



**Southern Voice**  
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**18**

**Exploring Domestic Financing  
Options for Post-2015  
Development Agenda in Selected  
Sub-Saharan African Countries**

**Eberechukwu Uneze**

**Adedeji Adeniran**

**EXPLORING DOMESTIC FINANCING OPTIONS FOR  
POST-2015 DEVELOPMENT AGENDA IN SELECTED  
SUB-SAHARAN AFRICAN COUNTRIES**

*Southern Voice Occasional Paper 18*

*Eberechukwu Uneze*

*Adedeji Adeniran*

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*Dr Eberechukwu Uneze* is the Executive Director of the the Centre for the Study of the Economies of Africa (CSEA), Nigeria. He can be reached at: [euneze@cseaafrica.org](mailto:euneze@cseaafrica.org)

*Mr Adedeji Adeniran* is a Research Associate at the the Centre for the Study of the Economies of Africa (CSEA), Nigeria. He can be reached at: [aadedeji@cseaafrica.org](mailto:aadedeji@cseaafrica.org)

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**Southern Voice on Post-MDG International Development Goals**

Website: [www.southernvoice-postmdg.org](http://www.southernvoice-postmdg.org)

E-mail: [southernvoice2015@gmail.com](mailto:southernvoice2015@gmail.com)

**Secretariat:** Centre for Policy Dialogue (CPD)

House 6/2 (7th & 8th floors), Block - F

Kazi Nazrul Islam Road, Lalmatia Housing Estate

Dhaka -1207, Bangladesh

Telephone: (+88 02) 9141734, 9141703, 9126402, 9143326 & 8124770

Fax: (+88 02) 8130951; E-mail: [info@cpd.org.bd](mailto:info@cpd.org.bd)

Website: [www.cpd.org.bd](http://www.cpd.org.bd)

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**Editor**

Debapriya Bhattacharya, PhD

Chair, *Southern Voice on Post-MDG International Development Goals*

and Distinguished Fellow, CPD

E-mail: [debapriya.bh@gmail.com](mailto:debapriya.bh@gmail.com)

**Cover Design**

Avra Bhattacharjee

# Preface

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The *Southern Voice on Post-MDG International Development Goals* works as an open platform, and is a network of 48 think tanks from Africa, Latin America and Asia that seeks to contribute to the global post-2015 dialogue. Motivated by the spirit of wide academic inquiry, the initiative is committed to provide quality data, empirical evidence and policy analyses, derived from research in the countries of global South. Through strategic engagements, *Southern Voice* aspires to address the existing 'knowledge asymmetry' and 'participation deficit' afflicting the global discourse on post-2015 agenda.

With these goals in mind, *Southern Voice* launched a call for papers among its members to inform the global debate based on promoting original research on new issues that have emerged from various reports, structured conversations concerning the post-2015 agenda as well as from the discussions around them and beyond. Eleven research grants were offered during this phase.

In response to the call, we received numerous proposals which were reviewed by *Southern Voice* members. The research papers were also peer reviewed, and the revised drafts were later validated by the reviewer.

The resulting collection of papers highlights some of the most pressing concerns for the countries of the global South. In doing so, they explore a variety of topics including social, governance, economic and environmental concerns. Each paper demonstrates the challenges of building an international agenda which responds to the specificities of each country, while also being internationally relevant. It is by acknowledging and analysing these challenges that the research from the global South supports the objective of a meaningful post-2015 agenda.

In connection with the ongoing debates on post-2015 international development goals, **Exploring Domestic Financing Options for Post-2015 Development Agenda in Selected Sub-Saharan African Countries** by *Dr Eberechukwu Uneze*, Executive Director for Centre for the Study of the Economies of Africa (CSEA), Nigeria and *Mr Adedeji Adeniran*, Research Associate, CSEA explores the revenue potential of key domestic financing options currently being proposed for the post-2015 development agenda in five Sub-Sahara Africa countries.

Contributions of *Ms Andrea Ordóñez*, Research Coordinator of the initiative and *Ms Mahenaw Ummul Wara* (Research Associate, Centre for Policy Dialogue (CPD) and Focal Point at the *Southern Voice* Secretariat) in managing and organising the smooth implementation of the research programme are gratefully acknowledged.

I would also like to thank *Professor Mustafizur Rahman*, CPD, Dhaka for peer reviewing, and *Dr Oliver Turner* for copy editing the paper. I would like to take this opportunity to recognise the support of Think Tank Initiative (TTI) towards *Southern Voice*, particularly that of *Dr Peter Taylor*, Programme Leader, TTI.

I hope the engaged readership will find the paper stimulating.

Dhaka, Bangladesh  
December 2014

*Debapriya Bhattacharya, PhD*  
Chair  
*Southern Voice on Post-MDG International Development Goals*  
and  
Distinguished Fellow, CPD  
E-mail: debapriya.bh@gmail.com

# Abstract

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This paper examines the revenue potential of key domestic financing options currently being proposed for the post-2015 development agenda in five Sub-Saharan Africa countries. The financing options include: tax revenue, domestic savings, capital flight, diaspora resources, financial transaction tax and domestic philanthropy. For the existing financing options, the paper examines the potential of scaling up the present level of revenue. In the case of new financing options, the prospects of, and the scope for, generating revenue are investigated. The paper finds that each country has a strong revenue potential in at least two of the financing options. While this does not suggest that the likely revenue will be enough to meet the financing requirement being proposed for the post-2015 agenda, it demonstrates the viability of domestic resources, and the need to explore them, if only to complement other financing options, especially foreign aid.

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# Acronyms

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CSO	Civil Society Organisation
CSR	Corporate Social Responsibility
FDI	Foreign Direct Investment
FIU	Financial Intelligence Unit
FTT	Financial Transaction Tax
GDP	Gross Development Product
GNI	Gross National Income
MDG	Millennium Development Goal
NGO	Non-Government Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
SSA	Sub-Saharan Africa
UNDESA	United Nations Department on Economic and Social Affairs
UNDP	United Nations Development Programme
USD	United States Dollar

# Exploring Domestic Financing Options for Post-2015 Development Agenda in Selected Sub-Saharan African Countries

*Eberechukwu Uneze*

*Adedeji Adeniran*

## 1. Introduction

Many developing countries will not meet the Millennium Development Goals (MDGs) due to a number of factors among which finance is paramount. The importance of finance has, therefore, been recognised in the various discussions leading up to the post-2015 development agenda. While the MDGs focused on foreign aid as its major source of financing, the post-2015 agenda is essentially emphasising domestic resource mobilisation and private sector funding. In this instance, a sustainable financing strategy will be crucial to achieving the ambitious targets and goals being proposed in the post-2015 development agenda.

In the past, the prospect of financing development through domestic resource mobilisation in the Sub-Saharan Africa (SSA) countries was viewed with skepticism due to weak economic growth and lack of technical capacity for effective tax administration (Aryeetey, 2004). However, over the last two decades, the weaknesses of external sources of finance have become more evident. For example, the external debt financing model that was adopted in the 1970s and 1980s in many developing countries resulted in debt crisis that had a debilitating effect on their economies (Ajayi, 1997). Also, foreign aid has, in recent times, become increasingly unpredictable and unsustainable as economic uncertainty pervades the world (Greenhill and Prizzon, 2012). This has resulted in a rethink in the development financing strategy, with greater emphasis on domestic resource mobilisation, especially since the strong growth experienced by many countries in the African continent.

A number of domestic financing sources for post-2015 have been identified in the development finance literature.<sup>1</sup> In this paper, we examine the revenue potentials of six of these financing sources for five SSA countries across the four regional blocs. These sources include three gap existing financing sources: tax revenue, domestic savings and capital flight, and three of the emerging financing sources: diaspora resources, financial transaction tax and domestic philanthropy.

Our objective is to shift the focus of the debate on financing for post-2015 from “what options are available” to “what options are viable.” While recent literature has identified a wide range of domestic financing options from which developing countries could draw on for the post-2015 development agenda, the revenue potentials of these channels have not been critically examined. It is therefore crucial to understand which among the financing options would be effective and what factors would enable their effectiveness?

Understanding these issues has important policy implication both for designing the financing strategy and setting the goals and targets for the post-2015 development. By providing an insight into the revenue potential of key domestic financing sources, policymakers are better informed on the expected financial flows. Hence, the post-2015 goals and targets will be aligned with available and potential resources.

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<sup>1</sup>A detailed review of the financing channels and sources for post-2015 can be found in United Nation Conference Sustainable Development (UNCSD, 2012), World Bank (2013), Greenhill and Ali (2013).

The rest of this paper is organised as follows. Section 2 provides an overview of Africa's performance on the MDGs and the role of finance. Section 3 gives a brief review of the preliminary cost estimate for post-2015 agenda. Section 4 examines the revenue potential of the identified financing options in the selected countries. Finally, conclusions and recommendations are given in Section 5.



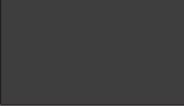




## 2. An Overview of Africa's Performance on the MDGs

With less than a year to the end of the MDGs, poverty levels are still very high. Similarly, the incidence of child mortality and maternal mortality remains predominantly high in spite of the efforts made at reducing it. However, appreciable progress has been recorded in the areas of gender disparity and universal primary education.




Table 1 summarises the performance of SSA countries in the key MDGs. The region is not likely to meet four out of the seven goals.<sup>2</sup> Even in areas where substantial progress has been recorded, there are concerns about sustainability and quality of the progress. For example, despite the 90 per cent primary school enrollment, completion rate has remained low at 65.6 per cent, with 45 per cent of enrolled primary school children without basic skills (Van Fleet, 2012).

Another disturbing issue is the increasing negative effect of climate change, which is a threat to the progress made towards achieving Goal 7 – environmental sustainability. As Table 1 reveals, most SSA countries reduced their consumption of ozone-depleting substances by more than 50 per cent. Yet, SSA has been identified as the most vulnerable area to climate change due to the absence of infrastructure, human and institutional capacity and financial resources to mitigate such threat (Vincent, 2004). Thus, SSA countries face enormous challenges that could impede the achievement of the MDGs.

**Table 1: MDGs Progress in Sub-Saharan Africa**

MDG	Progress	Status
Goal 1: Eradication of extreme poverty and hunger	<ul style="list-style-type: none"> <li>\$1.25-a-day poverty in Africa (excluding North Africa) declined from 56.5 per cent to 47.5 per cent during 1990-2008</li> </ul>	
Goal 2: Achieve universal primary education	<ul style="list-style-type: none"> <li>Average enrolment exceeds 80 per cent</li> </ul>	
Goal 3: Promote gender equality and empower women	<ul style="list-style-type: none"> <li>Good progress at primary level, but weak parity at secondary and tertiary levels of education</li> <li>High representation in parliament</li> </ul>	
Goal 4: Reduce child mortality rate	<ul style="list-style-type: none"> <li>Declining, but slowly</li> </ul>	
Goal 5: Improve maternal health	<ul style="list-style-type: none"> <li>Declining, but slowly</li> </ul>	
Goal 6: Combat HIV/AIDS, malaria and other disease	<ul style="list-style-type: none"> <li>HIV/AIDS on the decline, especially in Southern Africa, due to behavioural change and access to antiretroviral therapy</li> </ul>	
Goal 7: Ensure environmental sustainability	<ul style="list-style-type: none"> <li>Improved portable water supply</li> <li>Most countries reduced consumption of ozone-depleting substances by more than 50 per cent</li> </ul>	

**Source:** Compiled from the United Nations Report on MDGs in Africa (2012).

**Note:**  Achieved;  Likely to be achieved;  Not likely to be achieved.

<sup>2</sup>Easterly (2009) provided a more pessimistic projection of African progress towards MDGs in which none of the goals is expected to be met. However, his position is for a more cautious measure of progress in Africa.

In spite of this disappointing regional performance, it is important to examine the countries individually. This is because looking at the average performance of the entire region could blur the outstanding achievements made by some countries. To better understand this, we rely on the work carried out by United Nations Development Programme (2012). The results are presented in Table 2. It shows that South Africa and Ghana have made most progress among the selected countries, having achieved three of the MDGs. In fact, both countries have exceeded the target on poverty reduction, a goal which remains elusive in most developing countries. Ethiopia is likely to meet all the targets (except for improving maternal health), if the rate of current achievement is sustained. However, Nigeria and Gabon are less likely to meet most of the MDGs and are yet to fully achieve any target. For the seven goals, Goal 3 seems to be the most attainable by the selected countries, while Goal 5 is the least attainable.

**Table 2: MDGs Progress in Selected Countries**

MDGs	Status				
	Nigeria	South Africa	Ethiopia	Ghana	Gabon
Goal 1: Eradication of extreme poverty and hunger					
Goal 2: Achieve universal primary education					
Goal 3: Promote gender equality and empower women					
Goal 4: Reduce child mortality rate					
Goal 5: Improve maternal health					
Goal 6: Combat HIV/AIDS, malaria and other disease					
Goal 7: Ensure environmental sustainability					

**Source:** Compiled from the United Nations Development Programme (UNDP) country reports on the MDGs (2012).

Table 3 examines the quality of progress made on Goals 1, 2, 3 and 7 in the selected countries. For Goal 1, we compare changes in poverty and inequality in the past decade. The result shows that poverty reduction has been accompanied by increase in income inequality, except in Nigeria. Given that rising inequality stands in the way of upward income mobility for the poor, the post-2015 development agenda will have to address the twin challenges of poverty and inequality. Also, despite the remarkable progress made towards Goal 2 in terms of increased primary school enrolment, the

**Table 3: Comparison of MDGs Progress along Different Dimensions**

Country	Goal 1: Poverty Eradication		Goal 2: Universal Primary Education		Goal 3: Gender Equality		Goal 7: Environmental Sustainability	
	Poverty Change	Inequality Change	Primary Enrolment	Quality of Education	Gender Parity in Primary Enrolment	Female in Parliament as at 2013	CO2 Intensity (kg per kg of Oil Equivalent Energy Use)	
							2000	2010
Ethiopia	24.93	-3.60	95.90	44.73	0.93	28.00	0.23	0.20
Gabon	-	-	94.27	91.43	0.95	16.00	0.72	1.30
Ghana	10.53	-2.01	88.50	67.90	0.96	11.00	0.81	0.90
Nigeria	14.14	6.76	88.80	41.67	0.90	7.00	0.87	0.89
South Africa	12.43	-5.37	98.90	66.30	0.96	42.00	3.37	3.23

**Source:** Poverty, inequality, female in parliament and CO2 intensity are obtained from World Development Indicators (2014), primary enrolment is extracted from UNDP country reports on MDGs (2012) and quality of education is obtained from Africa Learning Barometer by Van Fleet (2012).

quality of education remains very weak. For example, learning of basic skills is still an issue and remains comparably low in Africa. Similarly, progress achieved under Goal 3 with regards to gender equality in decision making measured by percentage of female parliamentarian is significantly lower compared to progress made in gender parity in primary school enrolment. There are also concerns about the progress made towards achieving Goal 7, especially regarding the intensity of CO<sub>2</sub> utilisation, the primary agent responsible for global warming, which increased considerably between 2000 and 2010. These concerns show that development outcomes are mixed, with progress encompassing different dimensions and varieties. What this means is that the post-2015 will need to be broader in scope.

Achieving many of these goals will depend on a number of factors, especially on the continuous flow of projected funds. However, recent experiences have shown that these factors are already standing in the way of the MDGs. For example, Atisophon *et al.* (2011) estimated that of the USD 120 billion financing deficit faced by developing countries, only USD 64 billion could be potentially filled through domestic taxes. This means that most countries will continue to depend on foreign aid and other private resources. This is even more so for low-income countries with low potential to increase their domestic resources. Interestingly, foreign aid has not increased enough to close this financing gap. For example, between 2000 and 2010, the amount of foreign aid to SSA was about USD 40 billion to USD 50 billion, while the proportion used for direct funding of MDGs was only 40 per cent (UN Millennium Project, 2005).

Likewise, foreign direct investment (FDI) flows to SSA, which to some extent helped close the investment-savings gap, also declined. UNCTAD (2013) shows that gross FDI to Africa dropped by more than 17 per cent in 2010. In addition, FDI flow is skewed towards middle-income countries and the extractive industries, thereby reducing the potential effect on MDGs-related sectors (UNCTAD, 2005). In essence, poor funding is adversely affecting the current implementation of the MDGs in many developing countries.

However, other factors besides finance are equally responsible for the poor performance of many SSA countries on the MDGs. UN Millennium Project (2005) notes that low human capacity, poor governance and weak institutions negatively affect the efficiency of service delivery and the effectiveness with which the MDGs are implemented. As a result, SSA lost an estimated USD 432 million in domestic resources to money laundering, illicit financial transaction and other incidences of capital flight between 2000 and 2010.

In terms of appropriation, priorities have been given to unproductive and unsustainable activities in the economy such as fossil fuel subsidy, which is economically costly as well as harmful to the environment. International Energy Agency (2013)<sup>3</sup> notes that developing countries spent USD 410 billion on fossil fuel subsidy in 2012, which according to Granado *et al.* (2010) only 7 per cent of the subsidy reached the bottom 20 per cent households. Another factor noted by Scott and Seth (2012) is the neglect of Africa's infrastructural deficit under the MDGs framework, which is estimated at about USD 93 billion per annum. The MDGs focus more on ends – the development goals, while underemphasising the means – the infrastructure and human resources needed to meet the ends. Overall, it is important to note that good institutions and infrastructure are enablers of development and are as important as closing the financing gap.

### **3. A Review of the Financial Estimates for the Post-2015 Agenda**

The estimate of the cost of the post-2015 development agenda will only be known with some precision when the goals and targets are clearly set out. Nonetheless, there seems to be a consensus that the post-2015 goals will be broad as it will encompass the unfinished MDGs plus goals on sustainability –

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<sup>3</sup>International Energy Agency, World Energy Outlook, Recent Development in Energy Subsidies.[http://www.worldenergyoutlook.org/files/ann\\_plansphatsent.pdf](http://www.worldenergyoutlook.org/files/ann_plansphatsent.pdf)

objectives promoting climate change and energy access for all. It is on this assumption that several attempts have been made to estimate the cost of the post-2015 development agenda. In this case, we move on to review some of the preliminary estimates in the literature.

As Greenhill and Ali (2013) argue, there are two ways to quantify the cost of implementing the post-2015: sectoral approach and sustainable growth approach. The sectoral approach involves assessing the financial requirement of achieving a given set of targets across some specific sectors that are likely to be included. Based on this approach, Greenhill and Ali estimated that between USD 586 and 1,086 billion per annum will be required, across five main sectors: sustainable energy, food security and agriculture, education, health, and water and sanitation. The sustainable energy sector takes the bulk of the expenses between USD 434 billion and USD 934 billion, followed by food security and agriculture (USD 50.2 billion), education (USD 38 billion), health (USD 37 billion) and water and sanitation (USD 26.8 billion).

In a more detailed review of the sectoral cost, the UN Task Team Working Group on Sustainable Development Finance (2013) reported that the “unfinished” MDG sectors will require an additional USD 20-200 billion per year. New goals such as infrastructure financing will require between USD 1-3.2 trillion a year, with a significant proportion allocated for maintenance cost. Sustainability goal, which comprises objectives promoting climate change and energy access for all, has an estimate of about USD 820-1,635.4 billion. This is spread across five main areas: climate change mitigation (USD 400-1,200 billion), climate change adaptation (USD 50-170 billion), energy access and full energy security (USD 55-130 billion), renewable energy (USD 136-718 billion) and global commons (USD 235-547 billion).

The sectoral approach to estimating the cost requirement for the post-2015 agenda is not without its limitations. The main shortcoming of the approach is that it neglects the interdependencies among sectors. For example, the achievement under the poverty goal has a positive spill over on health, education and other goals, implying that aggregating the estimate for each of the sectors could result in double counting. This key weakness has led to the use of the sustainable growth approach. This approach assesses the level of financial resources that will be required to achieve sustainable growth that will raise enough income to meet other goals.

Although, there is no clear way of identifying the specific sectors that will promote sustainable growth, an important aspect of sustainable growth, the ‘green economy’ initiative seems to be well recognised. At the Rio+20 Conference in 2012, it was agreed that green economy initiatives be integrated into the post-2015 development framework. Green economy focuses on achieving sustainable development through poverty eradication and protection of the environment through sustainable production and consumption. In essence, the sustainable growth approach estimates the cost of post-2015 indirectly by estimating the cost of achieving poverty reduction and the sustainability goals.

Table 4 summarises the estimate for achieving green economy in developing countries.<sup>4</sup> Compared with the sectoral estimates, the amount of financial needs though slightly lower, is still substantial.

**Table 4: Preliminary Cost Estimate of Achieving Green Economy in Developing Countries**

Source	Estimate	Coverage
United Nations Department on Economic and Social Affairs (UNDESA), World Economic and Social Survey (2011)	USD 1.1 trillion per annum over 2000-2050	Incremental investment to achieved development targets in developing countries

(Table 4 contd.)

<sup>4</sup>This is based on sustainability scenarios produced for Rio+20. The scenarios basically entail different targets about energy sustainability and economic growth consistent with the desired level of sustainable growth.

(Table 4 contd.)

Source	Estimate	Coverage
United Nations Environmental Programme (UNEP, 2011)	2 per cent global GDP (gross domestic product) per annum over 2000-2050 (USD 0.78 trillion in 2010)	Additional investment in green economy activities
Netherlands Environmental Assessment Agency (PBL, 2009)	USD 400-1,600 billion per year	Additional investment in energy systems needed to comply with 2 degree target, 200-2050.
	USD 30 billion per year	Annual investment needed to achieve high yields necessary to avoid increase in agricultural land use, 2000-2050
	USD 50-160 billion per year	Adaptation to climate change
World Bank (2010)	USD 405-740 billion per year (2010-2030)	Climate change mitigation and associating financing needs
	USD 75-100 billion per year (2010-2050)	Climate change adaptation

**Note:** Some of the estimates are extracted from UNTT Working Group on Sustainable Development Financing (2012).

Also, a comparison of the least estimate for post-2015 with the most recent estimate for achieving the MDGs by Atisophon *et al.* (2011) shows that developing countries will require, as much as seven times the resources put into the MDGs, each year.

#### 4. Scope for Scaling-up Domestic Resources

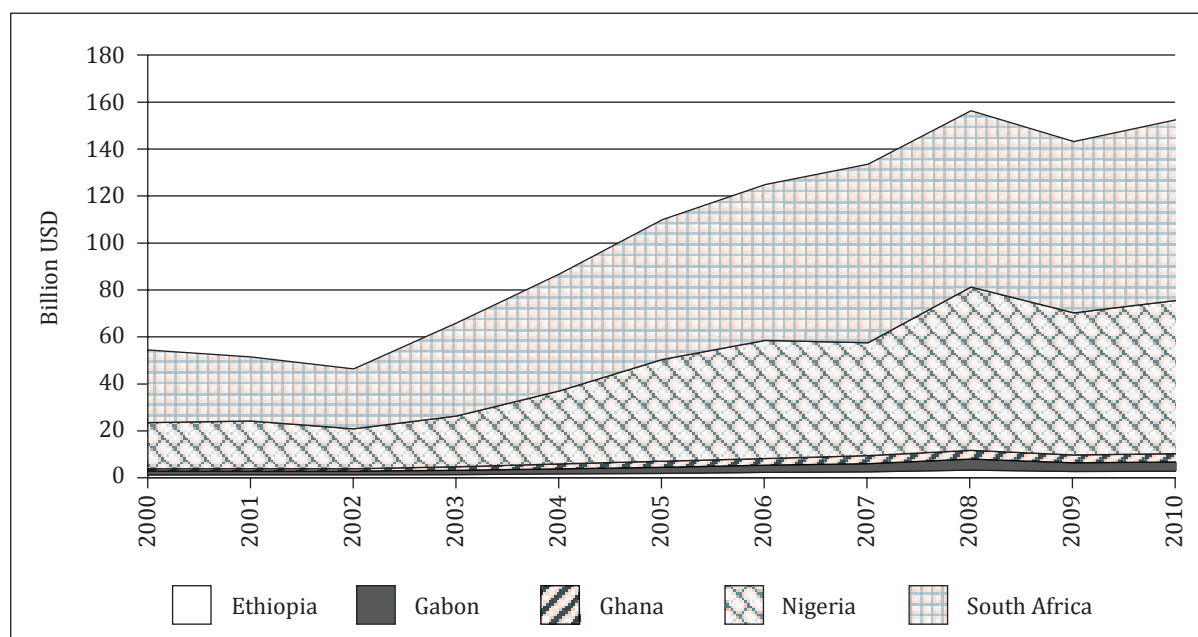
Sections 1 and 2 have shown that the resource requirement for the post-2015 agenda far outweighs the current flow of resources to SSA countries. This includes both internal and external sources. This financing gap means that not only would existing sources of financing be scaled-up, innovative sources should be explored. This section therefore focuses on the role of domestic resources mobilisation, its potentials and magnitude.

##### 4.1 Tax Revenue

Tax revenue is the largest source of domestic resource mobilisation available to governments in SSA (Bhushan *et al.* 2013). More importantly, resources mobilised through taxation have higher prospects of being channeled to development activities. In fact, improving the efficiency of the tax system in developing countries was an integral part of the MDGs financing strategy and over the last 10 years tax revenue has increased sharply, rising about three-fold in SSA.

Figure 1 shows that the positive trend in tax revenue is a common feature of the selected countries, with the magnitude of revenue generated reflecting the size of the economy. This is evidenced by the highest performance of South Africa in tax revenue, followed by Nigeria, Ghana, Gabon and Ethiopia. Another key feature is the pattern of growth in tax revenue which was similar across countries. The dramatic rise in tax revenue between 2002 and 2010 explains the potential of tax revenue in the financing structure of most SSA countries.

However, a breakdown of the tax level according to revenue sources shows that the improvement is largely due to increase in resource taxes, which accounted for 43 per cent of tax revenue of SSA over the period. It is estimated that non-resource-related taxes in SSA increased by less than 1 per cent of gross domestic product (GDP) over the past three decades (Gupta and Tareq, 2008). This highlights the nature and problem of resource dependency for many countries in SSA. As demonstrated in

**Figure 1: Trends in Tax Revenue**

Source: African Development Outlook, 2012.

**Figure 2: Tax Structure: Average (2000-2010)**

Source: African Development Outlook, 2012.

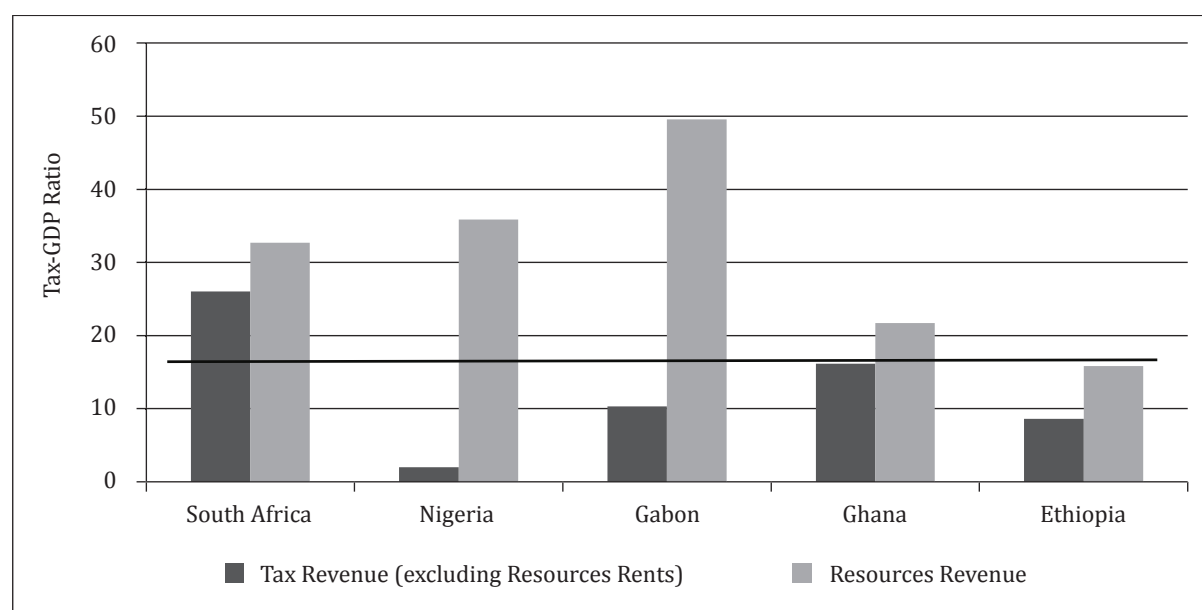
Figure 2, Nigeria and Gabon generated 80 per cent and 62 per cent of their tax revenues from natural resources, respectively. This is in sharp contrast with South Africa, Ghana and Ethiopia which showed greater diversity in the composition of tax revenue.

#### 4.1.1 Tax Ratio

Tax ratio is an important indicator of the size of tax revenue available to a government relative to the size of the economy. It is defined as tax revenue as a per cent of GDP. A ratio of 15 per cent (excluding resource taxes) is considered ideal for any country. In resource-rich countries of Nigeria and Gabon, the tax ratio excluding resources is 2 per cent and 10.3 per cent, respectively. However,

when resource revenue is included, the ratio for these countries increases to 35.8 per cent and 49.86 per cent, respectively (Figure 3).

**Figure 3: Tax Ratio in the Selected Countries: Average (2000-2010)**



Source: Authors' computation.

Although natural resource revenue is not bad for a country, the problem of resource dependency has far-reaching implications for an economy. For example, Sachs and Warner (1995 and 2001) observed that resource-rich countries tend to record poor economic performance, a phenomenon described as “curse of natural resources.” A similar study by Polterovich *et al.* (2010) found that resource abundance is associated with weak institutions, and lower human capital, which generally reduce the long-run growth prospect. Moreover, resource dependency tends to create a mono-economy, reducing the potential of other domestic revenue sources. However, as Wright and Czelusta (2004) observed, “it is the manner in which policymakers and business perceive resource endowment that determine the outcome.” For example, Botswana has used its resource endowment to spur development.

#### 4.1.2 Tax Effort

Tax effort is a broader measure of potential revenue that could be generated from taxes compared to tax ratio. Tax effort is preferred to tax ratio for three important reasons. First is that tax ratio is based on an arbitrary threshold of 15 per cent. In this case it may not be a sound basis to gauge the performance of the tax system or to determine the potential for additional tax revenue. For example, government’s drive to increase the tax revenue could, at the same time, reduce GDP and make the economy worse-off. Second is that tax ratio does not provide any indication to the potential revenue that could be raised by improving tax effort. Finally, it does factor into its computation the political and institutional factors that determine the revenue potential.

#### Estimating tax effort

Tax effort is calculated as:

$$\frac{ATR}{PTR}$$

where *ATR* is actual tax ratio and *PTR* is potential tax ratio.

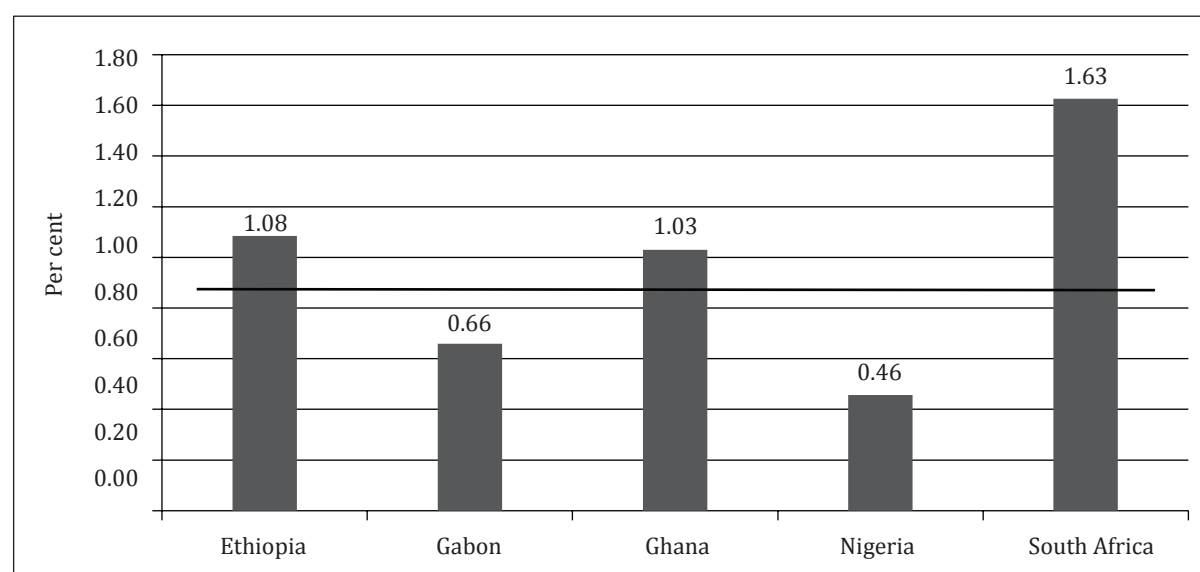
Tax effort has a benchmark of 1. Countries that have a tax effort lower than 1 have capacity to generate additional tax revenue, while countries' tax effort that is greater than 1 are generating the maximum possible tax revenue and effort to scale up will only come at the cost of reduced economic growth or investment.

The potential tax ratio gives a counterfactual estimate of revenue feasible for a given country based on its structural characteristics. To estimate the potential tax ratio, we use the predicted tax capacity model proposed by Bird *et al.* (2008) and Le *et al.* (2008). The model expresses potential tax ratio as a function of the level of economy's development, trade openness, level of industrialisation and institutional quality. A detailed analysis and regression results are presented in the Appendix.

Figure 4 presents tax efforts for the selected countries. The estimates show that South Africa, Ghana and Ethiopia have tax effort of more than 1, implying that the potential for additional tax revenue is low. For Nigeria and Gabon, the estimates are lower than 1, and this means that both countries are currently generating less taxes than expected. Using the average GDP between 1996 and 2012, a projected estimate of around USD 9 billion and USD 529 million additional tax revenue could be generated in Nigeria and Gabon, respectively. This analysis does not, however, imply that additional tax revenue cannot be generated in countries with high tax effort. Implementation of policies that promote economic growth and increase administrative capacity for tax collection, could improve potential tax.

Also, there are opportunities to improve tax revenue by expanding the tax bracket in order to capture the shadow economy.<sup>5</sup> Recent estimates of the size of shadow economy in SSA by Elgin and Oztunali (2008) show that it could be more than one-third of the current GDP. In the selected countries, Elgin and Oztunali (2008) estimates show that the percentage of shadow economy to GDP is highest in Nigeria with 49.94 per cent followed by Gabon (47.37 per cent), Ghana (37.42 per cent), Ethiopia (32.86 per cent), and South Africa (24.87 per cent). Reducing the size of the shadow economy as well as the level of informality will therefore help improve the potential tax revenue. Potential policy options could include: strengthening the capacity of revenue collection institutions, reducing the tax burden in order to lower incentives for tax evasion and instituting legal framework that penalise non-registration of specific activities within shadow economy.

**Figure 4: Tax Effort Index in Selected Countries**



Source: Authors' computation.

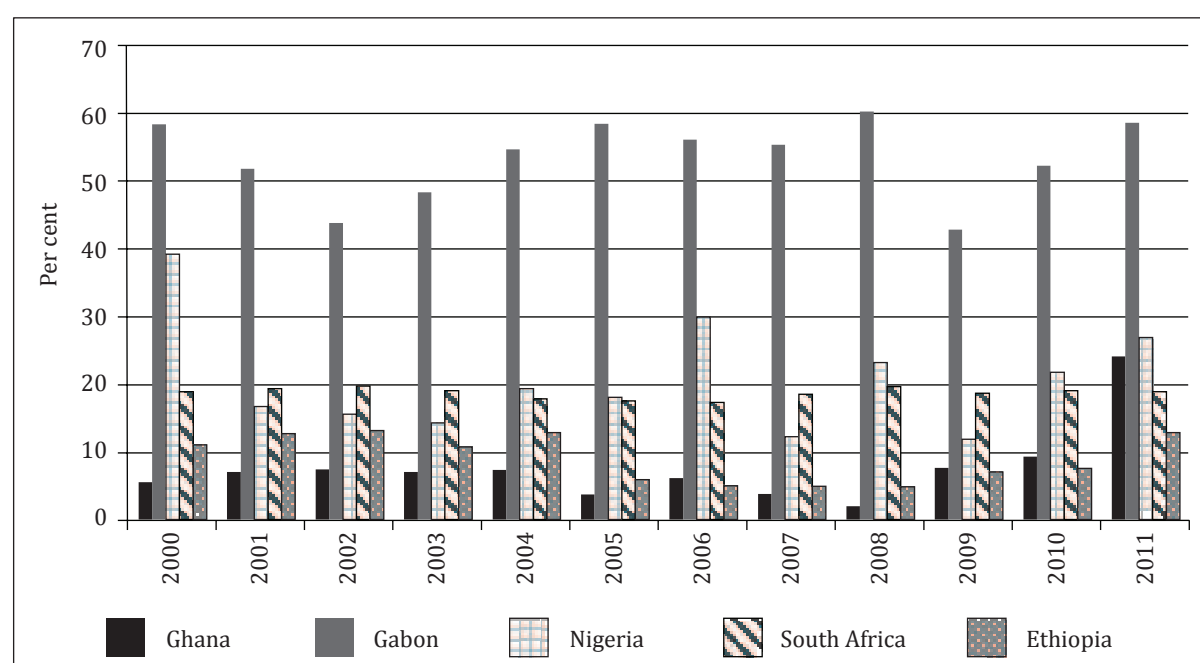
<sup>5</sup>Shadow economy comprises a set of economic activities that avoid government regulation and taxation.

## 4.2 Domestic Savings

Domestic savings are another important domestic financing option, but these are often neglected in the financing strategy of many SSA countries. Savings provide short and long-term resources which can be put into development projects and programmes. Domestic savings include public sector savings (i.e. sovereign wealth funds, budget surplus) and private sector savings (i.e. household saving, pension fund, insurance funds and companies retain earning). Worldwide, SSA region has the lowest savings rate, which according to UNCTAD (2007) stood at about 17.6 per cent of the continent's GDP. In addition, a large proportion of savings is concentrated in the informal financial sector, where it is hardly used to generate productive investment (United Nations, 2007). As argued by World Bank (2000), this low savings rate contributed to the large financing gap which has held back development in SSA.

Figure 5 presents the savings rates for the selected countries, with Gabon performing as high as 52.8 per cent between 2000 and 2011. This is in sharp contrast with the average savings rates recorded in Ghana (7.7 per cent), Ethiopia (8.8 per cent), Nigeria (19 per cent) and South Africa (18.6 per cent).

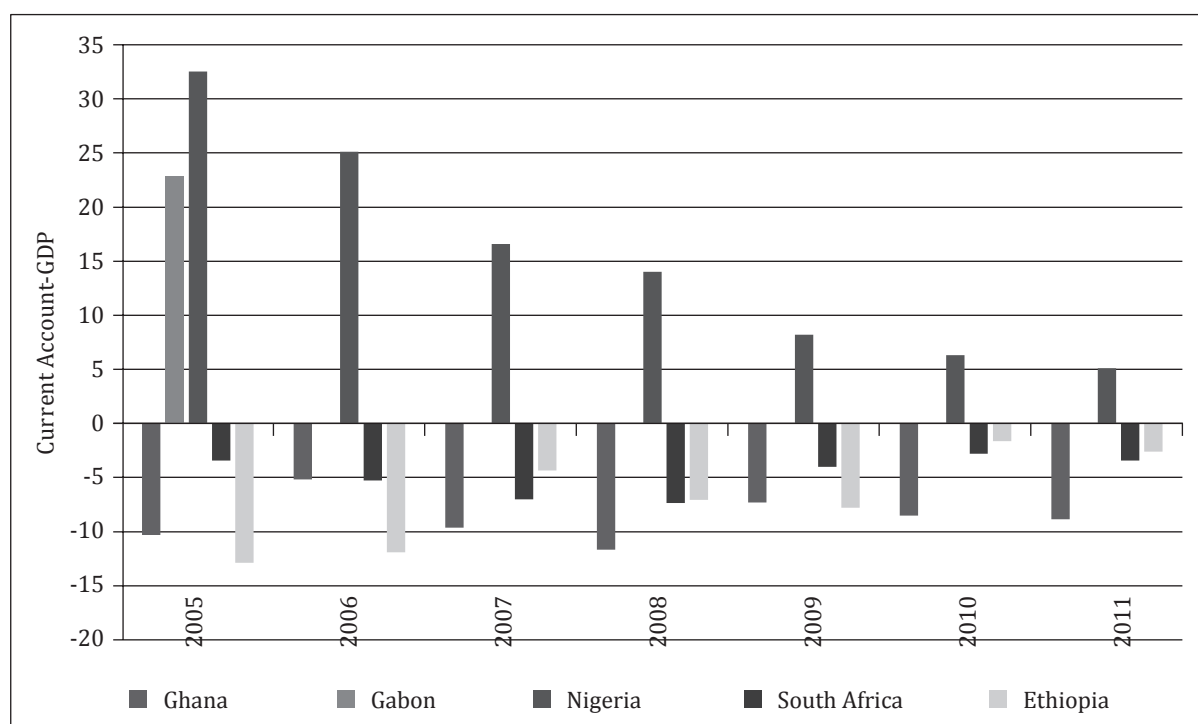
**Figure 5: Gross Domestic Savings (% of GDP) in Selected Countries**



Source: World Development Indicators, 2012.

### 4.2.1 Measuring Saving Deficiency

It is important to highlight that savings rate may not be a good indicator of the saving performance of a country and its potential to mobilise additional savings. In this case, a measure of saving deficiency (or the golden saving rate) for a country is required. Following McKinnon (2013), we measure saving deficiency as the current account deficit of a country relative to its GDP. Current account deficit is the difference in claims between a country and the rest of the world, and indicates the extent to which a country depends on external borrowing as against domestic saving. The result of the saving deficiency for the selected countries between 2005 and 2010 is presented in Figure 6. This is as far as data could allow. Nigeria and Gabon show no sign of saving deficiency, and this could imply that there is little scope to mobilise additional savings from the existing channels. Interestingly, South Africa, Ghana and Ethiopia have enormous potential to expand their current levels of domestic savings. This result needs to be interrogated further since it may be difficult to conclude that any country in SSA has exhausted its potential to mobilise savings.

**Figure 6: Savings Deficiency in Selected Countries**

Source: World Development Indicators, 2012.

While gross domestic savings levels in Nigeria and Gabon are impressive, both countries fell short of the optimum level of 'genuine' savings – the saving rate necessary to offset the declining stock of non-renewable resources. According to World Bank (2005), genuine savings for Nigeria and Gabon are (-) 35.7 per cent and (-) 6.7 per cent, respectively.

Other components of savings that are generally low in SSA are savings by the formal financial sector and corporate savings (United Nations, 2007). With the exception of South Africa, the level of financial development in SSA is low, and this hinders the mobilisation of these forms of savings. An important advantage of formal financial and corporate savings is that they can be more easily targeted or mobilised for investment.

However, the nature of productive investment mobilised through formal financial and corporate savings could deviate from prioritised developmental activities. The profit motive argument dictates that saving mobilised within the formal financial sector will be allocated to high return yielding investments. This means that private investors might underinvest in social sectors or public goods with low return. In SSA, private savings are estimated at about USD 1.1 trillion, and if deployed for development purposes, will significantly reduce the financing gap. Therefore, creating an incentive system that will encourage private investors to allocate resources to social sectors is critical to the post-2015 financing.

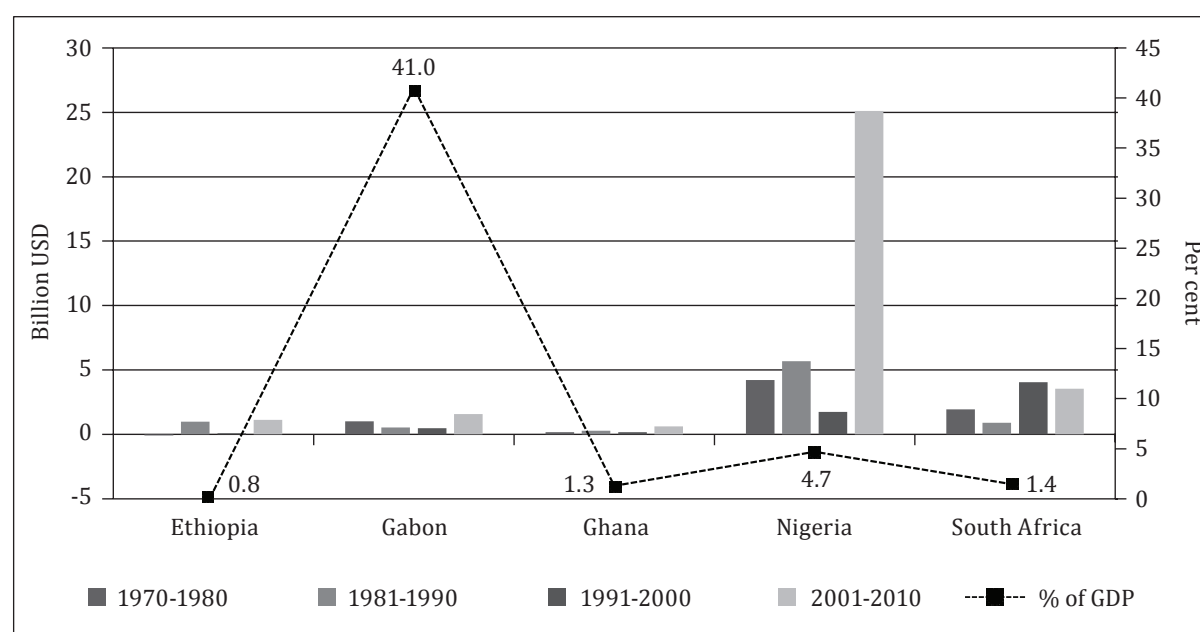
The first important step towards mobilising private investment in the social sectors is for government to provide an enabling investment climate and public infrastructure. In addition, regulatory and policy frameworks need to be stable in order to mitigate the problem of information asymmetry. Also, government interventions will be essential in reducing investment risk in the social sectors. A potential strategy in this regard is the provision of insurance facilities for investment in social sectors to help spread the risks. Another viable strategy is to grant tax credits and premium prices to firms operating within the sectors. Overall, a well-structured public-private partnership is essential to ensuring the mobilisation of private sector resources for development activities.

### 4.3 Capital Flight

Capital flight arises either because of economic and political uncertainty that increase investment risk or illicit transactions and activities such as money laundering among public officials, tax evasion and trade misinvoicing by multinational firms.<sup>6</sup> For many SSA countries, the incidence of capital flight has been observed to be due to illicit transactions and activities rather than strategic portfolio diversification by investors. Between 1970 and 2010, about USD 23.5 billion per annum was lost to capital flight in 33 SSA countries, with 72 per cent of the loss taking place in the oil-rich countries (Boyce and Ndumaka, 2012).

Using Boyce and Ndumaka (2012) cross-country estimates, we identify a similar pattern for the selected countries. As shown in Figure 7 capital flight as a percentage of GDP was higher in Gabon (41 per cent) and Nigeria (4.7 per cent) than in Ghana (1.3 per cent), South Africa (1.4 per cent), and Ethiopia (0.8 per cent). In terms of magnitude, Nigeria and South Africa, the two largest economies in the region, recorded the biggest loss between 1970 and 2010. Nigeria alone lost about USD 25 billion to capital flight between 2001 and 2010 (Boyce and Ndumaka, 2012). This is more than the combined capital expenditure of all sectors over the same period. In essence, capital flight has become an endemic problem across the region, and a substantial threat to domestic resource mobilisation effort. It holds back resources that could be channeled into development.

**Figure 7: Trends in Capital Flight**



Source: Boyce and Ndumaka (2012).

Therefore, understanding the channels and means through which this leakage occurs will be an important step towards reducing the incidence of capital flight. This will require not only improved governance at domestic level, but also international cooperation to curb both outflows from developing countries and inflows to developed countries. The recent initiative by United Nations Office on Drugs and Crime and World Bank - Stolen Assets Recovery (STAR) is a right step in this direction, but it can be taken a step further by integrating the concerns about capital flight into post-2015 development agenda. Specifically, development partnership under the post-2015 framework should involve collaboration towards eliminating capital flight in developing countries.

<sup>6</sup>Capital flight refers to transfer of assets abroad in order to reduce loss of principal, return, or control over one's financial wealth (Epstein, 2005).

Essentially, domestic policy that prevents revenue leakages through money laundering, strategic tax evasion by multinational firms and other avenues for capital flight remains the most effective strategy for addressing capital flight. Presently, there are enabling laws against money laundering in many SSA countries, but institutional framework for implementation remains weak and susceptible to abuses from the political class. For example, Nigeria and Ethiopia in 2011 and South Africa in 2004 reform the existing regulation on money laundering – stipulating stiffer penalty for money laundering as well as empowering anti-money laundering agencies. Nigeria, Ghana, Gabon and South Africa have also introduced transfer pricing regulation to curb trade mispricing by multinational firms, and are also members of Egmont Group – an informal network of financial intelligence units (FIUs) collaborating to reduce money laundering through information exchange, training and sharing of expertise. The main challenge therefore lies in strengthening the effectiveness of the existing institutions. Some policies in this regard include; improving the technical capacity of these institutions, intensifying the level collaboration among relevant stakeholders and institutions and ensuring independence of anti-money laundering institutions.

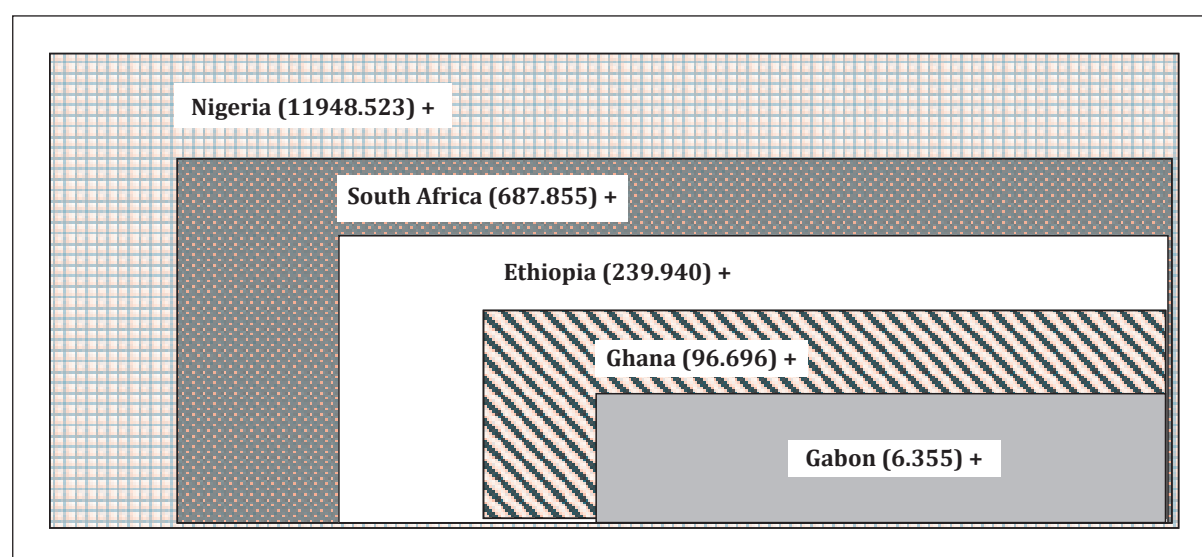
#### 4.4 Diaspora Resources

Globalisation has increased the pace of migration and labour mobility across the world. In addition to globalisation, severe economic conditions and political instability have intensified the propensity to migrate in many developing countries. The pool of migrants, although generating income outside their country of birth, provides significant source of development financing for their home countries, either through income transfer to their loved ones (remittances) or government debts instrument (diaspora bond).

Recent data show that remittances to developing countries have surpassed the amount of official development assistance (ODA) (Gupta, 2008; Ncube and Brixiova, 2013). Empirical evidence also shows a clear and unambiguous positive effect of remittances on human capital and poverty among the recipients (Adams and Page, 2003; Yang, 2008 and Gupta, 2008). At the macro level, studies have found remittances to be less volatile, more predictable and counter-cyclical, than foreign aid and FDI (Singh *et al.* 2011). Post-2015 financial framework cannot therefore ignore the growing importance of remittances for development financing.

Figure 8 shows the average flow of remittance from 2000-2010 in our case study countries. The plus sign indicates growing trend over time. Nigeria is the highest recipient, followed by South Africa, Ghana, Ethiopia and Gabon. However, remittances are usually underreported in the official statistics for SSA, as flows through the informal financial channels are not recorded. Freund and Spatafora

**Figure 8: Average Remittances Flow: 2000-2012 (Million USD)**



Source: World Development Indicators, 2013.

(2005) estimated that remittance flows through informal financial channels could be as high as 45-65 per cent of the formal flow in SSA. This is partly caused by high charges on transfer by formal operators, and to some extent by the low level of financial development in SSA as recipients have no access to formal financial institution.

This shows that there is an enormous potential to increase the current level of remittances as well as its utilisation. For example, Aycinena *et al.* (2010) estimated that a dollar reduction in the transfer fee made migrants from El Salvador to send an additional USD 25 per month. Reduction in cost of transfer also ensures higher flow through the formal channels, where it is much easier to target or mobilise for investment.

The other channel for mobilising resources from overseas diaspora is by issuing diaspora bond. Diaspora bond remains unexplored for development financing in most African countries, despite the large number of African migrants. Ketkar and Ratha (2007) identified three advantages of diaspora bond over other external debt financing options to include: (i) the interest rate on diaspora bond is less than the market interest rate, because the social tie between the diaspora and their home country is taken into account; (ii) the risk of default is absent as the debt service obligations are met in local currency, which diaspora investors are less averse to; and (iii) there is less concern about the risk of currency devaluation.

The scale of resources that could be mobilised through diaspora bond depends mainly on three factors. First is the number of overseas diaspora and the socio-economic attributes of the diaspora. Highly-skilled migrants are more likely to be employed in high-wage sectors and to invest in diaspora bond, than unskilled migrants. The migrants' level of closeness to home country is also essential; for example, the first generation migrants are generally more connected to their home country than the second generation migrants (Ketkar and Ratha, 2007). Second is the country's willingness to repay its debt, measured by a country international credit rating (Akkoyunlu and Stern, 2012). This is however not usually the case with diaspora bond, as patriotism weighs higher than economics in investment decisions. India, for example, was able to raise funds through the diaspora bond, despite the international rating agencies downgrading its credit rating in 1998. The last and most important is the level of governance in the migrants' home country. Willingness to invest in diaspora bond is influenced by patriotism, but the absence of strong institutions is likely to discourage such investment. Table 5 summarises the indicators of potential for diaspora bond in the selected countries.

**Table 5: Indicators of Potential for Diaspora Bond**

Country	Total Emigrant Stock in OECD ('000)	High-Skilled Emigrant Stock in OECD ('000)	S&P Rating	Closeness to Home Country	Governance Indicator	
					Corruption	Political Instability
Ethiopia	105	51	-	96.47	-0.60	-1.53
Gabon	4	2	BBB-	22.89	-0.55	0.30
Ghana	161	71	BB+	18.40	-0.08	0.10
Nigeria	229	149	BB-	1325.65	-1.13	-2.05
South Africa	268	168	A-	220.91	-0.15	0.00

**Sources:** Data on total and highly-skilled emigrant stock in OECD countries as at 2000 is obtained from Docquier and Marfouk (2004); closeness is the average remittance per migrant between 2000-2012, based on data source from World Development Indicator and governance indicator as at 2012 is from World Governance Indicators (2012). Also, the S&P credit is as at March 2014.

Given that diaspora bond is more likely to be issued to migrants in developed countries, only the stock of migrants in Organisation for Economic Co-operation and Development (OECD) countries is considered. In line with the literature, closeness of migrants to their home country is measured by remittances per migrant, which implies that the stronger the migrants' ties to home country, the more remittances are sent. Also, the governance level is measured by the current level of corruption

and political instability based on World Bank's "World Governance Indicators", while Standard and Poor's credit rating is used to measure sound credit rating. Nigeria and South Africa show the most promising sign of raising substantial funds through diaspora bond, although more needs to be done to improve governance. Ghana faces a mixed prospect; while there is a moderate stock of migrants abroad and sound credit rating, the closeness of migrants and the level of governance (corruption) are weak. For Ethiopia<sup>7</sup>, the absence of credit rating, weak governance and relatively low stock of migrants reduce the prospect of issuing diaspora bond. Gabon has little prospect of exploring this financing option, judging from the trend of the indicators.

#### **4.5 Domestic Philanthropy or Giving Sector**

Philanthropic organisations have played a major role in the financing of the MDGs and more resources can be harnessed from this sector for the post-2015 development agenda, especially in developing countries. In 2010, an estimated USD 56 billion was mobilised for developing countries from philanthropy, with the USA alone contributing about USD 39 billion. In SSA the level of financial giving remains very low, as indicated in a recent Charities Aid Foundation (2012) survey that found only 21 per cent of the population in the region willing to give money to organisations. This lack of willingness could be due to high incidence of poverty in the region. However, home-grown philanthropists are rapidly emerging among the growing population of the affluent in the region. For example, many African industrialists namely Aliko Dangote, Tokyo Sexwale, Moi Ibrahim and Tony Elumenu have recently established foundations dedicated to promoting global development, with large amount of grants already disbursed. Also, African leaders have contributed resources to charities within and outside the region, for example Mandela foundation, Desmond Tutu foundation, and Kofi Annan foundation among others.

Corporate philanthropy within the domestic front is also expanding rapidly. For example, a study by GIZ (2013) on corporate social responsibility (CSR) of local and multinational firms in Africa observed a remarkable improvement in the number of firms reporting their CSR as well as increasing awareness about environmental sustainability and development of their operating communities. Public goods and social sectors were also found to be priority areas of their interventions. Other important beneficiaries of charitable donations are non-government organisations (NGOs) and civil society organisation (CSOs), who play a crucial role in the coordination and implementation development initiatives. NGOs and CSOs in developing countries are largely financed through donations from local and foreign philanthropists and foundations. The philanthropic sector is therefore critical to the financing of the post-2015 development agenda.

Although data on the level of domestic giving in SSA is not available, effective public policies and tax incentives could promote giving as well as improve the contribution of domestic philanthropy to economic and social development. The potential will be higher in countries with high per capita income, large industrial presence and high propensity to give. Gittel and Telbaldi (2001) found that countries with higher per capita income have a higher giving rate. Lastly, propensity to give differs remarkably across countries, CAF (2012) survey found that the percentage of the population willing to give money to organisations to be as low as 4 per cent in Lithuania and as high as 83 per cent in Malta. Although, this is a subjective measurement of giving culture; it indicates the dynamics in giving across countries.

Table 6 presents the indicators of size of philanthropy sector. South Africa shows the greatest potential based on income per capita and number of listed domestic companies, though the willingness to give is also the lowest. Nigeria and Gabon also show strong potentials in expanding the level of philanthropy, giving the size of the various indicators. In Ghana and Ethiopia, the potential to raise funds through philanthropy appears low. However, this result should be treated with caution. It is

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<sup>7</sup>Ethiopia in 2008 became the first Africa country to issue diaspora bond for the planned USD 4.8 billion Grand Renaissance Dam project, but the actual funds generated is not disclosed.

**Table 6: Indicators of Potential Revenue from Philanthropy Sector**

Country	Giving Culture as at 2010 (% of Population Willing to Give)	Per Capita Income as at 2013 (Constant, USD)	Total Listed Domestic Companies as at 2012
Ethiopia	10	268.23	-
Gabon	12	6937.71	-
Ghana	27	766.05	34
Nigeria	30	1097.96	192
South Africa	14	5916.46	348

**Sources:** Giving culture is based on CAF survey (2013). Other indicators are from World Development Indicators, 2014.

difficult to identify any of the indicators without a shortcoming. For example, none of the indicators capture the level of social and economic inequality and social justice among economic class, which can significantly affect the propensity to give.

A more robust indicator of potential to generate funds from philanthropy, although equally difficult to measure, is the presence of vibrant media and well-informed public that put corporate practices and wealthy individuals under constant scrutiny. Callan (2012) noted that, in the past two decades, risk of bad public relations has made firms to be more accountable to communities within their domain. But the most important means of translating this potential into actual resource flow is through better public policy that offers favourable tax treatment to charitable donations. Presently, Nigeria and South Africa have regulation that provides tax incentive for charitable donations. The Nigerian companies' income tax act provides for tax deduction on charitable donation for firms, if the donation does not exceed 10 per cent of the annual profit. There is also a private bill currently in the parliament that will mandate businesses to spend 3.5 per cent of their gross profit on CSR. South Africa also has similar laws on tax deductions and regulations that provide incentive for firms to contribute to charity. For Ghana, Ethiopia and Gabon, we observe no clear rules for tax deductions on charitable donations. Surprisingly, existing laws in Nigeria and South Africa focus largely on companies, excluding individual donations to charity. Also, the scope of the laws is limited as they are restricted to specific sectors. For example, donations to agriculture sector which are not related to research are presently not eligible for tax deduction. In this case, additional reforms are needed in these countries to fully realise the revenue potentials of domestic philanthropy.

#### **4.6 Financial Transaction Tax (FTT)**

FTT is a tax imposed on various classes of financial instruments ranging from financial securities (equities, stocks and debts) to financial contract (derivatives), bank debits and credits. FTT serves two important purposes: it helps to stabilise the financial market and generates revenue for the government. A global FTT is one of the innovative and new options being proposed for financing post-2015 initiatives. Given the volume of financial transactions globally, a small tax rate will generate a sizeable level of funds for development. Nevertheless, the possibility of a unilateral FTT by developing countries needs to be considered. Between 2001 and 2008, South Africa realised USD 7 billion through FTT, and was the highest globally relative to GDP (Beitler, 2010). Different forms of FTT are already being implemented in many countries and these could be expanded.

Based on the experiences of developing countries currently implementing FTT, the potential revenue depends on the level of financial development, the size of financial markets and financial instruments and economic size. Following the literature, we measure the level of financial development by the ratio of broad money to GDP. The size of the financial market and instruments are measured by the value of market capitalisation of companies in the stock market as a percentage of GDP and the value of portfolio inflows (investment plus bond), respectively. Economic size is proxied by the level of real GDP. These indicators are presented in Table 7.

**Table 7: Indicators of Prospect for FTT**

Country	Financial Development (M2 % of GDP as at 2012)	Portfolio Investment, Bonds (Current USD Million as at 2012)	Market Capitalisation of Listed Companies (% of GDP as at 2012)	GDP as at 2013 (Constant US 2005 Million)
Ethiopia	41.5*	0	-	27.21
Gabon	21.45	-4	-	11.60
Ghana	30.51	0	8.3	19.84
Nigeria	20.86	350	12.26	190.62
South Africa	75.57	2455.88	160.14	313.47

**Source:** World Development Indicators, 2014.

**Note:** \* is the trend value, given that the actual value for 2012 is not available.

In terms of prospect to mobilise funds through FTT, South Africa is followed by Nigeria. This is evidenced by the strength of the economy and the financial market. For similar reasons, FTT may be less effective source of revenue for Ethiopia, Ghana and Gabon. Introducing FTT in these economies may be counter-productive, as the effect might disrupt the evolving financial sector and economic development. However, as financial markets develop in these countries, there may be a need to introduce FTT.

Grabel (2005) provides a rough projection of the potential revenue to be generated from FTT for 60 developing countries; including South Africa, Nigeria and Ghana, based on the value of their stock markets and different scenarios (rates) of FTT (see Table 8). For Ghana, the projected revenue is as low as USD 45 to 255 thousand per annum, while Nigeria has the potential to generate about USD 0.885 to 4.29 million per annum and South Africa as high as USD 102 to 514 million per annum. This therefore places more financially developed SSA countries at greater advantage to explore FTT for development financing. But most importantly, it underscores the benefits to financial development.

**Table 8: Projected Revenue from FTT in Selected Countries**

Country	Value of Traded in as at 2003 (USD Million)	Tax Revenue (USD thousand) at Different FTT Rate			
		0.10% FTT rate	0.50% FTT rate	0.50% FTT Rate (25% Transaction Reduction)	0.50% FTT Rate (50% Transaction Reduction)
Ghana	45	45	225	168.75	112.5
Nigeria	858	858	4290	3217.50	2145.0
South Africa	102808	102808	514040	385530.00	257020.0

**Source:** Grabel (2005).

## 5. Conclusion and Recommendations

This paper has examined the revenue potential of key domestic financing options which could be used to finance the post-2015 development agenda in SSA. Section 2 reviewed Africa's performance on the MDGs as well as examined the role of finance in the progress recorded by various countries. It finds that the huge financing gap, in most cases, accounted for the poor performance of many SSA countries on the MDGs. Other factors that contributed to the poor performance of some countries on the MDGs are weak institutions and infrastructural deficit. Section 3 assessed the preliminary cost estimate for the post-2015 development agenda. In comparison with the resources put into the MDGs, we observe the post-2015 estimate could be at least seven times higher. Section 4 examined the revenue potential of six key financing options in five selected SSA countries. The study finds that

the revenue potential of each financing option differed remarkably across countries. Overall, while the revenue potential is enormous in some countries, it is weak in others. However, each country has strong revenue potentials in, at least, two of the six financing options considered. While this does not suggest that the potential revenue will be enough to meet the financing requirements, it demonstrates the viability of domestic sources of revenue and the need to explore them, if only to complement the existing financing options, especially foreign aid.

Furthermore, the paper finds that the magnitude of potential revenue corresponds to the country's economic size. As it were, Nigeria and South Africa have more potential to mobilise domestic resources than the other countries examined. The other key issues that emerge from this study are that:

- Government has to play a leading role in every area and stage of domestic resource mobilisation process. In most SSA countries, the present realities demonstrate clearly that the institutional capacity to mobilise domestic resources is weak and susceptible to corruption. Therefore, measures to promote accountable and transparent governance while strengthening the capacity of institutions responsible for revenue collection will be important.
- The set of goals for post-2015 development agenda must be flexible enough to allow “domestic government ownership.” Unlike in the past when countries depend on external resources, the post-2015 agenda should draw on domestic and other innovative financing options.
- The proposed governance goals for post-2015 should include fiscal accountability and transparency as part of its target. Present discussions on governance have mostly focused on improving human rights, ignoring issues on fiscal accountability. While countries should be allowed to manage their resources to their best interest, there is a need to provide mechanisms to guide against the mismanagement and misallocation of scarce resources. With external resources, donors could condition their support on the continuous improvements in specific areas of governance.

Finally, there is a need for a broader country-level assessment of the financing requirement for the post-2015 agenda and the revenue potential of various domestic financing sources. This will better provide a sense of the magnitude of the financing gap and alternative financing options that could be explored.

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## Appendix

### Tax Effort: Regression

We adopt a linear model, which is specified in equation 1 as:

$$TGDP = \alpha_0 + \alpha_1 INDUST + \alpha_2 TO + \alpha_3 LogGNI + \alpha_4 INQ + \mu \quad 2$$

Where;

*TGDP* : Actual tax ratio

*INDUST* : Level of industrialisation (measured by the share of agriculture in GDP)

*TO* : Trade openness (measures as ratio of export plus import to GDP)

*GNI* : Gross Domestic Income per capita (at constant 2005 US)

*INQ* : Institutional Quality (measured by the level of corruption)

Theoretically, the tax ratio is expected to vary directly with trade openness and gross national income (GNI), and inversely with agricultural share of GDP and institutional quality. Using a pooled OLS regression, we estimate the equation 1 for the SSA countries for which data are available between 1996 and 2012. The estimated co-efficient are then used to derive the average tax effort for the five selected countries.

Table A1 shows the results, which indicate the variables are rightly signed and statistically significant. We also test the model using a random effect model to check the robustness of our results. The results show that the model is robust to alternative specification: the sign and magnitude of the point estimates are similar.

**Table A1: Tax Effort Regression**

Variable	Pooled OLS	Random Effect Model
	Tax Ratio	Tax Ratio
Agriculture value added	-0.003** (0.001)	-0.003* (0.001)
Trade openness	0.089** (0.029)	0.040 (0.040)
Log GNI per capita	0.059*** (0.017)	0.056* (0.232)
Corruption	-0.052*** (0.015)	-0.053** (0.018)
Constant	-0.208 (0.139)	-0.145 (0.192)
R-squared	0.314	0.3096

**Note:** The standard errors are in parenthesis and \* p<0.05, \*\* p<0.01, \*\*\* p<0.001.

**Table A2: List of Countries Included in the Regression**

Angola	Kenya	Namibia
Congo, Dem. Rep.	Kenya	<b>Nigeria</b>
<b>Ethiopia</b>	Lesotho	Senegal
<b>Gabon</b>	Liberia	Sierra Leone
Gambia, The	Madagascar	Burkina Faso
<b>Ghana</b>	Mali	<b>South Africa</b>
Benin	Mauritania	Togo
Cameroon	Mauritius	Uganda
Zambia	Botswana	

**Note:** The selected countries are in bold text.

**Table A3: Variable Description and Source**

Variable	Source	Sample
Tax Ratio		
Tax revenue	African Economic Outlook, AEO	1996-2010
GDP	World Development Indicators, WDI, World Bank	1996-2012
Agriculture value added	WDI, World Bank	1996-2012
Trade openness	WDI, World Bank	1996-2012
GNI per capita	WDI, World Bank	1996-2012
Corruption	World Governance Indicators, World Bank	1996-2012



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**Southern Voice**  
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**Website:** [www.southernvoice-postmdg.org](http://www.southernvoice-postmdg.org)  
**E-mail:** [southernvoice2015@gmail.com](mailto:southernvoice2015@gmail.com)

**Secretariat:**



**Centre for Policy Dialogue (CPD)**

House 6/2 (7th & 8th floors), Block - F  
Kazi Nazrul Islam Road, Lalmatia Housing Estate  
Dhaka - 1207, Bangladesh  
Telephone: (+88 02) 9141734, 9141703, 9126402, 9143326 & 8124770  
Fax: (+88 02) 8130951; E-mail: [info@cpd.org.bd](mailto:info@cpd.org.bd)  
Website: [www.cpd.org.bd](http://www.cpd.org.bd)