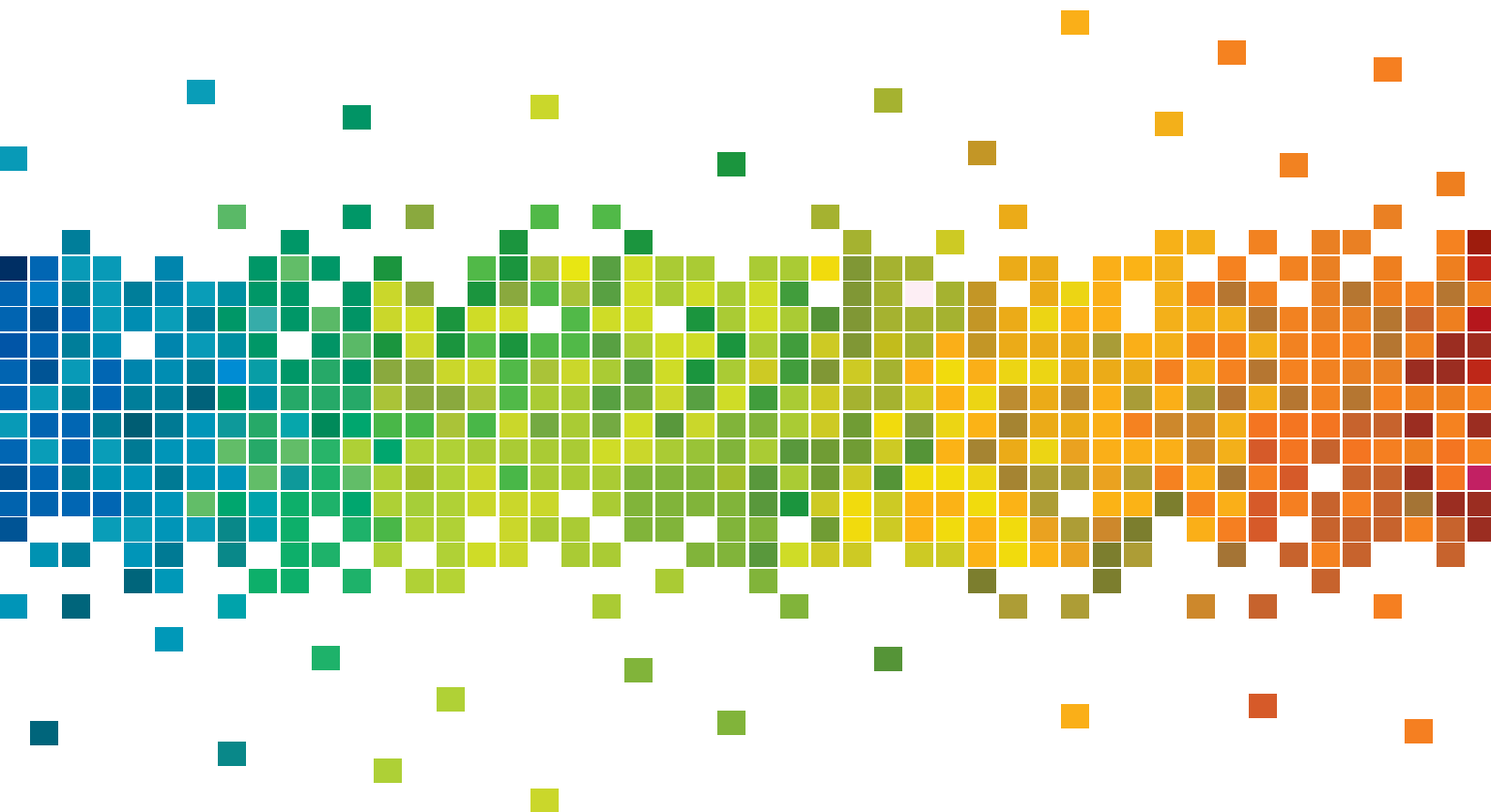




**Green Industry**  
for Global Recovery  
and Growth

GENERAL CONFERENCE Thirteenth Session  
8 December 2009, Vienna International Centre

REGIONAL PROGRAMME FOR AFRICA



# Round Table

Towards sustainable biofuels  
industries in Africa

**Briefing note**



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



## I. Introduction

Biofuels development, particularly in the context of African development, is a controversial issue that has recently attracted considerable interest among policymakers, development practitioners, donors and other stakeholders. To reach a better understanding of the underlying issues in the development of biofuels in Africa, the present round table will provide a platform for the exchange of information and ideas and for discussions among high-level decision makers on how Africa should further develop its potential for biofuels production in a sustainable manner.

In particular, the round table aims at achieving the following results:

- (a) Better understanding of potential opportunities and challenges associated with biofuels development in Africa among policymakers and development practitioners;
- (b) Concrete proposals and follow-up actions on how to further support sustainable patterns of biofuels development in the region;
- (c) A framework for enhanced coordination among key players in the area of sustainable biofuels development in Africa, taking into consideration relevant national and regional initiatives.

## II. Background

The combined effects of climate change, the continued volatility of fuel prices, the recent food crisis and global economic turbulence have triggered a sense of urgency among policymakers, industries and development practitioners to find sustainable and viable solutions in the area of biofuels. This sense of urgency is reflected in the rapid expansion of global biofuels production and markets over the past few years. In Africa, although exact data are not readily available, a number of prominent biofuels projects are under way in different countries. This heightened interest in biofuels in Africa is attributable to a number of factors, including the increased volatility in the price of oil; various ongoing efforts to revitalize the agricultural sector in the face of low commodity prices; agricultural and trade policy reforms; local and global environmental challenges; the need to create new jobs and to stimulate rural development; and the need to increase access to energy in remote rural areas. Biofuels are of particular importance to Africa. By virtue of its natural climatic conditions, available land and water resources, Africa is said to have the single largest potential for the production of bioenergy crops globally. It is therefore not surprising that African leaders, industrialists and investors have taken a serious interest in exploring the opportunities presented by biofuels development.

The development of biofuels in Africa offers a number of significant benefits. Forty-two African countries are net oil importers. This makes them particularly vulnerable to volatility in global fuel prices and to a large extent dependent on foreign exchange to cover their domestic energy needs. Energy-intensive businesses and industries continue to be negatively affected by the overall shortage of reliable domestic energy sources and high international oil prices. Biofuels production in these countries is often seen as a potential, domestically produced buffer to the vagaries of international energy markets. The development of biofuels in rural and remote areas is also seen as a potential solution for increasing the access of these often underserved areas to energy. While biofuels-based electrification does not per se create industrial production and employment in rural areas, the right policy mix, encompassing environmental regulation, as well as private sector and agro-industrial development

measures, has the potential to transform local economies, for example by offering opportunities for further value addition in agriculture, reforestation of arid areas and the creation of jobs in local fuel production and power generation.

While such opportunities certainly exist, particularly in a well-established rural business environment with supportive institutions in place, the cultivation of energy crops is not necessarily a panacea for rural development. The associated risks and challenges of biofuels production are still not well understood. These can include the uncontrolled expansion of agricultural frontiers, further deforestation, the downsides of monocultures, increased water pollution, the spread of unwanted genetically modified organisms, increased food insecurity and poor labour conditions. As biofuels production has strong economies of scale, small-scale farmers risk being forced out of business and off their land by larger companies, further increasing food insecurity. To address these potential challenges, robust sustainability criteria and agricultural/industrial zoning policies based on local development needs and targets must be systematically used to guide the development of biofuels.

In the absence of adequate data on these potential risks and opportunities, decision makers are currently forced to make policy decisions on difficult issues related to biofuels without adequate supportive information and analysis. This is particularly problematic given that policymakers in Africa regard agro-industries as one of the few areas where Africa has a comparative advantage over other regions and have to decide how to best derive benefits from this sector. To date, a number of countries in Africa have signed agreements with foreign investors to dedicate vast expanses of land to biofuels and food production. However, only a few countries, including Mozambique and South Africa, have established clear policy frameworks to ensure the development of a sustainable biofuels industry.

### **UNIDO and biofuels (renewable energy)**

There is an evident commitment to sustainable biofuels development in Africa at the highest political levels. For instance, in the Addis Ababa Declaration on Sustainable Biofuels Development in Africa, the participants at the First High-level Biofuels Seminar in Africa, held in Addis Ababa from 30 July to 1 August 2007, highlighted challenges that decision makers face in determining strategies and policies for the sustainable development of biofuels.<sup>1</sup> The lack of sound data and unbiased analyses in this area is striking, given the benefits the sector could bring in terms of job creation and energy security, particularly in rural—the poorest—areas of the region. In this context, it was highlighted in the Declaration that Africa required sound policies and strategies, institutional capacity-building, transfer of technologies and targeted research, among others. The region's institutions, in collaboration with other international expert bodies and financial institutions, have a particular responsibility in this respect. The round table may therefore wish to discuss:

- (a) Building of capacity to produce better data on the development of biofuels in all countries;
- (b) Nomination of neutral, unbiased institutions to conduct socio-economic analyses and make recommendations, covering targeted geographical areas and providing a reliable basis for policymaking;
- (c) Planning and review of follow-up action at a special multi-stakeholder workshop gathering key policymakers, relevant international organizations, expert institutions and potential international partners in 2010.

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<sup>1</sup>The Declaration was the main outcome of the First High-level Biofuels Seminar in Africa, jointly organized by the Africa Union, the Government of Brazil and UNIDO (the text of the Declaration is available from [www.unido.org/fileadmin/ext\\_media/Services/Energy\\_and\\_Climate\\_Change/Renewable\\_Energy/Conference\\_Ethiopia/Declaration.pdf](http://www.unido.org/fileadmin/ext_media/Services/Energy_and_Climate_Change/Renewable_Energy/Conference_Ethiopia/Declaration.pdf)).



In this connection, the International Conference on Renewable Energy in Africa, jointly organized by the Government of Senegal, the African Union, the Ministry for Economic Cooperation and Development of Germany and UNIDO, was held in Dakar from 16 to 18 April 2008. In its declaration, the Conference adopted a plan of action with five key programme dimensions: policy, regulatory and institutional framework; capacity-building and skills development; development of financing options; renewable energy for enterprise development and industrialization; and cross-cutting action on renewable energy development. The African Union and UNIDO, working in partnership, were recommended to lead the implementation of the plan of action and draw on existing mechanisms to establish a high-level policy advocacy group at the Ministerial level.

### III. Issues

#### Issue 1:

**How much of the potential for biofuels production in Africa can be realized in a sustainable manner, given the current situation in rural areas? How can Africa mobilize the necessary resources and capacities required to harness this potential?**

Different studies have been made on the potential for biofuels production in Africa. While the figures and details vary from study to study, it was generally revealed that Africa holds significant potential for producing biofuels. Given the existing circumstances of largely inefficient and non-mechanized agricultural production systems, it remains to be determined how Africa can realize this potential in a sustainable manner. Also, taking aside the existing natural features, policymakers need to better understand the policy options available for the other resources and capacities needed to establish a viable and sustainable framework for biofuels production.

#### Issue 2:

**What are the priority energy crops and conversion technologies in Africa? How would the large-scale production of these crops affect local communities?**

Leading biofuels-producing countries have achieved various levels of sophistication in production methods through dedicated support for their agro-industrial sectors. Given the existing agriculture and agro-industrial systems and climatic conditions in Africa, it is important to explore which energy crops are suitable for the different parts of the region. In view of the strong economies of scale in biofuels production, there is no doubt that such production in Africa will be driven, to varying degrees, by large-scale agribusiness systems. As part of the planning and policymaking process, it is therefore important to understand how such systems might affect both the local environment and communities.

#### Issue 3:

**To what extent is the debate about foods versus fuel in biofuels production relevant to Africa?**

Without a doubt, the changing climatic conditions, civil disturbances, inefficient patterns of land use and existing deficiencies in food distribution systems in Africa have resulted in enduring poverty and hunger in many parts of the region. The discussion on potential benefits from biofuels production must therefore take these underlying challenges fully into consideration. Studies have already revealed that good potential for production exists, but an unbiased review of the socio-economic factors and effects accompanying large-scale fuel production in

specific geographical regions, with due regard to food production and food security, is needed to provide policy-makers with the necessary analytical background to facilitate informed decision-making.

**Issue 4:**

**How will sustainability standards/safeguards affect local and international biofuels markets? What are Africa's needs in terms of becoming able to integrate suitability standards into biofuels production systems?**

It is widely agreed that the development of biofuels, and in particular fuels destined for international markets, should comply with internationally agreed sustainability standards. A number of attempts have already been launched to develop sustainability standards for the sector. It can also be expected that various, investor-driven voluntary standards will emerge in the near future. Given the state of the agricultural sector in Africa, it is important to examine how the use of sustainability standards will affect the region's potential for effectively attracting investors and participating in international biofuels trade. Policymakers, working in collaboration with experts, will need to determine what support and capacities are needed in their particular local circumstances to optimally integrate sustainability standards into biofuels production systems.

**Issue 5:**

**What types of partnership can enable the transfer of technologies and knowledge and build the necessary capacity at all levels to support sustainable biofuels development in Africa?**

As in any other new area of industrial development, efforts to realize the biofuels potential of Africa need to be accompanied by sound policies that are based on unbiased research and development, technology and knowledge transfer, particularly through private investments, and institutional capacity-building at the national and local levels. While individual, national solutions can secure considerable achievements if they include the right mix of stakeholders, it is widely recognized that regional considerations and international partnerships are a key component in any new area of industrial development. To this end, the round table will examine partnerships that hold potential for providing the required knowledge, experience and technologies in the area of biofuels development.

## **IV. Questions to panellists**

- What is the real biofuels potential of Africa?

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- What strategies are suitable for the systematic integration of sustainability frameworks into biofuels production systems?

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- What are the policy, legal, regulatory and institutional frameworks and instruments required to promote sustainable biofuels development?

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## Towards sustainable biofuels industries in Africa

- What strategies are required to balance private sector interests in biofuels development with the need to develop biofuels for poverty reduction?

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  - What lessons can be learned from selected case studies in Africa and from other regions?

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  - How can the roles and needs of various stakeholders along the biofuels value chain be best identified?
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## V. Agenda

1. Welcome address and introduction: Todd Benjamin (moderator), Former International Financial Editor at the Cable News Network
2. Keynote speech: Abeeku Brew Hammond, Professor, Kwame Nkrumah University of Science and Technology
3. Panel discussion (moderated by Todd Benjamin)  
  
Panellists:
  - Judi Wangalwa Wakhungu, Executive Director, African Centre for Technology Studies
  - Andrew Makenete, President, Southern African Biofuels Association
  - Abeeku Brew-Hammond, Professor, Energy Centre, Kwame Nkrumah University of Science and Technology
  - Ruud van Eck, Chief Executive Officer, Diligent Energy Systems
  - Pradeep Monga, Director, Energy and Climate Change Branch, UNIDO
4. Open-floor discussion
5. Concluding remarks by the moderator

The Director-General will participate in the discussion.

## VI. Biographies

### **Todd Benjamin**

#### **Former International Financial Editor at the Cable News Network**

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Mr. Benjamin is an award-winning journalist who worked for the Cable News Network (CNN) for 26 years in Washington, D.C., New York, Tokyo and London. He is now a senior adviser to Xynteo, an international management consultancy. Mr. Benjamin is a visiting lecturer in leadership at the London Business School Executive Education Programme. He devotes much of his time to speaking at and moderating major conferences and events.

**Abeeku Brew-Hammond**

**Professor, Kwame Nkrumah University of Science and Technology**

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Mr. Brew-Hammond has served as Manager of the Global Village Energy Partnership Technical Secretariat. He is also a past Director of the Kumasi Institute of Technology Energy and the Environment (KITE), a Ghana-based non-governmental organization with a regional outlook specializing in energy policy and project development. From 2002 to 2004, he served as Head of the Department of Mechanical Engineering at the Kwame Nkrumah University of Science and Technology of Ghana.

**Judi Wangalwa Wakhungu**

**Executive Director, African Centre for Technology Studies**

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Ms. Wakhungu is the Executive Director of the African Centre for Technology Studies of Kenya, an inter-governmental think tank on science, technology, and environmental policy that generates and disseminates new knowledge through policy analysis, capacity-building and outreach. She has conducted research and published widely in the fields of science, technology and innovation; agriculture and food security; biodiversity and natural resource management; energy and water security; and gender issues in science and technology.

**Andrew Makenete**

**President, South African Biofuels Association**

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Mr. Makenete has worked in the agricultural sector and has held numerous positions in the private sector. In 2006, he was voted National Agriculturalist of the Year by the South African Agricultural Writers Association. Mr. Makenete is a past deputy chairman of the Agricultural Business Chamber and chairperson of the Maize Trust. He is currently chief strategy officer of the Land Bank of South Africa.

**Ruud van Eck**

**Chief Executive Officer, Diligent Energy Systems**

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Mr. van Eck is the founder of Diligent Energy Systems, a company that produces biofuels from tropical plants, such as biodiesel from *Jatropha curcas* and bioethanol from waste from coffee production in Colombia. Mr. Van Eck is also a co-founder and Board Member of the Fuels from Agriculture in Communal Technology (FACT) Foundation, which promotes sustainable biofuels for local communities in developing countries.

**Pradeep Monga**

**Director, Energy and Climate Change Branch, UNIDO**

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Mr. Monga is an expert in the area of energy policy planning, energy technologies and financing mechanisms. His present responsibilities include providing strategic advice on energy policy issues, supervising networks of energy technology centres and coordinating with members of UN-Energy on energy and climate issues. He has presented several technical papers in the energy area and has co-authored several books.



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