

Africa-Europe Conference on Higher Education Collaboration, 25 October 2019, Brussels „Investing in people, by investing in higher education and skills in Africa“



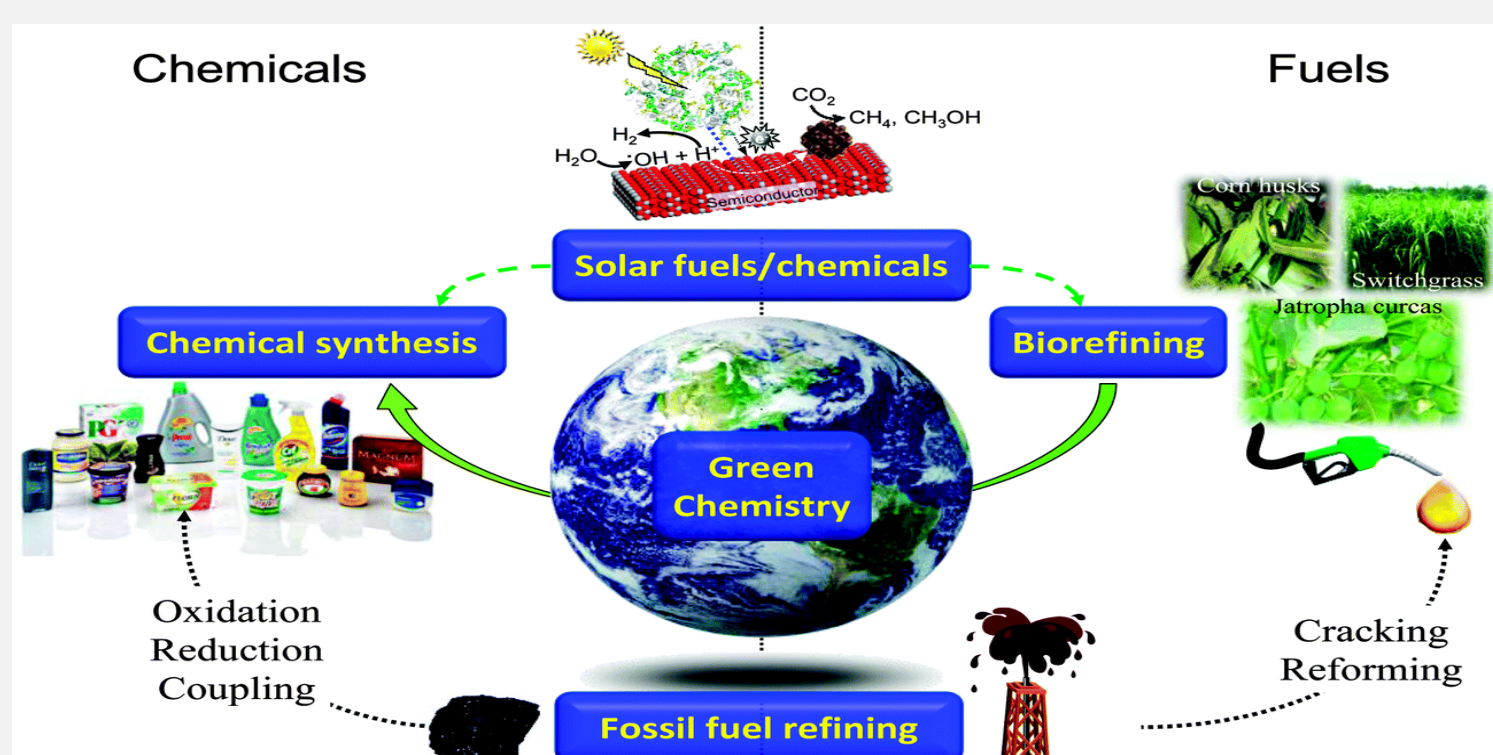
Practice-oriented University Education in Western Kenya

Brandenburg University of Applied Sciences (THB) & Masinde Muliro University of Science and Technology (MMUST)

Motivation, Goals and Background

The need of the Kenyan employment market for qualified professionals with a practice-oriented university degree is enormous but not adequately covered by the rather theoretically oriented Kenyan higher education system. The enhancement of this system by elements of a more practice-oriented higher education, which is designed with the involvement of industry and economy, can counteract this. To help with this, the DAAD (German Academic Exchange Service) and the German Foreign Office are promoting a program to establish a network of German and Kenyan universities with the goal of providing essential elements of practice-oriented education in the Kenyan higher education system. Interested university teachers and young scientists are being informed and trained about teaching by and at German Universities of Applied Sciences (UAS). These training measures are designed, organized and carried out by German UAS and include integrated practice-oriented modules in companies.

Since 2017, the Brandenburg University of Applied Sciences (THB) has maintained close ties with the Masinde Muliro University of Science and Technology (MMUST) in Kakamega (Western Kenya), in particular in support of the NGO Agrokenya, which was founded and is led by a master graduate of the THB. With the establishment of the DAAD-funded project ProUniEdu-WeK, in addition to the School of Agriculture, Veterinary Sciences and Technology (SAVET), further schools and departments of the MMUST were involved in the cooperation: School of Natural Sciences (SONAS), School of Public Health, Biomedical Sciences & Technology (SPHBST) and the School of Engineering and Built Environment (SEBE). Moreover, the Magdeburg Stendal University of Applied Sciences (HMS), the Eberswalde University for Sustainable Development (HNEE) and the University of Eldoret joined the project in order to strengthen the focus on sustainable development of rural areas in Kenya. As a result, the project profits from great synergies due to the multidisciplinary approach connecting renewable energies, water purification, mechanical engineering (pumps), health sciences (telemedicine, physiotherapy) and optometry.



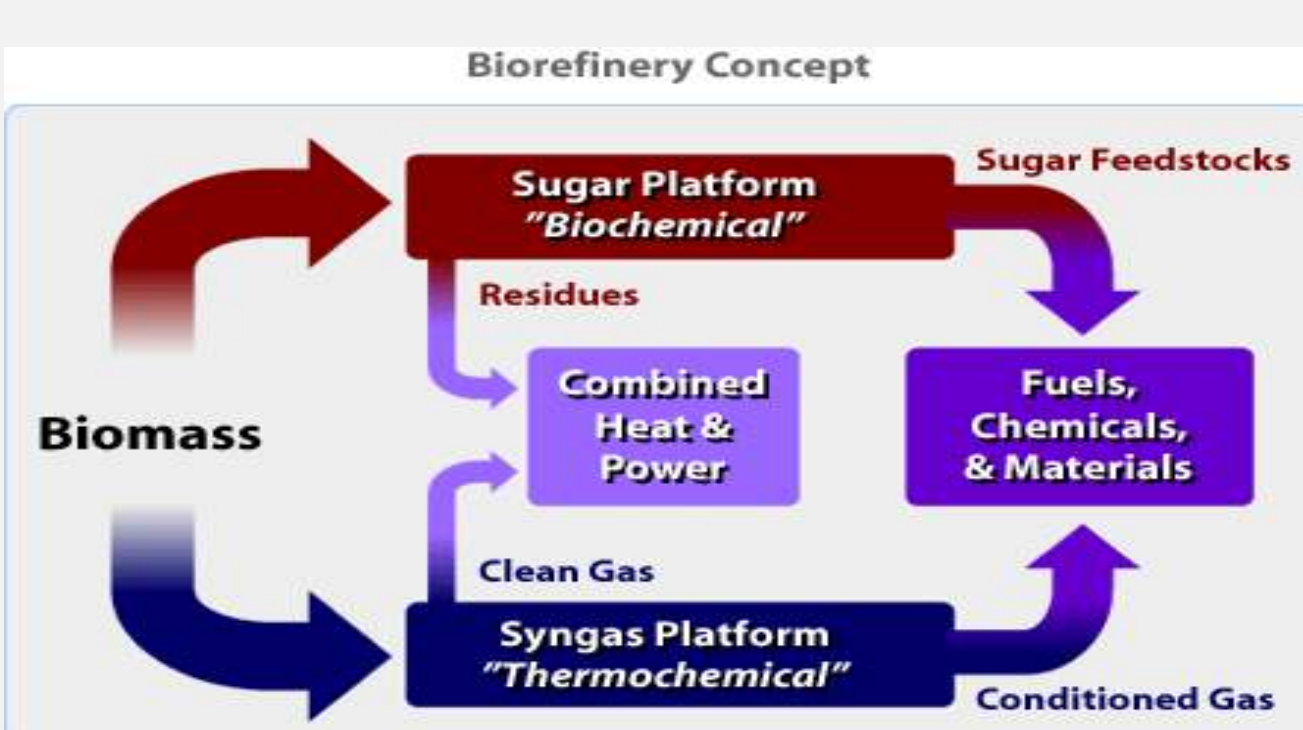
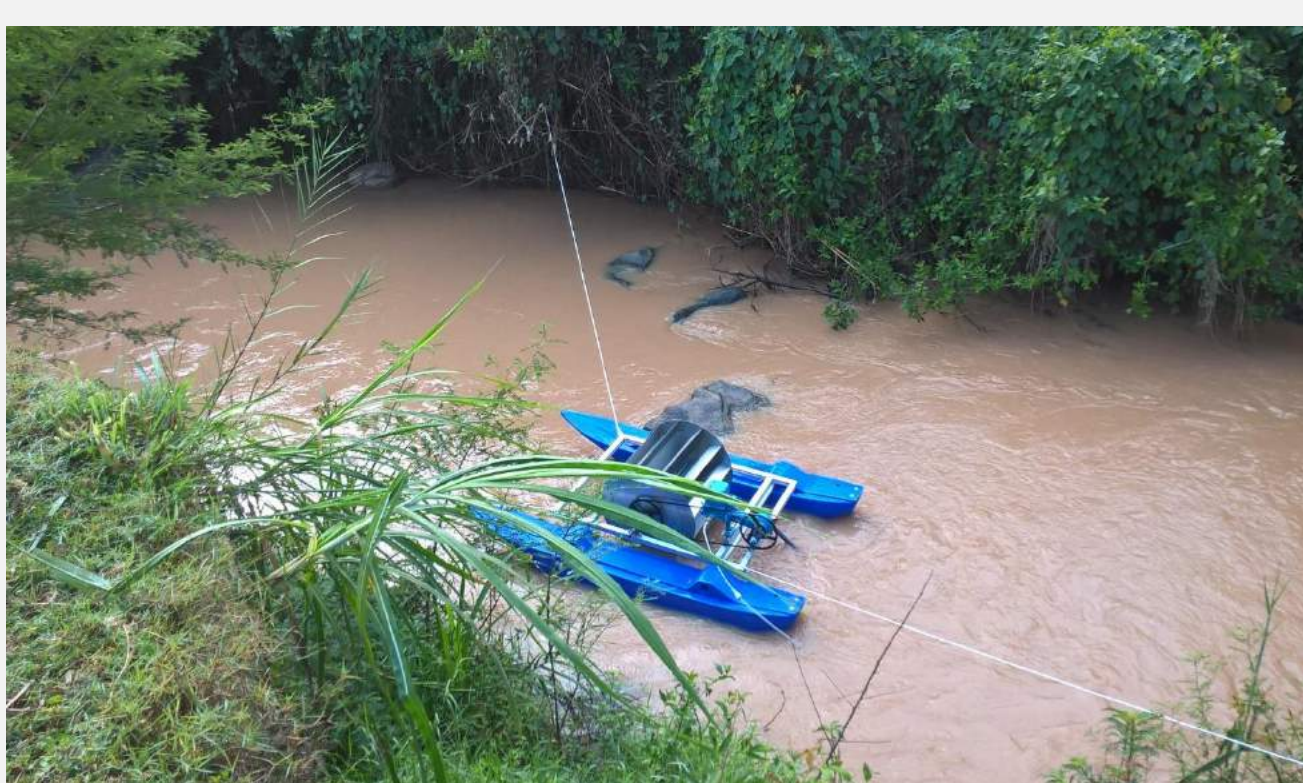
IMPLEMENTING PARTNERS:

- Agrokenya
- Masinde Muliro University of Science and Technology (MMUST)
- University of Eldoret (UoE)



Project Activities

- Exploratory Trips to Nairobi, Kagamega, Eldoret (March 2018 and March 2019)
- Workshops at MMUST Kakamega (May 2018 and May 2019)
- Practice-oriented University Education in Western Kenya: made clear the main ideas of the ProUniEdu-WeK project to promote practice-oriented university education, in particular based on project-based teaching and with a close connection to industrial and agricultural enterprises..
- Presentations and discussions about typical forms of practice-oriented teaching in Germany.
- Discussion on proposals and content of projects, by different departments of MMUST in cooperation with local institutions and German project partners
- Identification of candidates for the participation in workshops and scholarships in Germany (Brandenburg, Magdeburg, Eberswalde) in September 2018 and September 2019
- Establishing of a web-based infrastructure for document-sharing and publishing
- Projects Identified:
 - Robotics in practice-oriented university teaching
 - 3D printed robotics arm, prosthetics and wearable devices for telemedicine
 - Ceramic water filter
 - Hydrogenation of edible oil
 - Use of Lignocellulose materials in energy generation and soil fertility revitalization
 - Catalysis, Energy and Biomass and Water Purification
 - Smart agriculture for sustainable development of rural areas
 - Support of Agrokenya and its role in rural development (irrigation; poultry farming; goat-keeping; capacity building in agricultural practices)
 - Analysis of ergonomics among farmers in Kakamega county
 - Comparative gait and balance studies
 - Physiotherapy services for rural areas in Kenya
 - Rehabilitation ICT tool for Kakamega Rural Community Centres
 - Leveraging IT in Health and telemedicine for rural areas



Project Results

- Innovative streaming pump in use in rural area of Western Kenya
- Capacity building across departments at MMUST through international Workshops (3D printing; Catalysis, Telemedicine,...)
- Scholarships in Germany to faculty members from MMUST funded by DAAD
- Graduation of a THB MSc student in Chemical engineering: Water treatment techniques for Kenya
- Start of student's exchange:
 - First students and interns from TH Brandenburg to MMUST
 - In planning: Students from MMUST to THB

Sustainability & Synergies

Multi-disciplinary and practice-oriented teaching (interdisciplinary projects, funding of small firms, internships,...) in the rural areas of Western Kenya

Target group: Agriculture, Smallholder farmers

Contributions from Chemistry:

- Ceramic filters: Water purification,
- Catalysis: Biomass2energy, Waste2products, Biomass2Products

Contributions from Mechanical Engineering:

- Production of powerless streaming pumps
- 3-D-printing of spare parts and models

Contributions from Computer Science:

- Apps for farmers
- Apps for healthcare

Contributions from Health Sciences

- Ergonomics for farmers

Community engagement for a sustainable agriculture

- Goat farming for disabled and widows
- Education for farmers in special areas (poultry,

New hot topic in development: Applications of drones

- For precision farming
- For delivery of medicine, emergency help
- For surveillance of critical infrastructures

Information

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WEBSITE

<https://pro-uni-edu.org/>

COOPERATING PARTNERS

- Brandenburg University of Applied Sciences (THB)
- Eberswalde University for Sustainable Development (HNEE)
- Magdeburg-Stendal University of Applied Sciences (HMS)

FUNDED BY: DAAD