

**IMPACT OF FISCAL DECENTRALIZATION ON LOCAL AUTONOMY IN THE
SUDAN: EXPERIENCE OF GADARIF STATE**

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ABSTRACT

Based on state data of the periods (1997-2012), this study aimed at evaluating the fiscal decentralization experience of Gadarif state of eastern Sudan in the context of different aspects of fiscal decentralization, namely expenditure assignment, revenue assignment and intergovernmental transfers. To accomplish these objectives, many local fiscal indicators have been calculated, and parameters of regressions of both revenues and expenditures have been estimated. The results reveal that the experience of fiscal decentralization of the state came out with poor fiscal situations indicated by higher dependence on the federal transfers and higher vertical imbalance and consequently the failure of the state government to perform its responsibilities of delivering the basic services to its constituents. Moreover, none of both local expenditure neither local revenues respond to federal transfers, indicating the failure of these transfers to realized their objectives.

Key Words: fiscal decentralization, expenditure and revenue Assignment, local autonomy, federal transfers.

1. Introduction

1.1. Background

Fiscal decentralization – the devolution of taxing and spending powers to lower levels of government has become an important theme in governance in many countries in recent years. Accordingly, restructuring of governmental functions and finances between the national and lower levels of government has entered the core of development debate. That is because “in most countries, national government have failed to ensure regional equity, economic union, central bank independence, a stable macroeconomic environment and local autonomy” (Shah 2004).

Sudan was the largest country in Africa with high level of diversification in ethnicity and resources. It ruled by central elites mostly in military fashion, controlling economic resources and political powers. These central minded elites consider the movement towards the decentralization as threat to that legitimacy that may lead to fragmentation of political power and economic resources among different ethnic groups and regions. However, the move to the decentralization in the Sudan is result of presser and resist to dictatorship that causes conflicts and political instability.

The first step towards decentralization in the Sudan was in 1948 when rural councils formed to hold responsibility of delivering some services and collecting some revenues. The process of decentralization continues and by the time, the sub national governments have assigned more expenditures and revenues responsibilities.

The significant step for fiscal federalism in the Sudan was after signing the Comprehensive Peace Agreement (CPA) between the government of Sudan and the Sudan People Liberation Movement (SPLM) in 2005. The agreement constitutes a set of institutional arrangements that should improve the federal system in the Sudan. Thus, it is stated in the Wealth Sharing Protocol of the Agreement “decentralization and empowerment of all levels of government are cardinal principles of effective and fair administration of the country”.

Nevertheless, the Sudanese experience of decentralization reveals the overwhelming existence of vertical and horizontal fiscal imbalance reflected in the failure of the lower levels of government to perform their assigned responsibilities in one hand and the existence of large fiscal disparities among different states of the country on the other hand.

Gadarif state is one of the 17 states of northern Sudan. It constitutes with Kassala and the Red Sea what was called the Eastern Region. The state experienced decentralization since 1995 when a republican decree issued increasing the number of states from 9 to 26 with assignment of powers and revenues responsibilities. There are two levels of government, the state and the local level. The number of localities reached 10 in 2008 and 12 in 2010.

In spite of that the constitution addresses the fiscal intergovernmental relations between the different levels of government, determining which taxes should be collected by which level

of government and the expenditure to be carried out by different tiers of government, on one hand, the State government mandated to be responsible of much expenditure with narrow tax bases and fixed rates. On the other hand, buoyant taxes are assigned to the federal government and the state left with the very low income taxes. As a result, vertical fiscal imbalance is expanded, reflecting the low performance of basic services delivery.

Since the implementation of the federal system, the state faced many challenges in performing its responsibilities toward its constituents. Thus, the delivering of basic services of health, education and water need to be financed by the state government under the federal system. The increasing of the dependence of the state government on the transfers of the central government put the state and local governments on great challenge of performing its development projects in various localities. Thus, the actual assignment of responsibilities of health and education is not clear.

This study attempts to provide policy recommendations that would help constructing broad economic development strategies for the state with the aim of evaluating comprehensively the process of fiscal decentralization in Gadarif state during the period (1997-2012). To accomplish these goals the study addresses the following questions:

- i. How fiscal decentralization experience of the Sudan affects the financial situations in Gadarif state?
- ii. What is the causes and size of fiscal imbalance in Gadarif state?
- iii. Does the current system of fiscal transfers of the country acquire its objective of horizontal equity from the viewpoint of Gadarif state?
- iv. At what extent the objective of local autonomy is realized in the state.

1.3 Organization

The study is organized as follows: section two reviews the theoretical and empirical literature. Section three outlines the historical background of fiscal decentralization

experience of the Sudan. Section four offers the summary of socioeconomic features of Gadarif state. Section five provides the empirical findings of the study. Section six concludes.

2. Conceptual Framework

Wallace Oates developed the basic work on fiscal decentralization in 1972. The major assumption underlying his theory is that a central government, due to imperfect information, will produce a uniform level of public goods across districts. While uniform provision is appropriate for goods with national benefits, such as national defense, it may be inappropriate for goods that are local in scope, such as school funding and health clinic construction. Uniform funding for health clinic construction, for example, may be inefficient because it ignores heterogeneous tastes and preferences across districts. Perhaps one community wants more funding for health related activities, while another prefers the money spent on local schools. Local governments can obtain better information about preferences, costs, and other idiosyncrasies unique to their constituency, at a lower cost (Oates, 1972).

From a public expenditure standpoint, Musgrave and Musgrave (1984) assert that public goods should be produced by the level of government whose constituents benefit from that provision. If the benefit is felt nationally, the public good should be produced by the central government. If the benefit accrues at the local level, local governments should provide the good. This is due not only to the informational advantage, but also because local governments are closer to real resource costs.

In the event of a positive spillover—a situation in which one district benefits from the public goods provision of another district at no cost—the central government is able to internalize that spillover with the least amount of transaction costs (Smoke, 2001).

The substantial issue of fiscal decentralization is that of assigning responsibilities to the low levels of government. In this context, Oates(1999) argues that these responsibilities which range from the design to the implementation of various aspects of intergovernmental fiscal relations, raise a number of questions on the ground of which known in the literature of fiscal decentralization as the ‘four basic building blocks or pillars’ outlined as follows:

1. The assignment of expenditure responsibilities: what types of spending should be conducted by what levels of government?

2. The assignment of tax and revenue sources to different levels of government: what types of revenue should be raised and what tax rates should be set by what level of government? In addition, which level is responsible for tax administration and the public expenditure management system?

3. Intergovernmental fiscal transfers: how should intergovernmental grants and revenue sharing be used to fill the gap between expenditures and revenues at sub-national levels and provide the right incentives to sub-national governments? The fundamental question here is how the transfers are designed?

4. Sub-national borrowing: Which level should be able to finance its spending by borrowing from domestic or external sources, private or public?

Yet, literature of fiscal decentralization focuses on studying the impact of fiscal decentralization on different aspects: economic efficiency, services delivery, poverty, economic growth, macroeconomic stability, and factors of governance...etc. Regarding the issue of intergovernmental fiscal transfers, the emphasis is on in one hand, assessment of its impacts on sub-national governments' incentives and equalization. On the other hand, designing an appropriate system of transfers is the main issue pursued by theoretical and empirical studies.

That said, evaluating experience of fiscal decentralization of any country should come out through the above questions. However, the key issue in decentralization is “the coordination of intergovernmental fiscal relations, which has puzzled theoreticians and practitioners in recent years. Given increased complexity in coordinating government actions when lower levels of government enjoy greater autonomy of policy making, the key policy challenge in decentralization programs is to design and develop an appropriate system of multilevel public finances in order to provide local public services effectively and efficiently while, at the same time maintaining macroeconomic stability” (de Mello 2000).

Expenditure Assignment

The expenditure responsibilities assignment defines who does what – which function is assigned to different government levels. There is no optimal assignment of expenditure responsibilities among different levels of government in the literature. However, the key principle in this context is what known in fiscal decentralization as the "subsidiarity principle". This principle suggests that government functions should assigned to the level that is capable of efficiently undertaking this function. In general, this principle results in "a situation where, as far as possible, the area where a benefit of government service is felt coincides with the government boundaries at each level of government" (UNDP 2005).

The theoretical framework in this context generates several predictions. In particular: decentralization of expenditure responsibilities improves efficiency especially in countries with inter–regional heterogeneity of preference for public goods. Moreover, “the benefits of expenditures decentralization is higher the more local revenues are independents, and the better quality of governance at local level is" (UNDP 2005). However, the subsidiarity principle suggests that three types of functions are best performing by central government:

- 1- Provision of public goods and services that benefit the whole country (defense...etc.);
- 2- Income redistribution or social policies (pensions, unemployment insurance)
- 3- Government activities that involve spill-overs or externalities between local governments

Regional or states governments are often assigned the provision of important public services, such as health, education, and police. Local governments (localities) provide local public service suchas local roads, agriculture, water and sanitation and recreation facilities.

This assignment of responsibilities is based on efficiency or equity reasons in the manner the particular expenditure program is designed and delivered. On efficiency ground, three sorts of arguments apply. First, program benefits may spill over to other communities; second, decentralized decision making can lead to inefficiencies because they distort cross-boundary transactions in product or factors. Third, fiscal competition among different sub-national

governments may lead to inefficient choice of expenditure programs. On the other hand, equity issues apply to state-level governments, which are responsible for providing public services such as health, education and welfare, which can achieve redistributive goals that may be of national policy objective.

In general, the degree of discretion to lower levels of government differs from federation to another as does the manner at which that discretion constrained.

Revenues Assignment

While the assignment of expenditure responsibilities among different tiers of government is mostly similar in different countries, the assignment of revenues sources is varies widely among federations. In this context, the key question is what revenue sources assigned to sub-national governments? Answer of this question is related to the assignment of expenditure responsibilities: finance should follow function. In this regard, Shah (1991) determined the consideration of revenue sources assignment as follows:

- Progressive redistributive taxes should be central.
- Taxes suitable for economic stabilization should be central.
- Lower level taxes should be cyclically stable.
- Tax bases distributed highly unequal between jurisdictions should be centralized.
- Taxes on mobile factors of production are best administered at the center residence.
- Based taxes such as sales of consumption goods to consumers or excises are suited for states.
- Taxes on completely immobile factors are best suited for local levels;
- Benefit taxes and user charges might be appropriately used at all levels.

In general, tax assignment in various federations confirm to these guidelines, although there are individual cases of departure from these norms). Nevertheless, "one problem regarding

the assignment of revenue sources in many countries is that while sub-national governments need to have at least some revenue discretion in order to fully benefit from fiscal decentralization reforms, central governments often seem unwilling to provide a significant degree of real revenue autonomy to sub-national governments" (UNDP 2005). In these cases, intergovernmental transfers become necessary to fill the revenue gap.

Intergovernmental Transfers

Intergovernmental fiscal transfers are dominant feature of sub-national finance in most countries. They are used to ensure that revenues match the expenditure needs of various levels of sub-national governments. They are also used to advance national, regional and local objectives outlined in the literature as follows:

- Correcting or adjusting vertical imbalances: closing the fiscal gaps between expenditure assignments and revenue assignment.
- Compensating sub-national governments for complying with central government requirements of implementing delegated central government programs.
- Correcting or adjusting horizontal imbalances: transfers can be used to "equalize" the level of service delivering among different sub-national governments.
- Correcting or adjusting externalities with public goods provision. Grants may be used to compensate local governments for services they deliver, which influence areas of near jurisdictions.
- Setting national minimum standards to preserve internal common market and attain national equity objectives.

Types of Intergovernmental Transfers

There are two types of transfers to sub national governments: conditional and unconditional. Conditional grants are also known as specific purpose grants, block, sectoral, categorical or

earmarked grants. Unconditional grants on the other hand are also known as united or general-purpose grants.

Yet, when assessing a system of intergovernmental relations, there are two important policy questions to answer. First: is the system of intergovernmental fiscal relations fair to each level of government by providing sufficient resources to cover expenditure responsibilities? This question refers to the vertical fiscal imbalances. Second: are there large fiscal disparities among different regions? This case refers to the horizontal fiscal imbalances (Vazquez 2002).

This study seeks to evaluate the experience of fiscal decentralization of Gadarif state during the period (1997-2010) with especial focus on expenditure assignment, revenue assignment and federal transfers to the state,

2 Methodology

According to the objectives of this study, different methods being utilized to attain these objectives. Thus, ratio analysis of some fiscal decentralization indicators will be carried out to evaluate the fiscal decentralization experience of Gadarif state in the context of the country's. therefore, the following indicators will be used:

Vertical Imbalance (VI), due to Hunter (1977):

$$VI = 1 - \frac{\text{Own Revenue}}{\text{State Expenditure}}$$

Revenue Effort (RE):

$$RE = \frac{\text{Total Revenue}}{\text{GDP}}$$

With regard to the objective of evaluation of fiscal impact of the decentralization on the state, the study will use the following indicators:

Table (1): Summary of fiscal decentralization indicators

Variables	Indicators	Description	Level of Measurement
Sub-national government expenditures	Government expenditure share	Ratio of Sub-national government spending to total government spending	Ratio Level
	Government Size	Ratio of Sub-national government spending to GDP per government level	
Sub-national government revenues	Sub-national Tax autonomy	Ratio of tax revenue to total revenue of sub-national government's	Ratio Level
	Sub-national non-tax autonomy	Ratio of non-tax revenues to total revenues of sub-national governments	
Intergovernmental transfers	Vertical imbalance	Ratio of intergovernmental transfers to total sub-national revenues	Ratio Level

Source: IMF (2000)

In addition, regression analysis used to evaluate the experience of expenditure assignment, revenue assignment and intergovernmental transfers of the state. In this context, the following two simultaneous equations of total expenditure and own revenues will be attempted:

$$TE = \alpha_0 + \alpha_1 Trans + \alpha_2 GDP + \mu_t (1)$$

$$Strev = \alpha_0 + \alpha_1 Trans + \alpha_2 GDP + \mu_t (2)$$

Where

TE: the Total Expenditure

Trans: the Federal Transfers to the state

GDP: the GDP of the state

μ_t : The random variable; and

Strev : State own revenues.

Equations (1) and (2) explain at what extent the state total expenditure and own revenue respond to the variations in federal transfers and the GDP of the state.

3. Fiscal Decentralization in the Sudan: An Overview

The Sudan has experienced decentralization since 1948 when rural councils formed to hold responsibility of delivering some services and collecting some revenues. A major decentralization policy change was initiated with the introduction of 1951 Act. Under this Act, the government created councils with legal corporate status and clearly defined responsibilities. Elbattahani (2008).

In 1972 the country witnessed another significant development in the government structure as a result of Addis Ababa peace agreement signing. Consequently, the Government of the Southern Region formed and granted a substantial degree of autonomy including tax levies. (Elshibly1990).

In 1974 the People` Local Government Act introduced important measure toward decentralizing the country. Accordingly, the country is divided to 10 provinces and some functions like education, health and livestock shifted from the central government to the local councils with the same taxing powers.

The Regional Government Act of 1980 introduced further measures of decentralization. Hence, new regional governments created, given and granted a substantial degree of

autonomy. No additional taxing powers given to these regions other than previously performed by local councils and provinces (Elshibly1990).

The process of real fiscal decentralization in Sudan began in 1995 when a republican decree issued increasing the number of states from 9 to 26 with assignment of powers and revenues responsibilities. The system proceeds with three tiers, federal, state and local. Accordingly, states governments have four sources of revenues as set in the constitution. These sources are:

- (i) Transfers from the federal budget through the Northern States Subsidy Fund (NSSF).
- (ii) Off-budget transfers from the federal government of 43% percent of VAT collections and 10% of public enterprise profits.
- (iii) Revenues collected directly by the states through taxes, fees and user charges; and
- (iv) Loans and borrowing in accordance with the constitution.

On the other hand, local government revenues are a component of taxes on property, local transportation, local livestock production and other local taxes or duties.

The significant step toward fiscal federalism in the Sudan was after signing the Comprehensive Peace Agreement (CPA) between the government of Sudan and the Sudan People Liberation Movement (SPLM) in 2005. The agreement constitutes a set of institutional arrangements that should improve the federal system in the Sudan. Thus, it is stated in the Wealth Sharing Protocol of the Agreement “decentralization and empowerment of all levels of government are cardinal principles of effective and fair administration of the country”. That is of course in a decentralized system with significant devolution of power to the different levels of government i.e. section (113) of the protocol states that “An expenditure function should be assigned to that level of government whose jurisdiction most closely reflects the geographical served by that function. The delivery of a particular service (expenditure assignment) may be carried out exclusively by a given level of government or by two or more”.

On the revenues side, according to section (114) of the same protocol, “states levels of the government shall have the right to determine without national inference the structure of revenue base and the level of the charge or tax rate applied to that base”. Moreover, the wealth sharing protocol “provides a detailed breakdown of own source revenue for schedules all levels of government must radically reform their budgetary process” Bell and Ahmed (2005).

To perform the task of implementing fiscal decentralization proceed as outlined above, many constitutional bodies and agencies established; i.e. Northern State Support Fund (NSSF) created to set criteria of distribution of the current and development transfers. The NSSF is based on nine criteria: financial performance, population density, natural resources, human resources, infrastructure condition, per capita income, education, and health and security situations. Each factor receives 10 per cent weight except the financial performance, which receives 20 per cent.

The Fiscal and Financial Allocation and Monitoring Commission (FFAMC) have been structured in order to ensure appropriate utilization and sharing of resources both vertically and horizontally, transparency and fairness in allocation of funds among the states and to monitor and ensure that equalization grants from national government are through a specific criterion based on the following:

1. Population size
2. Minimum expenditure responsibilities
3. Human Development Index – social indicators
4. Geographical areas
5. Fiscal efforts; and
6. The effect of war factor.

The greater challenge in this context is how can the FFAMC perform, i.e. some questions may raise such as: how allocation of such grants will be determined, how will be funded, by which level of government, etc. what sort of vertical and horizontal equalization is intended and how will be achieved? Bell and Ahmed (2005). However, political consideration still dominate the full implementation of the formula, which in turn jeopardizes the overall approach.

National Reconstruction and Development Fund (NRDF) is created to develop the war affected areas and the least developed areas taking the effect of war and level of development as the main criteria.

Building on the Comprehensive Peace Agreement, the Joint Assessment Mission (JAM) formed in 2005 to develop a framework aiming at meeting the Millennium Development Goals (MDGs) for the people of Sudan, especially those in the south and other war affected areas. The common themes of this framework are including “the focus on broad-based and inclusive economic growth and empowerment of the people through a decentralized system of governance and services delivery” JAM (2005).

According to the Interim National Constitution of (2005) the following table details the own revenue sources of the state level:

Table (2): Own Revenue Sources assigned to states

Revenue Type	Revenue Items	Determination of Collection/Allocation
Own Source Revenue	State land and property tax and royalties; service charges for state services; state personal income tax; levies on tourism; state government projects and national parks; stamp duties; agricultural taxes; grants-in-aid and foreign aid; excise duties; border trade charges or levies in accordance with national legislation; other state taxes, which do not encroach on National or Southern Sudan Government taxes, many other taxes,	Combination of fiscal base and effort and effort by individual states. Potential bases provided by Article 193 of the INC

	many other tax as may be determined by law.	
Shared Revenue	2 percent of petroleum revenues by derivation	State share of revenue based on derivation basis (and other criteria), established by CPA
Grants and Transfers	<p>Current earmark transfers:</p> <ul style="list-style-type: none"> - Wages (Judiciary, Police, High Education) - Social subsidies transfers <p>Current block transfers:</p> <ul style="list-style-type: none"> - agricultural taxes compensation - Current transfers (largely for wages) - Emergency and Ad hoc transfers <p>Development transfers:</p> <ul style="list-style-type: none"> - State development projects (local component) - State development projects (foreign component) <p>Development and Reconstruction Funds for war affected areas.</p>	May be determined by formula, existing establishment costs (e.g., wages), or are in a sense ad hoc and discretionary.
Borrowing	Loans/borrowing in accordance with the constitution	

Source: the Interim National Constitution of (2005)

The empirical literature of fiscal decentralization in the Sudan

The fiscal trends of local governments in the Sudan is characterized by many features. On one hand, "the increase in demand on services coupled with the low share of development spending raises a number of questions regarding the states' commitment to long term development and macroeconomic stability. In addition to the administrative problems related to taxes, local government may refrain from raising taxes too high due to political reason, adverse effects on both the people, especially the poor local economic development. The

forms of taxation can be imposed on subsistence economies are very limited". Gangi and Ibrahim (2008).

On the other hand, intergovernmental fiscal transfers in Sudan – with its six types (current transfer, development transfers, and additional support transfers, value added taxes (VAT) and Benzene Transfers) increase as percentage of federal revenues from 2.7% in 1996 to 30% in 2005 suggesting that the ability of sub-national governments to finance their expenditure from their own revenues declined from 92% in 94/1995 to about 36% in 2005” (Elbaawi and Suliman 2007). Consequently, sub national governments became increasingly dependent on central transfers i.e. it reached 36% in 2006 and 38% of the federal government expenditure in 2007.

Furthermore, data on state level about the own source revenue collections which is available suggests that own source revenues shares in 2005 ranged from 66% in Red Sea to 12% in North Darfur. World Bank (2008). The level of reliance on transfers is greater, for the locality level in Gezira and North Kordofan states, over 80% of locality high share of the transfers that are earmarked.

Ali (2007) compared the current system of federal transfers of the Sudan with that proposed by FFAMC according to its criteria, he concluded that under this assumption, all states, except the Nile state, would be receiving federal transfers, which are much higher than what the current system gives them.

On his analysis of fiscal decentralization in post-session Sudan, Mohamed (2017) argue that in the vertical aspect, the results have shown the overwhelming fiscal imbalance in the lower tiers of the government of the Sudan. Moreover, the regression results revealed that none of the predictor variables, suggested by the FFAMC responds to the federal transfers indicating the failure of the transfers system of the country to reflect the need considerations.

However, most of researches conducted in the Sudan on the issue of fiscal decentralization ended with consistent results, thus Elbattahani and Gadkarim (2017) concluded that States and localities have only limited autonomy to make fiscal decisions, and accountability is missing. Local government officials are not accountable to local taxpayers. Recent

government expenditures have largely been concentrated in the urban centers, which have been captured by politically connected elites. This continues the disenfranchisement, not only of the rural poor but also have large segments of middle class in the peripheries.

However, there is a large gap in the literature of fiscal decentralization in the Sudan in the lower levels of governments, namely states and localities. This study attempts to take place in this gap.

4. Gadarif State: A Socioeconomic Review

Gadarif State, together with Kassala and Red Sea States, comprise the region of East Sudan as defined by the Eastern Sudanese Peace Agreement and consequent administrative arrangements. The state is located between longitudes 33° 30' and 36° 30' to the East, and latitudes 12° 40' and 15° 46' to the North. Gadarif shares an international border with Ethiopia to its East. Nationally, Kassala and Khartoum State to the North, El Gezira State to the West and Sennar State to the South border the state.

The state's total population estimated to stand at some 1.35 million (Central Bureau of Statistics 2008) with an annual growth rate of 3.87%. Over two-thirds of the populations live in rural areas and population density on a statewide basis stands at around 19 persons per km^2 . The total area of Gadarif state is calculated to be around 71,000 km^2 . The State is divided into twelve administrative localities.

4.1 Population

Table (3) below shows the statistics of the state populations and their growth according to different population censuses of the country.

Table (3): Population of the state according to the different censuses

Year	Population	Growth rate %
1973	580000	-
1983	742000	28%
1993	1148262	55%
2008	1334947	16%

Source: CBS Office-Gadarif State (2008).

Table (3) above shows the rapid increase of the populations of the state especially in the period (1983-1993) when the population increased by 55%. This rapid increasing is attributed to the great flow of immigrants from different parts of the country and the neighbor countries especially the African Horn countries for the reason of the great famine and drought destructed the region in this period. Tables (4) below shows the distribution of the populations of the state among different localities.

Table (4): Distribution of population among different localities

No.	Locality	Population	% of Total
1	Baladiyat El Gadarif	269,395	20
2	Gadarif Center	111,669	8.3
3	El Butana	71,092	5.3
4	El Fashaga	120,835	9
5	El Fao	176,662	13
6	El Rahad	135,682	10
7	El Mafaza	60,756	4.5
8	East Gallabat	113,334	8.4
9	West Gallabat	91,875	7
10	Basonda	47,562	3.5

11	El Gurreisha	83,394	6
12	Gala El Nahal	66,122	5
Total		1,348,378	100

Source: Central Bureau of Statistics – Gadarif State

Selected human development indicators

Table (5) bellow exhibits some human development indicators for Gadarif state compared to that of the whole country.

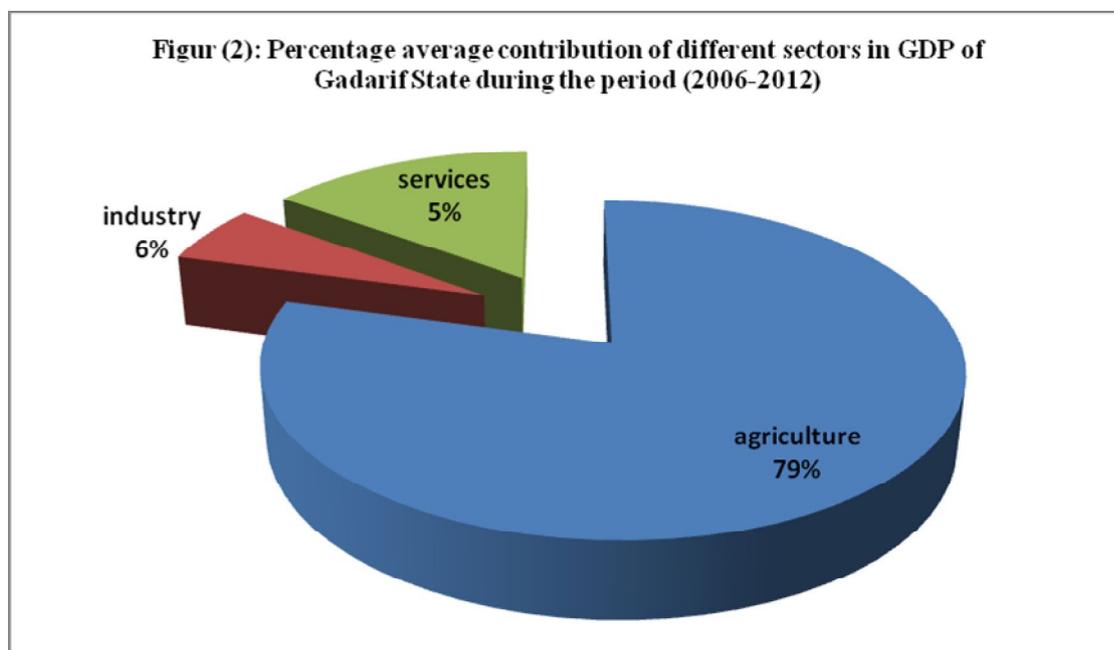
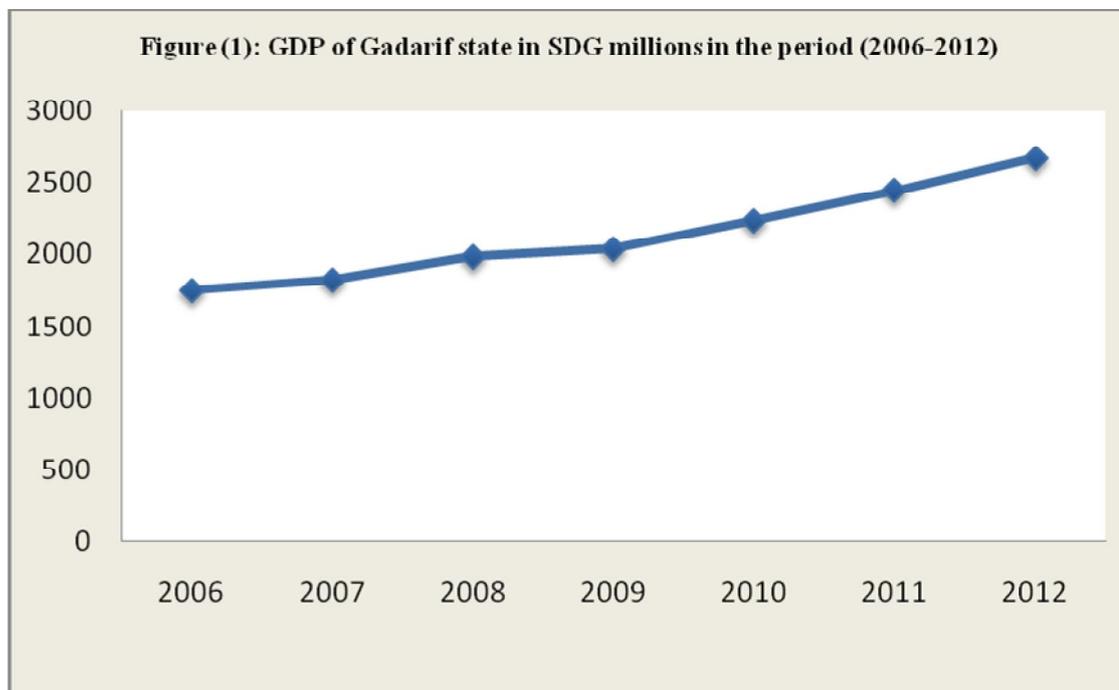
Table (5): Selected human development indicators for Gadarif State compared to Sudan in (2012)

Indicator	Gadarif	Sudan
Mother Mortality Rate (each 100000)	564	417
Child Mortality Rate <5 years (for each 1000)	20.8	22.2
Total Fertility Rate	4.8	3.9
Poverty Rate	50.1	46.5
Unemployment Rate	15	15.9

Source: Central Bureau for Statistics - 2011

4.2 GDP

Figure (1) below shows the GDP of the state during the period (2006-2012). The growth rate in this period is averaged of 5.4% (Ministry of Finance and Economy, Gadarif state 2014). Agriculture is the main sector in the state economy; it contributes of about 79% in the GDP as shown below in figure (2). Services sector constitutes 15% of the GDP of the state. The weakest sector in the state economy is the industrial sector, which contributes by only 6% in the GDP during the period above in spite of the huge agricultural and livestock production of the state. This situation attributed to the weak infrastructures and absence of incentive policies and strategies encouraging the sector in the state.



4.3 Agricultural Systems

Agriculture is constituted as the main activity in Gadarif state. Hence, of about 70% of the populations are working in the agricultural sector. The cultivable area is about 11.3 million *feddans* of improved and fertile lands. The rate of rain falling is about 100 – 500 millimeter in the year in the northern and western areas of the state and of about 500 – 900 in the east and south areas, which lay in the rich Savanna region.

There are two major types of agricultural systems in the state: the Rain fed and the irrigated agriculture. The irrigated agriculture is exists in the *Rahad* Scheme. The other type of agriculture is the Rain fed. It is divided into two types, traditional and mechanized farming. The former type is covering the most rain fed areas. Thus, the state is considered as pioneer for this type of agriculture in Sudan. It started in the area of *Gadambelya* – 45 Km west Gadarif city in the 1940s and then expanded to the most rain fed areas and became the main producer of Sorghum and Sesame in the country. Nevertheless, this type of agriculture is commercially oriented and most farmers depend on bank credits to finance their activities.

The traditional rain fed agriculture on the other hand is existed around the villages in small farms known as (*Bildat*). The main crops cultivated here are Sorghum, Millet and Sesame for subsistence purposes. Farmers in this type of agriculture use traditional forms of finance to run their activities. These forms are *Sheil*, *Katafally* and *Kasir*). But these types of finance are highly cost and do force farmers to be in perpetual indebtedness.

The total agricultural land (11.3 million *feddan*) is distributed among the different types of farming and forestry as follows:

- Total arable land	8.602.600	<i>feddans</i>
- Forestry	2.732.700	<i>feddans</i>
- Grazing	4,200,000	<i>feddans</i>

5. Analysis of Fiscal Decentralization in Gadarif State

In this section, the implementation of fiscal decentralization in Gadarif state will be outlined and evaluated on the ground of revenues assignment, expenditure assignment and intergovernmental transfers to the state during the period (1998-2012).

5.1 Assignment of Expenditure Responsibilities in Gadarif State

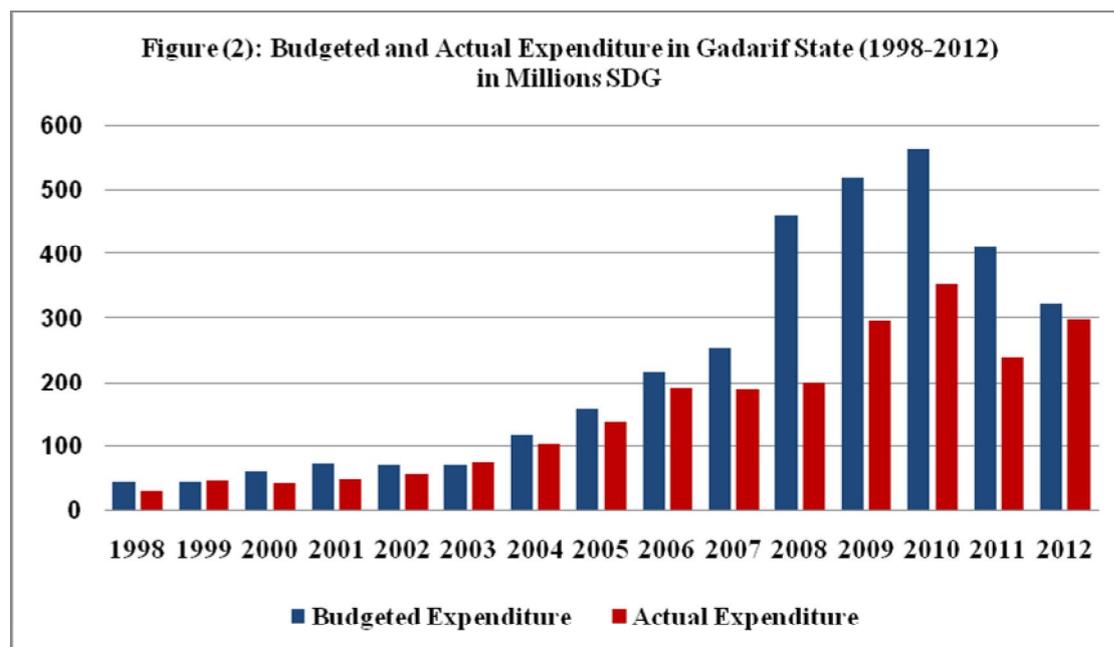
Table (6) below explains the trends of total expenditure in Gadarif state during the period (1998-2012).

Table (6): Budgeted and Total Expenditure of Gadarif State in the period (1997-2012) in Millions SDGs

Year	Budgeted Total Expenditure	Actual Total Expenditure	% of Actual/budgeted
1998	44.1	28.8	65%
1999	44.9	45.4	101%
2000	59.3	41	70%
2001	71.7	48.4	67%
2002	70.9	56.4	79%
2003	70.2	73.7	82%
2004	118.1	102	90%
2005	158.1	138	87%
2006	216.4	192	77%
2007	252.2	188	87%
2008	460.2	200	40%
2009	520.2	296	52.3%
2010	566.7	354.9	42.7%
2011	265.2	237.7	90%
2012	321.8	297.7	93%
Average			75%

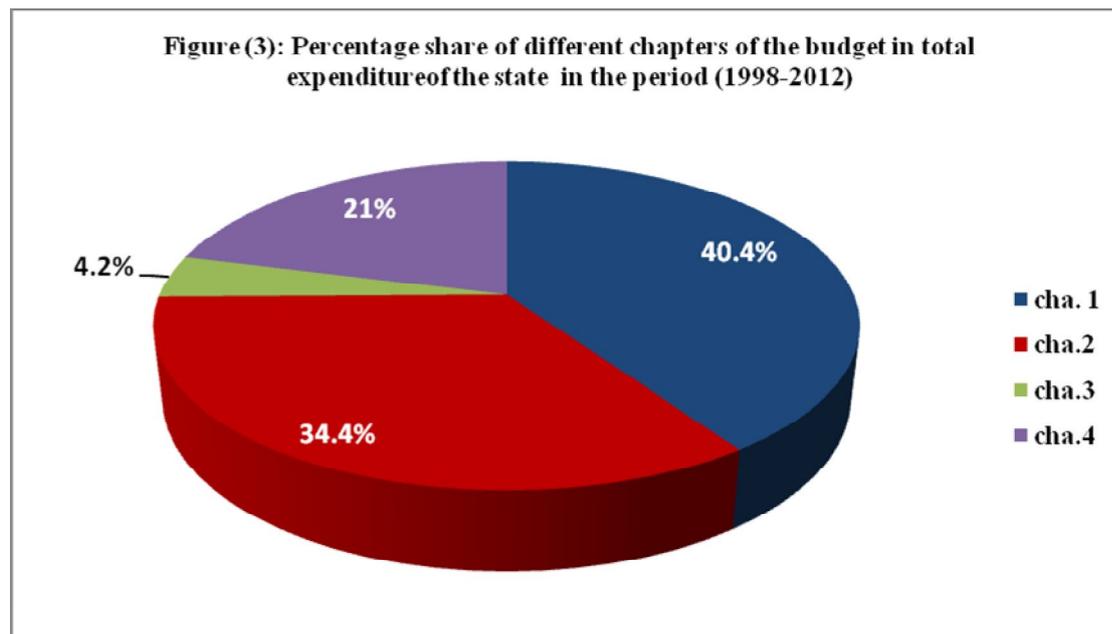
Source: Ministry of Finance & Labor Forces – various Economic Reviews.

Table (6) above and figure (2) below show the instable fluctuations of the percentage of actual to the budgeted expenditure of the state, i.e. in 1999 it reported 101%, while in the years 2008, 2009 and 2010 reported 40%, 52.3% and 42.7% respectively suggesting the weaker capability in preparing the budget in the state.



Expenditure Allocation in the state

Figure (3) below shows the structure of the expenditure of the state in terms of its different chapters during the period (1998-2012).Chapter One indicates thesalaries and wages, Chapter Two is of government expenditure on goods and services, chapter three exhibits capital goods and chapter four is of the development.



The table and the figure above indicate that only 21% of the budget devoted to the development in this period suggesting the poor performance of the services in the state, namely water, health and education. Furthermore, chapter one of the wages and salaries averages of the 40.4% of the budget.

Regression Analysis

In this context, two simultaneous equations will be attempted to investigate the expenditure and the revenue response to federal transfers and GDP of the state during the period (1998-2012). The importance of fiscal response of the sub national government analysis stems from that it is forecasting the impact of different transfer's designs on local fiscal behavior, which estimates both the level of transfers required and the impact of the transfers on their objectives. The similar analysis found in Bahl and Lin (1992), Gramlich (1977) and Mushkin & Cotton (1968).

State Expenditure Response

In this context, total expenditure of the state is regressed to GDP and federal transfers of the period (1998-2012) to investigate the impact of federal transfers on expenditure by estimating the grant elasticity which indicates whether the transfers have stimulation or substitution

impact on the state expenditure. To accomplish this objective, the following equation will be estimated:

$$TE = \alpha_0 + \alpha_1 Trans + \alpha_2 GDP + \mu_t \text{ Where}$$

TE: is the Total Expenditure of the state

Trans: is the Federal Transfers to the state

GDP: is the GDP of the state; and

μ_t : is the random variable

Time series data of the above variables of the period (1998-2012) have been used to investigate the factors affecting the total expenditure of the state. Results of the estimates of the equation are shown in table (7) below:

Table: (7): Results of total expenditure equation estimation of the period (1998-2010)

Dependent Variable	Independent Variable	Coefficient	T-Value	Sig.	R²	F Change
Log TE	(Constant)	-9.6	-3.4	00	0.89	37.4*
	Log GDP	1	3.9	00		
	Log Trans	-0.06	-0.3	0.8		

Source: Own calculation

* *Significant at 1%*

Results of table (7) above show that increase in one SDG in GDP associates with an increase in the total expenditure by the same value. With regard to the transfers, it is found insignificant to total expenditure indicating that the increase in transfers have no substitution impact on the expenditure of the state. This result can be interpreted as that the central

government deeply intervene in control and directing the federal transfer, affecting the fiscal autonomy of the state.

5.2 Decentralization of Revenue Sources of the State

In this part, the analysis will emphasized on the performance of different revenues sources of the state, revenue effort, fiscal imbalance and the impact of federal transfers in the period (1997-2012). Figure (4) below shows the budgeted and the actual total revenues of the state during the period (1997-2012).

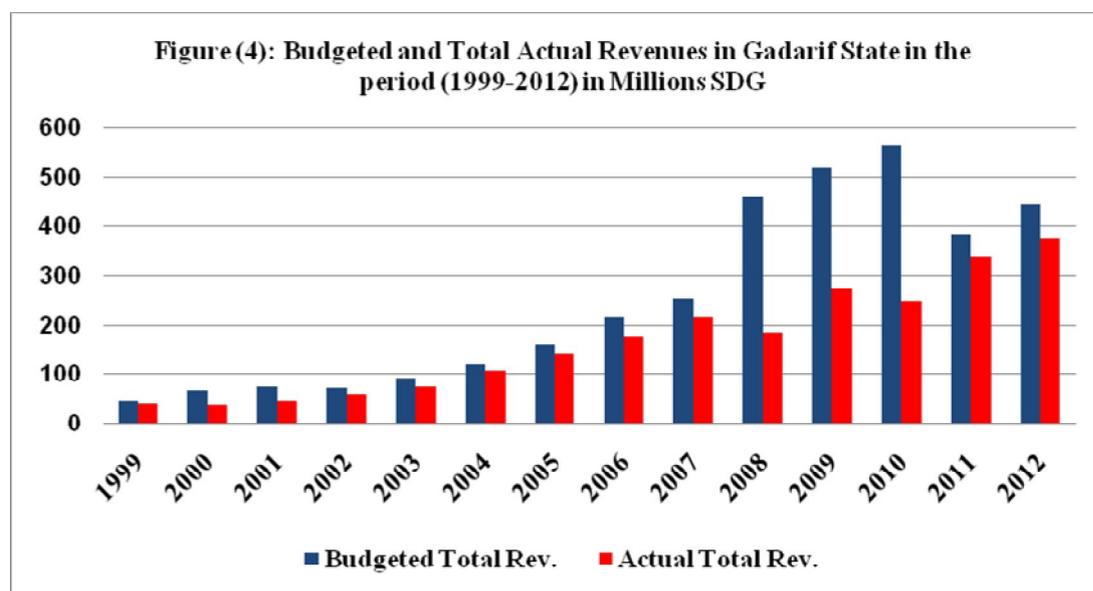


Figure (4) above shows that the actual total revenues of the state reported a weak performance in this period. For example, it accounted 71% of the budgeted total revenue, and then witnessed a rapid deterioration in the next three years (2008, 2009 and 2010) constituting of only 47%, 52% and 44% respectively. To promote the revenue performance of the state, detailed data of all revenue bases should be provided to set realistic and achievable revenues in the budget.

Share of Different Sources in Total Revenues of the State

Figure (5) below shows the share of different sources of revenues of the state during the period of the study.

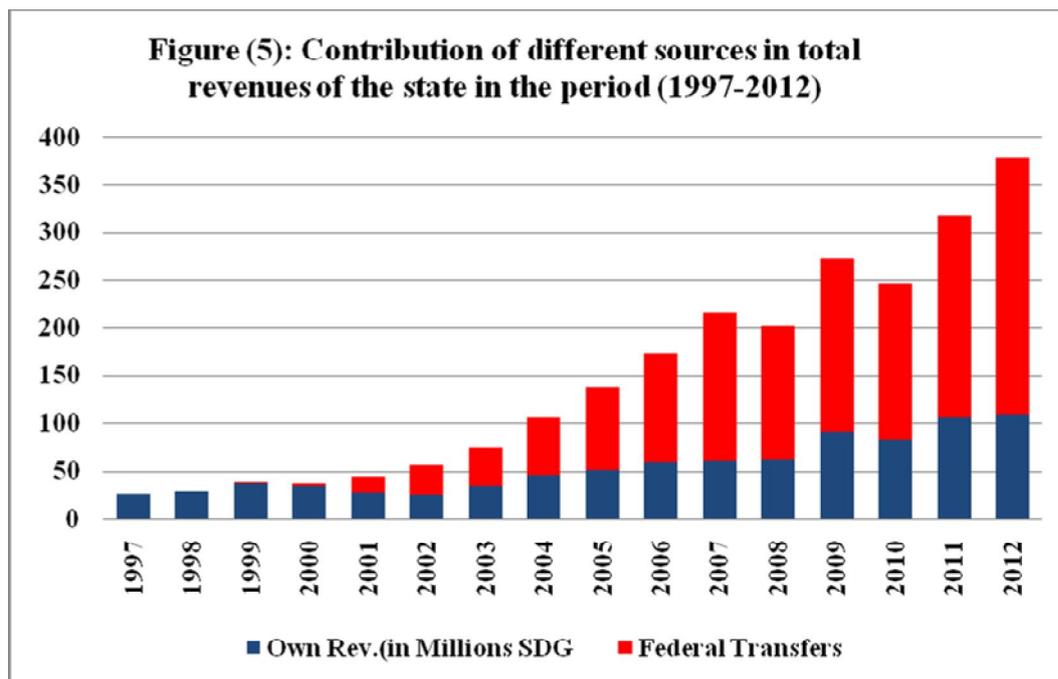
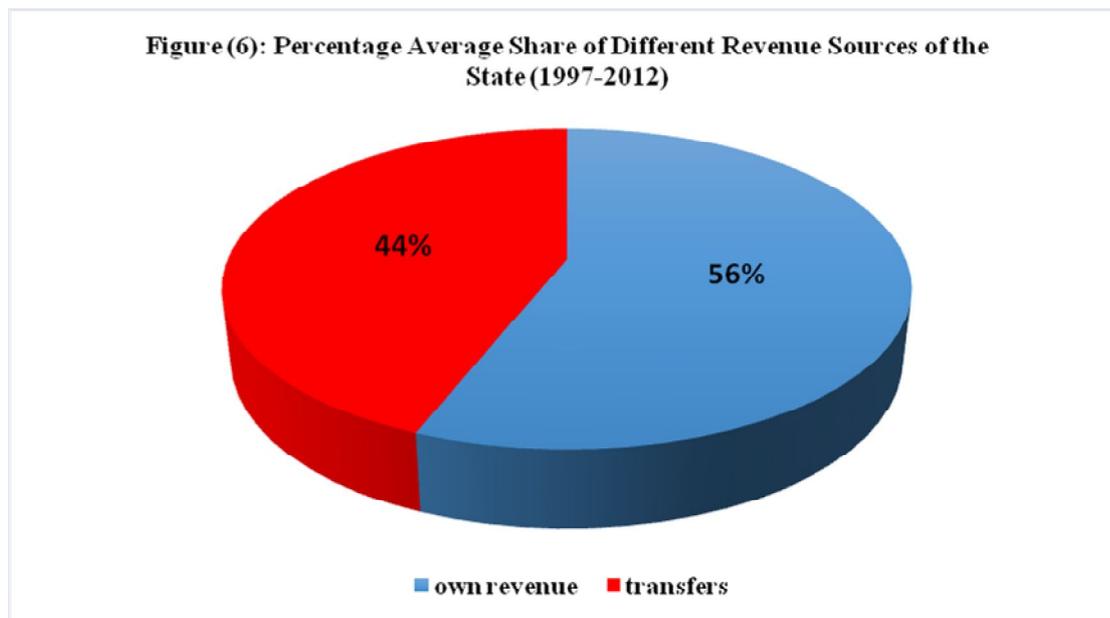


Figure (5) above explains that the gap between the own revenues of the state and the federal transfers is rapidly expanding by the time. Thus, in 1997 and 1998 the state is self-dependent. However, this situation is rapidly gone worst when the federal transfers reached 73% of the total state revenues in 2012. This deterioration in the total revenue of the state is attributed mainly to the republican decree of 2001, which removed the tax on agriculture. As the state's economy is agricultural in nature (about 89% of GDP of the state), the own revenue declined while the compensation made by the federal government failed to recover the fiscal imbalance made.

The figure below shows the percentage average shares of the own revenues of the state and the federal transfers in the period (1997-2012). It averages of 56% and 44% respectively.



Fiscal Imbalance in Gadarif State

Table (8) below shows the vertical imbalance (VI) of the state during the period of the study.

It is calculated as follows:

$$VI = 1 - \frac{\textit{Own Revenues}}{\textit{Total Expenditure}}$$

Table (8): Vertical Imbalance of Gadarif State during the period (1998-2012)

year	(1) Own Rev.(in Millions SDGs)	(2) Total Expenditure (in Millions SDGs)	(3)Imbalance (1/2)	(4)Vertical Imbalance 1- (3)
1998	28.8	28.8	1.00	0
1999	38.3	45.4	0.84	0.16
2000	34.9	41	0.85	0.15
2001	27.9	48.4	0.58	0.42
2002	25.1	56.4	0.45	0.55
2003	34.8	73.7	0.47	0.53
2004	45.0	102	0.44	0.56
2005	50.3	138	0.36	0.64
2006	59.3	192	0.31	0.69
2007	60.8	188	0.32	0.68
2008	61.3	200	0.31	0.69
2009	90.4	296	0.31	0.69
2010	75.3	354.9	0.21	0.79
2011	106.1	237.7	0.45	0.55
2012	108.2	297.7	0.36	0.64
Average				0.52

Source: Own Calculation

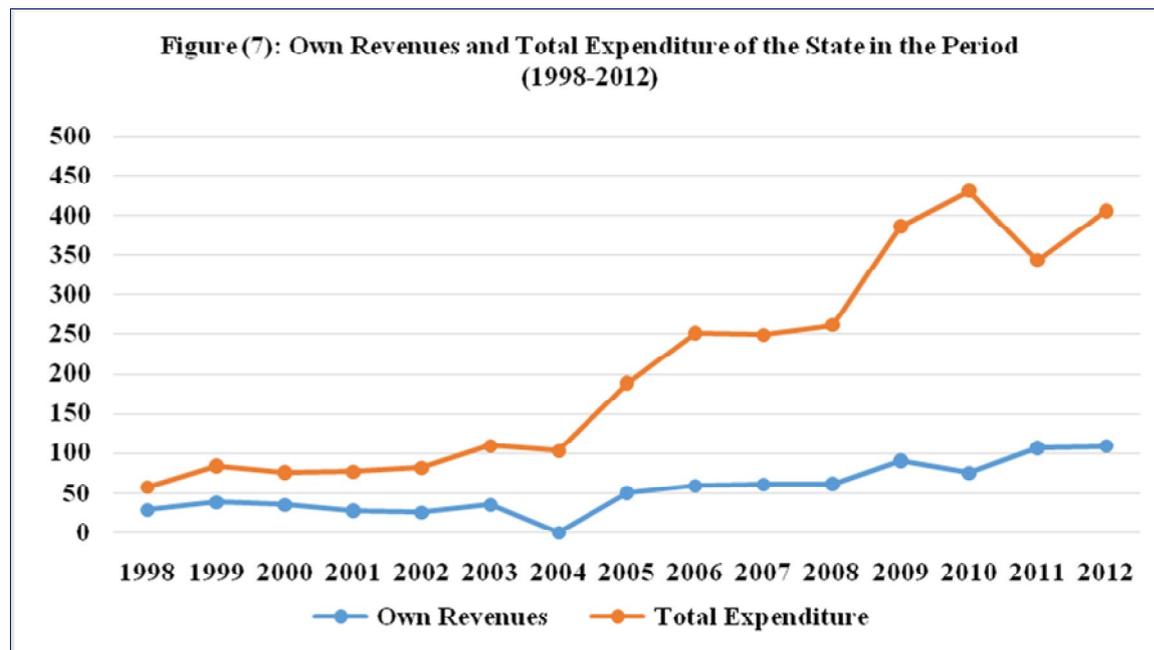


Table (8) and figure (7) above show that the vertical imbalance in the state is rapidly increasing i.e. it grows from 16% in 1999 to 79% in 2010 indicating the higher deterioration of the fiscal performance of the state under fiscal decentralization. However, it averages of 52% in this period. This situation reflects the failure of the state to attain the fiscal autonomy and perform its responsibility of services provision to its constituents. .

Revenues Effort in Gadarif State

Revenues effort is calculated as the ratio of total revenues of the state to GDP. It is used to investigate whether the revenues collection reflects the economic activities in the state. Table (9) below presents the revenue effort of the state in the period (1998-2012).

Table (9):Revenue Effort in Gadarif State during the period (1998-2012)

year	(1) GDP Millions SDGs)	(2)Total Revenue (Millions SDGs)	(3) Revenue efforts (2)/(1)
1998	1022.5	27.1	0.03
1999	1113.3	28.8	0.03
2000	1314.5	38.9	0.03
2001	1236.1	37.6	0.04
2002	1542.9	44.6	0.04
2003	1532.6	56.3	0.05
2004	1597	73.8	0.07
2005	1720	106.8	0.08
2006	1752.8	140	0.10
2007	1826	173	0.12
2008	1980	216.4	0.09
2009	2039.3	183.8	0.13
2010	2230.9	271.9	0.11
2011	2440.4	337.1	0.14
2012	2667.4	376.8	0.14
Average			0.08

Source: Own Calculation

Table (9) above shows the poor performance of revenues effort of the state. Hence, it averages only of 8% in the above period. This situation can be attributed to the in-adequate assignment of revenues sources i.e. most revenues sources assigned to the state level were in efficient and highly conflicting with the constituents. Moreover, the higher tax evasion, weak personnel, and wide exemptions were also responsible of the weak performance of the revenue effort of the state.

Share of Tax and Non-tax Revenues in total State Revenues

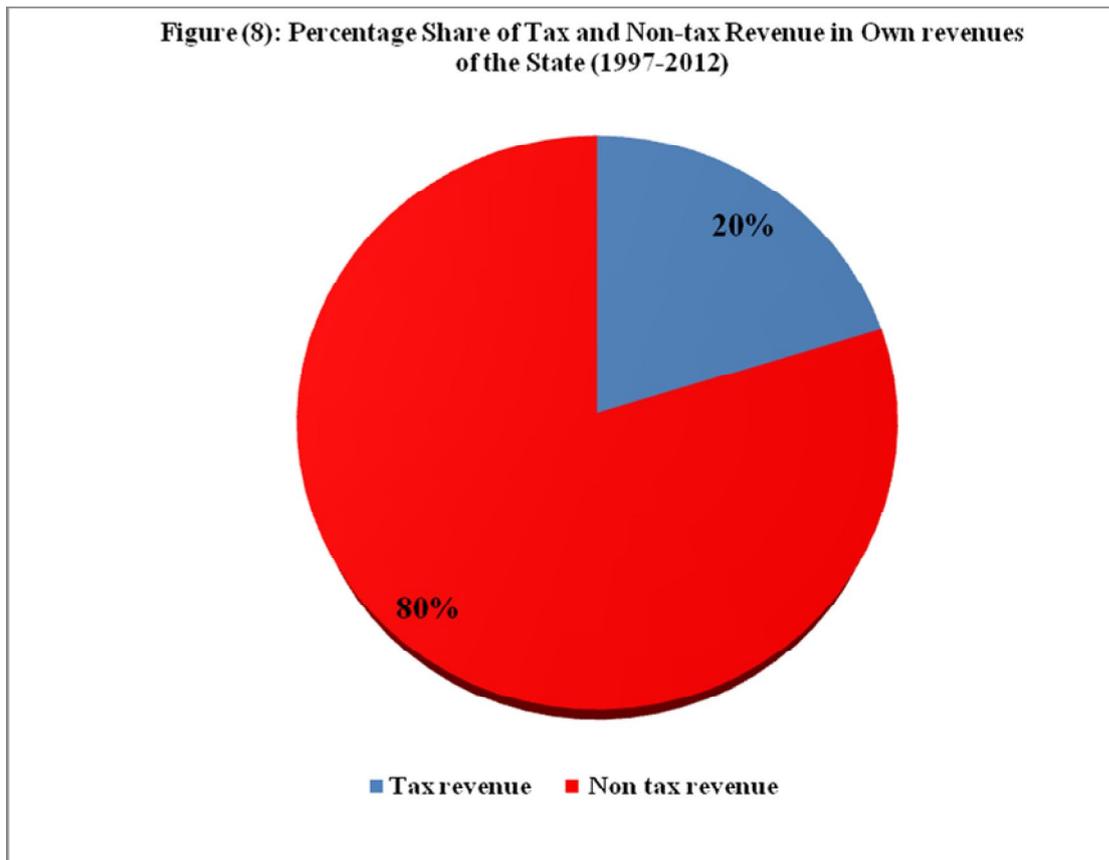
Table (10) below shows the share of tax and non-tax revenues in total revenue of the state in the period (1997-2012).

Table (10): Tax and non-tax Revenues (in million SDGs) in Gadarif State (1997-2012)

Year	Tax Rev.	%of State Rev.	Non tax	% of state Rev.
1997	6.4	23.5	20.7	76.5
1998	5.8	20.1	23	79.1
1999	8.7	22.7	30.2	77.3
2000	5.1	13.7	23.9	86.3
2001	4.7	16.8	39.9	83.2
2002	4.9	19.5	51.4	80.5
2003	5.9	17	67.9	83
2004	7.2	16	99.6	84
2005	9.1	18	130.9	82
2006	13.6	23	159.4	77
2007	15.8	26	200.6	74
2008	17.2	29	166.6	71
2009	27	29.9	244.9	70.1
2010	29.2	35.5	216.7	64.5
2011	36.2	10.7	301	89.3
2012	50.1	13.3	326.7	86.7
Average		20.9		79.1

Source: Own Calculation using data of Ministry of Finance & Labor Forces- Gadarif State.

Table (10) and figure (8) explains the higher distortion of the revenue structure of the state reflected by the rapid deterioration of the tax revenues compared to the non-tax revenues, which averages of 79.1% of the total revenue of the state in the above period. This situation is mostly due to the removing of the agricultural tax in 2001. However, the failure of revenue assignment is also responsible of this situation.



Impact of transfers on the state revenues (regression analysis)

In this consider, data of state revenues (*Strev*), transfers from federal government (*Trans*) and the GDP of the state of the period (1998-2012) will be used to examine the response of state revenues to federal transfers. Thus, parameters of the following equation will be estimated:

$$Strev = \alpha_0 + \alpha_1 Trans + \alpha_2 GDP + \mu_t$$

Using OLS technique for data of the above variables in logarithmic form, table (11) presents estimates of the above equation.

Table: (11): Estimates of state revenues equation of the period (1998-2012)

Dependent Variable	Independent Variable	Coefficient	T-Value	Sig.	R²	F Change
logStrev	(Constant)	-6.511-	-2.719	.024	73%	12*
	LogTrans	-.134	-1.455	.18		
	LogGDP	2.616	3.325	.01		

Source: Own calculation

* Significant at 5%

Results shown in table (11) reveal that variations in state revenues are not responding to the federal transfer's variations (it found insignificant), indicating the failure of one of the basic objectives of the federal transfers of inducing the local revenues - by directing the transfers to productive channels. However, the GDP is found significant at 1% with higher elasticity (2.6)

6. Concluding Remarks

This study aimed at evaluating the experience of fiscal decentralization of Gadarif state in the period (1997-2012). Therefore, expenditure decentralization, revenue decentralization, and

fiscal imbalance were analyzed in the context of the fiscal decentralization objectives. To accomplish these objectives, different methods have been utilized. Indicators of revenue effort and fiscal imbalance were calculated to evaluate the performance of revenue and expenditure assignment in terms of fiscal autonomy and fiscal imbalance. Time series regressions of data for the period (1998-2012) were attempted to investigate the response of revenue, expenditure and transfers to their different arguments.

Results of the study revealed that the fiscal situation of the state had rapidly deteriorated since the implementation of the fiscal decentralization system in 1995. Thus, no fiscal autonomy has been realized as the federal transfers constituted of about 73% of the total state revenues in 2012 and the revenue effort is reported only to 8% of GDP as the average of the period (1998-2012). The vertical imbalance averaged 52% in the same period. The regression results also indicated that the state revenues were not responding to the federal transfers.

To promote the fiscal decentralization system and to overcome the poor situation with regard of revenue and expenditure of Gadarif state, emphasis should be directed to different aspects. These policy measures recommended are:

- Revenue administrators should be empowered to increase the own revenue to acquire fiscal autonomy.
- Provision of detailed information about the different revenue source bases to help setting achievable targets for revenues in the budget.
- Local administrations should be given clear assignments with regard of their revenue and expenditure responsibilities.
- Directing the transfers to productive channels.

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