

**SIXTH FRAMEWORK PROGRAMME**  
**FP6-2004-INCO-DEV-3**  
**PRIORITY A.2.3.: Managing Arid and Semi-arid Ecosystems**



**First Periodic Activity Report (01.01.2007 – 31.12.2007)**  
**January 2008**

**ANNEX 1-1: Minutes of the first COMPETE project meeting in Mauritius**  
**on 21 June 2007**

**Deliverable D1.2 (Lead contractor: UKZN, Due date: April 2007)**

## **COMPETE**

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

**Responsible Partner:**

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**Project Co-ordinator:**

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COMPETE is co-funded by the European Commission in the 6<sup>th</sup> Framework Programme – Specific Measures in Support of International Cooperation (INCO-CT-2006-032448).



## **COMPETE Project Meeting**

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

*on the occasion of the ICSU 'International Field Workshop on Renewable Energy for Sustainable Development in Africa' (18-21 June 2007)*

**21 June 2007**

**Mauritius**

## **MINUTES**

### ***Meeting coordinator/contact point:***

Dr. Helen Watson, University of KwaZulu-Natal, South Africa (Watsonh@ukzn.ac.za)

### ***Meeting Objectives***

This first COMPETE project meeting set the stage for a successful implementation of the Competence Platform on Energy Crop and Agroforestry Systems for Arid and Semi-arid Ecosystems – Africa.

This meeting included several **keynote presentations** on the opportunities of improved land use (energy crops, improved agroforestry systems) for the sustainable production of modern bioenergy services in the African context.

Additionally, detailed **working plans for the different work packages** of the project were elaborated with a special focus on the timing of the workshops/meetings organised in the framework of the COMPETE project.



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## COMPETE Project Meeting, 21 June 2007 - Minutes

### 1 Opening Session

The COMPETE Project coordinator Dr Rainer Janssen (WIP – Renewable Energies), welcomed the partners and presented an overview of the Project. Commencing with the Project's platform comprising its website address, duration and coordinators, he went on to outline its partnership, objectives, and main activities and results. He then showed the diagrams on pages 27 and 16 of COMPETE's COORDINATION ACTION *Annex 1 – "Description of Work"* to respectively overview the work package and management structure.

A description of each work package's leader, partners, objectives, work groups and deliverables followed. WP7 has already met its deliverables of setting up a website, producing a flyer and newsletter, and developing a process for acquiring associate members.

Dr Janssen asserted that bioenergy is now set to occur at very large scales in many African countries and could either be very damaging by locking Africa out of new development opportunities, or sustainable and beneficial to African development. He concluded by challenging COMPETE partners to make the latter option a reality stating that the Project has the multi-disciplinary understanding to develop policies which reward best practice and build human capacity to unlock synergistic exploitation rather than competition for resources.

The COMPETE overview presentation is available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**'.

To access the COMPETE Partner Area use:

**LOGIN: competepartner**

**Password: bio34afr**

### 2 Key Note Address

Mr Werner Koerbitz (ABI, Austria) gave a presentation entitled "Key Trends Worldwide in Development of Biodiesel". By detailing the rapid increase in the area under biodiesel crops and/or in the number of, and production from biodiesel plants in Austria, Germany, Romania, United Kingdom, Singapore, Malaysia, Indonesia, South Korea, Laos, China, Argentina and Brazil, he substantiated his assertion that the global biodiesel scenario is currently dominated by a "Gold rush mentality". He predicted the detrimental consequences of this trend to be overcapacity leading to price battles and decreased profitability, and reduced tax rebates. He cautioned that the global community needs to "think first, then invest wisely" and listed the following key criteria for such investment:

- a. Meet the top criteria for biodiesel fuel quality
- b. Choose a high security level for multi - feedstock supply in volume and cost
- c. Select high efficiency and flexibility in process technology

- d. Secure 345 days of uninterrupted production
- e. Identify profitable markets with secure conditions
- f. Lobby for and take advantage of supportive legislation
- g. Use all readily available information

Mr Koerbitz then noted that while biodiesel for large scale commercial use has to be of the highest purity without any harmful contaminants and biofuel standards are getting stricter, a lot can go wrong in the production of biodiesel from virgin or used oils and fats of vegetable and animal origin. He went on to describe the characteristics of contemporary sources of biodiesel, noting the promising potential of *Acrocomia*, *Babaçu*, *Buriti*, *Cornus*, *Jatropha* and *Pongamia* in less developed countries. After discussing the importance of the process of technology site selection, and triggers of and the importance of an enabling legal framework, he concluded that the worldwide conversion of agricultural land to meet future biodiesel production would not threaten food security.

### 3 Foundation Presentations

Mr Francis Johnson (SEI, Sweden) gave a presentation entitled “Selected Results from the Thematic Research Network: Cane Resources Network for Southern Africa (CARENSA)”. He commenced by motivating the Network’s focus on the Southern African Development Community (SADC), and on sugar cane and sweet sorghum. He then outlined the research areas of its work package components: agriculture, industry, integration, markets and policies, and impacts.

Sugar cane (juice), palm oil, sweet sorghum, maize, *Jatropha* and soya bean ranked highest to lowest when he compared their biofuel (l/ha) and energy (GJ/ha) yields. He revealed that only 12% of the region’s land potentially suitable for agriculture is cultivated, and that Malawi, Mozambique, Tanzania and Zambia are the countries best suited for both sugar cane and sweet sorghum. He showed the distribution of potentially available areas in these four countries. Mr Johnson then presented (a) estimates of SADC’s total potential surplus for bagasse cogeneration, and of ethanol surpluses/deficits with production from C-molasses only and E5 ethanol demand (million liters) with existing factories, (b) scenarios for ethanol production in SADC from existing cane, new cane and sweet sorghum, and for internal SADC and export market demand, and (c) estimates of the potential supply for export. Based on (a) to (c) above, the average annual increase in area under these crops in the region from 2010 to 2025 required, is 9%. Finally, he revealed that the attitude of stakeholders to the expansion of production and trade in biofuels in the region is now generally favourable. He concluded that southern Africa is particularly appealing for bio-energy expansion, given SADC’s efforts to lower trade barriers, and harmonize standards and regulations.

Prof. Giuseppe Ristori (CNR, Italy) gave a presentation entitled “Inherent constraints of southern Africa’s savanna soils – implications for sustainable land use”. He commenced by explaining that his presentation was based on research carried out by the Southern African Savannas Network (SASN) and went on to describe the physical and biogeochemical characteristics and the inherent constraints to sustainable land use of the main soil groups in the savanna areas of Botswana, South Africa, Zimbabwe and Mozambique.

In order to ascertain which land use practices and management options are potentially the most sustainable in these savannas, two procedures adopted in 1:5.000.000 FAO digital soil data were applied to this biome. The first procedure grouped soils according to their fertility capability. It revealed the decreasing influence of low cation exchange and low moisture holding capacities and corresponding increasing influence of acidification, steep slopes and erodibility from the coarse grained arenosols in the drier, more westerly savannas to the luvisols, vertisols and ferrasols in the moister, more easterly savannas.

The second procedure grouped soils according to the constraints they pose to cultivation practices. It revealed that 17; 39; 47 and 50 percent of the savanna soils in Botswana, South Africa, Zimbabwe and Mozambique respectively, are potentially suitable for arable use. Prof Ristori concluded that the most sustainable land use options on soils with a very low inherent fertility and those susceptible to compaction, crusting and hardsetting are extensive livestock rearing using locally adapted domestic stock and/or game, and indigenous forestry. The swelling, heavy textured soils particularly vertisols and other soils with vertic properties, which are attractive due to their prevalence in relatively flat and watered terrain, can support annual cropping with moderate to high yields provided they are correctly managed and properly irrigated, and are hence suitable for commercial use.

Finally, he outlined CNR's envisaged contribution to COMPETE. Focusing on soils' quality and constraints and in particular on organic carbon dynamics, and changes under pressure of human activities, land potentially suitable for bio-energy production will be identified by: (a) collecting information from local partners, existing databases and literature on soil ecosystem status and overall fertility in target areas; (b) assessing the impact of energy crops on soil organic carbon turnover in soils from partner countries with experience of different existing biomass production systems; (c) in situ surveys of actual soil condition, soil organic carbon balance and problems in target areas, and (d) identifying sustainable soil management to support farm-system strategies for increasing carbon sequestration in soil and maintaining good bio-energy productivity.

## **4 Work Packages**

### **4.1 WP1 - Current Land Use Patterns and Impacts**

Dr Helen Watson (UKZN, South Africa) presented WP1 "Current Land Use Patterns and Impacts". She commenced by outlining the objectives, tasks, deliverables, and milestones and expected results as per Annex 1 and called on all partners contributing to WP1 tasks to commence earnest work on them as the progress of other WPs particularly 2 and 3, were dependent on knowing the location and spatial extent of land potentially suitable and available for large and small scale production of a variety of bio-energy crops. Most urgently required is input from the following tasks:

Task 1.3 (UiO) on the location and spatial extent of land that is unavailable because of legal or cultural status, or policy aspirations

Task 1.4 (UB) the locations and supply capacities of potential sources of water for irrigation

#### Task 1.6 (UFH, EUBIA, TaTEDO, ENDA-TM, MFC, MU)

- the locations of potential labour pools for both the agricultural production and processing of bio-energy crops taking into account the influence of factors such as gender, age, education, HIV Aids prevalence etc.
- the locations of potential local and export markets for cogeneration, bioethanol and biodiesel, supply chains and status of transport infrastructure
- overall production systems, existing locations and capacities of processing plants, potential ideal locations of new such plants

Dr Watson reminded all COMPETE partners that she had funding available to purchase databases and requested details of any that were potentially useful for the Project. She then asserted that it was critical for all COMPETE partners to know exactly where they are working because there were differences in up to 15% of surface area dependent on which definition of arid and semi-arid is used. Based on the assumption that COMPETE partners would seek out and share relevant information on countries they were residing and/or researching in, she concluded that information on the partner countries Botswana, Burkino Faso, Kenya, Malawi, Mali, Mauritius, South Africa, Tanzania and Zambia, would be the most detailed and should therefore be used as case studies. Lessons learnt, trends, indicators etc. identified from them, would guide and focus the acquisition and analysis of data in arid and semi-arid regions in other countries in sub-Saharan Africa.

The presentation by Dr. Helen Watson on WP1 is available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**' (see login and password on page 2 of these minutes).

#### **4.2 WP2 - Energy Crops and Agroforestry Systems – Improved Land Use**

Dr Veronika Dornburg (RUUTR.STS, The Netherlands) presented “WP2: Energy Crops and Agroforestry Systems – Improved Land Use”. After outlining the objectives as per Annex 1, she used a graphic to show how the tasks of the three working groups would be integrated to achieve the deliverables. She then clearly outlined the work plan (including inputs required from WP1 and 3) and the time schedule for each deliverable.

She proposed that deliverable 2.5, the next COMPETE Workshop focusing on “improved biomass schemes” should take place during 26-30 November 2007 in Ouagadougou, Burkina Faso.

The workshop would comprise presentations on existing and improved bioenergy systems as well as discussions on on-going work.

The following important issues that should be included in WP2 were then briefly discussed:-

- Inclusion of different scales of agriculture/bioenergy systems (from subsistence farming to industrial scale)
- Small scale production and local use of Jatropha
- Ethanol from sugar cane
- Analysis of possibilities for export (of either biomass or processed energy carriers) versus local energy supply
- Production of biofuels (technology and economics)

- Sweet sorghum production at different scales
- Fuelwood production and restoration forestry
- Small-scale use of firewood, overview development in different countries and possible improvements
- Failures in bioenergy projects
- Agricultural residues and by-products of food and energy production

The presentation by Dr. Veronika Dornburg on WP2 is available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**' (see login and password on page 2 of these minutes).

**Furthermore, detailed minutes on the work programme of WP2 are attached to these meeting minutes (also available at the 'Partner Area' of the COMPETE website).**

#### **4.3 WP3 - Sustainability Analysis of Alternative Land Use**

Dr. Rocio A. Diaz-Chavez (IC, United Kingdom) presented WP3 "Sustainability Analysis of Alternative Land Use". She outlined the objectives, tasks, deliverables, milestones and results, as per Annex 1. She showed recent trends in the world's temperature and rainfall to capture the focus of task 3.4 on the effects of climate change. She employed a flow diagram depicting bioenergy development options to demonstrate that task 3.5 mechanisms for monitoring sustainability are dependent on the scale of production. Finally, she explained the "Main International Standard Systems and their characteristics" and the "Benchmark of Criteria".

The presentation by Dr. Rocio A. Diaz-Chavez on WP3 is available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**' (see login and password on page 2 of these minutes).

#### **4.4 WP4 – South-South and North-South Cooperation**

Mr Stephane Senechal (EUBIA, Belgium) presented WP4 'North-South Cooperation on Promising Bioenergy Schemes'. He noted that EUBIA is coordinating work group 2's activities on North–South Co-operation. These activities are concerned with the transfer of knowledge and technical know how between developed and developing countries and the promotion of new energy crop and Agroforestry joint ventures. He then explained that work group 2 is responsible for tasks 4.7 and 4.8 and deliverables 4.6 and 4.7 as described in Annex 1. He effectively used sweet sorghum production, processing and uses, as an example of innovative bioenergy complexes. Finally, he noted that work group 1 was focusing on South-South Co-operation and listed the activities of tasks 4.2, 4.3, 4.4, 4.5, and 4.6 as per Annex 1.

Presentations by Stephane Senechal and Francis Johnson (SEI) on WP4 are available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**' (see login and password on page 2 of these minutes).

**Furthermore, detailed minutes on the work programme of WP4 are attached to these meeting minutes (also available at the 'Partner Area' of the COMPETE website).**

#### **4.5 WP5 – Financing of Alternative Land Use and International Trade**

Mr Stephen Mutimba (ESD, Kenya) presented WP5 'Financing of Alternative Land Use and International Trade'. He explained that the main purpose of this Package is to develop *innovative tools for the provision of financing* for national bioenergy programmes and local bioenergy projects, including: carbon credits, bilateral and multi-lateral funding instruments, and the role of international trade. He went on to outline the WP5's objectives, the focus of the three working groups, the tasks, deliverables and milestones as per Annex 1.

**Furthermore, detailed minutes on the work programme of WP5 are attached to these meeting minutes (also available at the 'Partner Area' of the COMPETE website).**

#### **4.6 WP6 – Policy Development**

Dr Balraj Rajkomar (FANRPAN, Mauritius) presented WP6 on 'Policy Development'. He commenced by asserting that the reliance of 80% of Africa's population on wood and charcoal was principally due to the fact that they could not afford modern and clean energy. While there was no easy alternative to traditional biomass use, the development of biocrops may provide one such option. Dr Rajkomar then outlined the objectives and implementation strategy of the COMPETE project providing the context for a description of WP 6's objectives, key partners and deliverables as per Annex 1.

In his final section entitled "Status and the Way Forward" he noted the Centre for Agricultural Research & Development (CARD) at Bunda College is the WP leader. FANRPAN Secretariat has established formal working arrangements with CARD on the project. CARD has started collecting relevant documents and materials for conducting policy reviews. Some partners such as FELISA in Tanzania have provided relevant information for the project. He concluded that the success of this project depends on the support of all partners by providing documents, reports and materials that are relevant for the fulfilment the objectives of this Work Package.

The presentation by Dr Balraj Rajkomar on WP6 is available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**' (see login and password on page 2 of these minutes).

**Furthermore, draft Terms of Reference for Policy Reviews within WP6 are attached to these meeting minutes (also available at the 'Partner Area' of the COMPETE website).**

#### **4.7 WP7 – Dissemination**

Dr Rainer Janssen presented WP7 'Dissemination'. He described the WP tasks as per Annex 1 then reiterated that the deliverables of setting up a website, producing a flyer and newsletter, and developing a process for acquiring associate members had already been met.

The presentation by Dr. Rainer Janssen on WP7 is available at [www.compete-bioafrica.net](http://www.compete-bioafrica.net) under the section '**Consortium – Partner Area**' (see login and password on page 2 of these minutes).

## 5 Working Group Session

Partners principally attached to WPs 1-3 and 4-6 divided into two groups respectively, and spent the afternoon discussing on what and how they needed to interact in order to deliver on time.

### **5.1 Work Packages 1-3: Synthesis of way forward and interactions.**

Dr Watson appealed again for (a) all partners contributing to WP1, particularly to Tasks 1.3, 1.4 and 1.5 to commence earnest work on them as the progress of other WPs particularly 2 and 3, were dependent on knowing the location and spatial extent of land potentially suitable and available for large and small scale production of a variety of bio-energy crops; and (b) all COMPETE partners to inform her of any potentially relevant GIS compatible data sources.

WP2 partners decided to focus first on the deliverables D2.1 - D2.3 i.e. on the description of agricultural practices, existing bioenergy systems and possible improved bioenergy systems. All partners agreed to send relevant information and materials to Dr Dornburg who would make it available internally for all partners on the COMPETE website. Using this information together with general data (e.g. FAO statistics), Dr Dornburg undertook to prepare a first draft on these deliverables in order to identify (a) missing or inadequate information, and (b) the partner/s responsible for providing additional information. Decisions on the work programme for D2.4 – D2.6 will be taken at the November COMPETE Workshop. A discussion on how links with WP1 and WP3 should be further established, also took place.

Dr Diaz-Chavez observed that WP2's D2.1 and 2.2 overlap with WP3's D3.3. All these deliverables need to look at impacts and indicators (environmental, social and economic). The main difference is that WP3 focuses on *land use change* including land use, soil carbon GHG impacts, water, socio-economic impacts. She noted that work on these deliverables could not commence until WP1 provided information on contemporary land use, and the location and spatial extent of land potentially suitable and available for large and small scale production of a variety of bio-energy crops. In the interim WP3 partners will continue arranging indicators and examining best and worse practice examples.

### **5.2 Work Packages 4-6: Synthesis of way forward and interactions.**

WP4 partners recognised the importance of (a) considering social activities in the implementation of bioenergy production systems and (b) developing and improving the local level efficiency of technologies on liquid biofuel and electricity production. They undertook to devise a questionnaire by end of August to be distributed to all African partners. The aim is to identify a questionnaire to identify Chinese, Indian and Latin-American technologies appropriate for African energy crop and agroforestry systems.

***WP4 partners agreed to have a 3-5 day seminar including field visits in October in Brazil (22-26 October 2007).***

A questionnaire to establish topics to be included in the seminar will soon be sent to partners potentially interested in attending it. Interest was expressed in the 'Legal Framework for Community Best Scheme on Biodiesel Programme'.

As the first step towards achieving Task 4.7 the African partners will be asked to identify regional and local existing bioenergy success stories suitable for promoting at the continent level. The aim is to create discussion and sharing framework of the various experiences between the African partners and Latin-American, Indian and Chinese partners. The first step towards North-South cooperation (Task 4.8) will be an overview of technical, economic, etc information on current European technologies that could be implemented in Africa. This document will be available for African partners for eventual interest of integration in some local or regional bioenergy production reality.

Dr Dornburg's (WP2 coordinator) contribution to WP5's deliverables is substantial and critical, the following synthesis of WP5's way forward was only able to be finally thrashed out at a meeting of all WP5's partners the following day.

Led by Practical Action (UK) WP5's WG1 will prepare a paper on current financing of energy crops and agroforestry using Carbon credits and other available green certificates. The paper will (a) outline on a national level, conditions, procedures, and factors that strengthen the case for energy crops and agro-forestry to be funded through carbon emissions reduction schemes, (b) assess opportunities and risks of carbon financing, and (c) analyze the required actions necessary to gain access to emerging markets for carbon.

Led by AFDB WG2 will (a) prepare a paper on available multilateral and bilateral funds for promoting bioenergy crops and agroforestry, (b) make an Inventory of programmes and goals of bilateral and multilateral development agencies and identification of gaps, and (c) carry out a thorough analysis of the actions that can be taken to enhance funding support from multilateral and bilateral donors. Including initiating dialogue with key donors to promote information exchange with COMPETE partners.

Led by Utrecht University WG3 will prepare a paper on (a) opportunities for the African region to produce biomass and biofuels for the international export market, (b) the size and trends in current international/national/regional commercial markets for energy crops and products, and (c) the potential for developing markets or influencing investors in a way that promotes sustainable energy crop and agro-forestry practices. This Group would also make a structural link between COMPETE and Task 40 on Sustainable International Bio-energy Trade under the Bio-energy Agreement of the International Energy Agency.

Dr Balraj Rajkomar appealed again to all COMPETE partners to provide CARD with relevant documents, reports and materials.

## **6 Conclusion**

Dr Rainer Janssen thanked all COMPETE partners for their respective contributions to making the day as valuable and productive as it was. He believed the way forward for individual WPs and for interactions between them had been competently charted and was confident that work would now commence in earnest. He looked forward to learning of the progress made in the task reports and at the next COMPETE meeting in November.