

# Workshop report

## The Executive Summary

(Including program and participant list)



Venue at Gaborone International Conference Centre (GICC) at the Grand Palm

**By Sten Stenbeck and Johannes Stripple**

21<sup>st</sup> of December 2009

## Executive Summary

*“Ladies and Gentlemen, Botswana is ready, not just to talk, but to implement projects that can help diversify this economy. Photovoltaic power stations, thermal solar fields, and other solar applications, biotechnology options, and various environmental coal technologies are all at the top on our agenda.”*

(His Excellency the former President of Botswana, Mr F G Mogae,  
UN Secretary-General’s Special Envoy on Climate Change)

The workshop was held on the 4<sup>th</sup> – 5<sup>th</sup> November 2009 at Gaborone International Convention Centre (GICC). The objective was to share knowledge and facilitate business and partnership opportunities. The organisers’ ambition was to create opportunities for an increase in climate technology investments and carbon market activities, which could contribute to Botswana’s climate change mitigation, sustainable development and economic growth. All material such as the full workshop report, presentations, speeches, the program and the focus group reports are available at the Botswana Innovation Hub website: [www.bih.co.bw](http://www.bih.co.bw).

### *Highlights*

Four main conclusions can be drawn from the workshop presentations and the ensuing discussions.

1. International climate policies, like CDM, NAMAs and REDD present opportunities for Botswana, but are not yet fully understood and utilized.
2. There is a range of promising projects in Botswana in the areas of concentrated solar power, bio-energy plants and energy efficiency projects.
3. There is international funding available for investments in low-carbon technologies.
4. There is a need for a new facilitating body to develop the necessary infrastructure and capacity to spur the development of climate technology businesses and projects in Botswana.

### *Overview*

The workshop was officially opened by His Excellency the former President of Botswana, Mr. F. G. Mogae, UN Secretary-General’s Special Envoy on Climate Change. The opening address stressed the severe consequences of Climate Change for Africa and its economies based on natural resources including agriculture. It also stressed the opportunities for Botswana as quoted above.

The rationale of the first day was to set the scene with an overview of the current global climate policy development and then focus on mitigation in developing countries, specifically Botswana. It was shown that recent international climate policy developments, such as the CDM of the Kyoto Protocol and NAMAs of the Bali Action Plan are relevant even for Botswana. Specific

partnership opportunities in Botswana were presented in the form of presentations on ongoing projects ready for partnering with financiers or project developers. The workshop demonstrated a range of promising projects such as large solar power plants, bio-energy plants and energy efficiency projects. In this way, participants looking for partnerships could get an orientation about what is going on both at the international level and in the local Botswana context. Presentations of all organisations or companies participating in the workshop increased the chances for matchmaking and networking during the breaks and the social events.

Access to investment funding for climate technology projects is a widely known challenge for developing countries all over the world, and in particular, Southern Africa. The workshop therefore hosted presentations on various funding options. The Swedish International Development Cooperation Agency presented their options of supporting projects in Botswana, Namibia and South Africa. The World Bank and the European Investment Bank presented their funds and options for finance. The Finnish initiative called Energy and Environment Program have finance in cooperation with the Development Bank of Southern Africa. NORFAD, which is a development finance joint venture between 4 Nordic countries and 11 SADC countries, offers finance for Small and Medium Sized companies in Southern Africa. The Cape Town based investor Inspired Evolution presented regional options for access to finance. The presentations on finance showed that there are substantial amounts of funding available for Clean and Climate Technology investments. However, the Botswana partners (e.g. the government) need to show their commitment in putting some of their own money on the table even though the level of this commitment differs among the different finance options.

In relation to the finance, the workshop hosted a particular session on Carbon Market options. Carbon finance is an additional funding option for Climate Technology projects and programmes. First of all, StenStenbeck introduced some basic notions and concepts of carbon markets. Following that, two large and experienced carbon market companies, Tricorona AB and Vattenfall Power Consultants outlined their experiences from the African carbon market. To finalise the opportunities for Carbon Markets in Southern Africa, UNEP Risoe presented their newly-launched Africa Carbon Asset Development (ACAD) Facility. UNEP will facilitate partnerships and work closely with commercial banks and other investors. The facility will be based in South Africa and will start operations in earnest in 2010, but is already now open for finding good replicable projects to get into the facility. Mr. David Lesolle concluded the session by telling how the legal framework for Carbon Markets has been developing in Botswana. Unfortunately there is no such framework in Botswana as the DNA is still at capacity building phase. Mr. Lesolle presented important issues to address in such a framework for Botswana.

To facilitate matchmaking and partnerships the workshop participants were divided into focus groups to enable discussions on specific areas of interest. Every group made a report back to the plenum. The reports show fruitful talks and early formation of partnerships. Parallel to the focus groups, there were opportunities to make special one-to-one-talks with funding agencies.

The discussions in connection to the presentations and in the pauses were intensive and productive. Entrepreneurs and participants in general who were new to Africa (but experienced in project developments or finance) met people with many years of African experience and the exchange seemed to be very fruitful. The focus of the workshop was to really get people together and enable mitigation partnerships to be formed. The focus group reports and the workshop evaluations indicate that partnerships were indeed formed, but there is still a lot to be done.

For the organisers, the workshop was a valuable and stimulating starting point for a new possible CleanTech program to be developed in Botswana. The workshop discussion highlighted a clear

need for a facilitating body to develop the necessary infrastructure and capacity to facilitate the development of climate technology businesses and projects in Botswana. Such a facility needs to coordinate the different initiatives within the region. It should also liaise with international organisations such as UNEP and the World Bank, as well as local initiatives and individual businesses struggling to get something done in Botswana. There is a basic need in Botswana to have a neutral institution for basic information about the Carbon Markets. Such an institution should also have the capacity to give the initial recommendations on how to go further on with the ideas. It might be a good idea to split the responsibilities that are currently within the DNA, so that the Department of Meteorological Services has more like a “referee” role, approving PDDs, and the Botswana Innovation Hub has more of a project development facilitating role.

The two-day workshop was concluded with a high-level closing dinner hosted by the Minister of Infrastructure, Science and Technology with a special honourable presence of His Excellency the former President of Botswana, Mr. F. G. Mogae, UN Secretary-General’s Special Envoy on Climate Change.

*The Climate Change challenge has also spurred nations and individuals to become innovative, both with regard to energy efficiency and to develop new ways to harness renewable energy. Improving energy efficiency provides an effective policy option for mitigation and, crucially, it yields domestic environmental, economic, and social benefits: reduced local air pollution and improved health; cost savings for energy consumers; and avoiding or postponing construction of new and expensive electricity generation capacity. Cleaner technologies can create jobs, boost industrial development, reduce air pollution, and help to mitigate greenhouse gas emissions.*

(His Excellency the former President of Botswana, Mr F G Mogae,  
UN Secretary-General’s Special Envoy on Climate Change)

## Workshop program

### Wednesday, 4<sup>th</sup> November, 2009

#### Official introduction

*Chairperson:* Mrs Festina Bakwena, Permanent Secretary, Ministry of Transport and Communications  
*Facilitator/moderator:* Mr Sten Stenbeck

- 08:30 Opening statement and introduction by Chairperson and prayer, Ms Lesego Motoma
- 08:35-08:50 Opening Address from His Excellency the former President of Botswana, Mr F G Mogae, UN Secretary-General's Special Envoy on Climate Change
- 08:50-09:00 Background on the Botswana Innovation Hub initiative, Dr Budzanani Tacheba
- 09:00-09:05 Background on the Lund University initiative, Dr Johannes Stripple

#### The current status of Climate Change policy (session 1)

- 09:05-09:20 Climate Policy: Copenhagen and beyond, Dr J Stripple, Lund University
- 09:20-09:35 Mitigation in developing countries: An overview, Dr Harro van Asselt, Free University, Amsterdam
- 09:35-09:50 Questions and discussion
- 09:50- 10:20 Tea/coffee break in room of mini expos

#### How to mitigate Climate Change (session 2)

*Chairperson:* Mr Håkan Bengtsson, Swedish Trade Council  
*Facilitator/moderator:* Mr Sten Stenbeck

- 10:20 – 10:45 The impact effectiveness of different Climate Change Technologies, Prof Lars J Nilsson, Lund University/IPCC advisor
- 10:45-11:00 Questions and discussion

#### Mitigation in Botswana (session 3)

- 11:00 - 11:15 Botswana climate change mitigation development, David Lesolle, African Carbon Exchange (Pty) Ltd
- 11:15 - 11:35 Botswana legal framework for Renewables and other Climate Technologies, Deputy Permanent Secretary, Mr B.K. Paya, Ministry of Mines, Energy and Water Resources
- 11:35 – 11:55 Renewables and energy efficiency, Prof. Oladiran, Centre for the Study of Renewable and Sustainable Energy (CSRSE) at the University of Botswana
- 11:55 – 12:15 Carbon Capture and Storage (CCS) – an update on possibilities, Dr Coninck, ECN, Netherlands
- 12:15 -12:30 Questions and discussion
- 12:30 – 13:30 LUNCH

## Partnership opportunities (session 4)

*Chairperson:* Mr Stephen Williams, Deputy Permanent Secretary, Ministry of Infrastructure, Science and Technology

*Facilitator/moderator:* Mr Sten Stenbeck

- 13:30 – 14:30 Examples from the Botswana Project Pipeline
- Planned Solar Power Plants, Mr Gamu Mpofu, Dep. of Energy
  - Rural Renewable Electrification Program, Mr P Dhafana, Botswana Power Corporation
  - Power Generation from Municipal Solid Waste, Ms. K Orapeleng, G4 Consulting
  - Energy Efficiency, Mr K Venjonoka, Dep of Energy
- 14:30 – 14:40 Questions and discussion
- 14:40 – 15:00 On request from the facilitator: Visiting organisations/businesses stand up at their seats and make a short introduction (1 min)
- 15:00 – 15:30 Tea/Coffee/Water in mini expo room
- 15:30 – 16:15 On request from the facilitator: Visiting organisations/businesses stand up at their seats and make a short introduction (1 min)

## Swedish Cooperation initiatives (session 5)

- 16:15 – 16:30 Partner Driven Cooperation and DemoEnvironment: Mr Dag Sundelin, Swedish International Development Cooperation Agency (SIDA)
- 16:30 - 16:45 Involving developing countries in setting climate standards, Anna Sabelström, Sweden National Board of Trade
- 16:45 – 16:50 Questions

## Closure of day 1 (session 6)

- 16:50 – 17:00 Closing remarks of day 1 by moderator
- 17:00 Refreshments and networking in mini expo room
- 19:00 Reception and light dinner at “Sweden House”

## Thursday, 5<sup>th</sup> of November

*Chairperson:* Dr Johannes Strippel, Lund University

*Facilitator/moderator:* Mr Sten Stenbeck

## Finance opportunities for Climate Tech investments (session 7)

- 08:00 – 08:30 World Bank - challenges and opportunities for Botswana (Mr Karan Capoor)
- 08:30 – 08:50 European Investment Bank Group: GEEREF an innovative instrument for fighting Climate Change by Investing in Developing Countries, Dr. Gunter Fischer, CFA, Principal
- 08:50 – 09:05 Energy Environment Program, Ms Katriina Koivisto, Finnish Embassy in Pretoria
- 09:05 – 09:20 Evolution One Fund, Dr Zuko Kubukeli, Inspired evolution
- 09:20 – 09:35 NORSAD: Nordic - SADC Small and Medium Sized Enterprises (SMEs) financing initiative
- 09:35 – 09:50 Questions and discussion
- 09:50 – 10:20 Tea/Coffee break in mini expo area

## Carbon Markets (session 8)

*Chairperson:* Mr Carter Morupisi, Permanent Secretary, Ministry of Infrastructure, Science and Technology

*Facilitator/moderator:* Mr Sten Stenbeck

10:20 – 10:40	Carbon Markets – an introduction of its role and function, Mr Sten Stenbeck, StenStenbeck Consulting and Training
10:40 – 11:00	Financing emission reductions - Making CDM happen in Southern Africa? Mr Mattias Goldmann, Tricorona AB
11:00- 11:25	The role and (corporate) responsibility of a compliance buyer and the practicalities in the CER generation and commercialisation, Mr Ad Dankers, Vattenfall Power Consultants
11:25 - 11:40	The Africa Carbon Asset Development Facility, Mr Glenn Hodes, UNEP Risoe
11:40 – 11:55	The development of a legal framework for carbon markets in Botswana, David Lesolle, African Carbon Exchange (Pty) Ltd
11:55 – 12:10	More participating CDM/VER developers, consultants and investors
12:10 – 12:30	Questions and discussion
12:30 – 13:30	LUNCH

## How to make partnerships happen (session 9)

13:30 – 15:00 Focus Group session (group work)

<i>Focus Groups</i>	<i>Facilitator</i>
(1) Solar	Ari Kalmari
(2) BioGas, BioFuels, Waste and Transport	Karl-Erik Grevendahl
(3) Energy Efficiency /Emission control/CCS/Coalbed Methane	Håkan Bengtsson
(4) Reduced deforestation	Peter Eliasson

At the registration day 1 (Wednesday) all participants indicate the focus group they want to attend, out of:

15:00 Tea and coffee, networking in the expo area

15:30 Focus group matchmaking continues.

## Closure of the workshop (session 10)

*Chairperson:* Dr Budzanani Tacheba, Botswana Innovation Hub

*Facilitator/moderator:* Mr Sten Stenbeck

16:30	Focus Groups report to plenum (5 min each)
16:50	Wrap up discussion, achievements and participants comments
17:00	Networking opportunity
19:00	High level closing dinner at conference venue

## Participants List

Organization	Country	Title	Surname	First Name	Position
African Carbon Exchange (Pty) Ltd	Botswana		Lesolle	David	
Ageratec	Sweden		Funkesson	Kajsa	Sales Manager
AGNA Ventures (Pty) Ltd	Botswana		Lekoba	Percy	
Alfa Laval (Pty) Ltd	Sweden/ South Africa	Mr.	Ekholm	Rolf	Managing Director Southern Africa
Alfa Laval (Pty) Ltd	South Africa	Mr.	Modibela	Moses	Divisional manager South East Africa
Ariya Capital	UK/ Botswana	Mr.	Moolenschot	Sean	Investment Director
Aspect Consulting	Belgium		O'Connel	Brian	Senior Consultant
Atlas Copco Botswana	Botswana	Mr.	Van der Nest	Ronnie	
Batlhabani Resources	Botswana	Mr.	Malobela	Konrad	Director
Batlhabani Resources	Botswana		Malobela	Virginia	
BioDiesel Botswana Pty LTD	Botswana	Ms.	Bullock	Kynn	
Botswana Chamber of Mines	Botswana		Molosiwa	Tefo	Environment Manager
Botswana College of Agriculture	Botswana	Ms.	Mojeremane	Witness	
Botswana Environmental and Natural Resources Observation Network (BENRON)	Botswana	Mr.	Kwerepe	Raymond	
Botswana Environmental and Natural Resources Observation Network (BENRON)	Botswana	Dr.	Sekhwela	M.B.M.	Secretary
Botswana Innovation Hub	Botswana	Mr.	Dick	Gaoitse	Project Officer
Botswana Innovation Hub	Botswana	Mr.	Kalmari	Ari	Advisor,
Botswana Innovation Hub	Botswana	Dr.	Tacheba	Budzanani	Project Officer
Botswana Meat Commission	Botswana		Ghanie	Stephen	
Botswana Meat Commission	Botswana	.	Maswabi	Gofaone	
Botswana Power Corporation	Botswana		Sephatla	Engelinah	SHER Officer
BPC Lesedi c/o Botswana Power Corporation	Botswana		Dhafana	Philimon	Manager - Planning and Projects
Carbon & Energy Africa	South Africa	Ms.	Scharling	Anne-Katherine	Project Manager
CIC Energy Corp.	South Africa	Mr.	Miller	Anthony	Vice President Project Management
CityCoolSolutions Ltd	Finland	Mr.	Sorri	Marko	CFO
Conservation International	Botswana		de Wet	John	Programme Manager
Creative Entrepreneurs Solutions	Namibia		Emvula	Tonata Itenge	Ambassador
Debswana	Botswana	Mr.	Busani	Bernard	Senior Manger: Energy Conservation
Department of Broadcasting Services, Radio Botswana	Botswana		Makgwathana	Evelyn	
Department of Energy	Botswana		Mabowe	B.	
Department of Energy	Botswana		Mmolawa	A.	
Department of Energy	Botswana		Mpofu	Gamu	
Department of Energy	Botswana		Sethare	O.	
Department of Energy	Botswana		Venjonoka	Kuvare	
Department of Environmental Affairs	Botswana	Mr.	Ntana	Mokganedi	Senior Natural Resource Officer
Department of Forest and Range Resources	Botswana	Mr.	Bose	Mosegofatsi	Snr Scientific officer

Organization	Country	Title	Surname	First Name	Position
Department of Mines, Botswana	Botswana	Mr.	Abi	Kgomotso	
Department of Mines, Botswana	Botswana		Ace	Barulaganye	
Department of Research, Science and Technology	Botswana		Motoma	Lesego	Director
Department of Tourism	Botswana		Rankwe	Gaone	
Department of Waste Management & Pollution Control	Botswana	Mr.	Moffat	Moore	
DNA Botswana, Department of Meteorological Services	Botswana		Selolwane	Moemedi	Principal Technical Officer
Ecosurv	Botswana		Lebotse	Lebogang	
Ecosurv	Botswana	Mr.	Parry	D.	
EECG Consultants	Botswana		Simbin	Tich	
Embassy of Finland	Finland		Koivisto	Katriina	
Energy research Centre of the Netherlands (ECN)	Netherlands		de Coninck	Heleen	
Envirotrade Carbon Limited	South Africa		Hall	Charles	
Envirotrade Carbon Limited	South Africa		Heaton	Mark	Country Manager: SA
ESBI Carbon Solutions	Ireland		Fitzsimmons	Mark	Business Development Director
ESBI Carbon Solutions	Ireland		Henderson	Phil	Senior Engineering Consultant
European Commission	Botswana		Thill	Marc	head of Operations
European Investment Bank		Dr.	Fischer	Gunther	Principal
Future Fuels Africa	Botswana	Mr.	Kettle	Peter	Managing Director
G4 Consulting Engineers	Botswana		Gubago	Botsile	
G4 Consulting Engineers	Botswana		Mudyiwa	Joseph	
G4 Consulting Engineers	Botswana	Ms.	Orapeleng	Keletso	
Grevendahl Development	Sweden		Grevendahl	Karl-Erik	
HB INTEC	Sweden		Paulsson	Bertil	Director
Illustrative Options	Botswana		Henningsen	Mark	
Inspired Evolution Investment Management (Pty) Ltd	South Africa	Dr.	Kubukeli	Zuko	Director
Itzama Srl	Italy		Lazzarini Viti	Andrea	CEO
Itzama Srl	Botswana		Ntshingane	M	
Kommerskollegium/ National Board of Trade	Sweden		Sabelström	Anna	Legal adviser/ project coordinator
Lund University	Sweden	Dr.	Bäckstrand	Karin	
Lund University	Sweden	Prof	Nilsson	Lars J	
Lund University	Sweden		Stripple	Johannes	
Ministry of Infrastructure, Science & technology	Botswana		Morupisi	C	Permanent Secretary
Ministry of Infrastructure, Science & technology	Botswana		Williams	Stephen	Deputy Permanent Secretary
Ministry of Minerals, Energy and Water Resources	Botswana		Paya	B.K.	Deputy permanent secretary
NORSAD	Zambia	Ms.	Nikka	Sari	
Power Tower	Botswana	Mr.	Thipe	Jack	Director
PURE Carbon AG	Germany		Knoedseder	Markus	Head of Quality Management and Regular Affairs
Royal Institute of Techology (KTH)	Sweden		Berglund	Fredrik	Master student
Royal Institute of Techology (KTH)	Sweden		Kjellström	Mats	

Organization	Country	Title	Surname	First Name	Position
Royal Institute of Technology (KTH)	Sweden		Voyce	Stefan	
Scania Botswana	Botswana		Hennop	Frederick	
Scania Botswana	Botswana	Mr.	Linder	Torsten	
Scania Botswana	Botswana		Stefanovic	Ivan	
Sida, Swedish Embassy	South Africa		Jemt	Lennart	First Secretary
Sida, Swedish Embassy	South Africa	Mr.	Sundelin	Dag	Country Manager
Solar International Botswana	Botswana		Berhane	Asgodom	Managing Director
Solar International Botswana	Botswana		Figaro	Eva-Sofia	
Solar Power Kgalgadi Resources Development company	Botswana		Abkenari	Morteza H	
Stargate Corporate Finance	UK/Botswana	Mr.	Lemar	Bryan	
StenStenbeck Consulting and Training	Sweden	Mr.	Stenbeck	Sten	
Stockholm Environment Institute (SEI)	Sweden		Román	Mikael	Senior Research Fellow
Swedish Meteorological and Hydrological Institute (SMHI)	Sweden		Michelson	Daniel B.	Project Manager
Swedish Trade Council	Botswana	Mr.	Alae Naziri	Saman	
Swedish Trade Council	Botswana	Mr.	Bengtsson	Håkan	Country Manager
Swedish Trade Council	Sweden	Mr.	Kettmaker	Jan	Hub Manager Southern Africa
Swedish University of Agricultural Science (SLU)	Sweden	Dr.	Eliasson	Peter	
TEM Foundation at Lund University	Sweden		Paulsson	Markus	Sustainability Management Consultant
The South African Institute of International Affairs (SAIIA)	South Africa	Ms.	Chevallier	Romy	
Tricorona AB	Sweden	Mr.	Goldmann	Mattias	Africa coordinator
UNDP	Botswana	Mr.	Dikobe	Leonard	Environment Programme Specialist
UNDP	Botswana		Lwin	Khin-Sandi	UNDP Resident Representative
UNEP RISØ	Denmark	Mr.	Hodes	Glenn	
UNEP RISØ	Denmark	Dr.	Ngara	Todd	Researcher
University of Botswana	Botswana	Dr.	Mmerekhi	B. T.	Head, Department of Chemistry
University of Botswana, CSRSE	Botswana	Prof	Jain	Pushpendra	
University of Botswana, CSRSE	Botswana	Prof	Oladiran	M.T.	
University of Botswana, Department of Economics	Botswana	Dr.	Juana	James S.	
University of Botswana, Department of Economics	Botswana	Ms.	Mangadi	Kagiso	
University of Botswana, Department of Environmental Science	Botswana		Isaacs	Senwelo	
US Embassy	Botswana		Lobelo	Phatsimo	
Vrije Universiteit Amsterdam, Institute for Environmental Studies	Netherlands	Mr.	van Asselt	Harro	
Wena Industry & Environment	Botswana		Mmerekhi	Florah	Editor
Wena Industry & Environment	Botswana		Moaneng	Mercy	
World Bank			Capoor	Karan	