

**OVERVIEW OF THE POLICY AND REGULATORY  
FRAMEWORK PERTAINING TO BIOFUELS IN  
NAMIBIA  
(NON-FOOD CROP PRODUCTION,  
ALTERNATIVE ENERGY)**

Heidi Currie  
BA, LL.B, LL.M

**Acknowledgements:**

World Sustainable Energy Coalition and the ISEO Legal Committee;

Global Energy Charter for Sustainable Development;

Jull, C (2007) *Recent trends in the law and policy of bioenergy production, promotion and use*. FAO Legal Study;

some background drawn from NACOMA's coastal review report;

Gratitude expressed to Joy Tshiteta for background research.

- FAO defines **bioenergy** simply as energy derived or generated from biofuels,
- whereas **biofuels** are very widely defined as *‘fuels of renewable and biological origin, including woodfuel, charcoal, livestock manure, biogas, biohydrogen, bioalcohol, microbial biomass, agricultural wastes and bi-products, and energy crops’*. (working group, 2000)



## **NAMIBIA:**

- ◆ no official legislation dedicated specifically to the regulation of biofuels
- ◆ Government has indicated interest in the production of biofuels
- ◆ Lack of regulatory mechanisms on a national level
  - by no means unique to Namibia but reflects the international situation



## GLOBALLY:

- ◆ No international agreements specifically addressing ***bioenergy*** developed yet
- ◆ *however*, several existing international environmental conventions and protocols impose obligations on member states to take **regulatory measures to address *climate change***
  - and encourage the promotion of legal **frameworks for bioenergy**



- ◆ Legislative and Policy initiatives are often combined in regulating this new sector of biofuels
- ◆ Recently, some countries have chosen to create a regulatory framework for bioenergy or biofuels by passing legislation *specifically* on the topic
- ◆ In other situations, governments have expressed their commitment to promoting bioenergy by the formulation of policies that are not legally binding but designed to complement existing national legislative frameworks



## **International Framework:**

**1992 Convention on Biodiversity (CBD)**

**1992 UN Framework Convention on Climate Change (UNFCCC);**

**Kyoto Protocol to the above-mentioned UNFCCC**

**1996 UN Convention to Combat Desertification (UNCCD)**

**2002 World Summit on Sustainable Development (WSSD)**

**2004 Bonn International Conference for Renewable Energies**

## **National Framework:**

**Namibia's Agronomic Industry Act of 1992**

**Namibia's Petroleum Products Act 13 of 1990**

**Namibia's Environmental Management Act 7 of 2007**

**Namibia's Constitution (1990)**

**Environmental Investment Fund of Namibia Act 13 of 2001**

**Namibia's Forest Act 12 of 2001**

◆ Surveys of comparative countries' strategies show that **correct public policies are vital for successful bio-energy development**

➤ Promotional activities, such as fiscal support & budgetary grants (funded implementation and programmes, subsidies) and tax concessions

➤ integral strategies to support the development of bio-energy industries



❑ How do existing, international legal obligations of States lend themselves to the development and promotion of bio-fuels?

❑ (And, particularly, micro-algae...?)

The 1992 United Nations Framework Convention on Climate Change (UNFCCC), in Article 3, commits parties to:

*'formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change.'*





- In Article 4, the UNFCCC requires the differing economic levels and particular circumstances of each country to be considered in its implementation

- **Such instruments are increasingly being used to encourage countries to develop national frameworks for bioenergy,**

- require member states to take measures to reduce the levels of greenhouse gas concentrations in the atmosphere

- **compatible with the approach adopted in Namibia's road-map strategy on bio-fuels**



## Kyoto Protocol:

- ✧ provides the most detailed and modern framework for the promotion of renewable energy, including fuels derived from biomass
- ✧ Annex 1 (**industrialized**) country parties agreed to binding emission reduction targets during the first Kyoto Protocol Commitment period: runs 2008 – 2012
- ✧ On the other hand, the ***Clean Development Mechanism (CDM)*** was designed to assist **developing** countries in reducing their emissions and encouraging investments in renewable energy projects



✧ *Clean Development Mechanism emissions reduction projects in developing countries are used to create credits (Certified Emission Reductions – CERs) which can be purchased and used by the Annex 1 parties in order to meet their Kyoto Protocol emission reductions obligations*

➤ However, since the inception of *Clean Development Mechanism* CDM in 2005: developing countries encountered obstacles in implementation of renewable energy projects, specifically the bioenergy sector: **equipment costs often higher per emission than other potential CDM projects**



## To Re-cap:

- set the scene as to what there is internationally, and nationally, how we compare, and

- ◆ (very briefly) - How the Climate Change Convention and Kyoto Protocol there-under can be used to promote the development of bio-fuels, and

- ◆ - which mechanisms to use thereunder



*Moving on more specifically to bio-fuels...*



Three key international conferences with important implications for bioenergy regulation have furthered this agenda:

1. 1992 (Rio) United Nations Conference on Environment and Development (UNCED);
2. 2002 Johannesburg World Summit on Sustainable Development (WSSD);
3. 2004 Bonn International Conference for Renewable Energies



- Interestingly, in 2009, the International Energy Agency's (IEA's) *'Bioenergy 2009 Annual Report'*:

- '... in the longer term, aquatic biomass, or algae, could make a significant contribution to bioenergy, and that future generations of biofuels, such as oils produced from algae, are at the applied research and development stage'



## WHY MICROALGAE?

- ✓ Potential of microalgae as an alternative and sustainable energy source generated significant research and business interest in recent years
- ✓ JSE-listed energy and chemicals group Sasol, (world's coal-to-liquids leader), has flagged its interest in biofuels, and believes that microalgae have advantages over other sources of biomass:
  - owing to ability to absorb CO<sub>2</sub> higher rates than terrestrial plants
  - directly linked to their rapid rates of growth,
  - ability to accumulate large quantities of oil that can be converted into a biodiesel product,
  - ability to be cultivated in arid regions where there is no competition with agricultural land





## **SO, MICROALGAE, *because***

the food-versus-fuel debate is far less intense and / or relevant.

Algal biofuels:

- regarded as “second- or third-generation biofuels”
- can be used to produce ethanol or biodiesel
- advantage of not using food feedstock



- ✓ Microalgae require sunlight, water and CO<sub>2</sub> to grow
- ✓ Under optimal conditions, algal cultures can double in population size between two and three times a day
  - advantage of growing on nonarable land, potentially using sea- water and brackish water, i.e. resources not used for conventional agriculture and/or growing food crops



- ❖ Namibia: technical sub-committee appointed: investigate potential conflict between biofuels & food production
- ❖ aquaculture farmers interested in growing microalgae in Namibia: apply for license to MFMR as required in the Aquaculture Act and licensing regulations



## Environmental Concerns, and indirectly regulatory instruments

- ◆ 1992 Convention on Biological Diversity (CBD), adopted at UNCED above, &
- ◆ 1996 UN Convention to combat Desertification (UNCCD)
  - address international environmental concerns over the production of bioenergy feedstocks in sensitive ecological areas



Also adopted at UNCED:

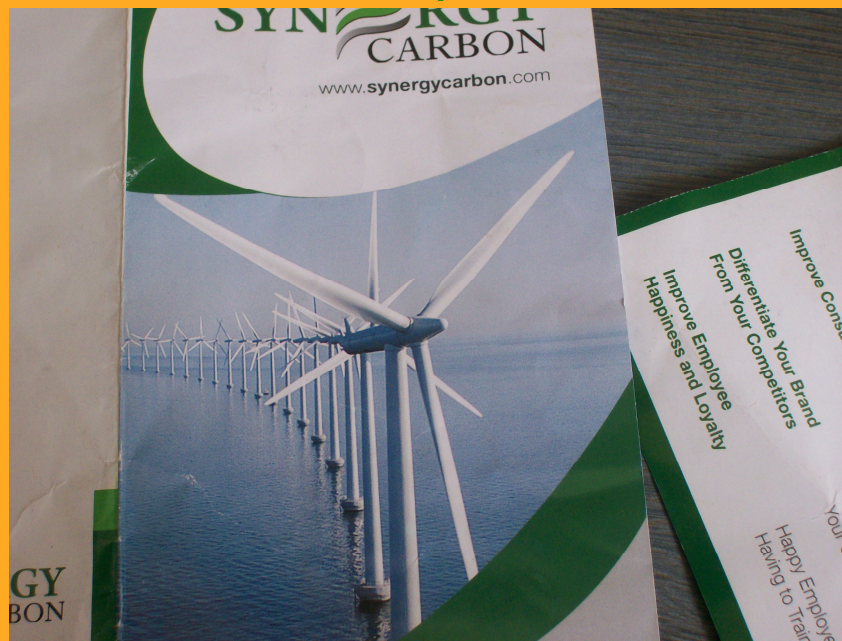
- two further influential international instruments with important implications for sustainable development of bioenergy sector:
  - neither impose binding legal obligations on signatory countries,
  - do reflect the international consensus appropriate measures applicable to natural resource management:
    1. *Rio Declaration on Environment and Development, &*
    2. *non-binding Forest Principles.*



- relevant to biofuel production from wood-derived sources & forestry operations,
  - cover best practice measures relating to management, conservation, EIAs, information disclosure, public participation, traditional knowledge protection etc.
- ❖ 10 years after UNCED, at the WSSD in 2002, so-called MDG (Millenium Development Goals) adopted
- indirectly relevant to biofuel production, in so far as they apply to the implementation of related Sustainable Development projects, environmental protection and conservation goals



- ◆ *Johannesburg Declaration* adopted at the WSSD and adopted Plan of Implementation calls for action on bioenergy and other forms of renewable -, clean - and environmentally sound energy, e.g. in paragraphs 9a), g), 20c) – e), i) and p)
- ◆ measures include the phasing out of subsidies that may inhibit sustainable development



◆ International Conference for Renewable Energies (ICRE) held in Bonn in 2004:

- bioenergy highlighted: 1 of most promising energy sources of the future;
- Political Declaration & International Action Programme (IAP) adopted:
  - considered very important to work of Commission for Sustainable Development
  - This IAP has established specific targets and goals for countries to encourage the use of renewable energy, which includes bioenergy





- In addition to UNCED, WSSD and ICRE, various other public and private organizations committed to promoting bioenergy through international cooperation, include:

- Global Energy Partnership (GBEP), launched at the 14 session of the Commission on Sustainable Development in New York in May '06;

- This partnership cooperates with FAO's International Bioenergy platform and facilitates bioenergy integration into energy markets:

- – by tackling specific barriers in the supply chain;

- the Global Energy Partnership also promotes high-level policy dialogue on bioenergy; and



- supports national & regional bioenergy policy-making and market development;
- favours efficient & sustainable uses of biomass;
- develops project activities in bioenergy;
- fosters bilateral & multilateral exchange of information, skills & technology etc.

SOURCE: Jull, C (2007) *Recent trends in the law and policy of bioenergy production, promotion and use*. FAO Legal Study



## **Namibia: Policies and Strategies in place:**

- no specific biofuels policy
- However, a 'National Roadmap on Crop-Oil for Energy'
  - launched in August 2006
  - focus on production, marketing & utilization among others,
  - will help the country to meet commitments to international agreements



- covers & includes decisions, institutional arrangements, international agreements, legislation, etc. to create a ‘conducive environment in Namibia to grow and process bio-oil”
- strategic document aimed at achieving required contribution of a bio-oil energy industry in Namibia’s Vision 2030;
- contains a number of short term and long term objectives



## Policy measures in Namibia to promote the biofuel industry *continued*:

- ❖ 2006, Namibian Government appointed Interim Bio-Energy Committee (IBEC) to oversee the development of Namibia's Bio-oil energy Roadmap
- This Committee then became the National Oil-Crops for Energy Committee:
  - established to implement the roadmap,
  - chaired by the Namibian Agronomic Board CEO



- comprising the Ministry of Agriculture, Water and Forestry, the Ministry of Environment and Tourism and the Ministry of Mines and Energy, in addition to public and private stakeholders (NGOs, parastatals, the petroleum industry, tertiary training institutions)
  
- **HOWEVER**, This body has no statutory powers:
  - serves as a platform for exchange of information & discussion of relevant issues
  
  - A discussion paper on ‘Strategies to support the emerging biofuel industry in Namibia’ is at present being drawn up by consultancy for Ministry of Agriculture Water and Forestry



❖ Vision Statement agreed to in Namibia's road map:

*( ' Vision for a bio-oil energy industry in Namibia' )*

***' An established bio-oil energy industry that contributes to a thriving and profitable bio-oil energy economy and meaningfully supports Namibia's development goals as envisaged in Vision 2030'***

❑ The road map establishes new development project, bio-fuel project of Namibia

➤ exclusive focus on terrestrial crops, specifically *Jatropha curcas*



*Recap: move now to more specific, National Acts of Namibian legislation, after having perused 'bigger picture' of what may be relevant:*

- 1992 Agronomic Industry Act of 1992: *Jatropha curcas* & any other plant used as energy crop: published in official gazette (Section 2a):
  - establishes an in-principle agreement for biofuel producers & processors to pay fees (probably in the form of levies) to cover administration costs, once sizeable crops have been harvested after three years of growth





▪ Namibia's Petroleum Products and Energy Act 13 of 1990:

- requires appropriate liquid fuel standards published in official government gazette
- Preamble: economy, distribution and measures aimed at the saving of petroleum products, maintaining prices, controlling and furnishing information, services and standards relating to motor vehicles;
- establishment & utilisation of National Energy Fund
- imposition of fuel levies



- Environmental Management Act No. 7 of 2007:

- once in force, establishment of Designated National Authority (DNA): paramount to allow project executants & proponents to register Clean Development Mechanism (CDM) projects i.t.o. Kyoto Protocol
- Namibia ratified the UNFCCC in 2003;
- In 2007, Cabinet approved establishment of a Clean Development Mechanism office at the Ministry of Trade and Industry, & Designated National Authority (DNA) at the Ministry of Environment and Tourism in terms of our country's obligations under the Climate Change Convention



- The Environmental Management Act should then require & / empower the Minister of Environment and Tourism to publish regulations that support activities relating to the implementation of the United Nations Framework Convention on Climate Change (UNFCCC)
- This same Act requires extensive EIAs, including environmental / ecological / biodiversity, economic and cultural / social issues, submitted to the Ministry of Environment and Tourism, before any large development / significant activity as listed may take place
- Namibian Government should address climate change through progressive environmental policies, could be enacted through this Act & should be included in the Energy White Paper of 1998



❖ Re-cap: tried to give picture through processes and legal requirements from production to final product

❖ Now move on to more specific carbon exchange issues...



## Global Carbon Exchange:

### ❖ Climate Change Convention (UNFCCC) & Kyoto Protocol:

- Globally, Governments turning to country wide = national legislation to regulate their carbon emissions
- Such laws generally have economy wide impacts thereby eventually affecting all companies & business



ining

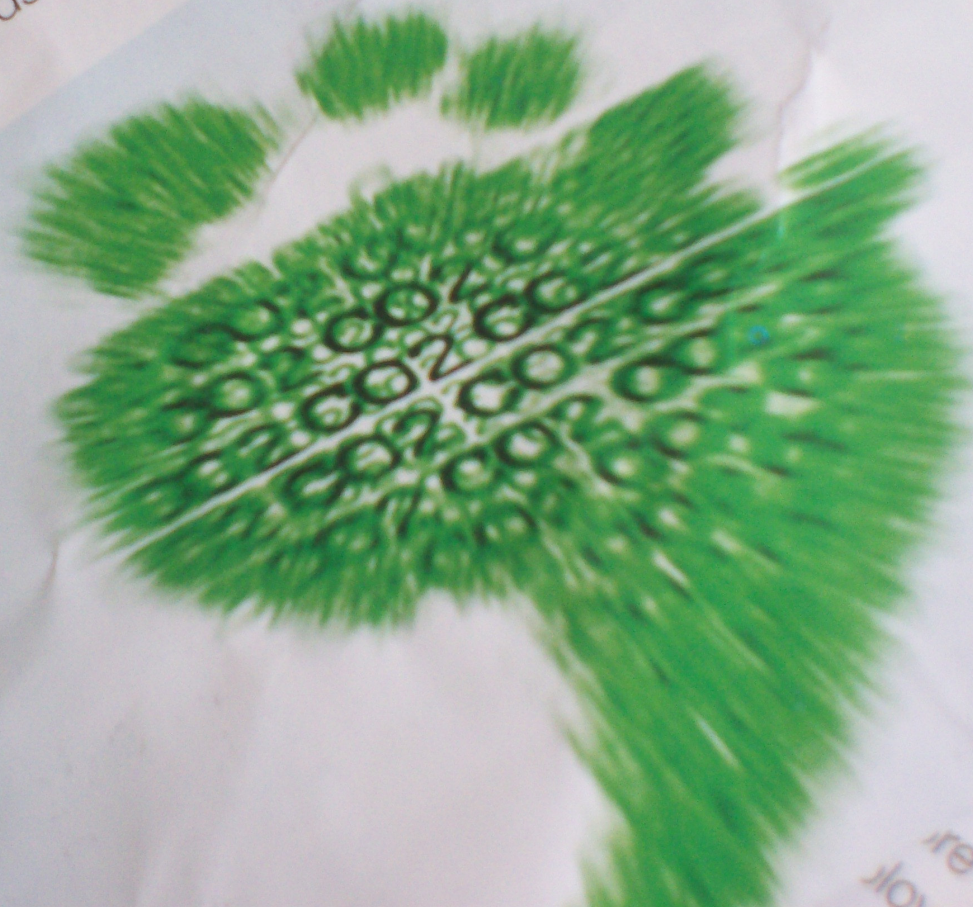
## **ST SAVING**

most cases, Synergy  
% on their energy bills this  
ciency measures that also reduc  
sions.

## **SOCIAL RESPONSIBILITY**

How can I develop my business in a sustain  
How can I limit the impact my business has on the  
ronment? Understanding your company's Carbon Fu  
print is an easy step towards social responsibility.

on Seals W



offset their  
carbon

re Pr  
lor

**Green Your Business and  
Let Your Customers Know**



Use Synergy Carbon's Seals to Communicate to

**Global  
Greening!!!**

**SYNERGY  
CARBON**

[www.synergycarbon.com](http://www.synergycarbon.com)



**GY  
BON**

Improve Consumer  
Differentiate Your Brand  
From Your Competitors  
Improve Employee  
Happiness and Loyalty

Improve Your Company  
Happy Employees  
Having to Train

- Legislation varies from direct carbon emissions taxes or fines to cap and trade systems which set emissions targets & allow companies to purchase carbon credits to reach their targets
- Early action saves costs in the long-run;
- positively affect the risk/return ratio &
- opportunities may arise to develop new environmental products increasing your differentiation





- ❖ If the above-mentioned biocrop (*Jc*) is to qualify for carbon credits in terms of the Kyoto Protocol, only land that was cleared prior to 1990 may be used for this crop, which is currently the case
- ❖ If micro-algae ponds were to be established along the Namibian coast, access to land issues would have to be resolved - currently problematic for the mariculture sector



- ❖ **Internationally agreed standards for biofuels still need to be established**, however, in various parts of the world, both public and private stakeholders are in the process of developing various sets of criteria and indicators to ‘measure’ compliance by:
  - implemented in voluntary or mandatory systems such as product labeling, certification schemes for bioenergy production



➤ Most of these criteria currently being developed in industrialized countries such as the EU & are geared towards ensuring that biofuels are:

- a) produced,
- b) distributed, and
- c) used

in ways that are environmentally and sociably sustainable *before* they are traded on local or regional markets.



- ❖ However, such mechanisms could lead to potential clashes with international trade agreements and / or may not be WTO – compatible, when used in government support schemes such as subsidies or when designated for preferential treatment.



## CONCLUSION

- Countries seeking to establish comprehensive regulatory frameworks for bioenergy should ensure that regulatory measures are linked with wider environmental protection and development goals...

SO...

NAMIBIA...is on the right track in terms of compatibility with the country's Vision 2030 strategy and development aims, as well as requirements, regulations and mechanisms in terms of the Environmental Management Act and international environmental policy and legal instruments.

BUT...



- We need to bear in mind the following:
  - The relationships between bioenergy & sustainable development (SD) are complex, depending on various factors, including
    - energy **crop**;
    - cultivation **method**;
    - conversion **technology**;
    - conditions & alternatives on a country-specific basis
  - The impacts of policy & legislation in related sectors, such as Agriculture, Forestry, Environment, Fisheries, Energy & Trade in Namibia may have profound effects on the development of an effective bioenergy programme



## Incidentally relevant National legislation:

- Constitution of the Republic of Namibia, 1990
- Forest Act 12 of 2001
- Water Resources Management Act 24 of 2004
- Environmental Investment Fund of Namibia Act 13 of 2001
  - provides for the establishment of the Environmental Investment Fund of Namibia:
  - to support sustainable environmental & natural resources management in Namibia



- but.... has not been brought into effect despite being assented to in 2001
- Section 4: “Objects of the Fund”:
  - to procure moneys for maintenance of endowment fund:
  - will generate income in perpetuity &
  - to allocate income to **activities & projects** aimed at promoting-





- (a) the sustainable use & management of environmental and natural resources;
- (b) the maintenance of the natural resource base & ecological processes;
- (c) the maintenance of biological diversity & ecosystems for the benefit of all Namibians;

&

economic improvements in the use of natural resources for sustainable rural & urban development.” (Section 4)

