | 7          |            | 47          | 3.1%          |
| Northern State   | 14         | 16         | 18         |            | 48          | 3.2%          |
| <b>TOTAL</b>     | <b>493</b> | <b>229</b> | <b>260</b> | <b>514</b> | <b>1496</b> | <b>100.0%</b> |
| Percent of Total | 33.0%      | 15.3%      | 17.4%      | 34.4%      | 100.0%      |               |

*Source: National State Support Fund*

| Table A-3<br>Actual NSSF Development Support 2003<br>(Millions of Sudanese Dinars) |              |            |            |                |           |           |               |               |
|--|--------------|------------|------------|----------------|-----------|-----------|---------------|---------------|
| State  | Water        | Health     | Education  | Infrastructure | Energy    | Other     | Total         | Pct Total     |
| Khartoum   | 96           | 21         | 16         | 2,562          |           | 20        | 2,715         | 25.9%         |
| Red Sea  | 1,075        | 34         | 15         |                |           | 7         | 1,131         | 10.8%         |
| Kassala  | 323          | 47         | 50         |                |           |           | 420           | 4.0%          |
| Gadaref  | 398          | 42         | 39         | 193            |           | 1         | 673           | 6.4%          |
| Gezira   | 258          | 34         | 41         |                |           |           | 333           | 3.2%          |
| White Nile   | 318          | 30         | 38         |                | 10        | 20        | 416           | 4.0%          |
| Sennar   | 363          | 59         | 58         |                | 40        | 7         | 527           | 5.0%          |
| Blue Nile  | 192          | 30         | 20         |                |           | 3         | 245           | 2.3%          |
| N. Kordofan  | 522          | 45         | 75         |                |           |           | 642           | 6.1%          |
| S. Kordofan  | 460          | 32         | 28         |                |           |           | 520           | 5.0%          |
| W. Kordofan  | 378          | 41         | 68         |                |           |           | 487           | 4.7%          |
| N. Darfur  | 723          | 43         | 48         |                |           |           | 814           | 7.8%          |
| S. Darfur  | 288          | 45         | 68         |                |           |           | 401           | 3.8%          |
| W. Darfur  | 211          | 55         | 53         |                |           |           | 319           | 3.0%          |
| River Nile   | 363          | 31         | 39         |                |           | 3         | 436           | 4.2%          |
| Northern State   | 336          | 21         | 15         |                |           | 5         | 377           | 3.6%          |
| <b>TOTAL</b>   | <b>6,304</b> | <b>610</b> | <b>671</b> | <b>2,755</b>   | <b>50</b> | <b>66</b> | <b>10,456</b> | <b>100.0%</b> |
| Percent of Total   | 60.3%        | 5.8%       | 6.4%       | 26.3%          | 0.5%      | 0.6%      | 100.0%        |               |

Source: National State Support Fund

| Table A-4<br>VAT and Ag. Comp Grants by State, 2002 and 2003<br>(Millions of Sudanese Dinars) |                 |               |                  |               |
|---|-----------------|---------------|------------------|---------------|
| State   | Value Added Tax |               | Ag. Compensation |               |
|   | 2002            | 2003          | 2002             | 2003          |
| Khartoum  | 14,563          | 18,957        | 70               | 75            |
| Red Sea   | 1,595           | 2,078         | 3                | 3             |
| Kassala   | 394             | 510           | 337              | 365           |
| Gadaref   | 729             | 948           | 1,568            | 1,695         |
| Gezira  | 4,843           | 6,307         | 1,766            | 1,910         |
| White Nile  | 729             | 948           | 427              | 461           |
| Sennar  | 503             | 656           | 566              | 1,052         |
| Blue Nile   | 221             | 292           | 973              | 612           |
| N. Kordofan   | 840             | 1,094         | 328              | 354           |
| S. Kordofan   | 330             | 437           | 447              | 483           |
| W. Kordofan   | 282             | 365           | 536              | 579           |
| N. Darfur   | 330             | 437           | 288              | 311           |
| S. Darfur   | 503             | 656           | 853              | 923           |
| W. Darfur   | 330             | 437           | 298              | 322           |
| River Nile  | 554             | 729           | 1,191            | 1,287         |
| Northern State  | 330             | 437           | 744              | 805           |
| <b>TOTAL</b>  | <b>27,076</b>   | <b>35,288</b> | <b>10,393</b>    | <b>11,237</b> |

Source: National State Support Fund

Table A-5  
Simulation a-d Total Pool by four distribution keys, Sudan, 2003

| States         | Transfers paid in 2003(baseline (1)) | 1aTotal pool- Population (2) | 1a- baseline (3) | 1bTotal Pool- Taxable capacity (4) | 1b- baseline (5) | 1cTotalPool- Needs (6) | 1c- baseline (7) | 1dTotalPool- Needs and taxable capacity (8) | 1d- baseline (9) |
|----------------|--------------------------------------|------------------------------|------------------|------------------------------------|------------------|------------------------|------------------|---|------------------|
| Blue Nile      | 2469                                 | 2061                         | -408             | 3592                               | 1123             | 2339                   | -130             | 2965  | 496              |
| Gadaref        | 4557                                 | 4801                         | 244              | 6394                               | 1837             | 5009                   | 452              | 5702  | 1145             |
| Gezira         | 14410                                | 10934                        | -3476            | 6364                               | -8046            | 9838                   | -4572            | 8101  | -6309            |
| Kassala        | 3055                                 | 4691                         | 1636             | 4576                               | 1521             | 5209                   | 2154             | 4893  | 1838             |
| Khartoum       | 21746                                | 15850                        | -5896            | 6420                               | -15326           | 11784                  | -9962            | 9102  | -12644           |
| N. Darfur      | 3952                                 | 4747                         | 795              | 6923                               | 2971             | 4842                   | 890              | 5882  | 1930             |
| N. Kordofan    | 3830                                 | 4602                         | 772              | 6043                               | 2213             | 5239                   | 1409             | 5641  | 1811             |
| Northern State | 3279                                 | 1818                         | -1461            | 814                                | -2465            | 1467                   | -1812            | 1140  | -2139            |
| Red Sea        | 3212                                 | 2168                         | -1044            | 1597                               | -1615            | 1964                   | -1248            | 1781  | -1431            |
| River Nile     | 4931                                 | 2825                         | -2106            | 1294                               | -3637            | 2303                   | -2628            | 1798  | -3133            |
| S. Darfur      | 3420                                 | 3755                         | 335              | 3153                               | -267             | 3702                   | 282              | 3427  | 7                |
| S. Kordofan    | 2930                                 | 9074                         | 6144             | 11480                              | 8550             | 9954                   | 7024             | 10717                                       | 7787             |
| Sennar         | 3494                                 | 3429                         | -65              | 6508                               | 3014             | 4182                   | 688              | 5345  | 1851             |
| W. Darfur      | 2398                                 | 5014                         | 2616             | 8575                               | 6177             | 7206                   | 4808             | 7890  | 5492             |
| W. Kordofan    | 2811                                 | 3504                         | 693              | 6428                               | 3617             | 4313                   | 1502             | 5371  | 2560             |
| White Nile     | 3505                                 | 4724                         | 1219             | 3838                               | 333              | 4648                   | 1143             | 4243  | 738              |

*Source: Calculations by the authors using data from Table A-1 and hypotheses in the text.*

Table A-6  
Simulation a-d Total Pool – 50% VAT by four distribution keys, Sudan, 2003

| States         | Transfers paid in 2003(baseline (1)) | 2a pool with 50% of VAT- Population (2) | 2a- baseline (3) | 2b pool with 50% of VAT-- Taxable capacity (4) | 2b- baseline (5) | 2c pool with 50% of VAT-- Needs (6) | 2c- baseline (7) | 2d pool with 50% of VAT-- Needs and taxable capacity (8) | 2d- baseline (9) |
|----------------|--------------------------------------|---|------------------|--|------------------|-------------------------------------|------------------|--|------------------|
| Blue Nile      | 2469                                 | 1774                                    | -695             | 2983   | 514              | 1993                                | -476             | 2342   | 19               |
| Gadaref        | 4557                                 | 4266                                    | -291             | 5525   | 968              | 4431                                | -126             | 4504   | 421              |
| Gezira         | 14410                                | 11791                                   | -2619            | 8181   | -6229            | 10925                               | -3485            | 6399   | -4857            |
| Kassala        | 3055                                 | 3961                                    | 906              | 3870   | 815              | 4370                                | 1315             | 3865   | 1065             |
| Khartoum       | 21746                                | 21999                                   | 253              | 14550  | -7196            | 18787                               | -2959            | 7190   | -5077            |
| N. Darfur      | 3952                                 | 3969                                    | 17               | 5687   | 1735             | 4044                                | 92               | 4647   | 913              |
| N. Kordofan    | 3830                                 | 4183                                    | 353              | 5321   | 1491             | 4686                                | 856              | 4456   | 1173             |
| Northern State | 3279                                 | 1655                                    | -1624            | 861  | -2418            | 1377                                | -1902            | 901  | -2160            |
| Red Sea        | 3212                                 | 2752                                    | -460             | 2301   | -911             | 2591                                | -621             | 1407   | -766             |
| River Nile     | 4931                                 | 2596                                    | -2335            | 1387   | -3544            | 2183                                | -2748            | 1421   | -3146            |
| S. Darfur      | 3420                                 | 3294                                    | -126             | 2819   | -601             | 3252                                | -168             | 2707   | -385             |
| S. Kordofan    | 2930                                 | 7387                                    | 4457             | 9287   | 6357             | 8082                                | 5152             | 8466   | 5754             |
| Sennar         | 3494                                 | 3037                                    | -457             | 5469   | 1975             | 3632                                | 138              | 4222   | 1056             |
| W. Darfur      | 2398                                 | 4179                                    | 1781             | 6992   | 4594             | 5911                                | 3513             | 6233   | 4053             |
| W. Kordofan    | 2811                                 | 2950                                    | 139              | 5261   | 2450             | 3590                                | 779              | 4243   | 1614             |
| White Nile     | 3505                                 | 4205                                    | 700              | 3506   | 1                | 4146                                | 641              | 3352   | 321              |

Source: Calculations by the authors using data from Table A-1 and hypotheses in the text.

Table A-7  
Simulation a-d Total Pool – 50% VAT and development grants by four distribution keys, Sudan, 2003

| States         | Transfers paid in 2003(baseline (1)) | 3a pool with 50% of VAT and development grants separate- Population (2) | 3a- baseline (3) | 3b pool with 50% of VAT and development grants separate -- Taxable capacity (4) | 3b- baseline (5) | 3c pool with 50% of VAT- and development grants separate - Needs (6) | 3c- baseline (7) | 3d pool with 50% of VAT- and development grants separate - Needs and taxable capacity (8) | 3d- baseline (9) |
|----------------|--------------------------------------|---|------------------|---|------------------|--|------------------|---|------------------|
| Blue Nile      | 2469                                 | 1763  | -706             | 2781  | 312              | 1947   | -522             | 2364  | -105             |
| Gadaref        | 4557                                 | 4343  | -214             | 5404  | 847              | 4481   | -76              | 4943  | 386              |
| Gezira         | 14410                                | 10763   | -3647            | 7722  | -6688            | 10034  | -4376            | 8878  | -5532            |
| Kassala        | 3055                                 | 3797  | 742              | 3721  | 666              | 4142   | 1087             | 3931  | 876              |
| Khartoum       | 21746                                | 22741   | 995              | 16465   | -5281            | 20035  | -1711            | 18250   | -3496            |
| N. Darfur      | 3952                                 | 4192  | 240              | 5639  | 1687             | 4255   | 303              | 4947  | 995              |
| N. Kordofan    | 3830                                 | 4252  | 422              | 5211  | 1381             | 4676   | 846              | 4943  | 1113             |
| Northern State | 3279                                 | 1806  | -1473            | 1137  | -2142            | 1571   | -1708            | 1354  | -1925            |
| Red Sea        | 3212                                 | 3613  | 401              | 3233  | 21               | 3477   | 265              | 3355  | 143              |
| River Nile     | 4931                                 | 2680  | -2251            | 1661  | -3270            | 2332   | -2599            | 1996  | -2935            |
| S. Darfur      | 3420                                 | 3228  | -192             | 2827  | -593             | 3193   | -227             | 3010  | -410             |
| S. Kordofan    | 2930                                 | 6777  | 3847             | 8378  | 5448             | 7363   | 4433             | 7871  | 4941             |
| Sennar         | 3494                                 | 3136  | -358             | 5185  | 1691             | 3637   | 143              | 4411  | 917              |
| W. Darfur      | 2398                                 | 3874  | 1476             | 6244  | 3846             | 5333   | 2935             | 5788  | 3390             |
| W. Kordofan    | 2811                                 | 3001  | 190              | 4948  | 2137             | 3540   | 729              | 4244  | 1433             |
| White Nile     | 3505                                 | 4034  | 529              | 3444  | -61              | 3983   | 478              | 3714  | 209              |

*Source: Calculations by the authors using data from Table A-1 and hypotheses in the text.*



Table A-8  
Summary of changes in the distribution of central-state transfers, Sudan simulations, 2003

|                | Population      |                 |                 | Taxable capacity |                 |                 | Needs           |                 |                 | Taxable capacity and needs |                 |                 |
|----------------|-----------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------------------|-----------------|-----------------|
|                | 1a-<br>baseline | 2a-<br>baseline | 3a-<br>baseline | 1b-<br>baseline  | 2b-<br>baseline | 3b-<br>baseline | 1c-<br>baseline | 2c-<br>baseline | 3c-<br>baseline | 1d-<br>baseline            | 2d-<br>baseline | 3d-<br>baseline |
| Blue Nile      | -408            | -695            | -706            | 1123             | 514             | 312             | -130            | -476            | -522            | 496                        | 19              | -105            |
| Gadaref        | 244             | -291            | -214            | 1837             | 968             | 847             | 452             | -126            | -76             | 1145                       | 421             | 386             |
| Gezira         | -3476           | -2619           | -3647           | -8046            | -6229           | -6688           | -4572           | -3485           | -4376           | -6309                      | -4857           | -5532           |
| Kassala        | 1636            | 906             | 742             | 1521             | 815             | 666             | 2154            | 1315            | 1087            | 1838                       | 1065            | 876             |
| Khartoum       | -5896           | 253             | 995             | -15326           | -7196           | -5281           | -9962           | -2959           | -1711           | -12644                     | -5077           | -3496           |
| N. Darfur      | 795             | 17              | 240             | 2971             | 1735            | 1687            | 890             | 92              | 303             | 1930                       | 913             | 995             |
| N. Kordofan    | 772             | 353             | 422             | 2213             | 1491            | 1381            | 1409            | 856             | 846             | 1811                       | 1173            | 1113            |
| Northern State | -1461           | -1624           | -1473           | -2465            | -2418           | -2142           | -1812           | -1902           | -1708           | -2139                      | -2160           | -1925           |
| Red Sea        | -1044           | -460            | 401             | -1615            | -911            | 21              | -1248           | -621            | 265             | -1431                      | -766            | 143             |
| River Nile     | -2106           | -2335           | -2251           | -3637            | -3544           | -3270           | -2628           | -2748           | -2599           | -3133                      | -3146           | -2935           |
| S. Darfur      | 335             | -126            | -192            | -267             | -601            | -593            | 282             | -168            | -227            | 7                          | -385            | -410            |
| S. Kordofan    | 6144            | 4457            | 3847            | 8550             | 6357            | 5448            | 7024            | 5152            | 4433            | 7787                       | 5754            | 4941            |
| Sennar         | -65             | -457            | -358            | 3014             | 1975            | 1691            | 688             | 138             | 143             | 1851                       | 1056            | 917             |
| W. Darfur      | 2616            | 1781            | 1476            | 6177             | 4594            | 3846            | 4808            | 3513            | 2935            | 5492                       | 4053            | 3390            |
| W. Kordofan    | 693             | 139             | 190             | 3617             | 2450            | 2137            | 1502            | 779             | 729             | 2560                       | 1614            | 1433            |
| White Nile     | 1219            | 700             | 529             | 333              | 1               | -61             | 1143            | 641             | 478             | 738                        | 321             | 209             |

Source: Tables A-5, A-6 and A-7.