



Institut International d'Ingénierie de l'Eau et de l'Environnement  
International Institute for Water and Environmental Engineering



# **ZiE : AN INTERNATIONAL SCIENTIFIC AND CAPACITY BUILDING PLATFORM IN THE HEART OF WESTERN AFRICA**



# High Education & Research Institution

- On site High Education : BSc, MSc and PhD
- Distance learning High Education : BSc and MSc
- Vocational training: short courses and professional degrees
- Research and Development: Focus on innovation
- Engineering





# 2010-2015 Research Activities

## ■ **Development of Research based on**

### □ **An International PhD program**

- **Partnership with 14 Universities (France, Ghana, Switzerland, Ivory Coast, Burkina and USA)**

### □ **4 thematic programs:**

- **Secure Water for Africa: SWAF**
- **Access to Sustainable Energy for All in Africa : ASENAA**
- **Sustainable and Safety Urban Life : SSAUL**
- **Innovation and Green Business for Africa : IGBA**

### □ **6 international standard laboratories:**

- **Water**
- **Energy (Renewable)**
- **Environment**
- **Eco-materials**



## Laboratory of Solar Energy and Energy Savings (SEESL)

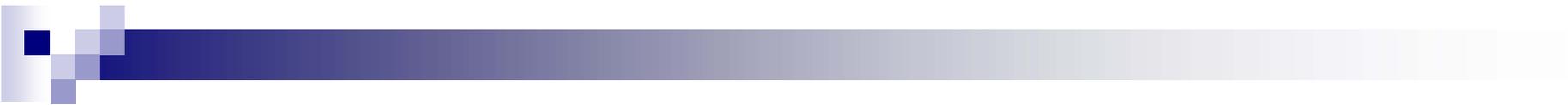
- Accurate assessment of the solar resource and energy needs in Africa
  - ✓ *Elaboration of database and maps of DNI (direct normal irradiation) in Africa*
  - ✓ *Elaboration of maps for energy needs in Africa (south of Sahara)*
- Concentrating solar power plants (CSPP)
- Bioclimatic architecture & Solar PV / thermal (low temperature) Systems
- Optimal design and thermodynamic optimization of energy systems & Energy Efficiency

Solar PV field  
2.85 KWp



Diesel generator  
11.5 KVA

## Pilot of « Flexy Energy »



## Laboratory of Biomass Energy and Biofuels (LBEB)

- Alternative energy for rural areas: biomass and bio-fuel, thermochemical conversion
- Adaptation of gasoline engines to vegetal oils
- Esterification of vegetal oils to biofuels
- Activated carbon for water and waste treatment



## 2iE/LBEB: Research on Biofuels





[www.2ie-edu.org](http://www.2ie-edu.org)

**Merci!**

**Our main partners**

