OREA Knowledge Series: No. 1

Managing Oil Revenue in Uganda

A Policy Note



Managing Oil Revenue in Uganda A Policy Note

March 2009

OREA Knowledge Series: No. 1

Extracted from the proceedings of a National Seminar on Managing Oil Revenue in Uganda Held at Munyonyo Commonwealth Resort, Kampala, 8-9 July 2008

CONTENTS

Fore	word	V
Prefa	ice	vi
List	of Abbreviations	viii
I.	Background	1
II.	Managing Expectations	4
III.	Developing Local Content	7
IV.	Taxation and Fiscal Management	10
V.	Governance and Transparency	13
VI.	Policy Recommendations and Conclusions	16
Anne	exes	18

FOREWORD

This Policy Note is extracted from the proceedings of a two-day National Seminar on Managing Oil Revenue in Uganda, held in Kampala during the second week of July 2008 and opened by President Yoweri Museveni. The Government sought to attain three important objectives from the National Seminar: (i) share information on the country's oil prospects with key stakeholders; (ii) provide a forum for the discussion of the National Oil and Gas Policy, and the proposed oil and gas legislation; and (iii) share the macroeconomic and political economy experiences of other countries. More specifically, officials sought to learn from other country experiences about oil's impact on the fiscal regime, investment and savings, agriculture, the environment, and host communities. Additionally, they wanted to learn about how to collect accurate baseline data on oil exploration, create technical capacity, maximize local content, erect infrastructure, link research to policy, and promote accountability.

The publication of the Policy Note is timely as it coincides with further discoveries of oil deposits in Uganda, enhancing the country's potential for becoming an important oil producer, but also raising concerns over adverse policy and socio-economic impacts. The Policy Note is a good rendition of the quality policy discussions and advice at the Seminar. It contributes to the key goal of the Government's oil and gas policy: to spend oil revenues wisely and ensure that oil, which is a finite resource, is transformed into an infinite resource for Uganda's social and economic development.

The Seminar was jointly organized by the Ministries of Finance, Planning and Economic Development (MFPED), and Energy and Mineral Development (MEMD), in conjunction with the African Development Bank, and with generous support from the Kingdom of Norway and the Nordic Trust Fund for Governance. We would like to thank the African Development Bank for taking the lead in compiling this Note. The attendance in large numbers by MPs, Government officials, diplomats, resource persons and civil society, enriched the debates at the Seminar, as also reflected by the quality of this Note. We sincerely thank all Seminar participants and contributors to the process that led to this publication.

Kampala, Uganda, 30 January 2009

Dr. Ezra S. Suruma

Minister of Finance, Planning and Economic

Development

Daudi Migereko (MP)
Minister of Energy and
Mineral Development

PREFACE

The discovery of oil in Uganda in recent years has been a source of both pride and apprehension for the Government and the population. In October 2007, President Yoweri Museveni requested the AfDB President, Dr. Donald Kaberuka, who was visiting Kampala to deliver the 2007 Joseph Mubiru Memorial Lecture, for assistance in addressing some of the many challenges—financial, technical and socio-economic—that emanate from oil exploitation. In particular, the Government wanted to learn from the experiences of other countries. The AfDB announced that it would help organize a seminar on the management of oil revenue in Kampala.

The Government of Uganda requested that the Oil Seminar should primarily target state officials—the Executive, Legislative (MPs) and the Judiciary. It argued that it was important to cater for the information and capacity needs of officials at an early stage to ensure that they were on the same page with respect to the progress made in national oil prospecting, and the legislative and technical challenges facing the Government. In the event, private sector representatives, development partners, and local government officials from the oil theatre, as well as a number of advocacy groups, were also invited—in all close to 200 people attended. The Seminar was opened by President Yoweri Museveni. Dr. Zeinab El Bakri, AfDB Vice President, led the AfDB delegation.

The Seminar provided a unique opportunity for exchange of views between international experts and policymakers, and a cross section of Ugandans, on key emerging issues of the country's transformation into an oil producer. For the Bank Group, the Seminar and its success exemplified the importance it attaches to knowledge and advisory services in its support to member countries. It believes that quality policy dialogue and the sharing of experiences are as important to country performance as lending operations.

A key conclusion of the Seminar was that there is no universal model for managing oil revenue. The case-studies discussed showed that each nation followed its own path, depending on the country context, capacity and governance environment. Each country faced challenges in ultimately identifying a workable model.

This Policy Note is by no means exhaustive of the options open to new comers such as Uganda. It serves to illustrate the various models, challenges and opportunities in managing newly found wealth. The Note provides the reader with fundamental insights on how other countries have evolved. For Uganda, at the threshold of oil exploitation, the Policy Note is particularly timely. Identifying an appropriate model is at the epicenter of the current debate in Uganda. This Policy Note is designed to contribute to that debate especially with the comparative insights it provides on the experiences of other countries in Africa and elsewhere.

This Policy Note is the first in a series ('OREA Knowledge Series') from the Country and Regional Department – East A. The series is intended to bring to a broad audience the results of analytical work on development issues in East Africa. As practical policy reports, these Notes should help us reflect on what we do know and, what we do not know. The primary objective is to contribute to the policy debate in the region and, thus lend credence

to the AfDB's quest for a Knowledge Bank, in line with the recommendations of the Higher Level Panel Report "Investing in Africa's Future: The AfDB in the 21st Century".

The Seminar and this Policy Note would not have been possible without the support of the Government of Uganda. Dr. Ezra Suruma, Minister of Finance, Planning and Economic Development, and Mr. Daudi Migereko, Minister of Energy and Mineral Development, and their officials, collaborated with the Bank Group at each stage of the process. Early agreement on the structure of the seminar enabled the Bank Group to plan and solicit for the funds required.

I would like to thank the former President of the Republic of Botswana, H.E. Festus Mogae, for presenting a keynote speech at the Seminar and for participation in panel discussions. Many Ministers and other Government officials accepted to present papers or chair sessions at the Seminar, making it a truly collegial exchange of views. It is noteworthy that the weekly Cabinet meeting was postponed to allow Ministers to attend.

I would also like to thank, without implications, resource persons from the AfDB, IMF, World Bank, Central Bank of Tanzania, Federal Government of Nigeria, Norwegian Agency for Development Cooperation (NORAD), Oil for Development (Norway), Transparency International, Department for International Development (DFID), Extractive Industries Transparency Initiative (EITI), Makerere University, University of Dar es Salaam, University of Cape Town, and Economic Policy Research Center, Kampala, for their contributions. Though too many to list here by name, they are mentioned along with their contributions in the text.

At the Bank Group, I would like to thank the Office of the Chief Economist and the Governance Department for their material and tactical support toward planning and executing the Seminar. Tove Strauss (OSGE), John Anyanwu (EDRE), Chidozie Emenuga (OREA), Richard Walker (OREA) and Steve Kayizzi-Mugerwa (OREA) comprised the secretariat, based at the Country and Regional Department—East A (OREA), that planned the Seminar. Thanks especially to the AfDB Country Office (UGFO) in Kampala, the former Resident Representative, Mukaila Ojelade, and Florence Wamala, for the detailed planning and logistics. Steve Kayizzi-Mugerwa and Richard Walker put the Policy Note together from notes by Prof. Melvin Ayogu and an EPRC team headed by Dr. Sarah Ssewanyana.

Finally, I would like to thank the Norwegian Government and the Nordic Trust Fund for Governance for their generous financial support to the National Seminar on Managing Oil Revenue in Uganda.

Tunis, 20 February, 2009

Aloysius Ordu Director, Country and Regional Department—East A African Development Bank

LIST OF ABBREVIATIONS

AfDB African Development Bank

DFID Department for International Development

DRC Democratic Republic of Congo

EDRE Research Department (AfDB)

EIA Environmental Impact Assessment

EITI Extractive Industries Transparency Initiative

EPRC Economic Policy and Research Centre

FDI Foreign Direct Investment

GDP Gross Domestic Product

IMF International Monetary Fund

MEMD Ministry of Energy and Mineral Development

MFPED Ministry of Finance, Planning and Economic Development

NORAD Norwegian Agency for Development Cooperation

OREA Country and Regional Department - East A (AfDB)

OSGE Governance Department (AfDB)

SME Small and Medium Enterprise

UGFO Uganda Field Office

Chapter I Background

1.1 Oil Discovery: Emerging Challenges and Opportunities

Uganda's oil discovery was symbolically announced on 8th October 2006, the day before the country's 44th independence anniversary. Although it was publicly known that oil deposits had been found some ten years previously, the Government had waited until commercially viable oil reserves were discovered in the Albertine rift of Western Uganda before making its announcement. At the national thanksgiving, President Museveni ascribed the discovery partly to divine providence—attempts by previous regimes to find oil, going back some 70 years, had failed but not for lack of expertise or financing—and partly to his Government's foresight, planning and patience. As a precursor to what has proven to be an enduring national debate on the future impact of the oil wealth on households and the economy, he argued pointedly that oil would be a blessing for Uganda and not a curse.¹

The National Seminar on Managing Oil Revenue was held close to two years after the official announcement of the oil discovery. The magnitude of Uganda's oil findings have in the meantime vastly expanded, with international oil companies finding oil (frequently in combination with gas) from all the drilled prospects undertaken thus far. Proven oil reserves are estimated at over 1 billion barrels, while gas discoveries are also considered commercially viable. National interest in the oil discovery has expanded considerably, owing partly to the steep increase in international oil prices during the second half of the 2000s and also because Ugandans are waking up not only to future opportunities, but also to the political and socio-economic challenges associated with oil wealth. Media discussion and coverage of what oil and mineral wealth have meant for other African countries, including poor governance and even civil war—the so-called "oil curse"—have found resonance in a country which has experienced social and political adversity of its own in the past.

The Government has been forward looking since the oil discovery. It has undertaken trips to Libya, Trinidad and Tobago and Norway, among others, to acquire as much information as possible on the socio-economic impact and technical requirement of oil production. The Government has developed an oil and gas policy to address the magnitude of technical and policy issues arising from the expected change in the country's future income streams. In doing this, the concerned line ministries (mainly Finance, Planning and Economic Development, and Energy and Mineral Development), undertook consultations within Government, with the private sector, and with local governments and communities in areas that are directly affected by the oil discoveries. In retrospect, and as revealed by comments from seminar participants, the local consultations fell well short of the popular demand for information on the oil discovery and what it portends for the country.

Close to a decade ago the Government, sensing the real possibility of future oil production, sent a number of students to foreign universities for courses in petroleum engineering and related subjects (see Annex 2 for examples of what jobs might be coming on the market in the wake of oil production). It was this youthful group that

President Museveni had argued more broadly: "There is a lot of nonsense that the oil will be a curse. No way. The oil of Uganda cannot be a curse. Oil becomes a curse when you have got useless leaders and I can say that we don't approach that description even by a thousandth of a mile."

eventually spearheaded the search for oil and laid the ground for the Government's oil and gas policy. The Government estimates that commercially viable exports of oil will not be realized until 2013, and that even then much will depend on how quickly the public sector is able to build infrastructure. The oil debate in Uganda is thus still driven more by rising domestic expectations than actual flow of oil.

1.2 What Government Sought from the Seminar

In setting up the agenda for the oil seminar, the Government identified eight themes/areas for discussion (see Annex 1). The Ministry of Finance listed the impact on the fiscal stance and the threat of the Dutch Disease as among the most important. On the other hand, the Ministry of Energy and Mineral Development that is doing the actual prospecting identified as key issues for consideration skills development, mitigation of land alienation and environmental degradation, and containing the threat of local and regional conflicts. With respect to the latter, military scuffles have taken place near Lake Albert, at the common border with the DRC. The Bank of Uganda suggested that high future oil revenues will require discussion of its role as Government's banker. Officials also wanted discussion on (i) the issues of governance and accountability, in a country challenged by corruption, and (ii) the importance of infrastructure development, to link the oil-producing region to markets. The Bank put together an international team of experts and policymakers to share their wealth of experience with Uganda's policymakers and other stakeholders (Box 1).

The rest of the Policy Note proceeds as follows: Chapter II discusses the challenges of managing expectations in a poor country with enormous social and economic needs, limited institutional capacities and lingering ethnic tensions. It presents a number of options that could be considered by the Government going forward. Chapter III discusses the important issue of value addition and how the country can extract the maximum benefit from its oil resources, with examples from other countries. Chapter IV looks at the implications for the Government's fiscal stance of oil revenue and outlines strategies to address them. Chapter V discusses governance and transparency, and why belonging to an international agency of restraint such as the Extractive Industries Transparency Initiative is important for ensuring that the country's oil resources are beneficial to the population. Chapter VI concludes the Note with a set of policy recommendations.

Box 1: Team of Contributors by Session

Opening Session. The seminar was opened by President Yoweri Museveni, while Dr Zeinab El Bakri made an opening statement on the part of the AfDB.

Global experiences. The former President of Botswana, Festus Mogae, delivered a key note on Botswana's experience in managing diamond resources. The Governor of the Central Bank of Tanzania, Benno Ndulu, was the anchor for this interactive session on global experiences. Louis Kasekende, AfDB's Chief Economist, gave an overview of Africa's recent experiences with commodity booms. Petter Nore, of Norway's Oil for Development, presented that country's experience and Bright Okogu, the Director-General Budget of Nigeria's Federal Ministry of Finance, that of his country. Jürgen Reitmaier, Special Regional Advisor to EITI, and formerly of the IMF, discussed the importance of transparency and accountability for oil revenue management.

State of play to date. The Minister of Energy and Mineral Development, Daudi Migereko, his Permanent Secretary, F. Kabagambe-Kaliisa and Ernest Rubondo, the Assistant Commissioner for Petroleum Exploration and Production, presented facts about Uganda's oil exploration efforts, the oil and gas policy, and the legislation to be presented to Parliament.

Fiscal management and taxation. Vida Ovesen, former State Secretary in Norway and Advisor to the Government of Timor-Leste, and Philip Daniel, of the Fiscal Affairs Department of the IMF, made presentations on the fiscal and tax policy challenges facing nascent oil producers. Bryan Land of the World Bank, and Lawrence Kiiza, Director, Economic Affairs, Ministry of Finance and Economic Development, were the main discussants.

Governance and transparency. Christiaan Poortman, Director of Global Programmes at Transparency International, and Eddie Rich, Regional Director, Extractive Industry Transparency Initiative (EITI), were the presenters in this session. Bright Okogu was the main discussant.

Building local content and managing expectations. Petter Nore shared the Norwegian experience and Lawrence Bategeka, Research Fellow at the Economic Policy Research Center (EPRC), Makerere University, presented a research paper on managing expectations², commissioned for the seminar by the AfDB. The discussant for this session was Delphin Rwegasira, Professor of Economics at the University of Dar es Salaam, and formerly of the IMF.

Pulling it all together. The task of distilling lessons from the two-day seminar was left to a panel comprising Anthony Venables, Professor of Economics, Oxford University and Chief Economist, DFID; Emmanuel Tumusiime-Mutebile, Governor, Bank of Uganda; Christiaan Poortman; and Aloysius Ordu, Director, Country and Regional Operations Department, East A, at the African Development Bank. The discussion was moderated by the Minister of Finance, Planning and Economic Development, Dr. Ezra Suruma

End. The Seminar was closed by a speech from the Prime Minister Prof. Apollo Nsibambi, made on his behalf by the Minister of Energy and Mineral Development, Mr. Daudi Migereko.

The paper was written jointly by Sarah Ssewanyana, and Lawrence Bategeka, both of EPRC and Julius Kiiza, Department of Political Science, Makerere University.

Chapter II Managing Expectations

1.1. Introduction

Oil has been discovered in Uganda, but no commercial oil is flowing yet and no oil revenues are expected until after 2013. Ugandans at the national, local government and community levels appear to already have high expectations related to the discovery of oil. At the national level the "positive" expectations include those of increased national prosperity as the Government invests in roads, power plants, education and health services and other socio-economic infrastructure. The general public also expects to see the "end of donor dependence and conditionality" and the regaining of economic sovereignty. Ugandans hope that oil exploitation will improve their quality of life. However, there is also considerable apprehension. Ugandans have noted that many resource-rich African countries seem to have been affected negatively by oil wealth, with increasing corruption in public affairs, political instability, environmental degradation, and increasing inequality.

Local level expectations and fears over oil are prominent. The oil discovery was made in the west of the country, an area comprising the districts of Hoima, Masindi, Kibaale and Buliisa, which in turn belong to the old Kingdom of Bunyoro-Kitara. The latter, revived as a cultural institution close to two decades ago, sees oil wealth as an opportunity to recapture lost glory. The Kingdom expects rapid improvement in infrastructure, and social services—indeed that Hoima, a small trading outpost close to the DRC border, would become the economic capital of Uganda. At the same time, local fishermen on Lake Albert, in the center of the oil region, fear for a loss of their livelihood.

The seminar made it clear that managing oil and gas revenue begins with managing domestic expectations. Although the Ministry of Energy and Mineral Development has done considerable work in oil exploration and has already written an oil and gas policy, not much of this has been communicated clearly to other Ministers, members of parliament, nor the general public. This section outlines some options highlighted in the seminar for Uganda to consider as it puts in place strategies for managing the ever increasing domestic expectations.

2.2 Stakeholder Participation

The first step in managing expectations is to *identify* all the stakeholders that will be involved/impacted in/by both the discovery of oil and the resultant oil revenues. These stakeholders might include (and not be limited to): local communities, civil society organizations, the broader Ugandan public, national and local government, Parliament, oil companies, and the local private sector and business community.

As a next step, all stakeholders must be *consulted* in a timely fashion and given ample opportunity to voice concerns and make their contributions. By allowing different stakeholders to express their concerns, anxieties and hopes, these consultations will help to reduce suspicions. In addition, it will ensure that the development of an oil strategy and policy are more inclusive and ultimately linked to national and district development plans.

In order to ensure that there is sufficient consultation with local communities, a liaison office should be opened in the relevant districts where oil has been discovered.

Finally, *involve* stakeholders in activities related to the exploration, extraction and utilization of oil reserves. This might include capacity building and making resources available for stakeholders to ensure their involvement. For example, in order to mitigate environmental concerns, district environmental officers need to be involved in the Environmental Impact Assessments (EIA); and may need certain resources for them to visit the oil wells and conduct regular monitoring and evaluation exercises.

If all stakeholders are identified, consulted and involved; social responsibility of the oil industry will be taken seriously and communities that live in the vicinity of the oil fields will receive obvious and timely benefits. This will help *ensure a fair deal for all*.

Box 2: Managing and meeting expectations - Nigeria's turnaround

Nigeria has experienced some of the negative consequences of managing oil wealth poorly, but has recently begun to benefit from some of the lessons learned through these mistakes. Some of the failures were due to corruption, various problems of governance including, but not limited to, lack of transparency and accountability, rent seeking, and generalized struggle for control of resources from the centre. The latter led to continuing conflicts, as a result of unequal resource distribution and environmental degradation. In addition, proper macroeconomic management (monetary and fiscal) was often jeopardized.

Key to Nigeria's turnaround has been improved public financial management, which is underpinned by a budgeting regime that follows strict public procurement procedures and prioritization of expenditure. It is reported that these due processes have saved the country \$3.5bn over the last five years. Engendering the reform required the Government to confront its failings, namely: corruption, lack of transparency, neglect of its people and the environment, and the absence of an enabling framework. To jump-start the reform process, Federal Government passed the Fiscal Responsibility Act at the Federal level. It has been a struggle since then to extend this commitment to the states, partly because of the perception of hypocrisy of the Federal Government (e.g. continued profligacy) and the lack of integrity in the electoral process, and hence, legitimacy to the people.

To restore confidence, in 2003 Nigeria became the first country to sign up for EITI. Furthermore, the Government conducted a financial and physical audit of its processes in the oil and gas sector for the period 1999-2004. These outcomes were shared broadly with the public. The 2005/6 audit is ongoing and reporting templates are being designed to institutionalize the practice of regular reporting of activities in the sector. Nigerian success has been rewarded with macroeconomic stability, real income growth of over 6% in comparison to about 3% historically. The average fiscal surplus is about 10% of income and the external reserves position has increased from \$7.4bn in 2003 to approximately \$60bn currently.

The Nigerian experience shows that although fiscal responsibility and intergovernmental coordination is important to secure macroeconomic stability, *transparency and accountability* is core to managing the oil industry. Transparency avoids unnecessary speculation and fantastic expectations. Accountability means that Government identifies with the aspirations of the people and is responsive to their concerns; such an attitude promotes support for reforms, even difficult policies that call for certain sacrifices.

2.3 Importance of Reliable and Timely Information

Inaccurate and exaggerated expectations arise largely when there are significant information asymmetries. Providing *reliable and timely* information will help significantly in shaping public expectations. While not all information can be placed in the public domain, some basic information sharing is necessary to avoid false expectations and accusations, and to manage people's expectations downwards. If information is not shared broadly and only kept amongst a certain group, this can cause suspicions to develop and ultimately lead to distrust amongst different stakeholders. Such a situation will have a negative bearing on a country's politics and stability.

Better and broader dissemination of information (i.e. by Government, oil companies and other stakeholders) will also improve *transparency and accountability*, and ensure that oil revenues are managed more effectively and efficiently (see Box 2).

2.4 Monitor Expectations

Managing expectations is not a once-off event. Expectations can change quite quickly and, as a result, there needs to be constant attention given to understanding how expectations are changing through time and across different stakeholders. Thus, to understand current thought and areas where expectations are false, distorted and/or out of date, a process needs to be put in place to continually monitor expectations. This will ensure that timely and thoughtful mitigation measures are also put in place.

Chapter III Developing Local Content

3.1 Introduction

How to extract as much benefit from the oil discovery is the goal of the Government. Local content and processing of crude oil can provide further wealth generation. The petroleum value chain consists of upstream activities (e.g. licensing, exploration, oil development), midstream activities (e.g. transportation, refining, gas processing), and downstream activities (e.g. distribution, marketing, sales). This entire chain needs to be kept in mind when considering the development of local content. Although some countries may have developed local content in certain areas, Uganda could well find its own niches consistent with its skills and resources. There are, however, some points worth keeping in mind when developing local content.

3.2 Proactive Approach

A proactive approach is important to ensure that local content becomes an inherent part of the business and contracting strategy. International oil companies use several tools to enhance local content, which must be encouraged and incorporated in contracts. These include creating local jobs, using local suppliers, supporting training and local skills development, creating enterprise centers, establishing supplier forums, entering into mentoring programmes for SMEs, and providing seed capital for local entrepreneurs. The Government of Uganda can also consider several tools for successful local content development. These include concessions, production sharing requirements, technology transfer requirements, tax incentives, procurement and contract strategies, support for SMEs, mentoring programmes for local entrepreneurs, and creation of enterprise centers and free trade zones.

Planning and preparations need to begin immediately for Uganda to benefit from the oil industries' use of local content and to ensure that suppliers and local industries are able to respond when the oil starts pumping. The country needs to identify the industries that will be critical and where skills need to be developed. Supply side constraints and potential bottlenecks need to be given urgent priority. Structural policies that focus on improving the capacity and operations of the non-oil sector must be put in place to increase inter-sectoral linkages and the diversity of exports. Uganda also needs to consider the regional dimension of bringing in capacity from neighbours such as Rwanda and Kenya. In addition, uninterrupted and efficient access to a sea port (e.g. Mombasa or Dar es Salaam) is increasingly important. This will require regional collaboration on infrastructure development.

3.3 Domestic Capacity and Business Environment

Building domestic capacity is a critical step for Uganda to take immediately (see Box 3). Capacity will be required for negotiating with oil companies, management of the oil industry, provision of labor and skills to the oil industry and domestic support industries, and, furthermore, to build up the non-oil economy. Where capacity is not available locally, Uganda should source support from outside the country, while building up internal capacity. Technology transfer will require skilled workers to absorb the technology. This absorptive

capacity building is a key component of developing local content. Additional processing capacity can be built up over time to capture more of the value chain within Uganda. A *number of avenues* can be considered to support capacity building, including technical assistance from development partners, bi-lateral assistance from other countries with experience in the oil sector, and finally, from the oil companies themselves. Revenue from oil exports can also be used to develop capacity.

Box 3: Developing local content – the Norway and Botswana way

Norway in the 1960s knew nothing about oil, but quickly understood that it would *not get anywhere without skilled and trained people*. The country needed knowledgeable people to plan its oil business and negotiate on equal terms with the multinationals. It also required an industrial workforce that could participate in the oil industry. All this was achieved by a variety of educational initiatives and through providing on-the-job training. Uganda needs to develop an appropriate education and training programme in preparation for the oil industry.

Botswana's successful management of its diamond wealth was built on the premise of *building capacity* over time in order to progressively develop local content. Diamonds were discovered in Botswana in 1967, a year after Botswana's independence. Botswana was then amongst the least developed and poorest countries in the world, with only about 40 university graduates in the entire country. On the other hand, the De Beers officials with whom Botswana negotiated were employees of Anglo American Services Pty. Ltd. This was a multi-national company which controlled and marketed, through the Central Selling Organization situated in London, 85% of the world's output of diamonds, including part of the Soviet Union's production. Despite this huge asymmetry in information, power and technical competency; Botswana's open mindedness, tenacity, and pragmatic approach led to a winning outcome for the country.

Botswana brought in *outside help whenever required, but at all times maintained control*. For example, they assembled a negotiating team made up of experts from the Commonwealth Fund for Technical Cooperation, Ford Foundation, Christian Michelson Institute and Canadian Government. This negotiating team was, however, led by the country's Permanent Secretary of the Ministry of Development Planning and assisted by the Director of Economic Planning.

Botswana realized early on that absorbing technology and reaching advanced levels of beneficiation takes time. In this regard, diamond revenues were used over time to build this absorptive capacity. For example, Botswana has now, forty years later, entered the third and final phase of diamond beneficiation. Having successfully persuaded De Beers to repatriate part of Diamond Trading Corporation (the central selling unit of De Beers) to Gaborone from London, this has paved the way for building a sustainable local diamond cutting business. Licenses have now been granted to 16 cutting and polishing houses who own similar facilities in London, Antwerp, Mumbai, Beijing, New York and Thailand. This presents the opportunity for skills development and training of Batswana by the firms themselves, as well as Government sponsored training and entrepreneurship development programmes.

A strong and attractive business environment is an important precondition for the successful development of local content. A predictable macro-economic environment, appropriate institutions and laws, and sufficient economic and social infrastructure will create the general space for a thriving business environment. Focus should be on reducing the barriers to entry, improving local skills and capabilities, and on reducing transaction costs – including those that arise from cumbersome bureaucratic hurdles to enterprise development. Factors that matter for creating an industrial base (manufacturing, fabrication and services) are pertinent. Any protection should be temporary and transparent. In addition, key obstacles to

keep in mind include: (i) limited size and access to local financing, (ii) lack of familiarity by international banks with local firms, (iii) limited track record of local firm borrowing, and (iv) limited experience of local entrepreneurs with goods and services required in oil exploration, extraction and utilization.

3.4 The Non-Oil Sector

The non-oil industry must be *maintained and expanded*. Investments from oil revenues should be targeted to enhance the productive capacity and efficiency of non-oil industries. Agriculture, and agro processing, should remain the core sector and a policy of economic diversification pursued. Uganda's export capacity must be maintained and, in this regard, inflation should be contained and the exchange rate prevented from appreciating.

Chapter IV Taxation and Fiscal Management

4.1 Introduction

Oil reserves are an exhaustible resource with an uncertain and finite revenue stream. Therefore, it is important to have a *sound macroeconomic policy framework* to manage the revenue stream, maintain macroeconomic stability, and, through sound investments, create a permanent income for the country. There is *no perfect model* and Uganda needs to take lessons from the experiences of other countries and through domestic consultation and debate, develop a model that fits its own requirements. Importantly, this model needs to be flexible, as there will be mistakes along the way that Uganda can learn from in order to further refine the model.

Regarding oil revenues there are, in general, *two fiscal regimes that could be adopted* by a country: (i) tax and royalty (with or without state participation), and (ii) production sharing (with or without state participation). While these two are the most dominant fiscal regimes, regimes in about 40% of the oil and gas producing countries fall outside of these. The choice of a fiscal regime depends on proxies for a) profit and b) rate of return. Ultimately, the country's take under different arrangements is important. A *progressive fiscal regime* should be considered and negotiated up front, as this removes the need for re-negotiating when the profitability of oil companies increases.

4.2 Legal Framework

A *clear legal framework*, to manage oil revenues, needs to be put in place. This will ensure that public investment remains consistent with the overall macroeconomic framework. Furthermore, institutional strengthening is required to ensure robust revenue collection. Uganda also needs to *simplify the contracts* that are being negotiated with the oil companies. This will better define what needs to be negotiated. At present they are complex, including numerous parameters and trade-offs, and negotiating is cumbersome. It is important to acquire the best legal expertise possible when writing contracts as the issues involved are often intricate.

4.3 Tax System

The tax system should, ideally, raise both revenue (e.g. tax the resource rent) and encourage the private sector to explore and develop oil (e.g. without distorting incentives to invest). In this regard, it should strive to be *competitive and comparable* with other countries of similar prospects. It is equally important to reduce uncertainty by creating stability of fiscal terms, although it was noted that over 30 countries have adjusted terms since 2000. Some countries actually achieved more by the simple operation of *progressive terms*. There is pressure on investors to reflect ex post rates of return that were thought improbable when the initial investments were made. This trend highlights the likelihood that Governments will try to tax high rents earned by oil companies; whilst those with progressive tax systems (e.g. rate of return schemes) will be the first to achieve this goal.

4.4 Looking Ahead

The Ugandan Government is encouraged to *spend wisely* according to a Fiscal Responsibility Law and the objectives set out in the national development plan and medium term expenditure framework. This would include de-linking spending decisions from revenue flows and putting aside sufficient savings for future generations. Oil revenue is to be integrated into the budget, thereby subjecting it to both legislative oversight (constitutionally-mandated accountability) and the discipline of the budgetary process. Uganda is also encouraged to follow a budgeting framework in line with the absorptive capacity of the economy.

Uganda is developing a National Vision 2035, which will include *five year development plans*, that lays out what the country hopes to achieve and how it proposes to get there. In this regard, the new oil policy must be seamlessly aligned and integrated with the Vision and development plans, to ensure that the oil industry assists Uganda in reaching its development goals. In addition, oil revenue *investments must be guided by strict criteria* to ensure that projects deliver high social and economic returns.

Box 4: Some fiscal management experience from Timor-Leste, Norway and Botswana

Following on from Norway's successful establishment of its petroleum fund in 1990 (see Box 6), Timor-Leste decided to adopt a similar approach. Timor-Leste has only one oil field (Bayu Undan in the Timor Sea), producing about 100,000 bpd. In 2005, with assistance from Norway, they established a petroleum fund. Currently, the fund's balance is \$3bn (or 750 % of GDP) and is rapidly increasing through the revenues saved. Although the revenues will decline at some stage, the fund's balance is expected to continue to increase, as a result of a prudent investment strategy and strict criteria on withdrawals from the fund. The creation of a petroleum fund has served the economy of Timor-Leste well and, in addition, the country is now ranked third on transparency and governance with respect to oil revenue management.

In recognizing that a petroleum fund is no substitute for sound fiscal management and that a poorly designed fund can inflict more damage than good, the Norwegians adopted the following measures as well:

- A budget process that integrates oil revenues
- Expenditure priorities that are set within an open budget process
- A sound project management cycle that includes planning and budgeting, execution, accounting, reporting, and monitoring and evaluation
- A long-term fiscal policy strategy (integrating oil revenues)
- A strict savings policy (e.g. how much to spend, how much to save)
- An informed public

Botswana displayed a pragmatic approach to both contractual relationships and revenue management. For example, the definition of capital or development projects has evolved to include recurrent expenditure on education, training and health services. It was argued that these were part and parcel of human resource development and that human capital is the country's most precious resource. For a new project to be implemented, it had to be included in the National Development Plan whose amendment had to be approved by parliament. This instilled discipline in Government expenditure, minimised waste, and certainly prevented extravagance on prestige projects. It also minimised or helped to minimise corruption. While the Government initiated projects, determined priorities and responded to national emergencies, such as frequent droughts, parliament helped monitor the implementation of agreed policies and development priorities.

Uganda needs to follow a *phased utilization* of oil revenues. Four areas of potential focus could include: (a) strategic infrastructure (roads, rail, and energy), (b) human resource development (education, health), (c) scientific research, and (d) industrialization and other activities to lower the cost of doing business. Oil revenues should not be used for consumption spending. As an example, in the first phase basic infrastructure could be established. Following this, public spending could then be gradually increased, so as to maintain macroeconomic stability, and used to build the productive capacity of the economy (e.g. human capacity development, economic diversification and enhancement of non-oil sectors) and, thereby, increase the overall wealth of society even when the finite resource is finished.

Over 20 oil producing countries have specific oil funds, whilst several others have some degree of oil revenue segregation and accounting. Uganda is encouraged to set up a petroleum fund (or stabilization fund), managed by the Central Bank, where all oil revenues are invested (see Box 4). A share of this fund should be invested out of the country. Savings into and withdrawals from this fund must be controlled by clear rules (e.g. through the budget) that are supported in legislation and can be subject to appropriation by parliament. This is to ensure both transparent governance and sustainability of the fund. Spending from the fund should be channeled through the Budget and targeted to achieving clear development objectives.

Fiscal management must keep a strong *focus on the non-oil economy*. It is difficult to predict with accuracy the oil revenues, and these should be decupled from non-oil revenues for fiscal planning purposes. In addition, prudent advice would be to resist the tendency to overestimate the value of petroleum resources and underestimate the non-oil economy. Sector distribution of productive activities in the economy is not a zero-sum game; the strengthening of one need not presume the demise of the other.

In terms of revenue management, an important feature is the ability to both levy and collect the correct revenue. In this regard, a good starting point to ensure this happens is the *reconciliation of payments and revenues*. The following are suggested as support in achieving good practice in revenue management: the *Extractive Industries Transparency Initiative (EITI)* (see Box 5) and the *IMF Guide on Resource Revenue Transparency*. Some of the terms involved in these so-called 'best practices' require further deliberation at the country level, to be certain that they are right for Uganda.

Chapter V Governance and Transparency

5.1 Introduction

There is only one condition under which extractive industry revenues benefit the people: when *Governments represent people's interests and are accountable to them*. Increasingly the public is looking for stronger guarantees, more opportunities to participate in decisions and more evidence of the implementation of public claims on accountability. Transparency helps to manage expectations and communicate information to the public, which, in turn, helps to keep oil companies in check (e.g. difficult for them to inflate costs), as there is more information in the public domain.

5.2 Transparency and National Consensus

The Ugandan Government needs to ensure that oil and gas resources (and revenues) are used on the basis of broad national consensus, according to international best practice, and in a transparent and accountable manner for the benefit of all Ugandans. As already discussed, oil revenue should be kept separate from other Government revenue, not used for current expenditures, and when used for capital projects, justified in parliament in accordance with the National Development Plan.

Oil and gas companies often have adequate information about the resource being extracted, but are not transparent and do not share this with the broader public. When the governance of a country is not in the interest of the people, companies tend to collude with politicians to deny the citizens (especially the poor) some benefits from the natural resources being exploited. One major way to address this matter is for host Governments to require oil companies to *publish all information*.

In the context of good practices in transparency, accountability and governance, some recommendations for Uganda include:

- Transparency ensures credibility, whereas, secrecy breeds suspicion and conflict.
- Strengthen the institutions tasked with managing the oil sector and associated revenues.
- Develop a clear communication strategy for the oil and gas sector, to provide information to the public on petroleum exploration, extraction and utilization; and host regular consultative meetings and discussions with all stakeholders (including civil society organizations).
- Interrogate, with a view to adoption, the principles laid down by EITI (see Box 5).
- Introduce regulations that require all companies operating in the country to make public all information relevant to revenue transparency.

The management of natural resource revenues can lead to corruption and possible conflict a process for *transparently, fairly and effectively preventing/resolving the threat of corruption and conflict is crucial*. This would begin with informed participation of citizens, civil society and relevant stakeholders in the governance process, including policy making, legislation and oversight. Participation must be embedded in democratic representation and accountability (see Box 6). In addition, fighting corruption is not an event; it needs vigilance, strong institutions and strong values acquired through a good education system.

Box 5: The Extractive Industries Transparency Initiative (EITI)

Launched in 2002 to improve transparency and accountability in countries rich in oil, gas, and mineral resources, EITI has been guided by a set of principles and criteria that provides a framework and monitoring mechanism under which resource-rich countries can ensure the transparency of revenue flows from their natural resource sectors.

At the global level, the EITI is a coalition of Governments, companies, civil society, institutional investors and international organizations. At the level of a participating country, its key organs are an implementation leader (often from Government) and a multi-stakeholder committee that comprises the Government, locally operating companies and civil society; the committee may also include parliamentarians and the media.

EITI is *recommended* as a good model for Uganda, as EITI provides information to the public, in the hope that this information improves Government accountability. EITI helps member countries build capacity for transparent management, and membership enhances countries international credibility and creates a more favourable environment for FDI.

The EITI *principles* provide the cornerstone of the initiative. These are based on the shared belief that natural resource wealth should be an important engine for growth and development, but if not managed properly, can have negative economic and social consequences. Proper management of this wealth, and the revenue stream that flows from it, requires high standards of transparency and accountability by Governments and companies in the sense of honouring commitments (contracts and the rule of the law). The consistency of payments and revenues should be ensured and the magnitude of these flows publicly disclosed.

The EITI *criteria* are the requirements for successful EITI implementation. The criteria mandate the regular publication of all material oil, gas, and mining payments by companies to Governments and, as a hopefully undistorted mirror image of these payments, publication of the respective revenues received by Governments. This is a powerful test that requires that company payments and Government revenues are each independently audited, applying international auditing standards. Discrepancies are the subject of a reconciliation process managed by an independent administrator. Civil society is actively engaged in the design, monitoring, and evaluation of this process, and contributes toward public debate.

Presently, 23 countries across Africa, Asia, Latin America, Middle East and former Soviet Union have candidate status under the EITI. Of this, 16 are African countries, including: Cameroon, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Ghana, Guinea, Liberia, Madagascar, Mali, Mauritania, Niger, Nigeria, Sao Tome and Principe, and Sierra Leone. Although several countries in Africa and elsewhere have already published audited EITI Reports, no country has, as yet, been validated. In addition to the countries already implementing EITI, several more African countries are presently preparing to sign up, including: Botswana, Mozambique and Tanzania. On the other hand, 37 major international oil, gas, and mining companies, as well as investors in these companies, and 80 institutional investors, all with total collective assets of over \$14 trillion, are involved in EITI. Many civil society groups and networks such as Publish What You Pay, Open Society/Revenue Watch and Transparency International are also involved. Supporting Countries include the UK, Norway, US, France, Germany, Netherlands, Australia and Canada.

The modalities of EITI implementation and the possibility of stretching it to cover more steps in the value chain is worthy of consideration. To finance technical assistance for implementation by countries, a donor consortium trust fund has been set up under the management of the World Bank.

5.3 Access to Information and Free Media

The *credibility of democratic processes* is crucial in order to ensure domestic accountability. Freedom of expression and access to information are important conditions for credibility of Government action. Citizens need to be convinced that the Government is acting in their interest, that costs of exploration are controlled, that benefits are distributed equitably, and that interests of future generations are protected. Above all, they need to be included in the decision making processes.

Box 6: Norway's success in governance and transparency and Nigeria's attempts to catch-up

In pursuance of transparency and accountability in managing oil revenues, Norway has set up a fund (the Petroleum Fund) into which all petroleum revenues flow. The fund reflects the total financial assets from the petroleum sector (both revenue stream and return on associated investments). A fiscal guideline on sustainable income determines the benchmark on how much money can be withdrawn from the fund. The fund is directly linked to the State budget; not as separate institution, but as an account from which the Government can draw to finance the budget deficit. The fund is managed with a high level of transparency embodying regular and frequent reporting and disclosure of information. With regards to asset management of the fund, there are clear lines of responsibilities:

- Ministry of Finance "owner"
 - Responsible for the overall management of the fund
 - Defines the strategic asset allocation (benchmark and risk limits)
 - Monitors and evaluates operational management
- Central Bank "operational manager"
 - Implements investment strategy in accordance with defined benchmark and risk limits
 - Appoints external investment managers
 - Risk control and reporting (performance, risks and costs are reported every quarter): annual report lists all investments, both equities and fixed income, and all payments to the fund

These strict rules/guidelines and comprehensive communication builds trust, which is necessary to achieve public support and legitimacy in managing the oil wealth. They also provide a disciplining effect and pressure to deliver sound financial returns. This minimizes the risk of bad governance and corruption.

Since 2003, Nigeria has been implementing several economic reforms to try and reverse the resource-curse and bad policies of the past. Nigeria was the first country to join the EITI in 2003. The aim was to improve accountability and transparency in oil revenue management. Prior to this, the oil sector was generally seen by Nigerians as corrupt and non-transparent. To improve public perceptions, Nigeria carried out a financial, physical and process audit of the oil and gas sector in 1999-2004. These results were shared widely with the public (the 2005 and 2006 audits are still ongoing). Public expenditure management and, in particular, oil revenue management, was at the core of the reforms. A price-based fiscal rule was introduced in 2004. The benchmark was \$25bn in 2004, \$30bn in 2005, \$35bn in 2006 and \$40bn in 2007. The 2008 budget recommended \$53.83bn, but was raised to \$59bn. Any revenue above this price or benchmark is saved into an Excess Crude Oil Account. A Fiscal Responsibility Act was enacted, committing Government to fiscal prudence, sound financial management, greater transparency and accountability, and improved inter-governmental fiscal coordination. Nigeria also established a Stabilisation and Savings Fund, from which resources were used for both clearing Paris Club debt and for power projects. A cash management committee has also been established and economic diversification is being encouraged.

From the Nigerian example, it is clear that reforms need strong political will and support. To minimise resistance to reforms, a broad spectrum of stakeholders needs to be brought on board – politicians, civil servants, development partners, academics, civil society organisations and the broader public. In addition, a broad consensus needs to be built up among the key arms of Government.

Moving forward, for example, a process needs to be put in place to ensure that all Parliamentarians have an opportunity to discuss the draft National Oil and Gas Policy with their constituencies. Requirements for meaningful citizen participation include: (i) the distribution of relevant and understandable information on all aspects of policy, (ii) inclusive consultations on policy options, laws and regulations for each license and contract, and (iii) an independent and empowered civil society and free media.

Chapter VI Policy Recommendations and Conclusions

There was consensus that the seminar provided the most important exchange of views on Uganda's oil prospects since the announcement of the oil discovery two years previously. The purpose of the seminar was not to derive a model for Uganda, since such a model would need to emanate from the country's own political economy. However, the seminar discussed a number of policy issues, linking them to experiences from Africa and beyond—Nigeria, Botswana, Norway, Timor-Leste, and Trinidad and Tobago. This provided a good basis for deriving policy implications for Uganda as it embarks on the commercial exploitation of its oil. This chapter discusses briefly the twelve most important policy recommendations deriving from the seminar (see Box 7).

Reaching national consensus on the expenditures that will have the first call on oil revenue is a crucial first step. Benefits for the poor are cardinal and national priorities should be protected from political expediency. Oil should help Uganda to realize development plans that it already has—not to dream up new ones. The Government must not only spend oil revenue wisely in order to prevent macroeconomic instability, but it also needs to put aside some of the oil wealth to meet the needs of future generations.

The Government needs to demonstrate social responsibility by (i) meeting the needs of the host communities (i.e. ensure that they get a fair deal), (ii) protecting their sources of livelihood (mainly agriculture) and (iii) caring for the environment. Countries that neglected citizens' demands have reaped popular frustration, dissent and serious political disruption in oil producing regions.

Oil is a finite resource. However, using oil revenue to generate domestic capacities and enhance human competences in Uganda will help provide an infinite stream of benefits. Oil production and trade must be understood well by Ugandans. The science and economics of oil refining should not be left to expatriates alone. Related to this is the importance of using some of the oil proceeds to construct economic infrastructure—both to enhance the productivity of oil exploration and to help diversify the economy.

The seminar also highlighted the importance of encouraging local private sector participation and growth of local firms by avoiding exclusive policies and allowing competition. Contracts with oil prospectors are not cast in stone and could be renegotiated in the face of new facts. Still, the public sector's capacity to negotiate contracts with domestic and foreign firms will need to be strengthened, to ensure a fair deal for all.

Information is crucial and participants encouraged the Government to avoid misinformation at all costs. This is closely related to the promotion of governance and transparency. Both are needed if the oil proceeds are to fully benefit the people. Participants observed, however, that corruption cannot be eliminated entirely and that the Government must remain vigilant.

Box 7: Twelve Recommendations for Managing Oil Revenue in Uganda

- Agree national priorities and protect them from political expediency.
- Put aside some of the wealth for future generations.
- Demonstrate social responsibility (for example, host communities should see real benefits from the oil exploitation).
- The environment must be protected.
- Maintain and grow the non-oil sectors (notably agriculture).
- Create domestic capacity and enhance human resources in order to turn the finite resource, oil, into infinite benefits for the country.
- Economic infrastructure is crucial for profitable oil exploitation and for economic diversification.
- To ensure a fair deal, raise the country's capacity to negotiate contracts and, where required, bring in external support.
- Encourage private sector participation through the growth of local firms.
- Avoid misinformation to the public.
- Give good governance and transparency high priority.
- Macroeconomic stability is important for sustaining prosperity.

Annex 1: Themes Identified by the Government for Possible Discussion at the Oil Seminar

Theme	How the ministries explained their choice of focus.
1. Fiscal stance	The Government is well aware that oil-rich countries have pursued a variety of fiscal regimes, varying with the size of oil revenues and level of development. What approach would be best for Uganda? How would the rate of taxation be set in order not to disrupt savings and investment patterns?
2. Revenue management	Closely associated with the fiscal stance is the importance of managing oil revenues expeditiously. The challenge here is how to ensure that oil, which is a finite resource, generates infinite benefits to the country. How would the country ensure that revenue inflows do not lead to permanent currency appreciation and to the decline of agriculture and manufacturing—typical Dutch Disease impacts? The Government is also concerned that oil inflows could discourage donors from continued support to Uganda. A Revenue Management Law is being prepared.
3. Managing expectations	Several years before commercially viable exploitation of Uganda's oil, popular expectations are already generating a broad political debate. Changes in spending behavior in the private economy have also been noted. The Government admitted, however, that information flows have not been well managed and that there were false expectations regarding how the oil proceeds will be shared. The oil and gas policy has been read by a small fraction of the population.
4. Local content	Adding value to Uganda's oil is a subject of much concern to the Government. President Museveni has argued on several occasions that exporting crude oil is an inferior option to exporting finished oil products. The key issue is how to develop local content in a cost effective way.
5. Governance and accountability	It is important to establish adequate baseline data and develop effective accounting systems for the oil sector. For example, what is the size of proven oil reserves in Uganda? How much can be exported? What are the benefits and costs of exporting versus domestic refining? Moreover, to eliminate corruption, a high degree of transparency is required. How should the Government build the institutions and human resources needed for this purpose? A robust system for monitoring and evaluation is crucial for accountability.
6. Infrastructure	Oil was discovered in a relatively remote part of Uganda. The profitability of oil exports will require good infrastructure, including locomotive power. It is important to interest the private sector in infrastructure provision.
7. Land, environment and conflict prevention	The oil region is in an environmentally and geopolitically (bordering the DRC) sensitive part of the country. Oil exploitation also raises the specter of land alienation in a region of the country that already feels economically marginalized. How will Uganda avoid the "tragedy of the commons"?
8. Research and skills development	The Government has underlined the importance of identifying and producing the types of skills required by the oil industry and the rest of the economy. Indeed, the Government is of the view that national curricula need to be revisited in light of the oil discovery. The importance of bridging research and policy for the oil sector is also emphasized.

Annex 2: An example of the kind of jobs that will be required by Uganda's oil sector*

Exploration and Production

- Geology and Geophysics
- Petrophysics
- Production and Operations Engineering
- Reservoir Engineering
- Well Engineering/Drilling
- Petroleum Engineering
- Petroleum Operations Management
- Chemical Engineering

Operations

- Oil Field Operations Management
- Production Operations Management
- General Operations Management
- Project Management
- Petroleum Plant Superintendents
- Oil Field Operations Supervision
- Terminal or Depot Operations Management
- Terminal or Depot Technicians

Contracting and Procurement

- Engineering procurement
- Petroleum Materials Handling
- Petroleum Logistics Management and Supervision

Commercial

- Crude Oil Trading Specialists
- Commercial Petroleum Contracts Management

Environment, Health and Safety (EHS)

- EHS accident investigations training and experience
- Environmental monitoring or management
- Lead Auditor or Internal Auditor qualifications and experience in Safety/Compliance
- Environmental qualifications to international standard
- EHS qualifications

^{*}Extract from a Kampala Newspaper Jobs Page (from early 2008) for an International Oil Company Prospecting in Western Uganda

The African Development Bank (AfDB) Group is Africa's premier development institution, owned by both regional (African) and non-regional member countries. Since its establishment in 1964, the Bank Group has focused on the continent's economic and social development. Poverty reduction has been a key consideration, along with the elimination of its causes: limited human and institutional capacities, poor access to social and economic infrastructure and services, and inadequate capital. The Bank Group uses its influence and convening power to argue Africa's case in international forums and to mobilize financial resources. Availing knowledge and advisory services to regional member countries has become increasingly important in recent years.

