EDULINK

EDULINK II
ACP-EU Co-operation Programme
in Higher Education

Energy Access and Efficiency
Renewable energy and biotechnology

Capacity building in applied renewable energy technologies in Guyana and Suriname

Knowledge exchange during a fieldtrip to the laboratory of the Federal University of Western Pará, Brazil (March 2017).

PROJECT IMPLEMENTATION PERIOD
October 2013 – October 2017

CONSORTIUM
- Anton de Kom University, Suriname
- Katholieke Universiteit Leuven, Belgium
- University of Guyana, Guyana

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PROJECT WEBSITE
http://renewableenergy-edu.org

SUMMARY OF RESULTS

A joint MSc programme in Renewable Energy Technology (RET) was developed, as well as a certificate programme for mid-career professionals with decision-making authorities. University laboratories were upgraded with new equipment for hydropower, biomass, solar and wind energy research. The renewable energy debate in Guyana and Suriname has been stimulated and the Regional Universities Network for Research and Education in Sustainable Energy has been enhanced.

BACKGROUND

Guyana and Suriname have made use of and promoted renewable energy. Suriname, for instance, has a hydro-electric dam and Guyana plans to provide all hinterland villages with renewable energy. However, policies do not support the development of technical expertise within the wider Caribbean region. Renewable energy expertise has to be imported due to the lack of local experts, relevant courses and qualified staff to deliver such programmes. Theoretical courses on their own are not enough and students require practical skills. A basic research infrastructure needs to be made available to perform scientific investigations in the renewable energy domain.

The project aimed to improve institutional capacities to deliver academic programmes in applied renewable energy technologies with specific emphasis on hydropower, biomass, solar and wind energy. In addition, the research infrastructure needed to be strengthened and capacity built to review and recommend relevant policy and legislative structures that facilitate the use of renewable energy sources by public and private entities. In support of this the regional integration in the specific fields of renewable energy technologies needed to be fostered at the academic and professional levels.

METHODOLOGY

Curriculum development
The joint MSc programme in RET and detailed course outlines were developed based on initial stakeholder consultations, internal curriculum assessments and review of external programmes.

Training
4 Lecturers were trained at the Universities of Gent and Leuven (Belgium) in preparation for the implementation of the MSc programme.

Quality assurance
The existing quality assurance system at AdeKUS was used and adapted in areas of perceived weakness.

Delivery of MSc programme
In the programme courses, students were exposed to structured lectures, ICT, and laboratory and field work. Students from Guyana visited AdeKUS for additional lectures, laboratory work and fieldwork. Students had the opportunity to do part of their internship in Belgium, the Netherlands and Brazil. Exams were held simultaneously.

Improvement of research facilities
Equipment was purchased to improve the laboratory facilities with respect to facilitating advanced research in the renewable energy domain.

Visibility
Regular stakeholder meetings and one-to-one interactions with key stakeholders were held. To increase awareness of renewable energy, international symposia with experts, policy makers and stakeholders were held.

ANTON DE KOM UNIVERSITEIT VAN SURINAME

UNIVERSITY of GUYANA

KU LEUVEN

RESULTS

Outputs

Capacity building

- MSc programme in RET.
- 14 students enrolled at AdeKUS and 9 at UG (1 female student per university); students from other master programmes took elective courses.
- 4 staff members received advanced training in: energy conversion of biomass; applied control; biomass combustion and gasification; production of liquid biofuels; pyrolysis; wind power systems.
- A certificate level programme for mid-career professionals in the private and public sector with renewable energy knowledge.

Publications

- 2 articles on hydro-energy and sustainable energy development in the academic e-journal of Suriname.
- 2 publications on thematic research within RET (in preparation).

Database

- Each student has collected significant amounts of data, which are in the process of being incorporated in a central database which will be made publicly accessible on the university website.

Networking

- An increasing number of specialists are interacting at national and international levels, e.g. between companies, governmental institutions and universities.

Visibility

- 4 stakeholders meetings.
- 2 launches of the master programme.
- Several press interactions.
- 2 international conferences (including 1 paper).
- 1 international congress.

Construction of a solar energy installation by students for the research thesis of a student at AdeKUS, Paramaribo, Suriname (April 2017).

Outcomes

- Both universities are capable of delivering quality programmes in renewable energy.
- Increased research capacity due to improved laboratory equipment.
- Enhanced interaction of regional professionals and academics.

Impacts

Usage

- The programme is currently followed by 19 students (17 male, 2 female).
- Research infrastructure is fit for purpose and linked to educational programmes in renewable energy.
- Continued increase in national awareness of the importance of renewable energy for socio-economic development.

Policy implications

- Universities can effectively influence policy and legislative structures related to renewable energy in the public and private sphere as a result of increased capacity within the universities. Since most of the students are / will be working at managerial level in the public and private sector, they are in a position to influence policy. Overall, students, policy makers and professionals will be more aware of the technological and sustainability issues related to renewable energy.

Sustainability

- The programme is fully integrated into the academic offerings of both universities. There is significant public interest in the continuation of the programme. It will continue to be offered and tailored where needed.

Knowledge exchange during a fieldtrip to Brazil (March 2017). The hydro-energy station in Santarem.

TESTIMONIAL

Oswald van Cleemput, Emeritus Professor, University of Gent, Belgium

"This project is oriented towards renewable energy and technology, a field of utmost importance for countries in development. The programme deals with a topical theme and is relevant for further development. This project is relevant because energy and technology are moving so fast and it is so important that programmes like this are not overlooked at university level."

ACP-EU Co-Operation Programmes in the fields of Higher Education and Science, Technology and Research
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Implemented by the ACP Secretariat

Financed by the European Union