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ANNEX 3-3-2: Policy Guidance note on integrating and rewarding sustainability Good Practice

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COMPETE

Competence Platform on Energy Crop and Agroforestry Systems for Arid and Semi-arid Ecosystems - Africa

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1. Introduction

The current report aim is to present a guideline for policy makers in Africa regarding the sustainable production and use of bioenergy crops with a focus on rewarding good practice. This guideline as part of the COMPETE project will be reviewed by the partners and submitted as a final report to the coordination.

The guideline is based on the experience and views of the African partners and the work different COMPETE partners are conducting in the area of bioenergy. This report includes also some of the opinions collected during the International conference ***International Conference and Policy Debate on 'Bioenergy Sustainability Schemes - An African Perspective' 16-18 June 2008, Arusha, Tanzania*** and also during the ***International Workshop 'Bioenergy Policies for Sustainable Development in Africa'25-27 November 2008, Bamako, Mali.***

2. Biofuels policies in Africa.

According to ENDA (2007)[1], at the global level, the current interest in biofuels is mainly seen in the context of industrial production operating within the framework of an international market governed by the globalization rules. Two trends have emerged from the biofuels scene. On one hand, fossil fuel-importing nations who are seeking an immediate solution to reduce their growing energy expenditures, and on the other hand, countries which are currently- or are interested in becoming- biofuels exporters, are attempting to position themselves strategically within the global energy market. This reflects the great hope for biofuels as key in overcoming the energy crisis, promoting alternative energy, and reducing global warming and its consequences. The industrial-scale production of biofuels practiced to date has focused primarily on the conversion of crops such as sugarcane, corn, soy, as a fuel base. This *first generation* of biofuels remains contested and is currently the source of a heated debate on the threat that energy security poses to food security (ENDA, 2007).

Policy and regulatory support is necessary for the successful implementation of improved and modern bioenergy projects. There are a number of international, national and regional initiatives in Africa regarding policies and plans. For instance, the 2007 Addis Abba Declaration that emanated from the First High Level meeting of African bioenergy stakeholders, committed the continent to sustainable bioenergy development (Diaz-Chavez and Jamieson, 2008). The Seminar was organised by The African Union Commission along with the United Nations Industrial Development Organisation (UNIDO) and the Brazilian government. The political declaration put out will, among other things, facilitate:

a) the development of an enabling policy and regulatory frameworks for biofuels development in Africa
b) the formulation of guiding principles on biofuels to enhance Africa's competitiveness while minimizing the risks of biofuels development for small-scale producers
c) the encouragement of the engagement of development partners to enable North- South and South-South cooperation in biofuels development (Jumbe and Msiska, 2007).

The meeting also called for the engagement of public financing institutions to support biofuels projects and proposed the establishment of a forum to promote access to biofuels information and knowledge (IISD/UNIDO, 2007).

[1] ENDA, 2007. Biofuels development in Africa: illusion or sustainable alternative? ENDA -TM / « Energy, Environment, Dévelopment » programme.

Table 1. Examples of African Countries policy, laws and programmes related to biofuels.

Country	Policy Documents	Strategies on Biofuels Implementation
Tanzania	• Forest policy (1998)	• To ensure sustainable supply of forest products and services by maintaining sufficient forest area under effective management
	• Energy policy of (2003)	• Promote efficient biomass conversion and end-use technologies; reduce rate of deforestation and land degradation
	• Environmental policy of (1997)	• Investment in Biomass development
	• Land policy of (1997).	• Tanzania general underlying right to land, but clearly recognizing and clarifying customary and other use rights to land.
	• Agriculture policy (1997).	• To promote sustainable food security, income generation, employment growth, and export
	• National Biofuels Task Force (2006)	• To facilitate the ongoing and potential biofuels initiative; to conduct a Policy and regulatory Environmental scan; to develop guidelines for biofuels development.
	• The Land Act (199) and the Village Act (1999)	• Land in Tanzania to be " Public land" and are held by the state for public purposes.
South Africa	• White Paper on Energy Policy (1998)	• To guarantee access to safe, reliable and affordable energy; to liberalise the energy sector and to introduce greater levels of competition in electricity markets.
	• Draft Energy Efficiency Strategy (Dept of Minerals and Energy)	• Target for energy efficiency improvement of 12% by 2014
	• White Paper on Renewable Energy (2003)	• Target of 10.000 GWh of renewable energy contribution to final energy consumption by 2013. The renewable energy is to be utilised for electricity generation (4% of projected electricity demand), heat and biofuel production.
	• Draft Biofuel Strategy has been released and approved by DME in Dec 2006	• Addresses policy, regulations and incentives for biofuel industry. It proposes a 4.5 percent use of biofuels in liquid road transport fuels (gasoline and diesel) by 2013.
	• Renewable Energy Subsidy Scheme (2006/07)	
	• Department of Agriculture	• Proposes a maximum capital subsidy of 16.7 SA¢/l provided for bio-ethanol plants and 27.3 SA¢/l for biodiesel
	• Central Energy Fund (CEF)	• Agriculture programmes to support small scale farmers and emerging farmers for better targeted biofuel production.
		• Originally created for promoting synthetic fuel production can be extended to the promotion of biofuel
Burkina Faso	• National Energy Sector	• Not regulated
	• Law N°005/97/ADP from January 1997 on environmental issues	• To observe the interdependence between environment and socio-economic development; to ratify international agreements concerning environment conservation; to protect the future generations from environmental degradation.
	• National Strategy under development	
	• Energy and poverty alleviation policies (2000)	• For the regulation of wood fuel trade
		• To develop the energy administration (organisation capacity and policy formulation); to enhance efficient energy supply options (electricity, hydrocarbons, woodfuel, renewable energies); to provide socio- economic development and to alleviate poverty.
Mozambique	• Urban Programme – Maputo, since 2006	All programmes within PROBEC
	• Rural Programme – Manica, since 2004 and Sofala, since 2007	
	• Biofuel Component – since mid 2007	
	National Biofuel Task Force of Mozambique	• To develop national sustainable criteria for biofuel production.
Zambia	• National Energy Policy (NEP1994)	• No biofuels inclusion
	• Reviewed in 2004	• Government should ensure that it makes available land for biofuels production in a transparent form
		• Allocation of land for growing of energy crops should not compromise food security and priority is given to Zambians
		• There should be no sale of land.
	• Biofuels Act	• Under development to stand alone

Source: COMPETE country reports on biofuels policy (2007)

Some examples of current legislation or programmes either directly related to biofuels production or related to issues regarding its production are presented in Table 1. Furthermore, some other initiatives are present in the continent, such as the South African Biofuel Association, the Biofuels Association of Zambia, the *Programme for Basic Energy and Conservation* (ProBEC) which is a Southern African Development Community (SADC) project, implemented by the German Development Co-operation (GTZ).

In contrast to the development of bioenergy policies in other regions of the world, Africa does not have a comprehensive regional policy on biofuels to regulate the growing industry. This lack of a regional policy and strategy has led to underinvestment into biofuels research and development in Africa. The regional economic communities in Africa such as ECOWAS, SADC, AU/NEPD and EAC are playing and must play an important role in supporting the development of the biofuels industry in Africa. A number of international aid organisations are collaborating with different countries in Africa on the generation of the policies (GTZ in Mozambique, SIDA Sewdish Agency in Tanzania, CIRAD - Centre de Coopération Internationale en Recherche Agronomique pour le Dévelopment- in Burkina Faso) (Diaz-Chavez and Jamieson, 2008).

3. Conclusions on Sustainability tools and means to assure, monitor and reward sustainable bioenergy production

International Conference and Policy Debate on 'Bioenergy Sustainability Schemes - An African Perspective. 16-18 June 2008, Arusha, Tanzania

The Proceedings of the International Conference included the discussions of the Roundtables organised by the COMPETE project as well as the presentations made by COMPETE partners and guest speakers. As an example the following figure shows the contents of the sessions related to the sustainability schemes and forms to reward good practice (COMPETEa, 2008).

Bioenergy Policy Developments in Africa – Presentations by African Policy-makers

Chair: Dr. Rainer Janssen, WIP Renewable Energies, Germany

09:00 – 09:30	Opening Address Hon. William Mganga Ngeleja (MP), Minister for Energy and Minerals, Tanzania	7
09:30 – 09:40	Welcome Address – 'COMPETE in Action' Estomih Sawe, TaTEDO, Tanzania	9
09:40 – 10:00	Bioenergy Policy Developments in Mozambique H.E. Mr. Jaime Himede, Vice Minister, Ministry of Energy, Mozambique	14
10:00 – 10:20	Bioenergy Schemes – Witherto in Africa? The Zambian Case Oscar Kalumiana, Director, Ministry of Energy and Water Development, Zambia	15
10:20 – 10:40	Status of Strengthening Policy, Regulatory and Institutional Framework for Biofuels Development in Tanzania Styden Rwebangila, Ministry of Energy and Minerals, Tanzania	17

09:00 – 10:00

Roundtable 1: Policy strategies to enhance the bioenergy potential in Africa

Chair: Prof. Francis Yamba, CEEEZ, Zambia

Secretary: Dr. Rainer Janssen, WIP Renewable Energies, Germany

Panellists

- H. E. Jaime Himede, Vice – Minister, Ministry of Energy, Mozambique
- Mr. Oscar Kalumiana, Director, Ministry of Energy and Water Development, Zambia
- Mr. Mamadou Dianka, Coordinator Biomass Energy Regional Programme, UEMOA
- Mr. Styden Rwebangila, Ministry of Energy and Minerals, Tanzania

The *International Conference and Policy Debate on 'Bioenergy Sustainability Schemes - An African Perspective* was introduced by Mr Estomih Sawe from TaTEDO Tanzania. During this introduction Mr Sawe elaborated on some of the policy issues necessary in Africa. The main points he addressed are presented in the next box:

Box 1. Mr Estomih Sawe's introduction to the conference.

- To develop comprehensive regional and national biofuels policies, regulations and strategies in consultation with stakeholders, including regional economic communities to include incentives for indigenous private sector and small farmers to take a leading role in the biofuels industry to ensure that local households, business, and communities capture the benefits of energy services afforded from biofuels development, as well as associated income and job opportunities. Policies should be clear, long term, stable and ensure biofuels development by local people, for local people has higher priority in Africa and should enhance the ability of local people to access modern energy services.

- To establish a regulatory and institutional framework in order to regulate and provide incentives for development and growth of a sustainable biofuels industry. Adequate political commitment and putting in place effective policy and regulatory frameworks are crucial elements that can improve the investment climate for bioenergy. A firm legal basis is fundamental to properly regulate and support the development of biofuels. African countries which will have sound policies to promote the production and use of biofuels will be at the forefront of realizing the economic, social and environment benefits of the biofuels industry.

- To encourage international and regional cooperation is essential for developing sound biofuels industries. This includes cooperation with international development agencies of the UN, the World Bank and African Development Bank, and others. International cooperation activities should include an emphasis on local capacity building and technical assistance, joint R&D, technology transfer, reduction of trade barriers, investment and partnership. Many opportunities for enhanced North-South and South-South cooperation should be explored. The need for the development of local Centers of excellence is important in fostering local knowhow on biofuels and South-South information exchange.

Mr Oscar Kalumiana, Director Department of Energy, Ministry of Energy and Water Development, Zambia presented the talk titled ***Bioenergy Schemes – Witherto in Africa? The Zambian Case*** The conclusions of his presentation included some policy recommendations as follows:

For the development of a successful African biofuels sector it is important to identify sustainable business models suitable for the African framework conditions (e.g. outgrower schemes). Thereby, the future production potential in African countries has to be analyses with respect to competing uses for resources such as land and water. For Zambia it is envisaged that 5% of diesel can be replaced by biodiesel and 10% of petrol by bioethanol in 2015. Furthermore, exports to the markets of developed countries seem possible. Finally, the following main criteria for the development of a sustainable African biofuels sector are highlighted:

- Market development
  - Accessibility and infrastructure development
  - Standards/specifications
  - Fair Trade and ecological labelling
- Socio-economic Issues
  - Food security
  - Sharing of benefits
  - Gender equality

Mr Styden Rwebangila, Ministry of Energy and Minerals, Tanzania, presented "Status of Strengthening Policy, Regulatory and Institutional Framework for Biofuels Development in Tanzania".

On his talk he pointed out the elaboration of a Draft Biofuels Development in Tanzania as part of the formed Task Force. These guidelines are expected tol provide the principles for the development of the biofuels sector in Tanzania. They include the following points:

- Establishment of effective institutional framework (biofuels one stop centre)
- Development of criteria for sustainable production
  - Positive impact on local communities
  - No land use change/productive land for biofuels
  - Protection of vulnerable biodiversity
  - No clearing of forest
  - Protection of water sources (surface/ground/catchments)
- Thorough Environmental Impact Assessment (EIA)
- Contract farming to ensure benefits for the local population

Finally, it is common understanding in Tanzania to place emphasis on the production of biofuels for local demand (rural electrification, national transport fuel). However, export of biofuels is considered for a transition period during the establishment of the internal biofuels market.

Mr Mamadou Dianka Coordinator Biomass Energy Regional Programme from UEMOA presented **Steps on Promoting Liquid Biofuels Markets**

His conclusions highlighted the need on the implementation of real agro -energy policies aimed at the long-term development of the enormous assets in term of space available for the production of a large variety of feedstock species to produce ethanol and biofuel. This policy will also have to settle the land question in order to facilitate private investment. The World Bank, the European Union and the Government of Brazil could provide support.

COMPETE Declaration

As a result of the *International Conference and Policy Debate on 'Bioenergy Sustainability Schemes - An African Perspective. 16-18 June 2008, Arusha, Tanzania* a position paper on the views of the partners and the conclusions of the Conference was produced (COMPETEb, 2008). This "COMPETE Declaration on Sustainable Bioenergy for Africa Policy strategies to enhance the bioenergy potential in Africa Bioenergy" stated that this bioenergy potential should be seen as part of the solution of energy needs and greenhouse gases reduction and not as part of the problem. Major opportunities as well as constrictions need to be considered within the range of alternatives that bioenergy can provide especially in developing countries. Five main topics considered within the policy strategies were presented as follows:

1) Visions guiding the implementation of policy strategies for bioenergy development in Africa
The following visions should provide the guiding principles for bioenergy policy development in African countries:

- Rural development and improved livelihoods for the rural population in African countries
- Increased energy access and income generation opportunities
- Successful transition from traditional biomass to modern biomass
- Sustainable large-scale production of biofuels involving communities, smallholders, cooperatives and local enterprises
- Support to rural production and marketing of bioenergy
- Reduced dependence on imported expensive fossil fuels
- Achievement of the Millennium Development Goals (MDG)

2) Markets (local, national, international) for bioenergy development in Africa
The following policy measures and principles for bioenergy market development should be implemented in African countries:

- Create *policies and (technical) standards* to facilitate and guide bioenergy market development in Africa (both, local and export markets)
- Give *priority to small-scale projects and local markets* (e.g. rural electrification, water pumping, transport fuels in agriculture)
- Create new and long term *national markets* for bioenergy (e.g. blending targets)

These key points and those presented above will contribute to call for some key policy considerations in African countries as described in the next section.

4. Key points for Policy Guidelines

The framework for sustainability proposed in COMPETE (see First year report) considers policy as another pillar for sustainable development. It is not viewed as a driver for biofuels production but as an integral part to promote sustainable development. From the presentations, meetings and papers from the different partners of COMPETE and the discussion on the COMPETE Declaration the following key points have been extracted to discuss as the mainstream for Policy Guidelines for sustainable biofuel production:

- To include all national, regional and local stakeholders in consultations on policies related to renewable energies and biomass. The contribution of committees and task forces will help to improve and accelerate the process.
- To clear state the objectives of the biomass use for the national needs, e.g. energy security, electricity provision, rural development, transport requirements, job creation, economic investment, north-south and south-south cooperation.
- Policies should be clear, long term, stable and ensure biofuels development by local people, for local people has higher priority in Africa and should enhance the ability of local people to access modern energy services.
- To promote the land use allocation based on scientific and practical data
- Encouragement of the engagement of development partners to enable North- South and South-South cooperation in biofuels development.
- To link the policies to climate change implications (e.g. adaptation and vulnerability).
- To establish a regulatory and institutional framework in order to regulate and provide incentives for development and growth of a sustainable biofuels industry.
- To identify sustainable business models suitable for the African framework conditions
- To look at the needs of the national market first and forecast the possibilities of the expansion for global markets, including: accessibility and infrastructure development, standards/specifications and fair Trade and ecological labelling.
- To develop national sustainability standards or to work with international organisations such as the Roundtable on sustainable biofuels work on the national interpretations.
- To set the regulatory requirements for the use of traditional environmental tools such as strategic environmental assessment to review policies, plans and programmes related to biofuels and to enhance and enforce environmental and social impact assessment.
- To review feasibility studies along with investors within the regulatory framework.
- To create the conditions to apply wider sustainability objectives looking not only at the biofuel production but at a general development for the local area/region including social, economic and environmental considerations (possibility to link with MDGs).

5. Considerations for rewarding sustainability Good Practice.

The Food and Agriculture Organisation (FAO) defines **Good practices** as:

"Any collection of specific methods that produce results that are in harmony with the values of the proponents of those practices. In agriculture, applies available knowledge to addressing environmental, economic and social sustainability for on-farm production and post-production processes resulting in safe and healthy food and non-food agricultural products" (FAO, 2009).

A number of issues need to be considered to ensure both a sustainable production and use of biomass oriented towards energy needs and reducing GHG emissions. Amongst these are environmental and social concerns, which bring into consideration the area of land required from energy crops for producing electricity and biofuels for transport. Additionally, other concerns include the effects that the large-scale cultivation of energy crops and use of residues may have on biodiversity, soils, hydrology and landscape (Diaz-Chavez and Woods, 2008).

In the COMPETE project three main products are related and considered to be use in an integrated form with the Arusha Declaration as in the following figure.

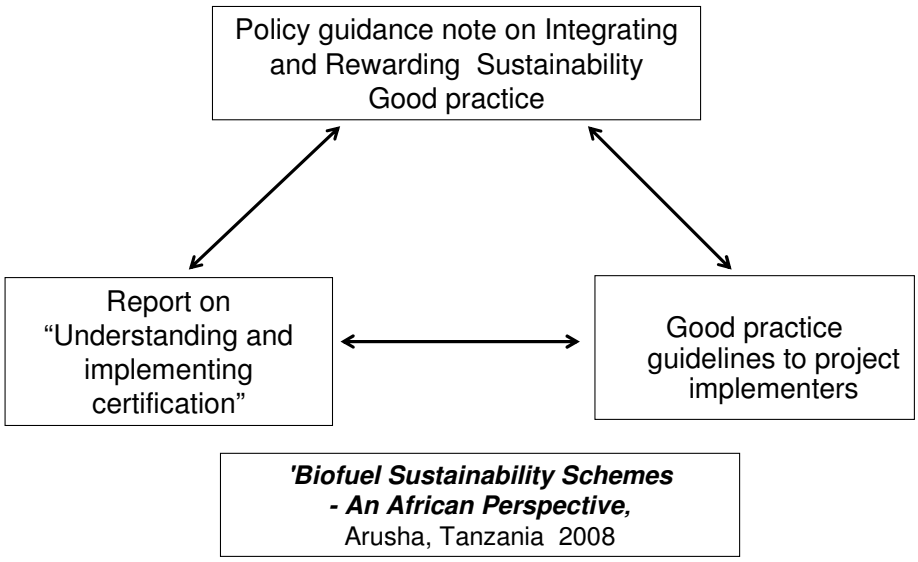

Figure 1. Links between different guidelines of the COMPETE project.

A number of different approaches exist to assess the sustainability of renewable resources (biomass) used for energy production. They range from the use of indicators to the application of the life cycle assessment (LCA), life cycle inventory (LCI) (ISO, 1997), to specific index such as the Sustainable Process index (Narodoslawsky and Niederl, 2006) and the ecological footprint in different versions (Rees, 2006). What they all have in common is the use of indicators from at least one of the sustainability pillars whilst some are based on supply chains.

Nevertheless, there is a general failure in these systems to incorporate the production stage (large or small scale) into these approaches (figure 2). The decision of approaching any of these forms or a synthesis of them may be a major factor determining the sustainability performance of bionergy production. The forms of production are strongly related to the different indicators from the three main pillars, and they provide a link to the fulfilment of more advance environmental and social goals, such as the Millennium Development Goals.

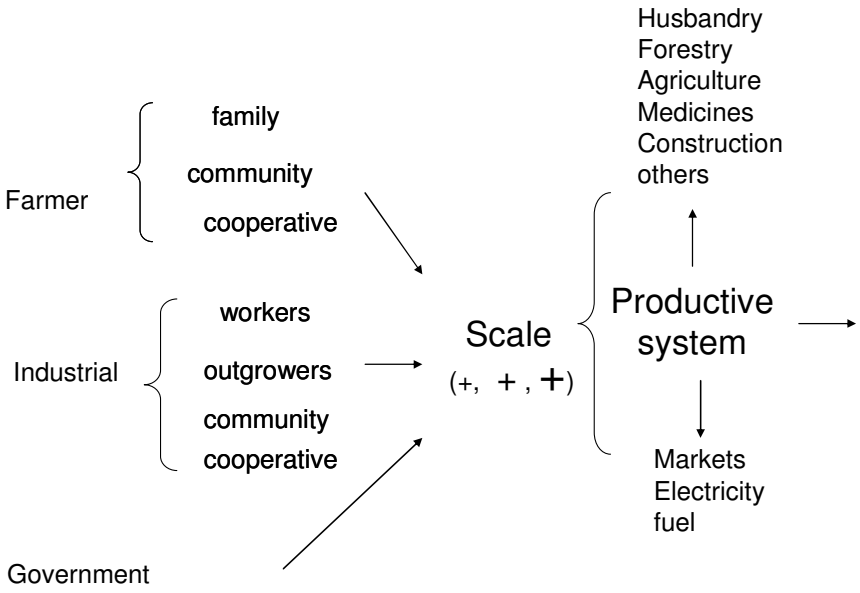

Figure 2. Forms of production (Diaz-Chavez, 2009)

The Certification Report of COMPETE presented a complete review of available certification, standards and verification systems proposed for bioenergy crops and other crops in general. The majority of these systems are intended to ensure a sustainable production. Nevertheless, in terms of "rewarding good practice" only the Organic and Fair trade provide a "premium" payment for the producers. Currently, these two systems are not applicable for bioenergy crops.

An additional "Good Practice" reward is related to the Clean Development Mechanism (CDM), one of several mechanisms under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC). CDM allows developed countries to implement greenhouse gas reduction project activities in developing countries, where the costs of these activities are usually much lower. These projects are to be carried out with the purpose of assisting developing country Parties in achieving sustainable development, whilst simultaneously allowing developed country Parties to achieve compliance with their quantified emissions limitation and reduction commitments. The main criteria to be met by projects include proving *additionality*, this is on top of any "business as usual scenario", permanence of emission reductions achieved and no leakage thus ensuring that emissions achieved at one location are not emitted in another location. The most significant difference of A/R CDM to other projects under the Mechanism is non-permanence. In A/R CDM, CO2 once sequestered in trees could be released back into the atmosphere in an occasion such as forest fire or die back from pests. The issue of non-permanence is addressed by creating a different type of Certified Emission Reductions (CERs), namely temporary CERs (CERs) (Khatun and Knorr 2009).

Forestry projects under the CDM have a potential value to diverse number of stakeholders, from private entities in the developed countries in contributing to their corporate social responsibilities, to NGO's aiming to combat desertification or deforestation. From a national point of view, CDM holds the potential to lead to significant investment as project partners, the creation of jobs and poverty alleviation in the developing countries, in a way that assists these countries in achieving sustainable development. One example considered are Jatropha plantations which differ from conventional A/R projects as they give revenue in the form of crops in addition to other incentives such as carbon credits, providing communities an extra inducement to care for the forests (Khatun and Knorr 2009).

Fair trade certification includes environmental, social and trade issues (FLO, 2009). Organic Trade also considers environmental and social issues for the production of crops paying a premium to farmers (OTA, 2009). While certification and standard systems provide certain assurances to the consumer and wider benefits to the producer, it is important that these systems do not act as a barrier for trading or an additional burden especially to small scale producers.

Table 2 shows a summary of some possible options to reward Good Practice for bioenergy crops production in Africa. The description of the different criteria involved in the systems included in the table and others (e.g. RSPO) are described in the report on certification of COMPETE.

Table 2. Summary of options for rewarding good practice.

Possible Good Practice schemes	**Currently in use**	**Additional cost**	**Social benefits**
National Regulations (e.g. EIA, SIA)	?	X	Depends[1]
Certification, standards for bioenergy crops (e.g. RSB)	X	√	√
Fair Trade	√	√	√
Organic Trade	√	√	√
CDMs	√	X	√
Other (e.g. general market)			Depends[2]

RSB = Roundtable on Sustainable Biofuels (not yet official in 2009)
Depends= [1]Varies from one country to another and on [2]type of market.

Globalisation and trading system have implications for agricultural products both food and non-food crops in terms of sustainability. Sustainability issues regarding policies and institutions particularly in developing countries have to be considered for better production and wider social benefits. Nevertheless, other technological aspects and marketing support will play an important role for the future sustainability of different crops.

Much of the implications of trading commodities are in fact related to policies and regulations. The reward for the producers (either small farmers or large producers) will depend on different factors associated with the trading commodities. As bioenergy crops are not yet regarded as commodities (especially for biofuels) there will be a limitation on the possibilities to reward the producers. Nevertheless, with agriculture having a resurgence in the international and political agendas, it would be advisable to focus the efforts into rewarding farmers for good practices.

6. Conclusions

Although policy-making is a difficult task and for many a difficult art, the biofuel industry is moving fast globally and therefore policy making should try to encompass this movement without precipitation. The key points selected in the previous sections have also been mentioned in different International High Level Conferences in Africa (e.g. UNIDO in Addis Ababa, in Burkina Faso, in Senegal).

The COMPETE project finalises in December 2009 giving its partners and other associate members (including high level decision makers) the opportunity to discuss on the selected key points for guidelines in policy making regarding sustainability and biofuels.

7. References

COMPETE. 2007. Competence Platform on Energy Crop and Agroforestry Systems for Arid and Semi-arid Ecosystems – Africa. http://www.compete-bioafrica.net/index.html. Accessed: April 2007.

COMPETEa. 2008. Proceedings International Conference *International Conference and Policy Debate on 'Bioenergy Sustainability Schemes - An African Perspective. 16-18 June 2008, Arusha, Tanzania* http://compete-bioafrica.net/events/events2/event_tanzania/COMPETE-WS-Arusha-June2008-Proceedings-080814.pdf. Accessed: december 2008.

COMPETEb. 2008. Declaration on Sustainable Bioenergy for Africa Policy strategies to enhance the bioenergy potential in Africa Bioenergy. http://compete-bioafrica.net/events/events2/event_tanzania/COMPETE-Declaration-Final-081024.pdf. Accessed: December 2008.

Diaz-Chavez and Woods, 2008. Sustainability Assessment of biofuels in practice. 5th International Biofuels conference. February 7-8, New Delhi, India.

Diaz-Chavez, R and Jamieson, C. “African Case study” in: Woods and Black “ Land-use change impacts and opportunities at regional level”. The Gallagher Report. RFA UK. http://www.dft.gov.uk/rfa/reportsandpublications/reviewoftheindirecteffectsofbiofuels.cfm

ENDA, 2007. Biofuels development in Africa: illusion or sustainable alternative? ENDA -TM/ «Energy, Environment, Dévelopment » programme. Dakar, Senegal.

FAO/Netherlands Conference „Water for Food and ecosystems“. http://www.fao.org/ag/wfe2005/glossary_en.htm. Accessed November 2009.

FLO .2009. Fairtrade Labelling Organisations International. http://www.fairtrade.net/. Accessed November 2009.

IISD/UNIDO, 2007. First High-Level Biofuels Seminar in Africa 30 July-1 August 2007 | Addis Ababa, Ethiopia. http://www.iisd.ca/africa/biofuels/.

ISO, 1997. ISO/DIS 14040. Environmental Management. Life Cycle Assessment. Principles and Framework. ISO. Geneva

Jumbe, Ch. and Msiska, F. 2007. Report on International and Regional Policies and Biofuels Sector Development in Sub-Saharan Africa. ANNEX 6-2: Report on Regional Policies and Strategies. Food Agriculture and Natural Resources Policy Analysis Network (FANRPAN). COMPETE. Germany.

Khatun, K and Knorr, W. 2009. Opportunities under the Clean Development Mechanism (CDM) for Africa. COMPETE Newsletter 5.

Narodoslawsky, M and Niederl, A 2006. The Sustainable Process Index (SPI). Renewables Based technology. England. John Wiley & Sons. Ltd.

OTA. 2009. Organic Trade Association. http://www.ota.com/index.html. Accessed November 2009.

Rees, WE .2006. Ecological footprints and bio-capacity: essential elements in sustainability Sustainability Assessment. John Wiley and Sons,.

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WP6 Coordination – Policies

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