



## ENERGY ACCESS IN Sub-Saharan AFRICA: Case study based on findings from the town of Bukavu (Democratic Republic of Congo, South Kivu)



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### Partnership:

**LEAD (UBC) – Bukavu – DRC**

**EDF-Research and  
Development - EDF Lab Paris  
Saclay – France**

**Sciences-Po-CERI**



# EDF-R&D research on “Access to energy in Global South”

- 90'- early 2000' - A research tradition at EDF-R&D to work on and with 'developing' countries
- EDF-R&D more recent work focused on sub-Saharan African countries: *Structural features and trends, conditions of access to energy conditions and practices, energy uses*



A desk study on energy issues in these countries (EDF-R&D, ceri/science-po)

A quantitative survey and a qualitative study in the town of Bukavu (LEAD/university of Bukavu, EDF R&D)

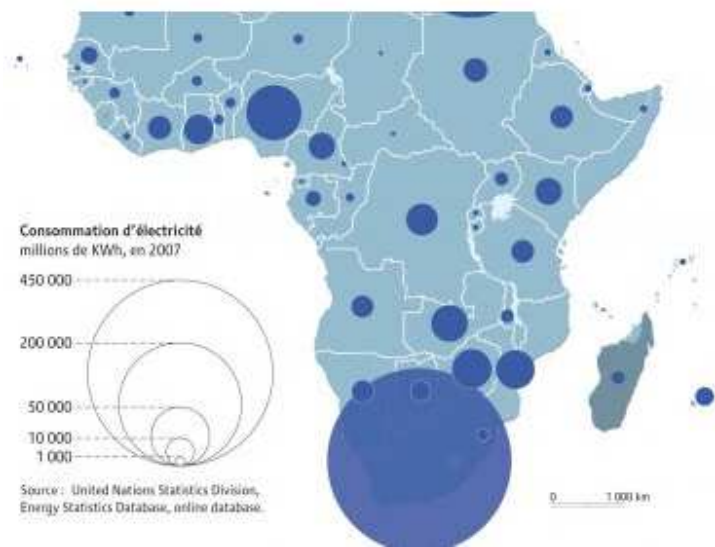
An exploratory case study of Congolese migrants (DRC) migrants in greater Paris region (LEAD/university of Bukavu)

# Access to energy in Sub-Saharan Africa: some difficult and paradoxical challenges



Lack of access to energy in spite of various and plentiful resources

Lack of investments required to its development in spite of the high amount of international funds dedicated to electrification in the area (SE4ALL- *sustainable energy for all*)

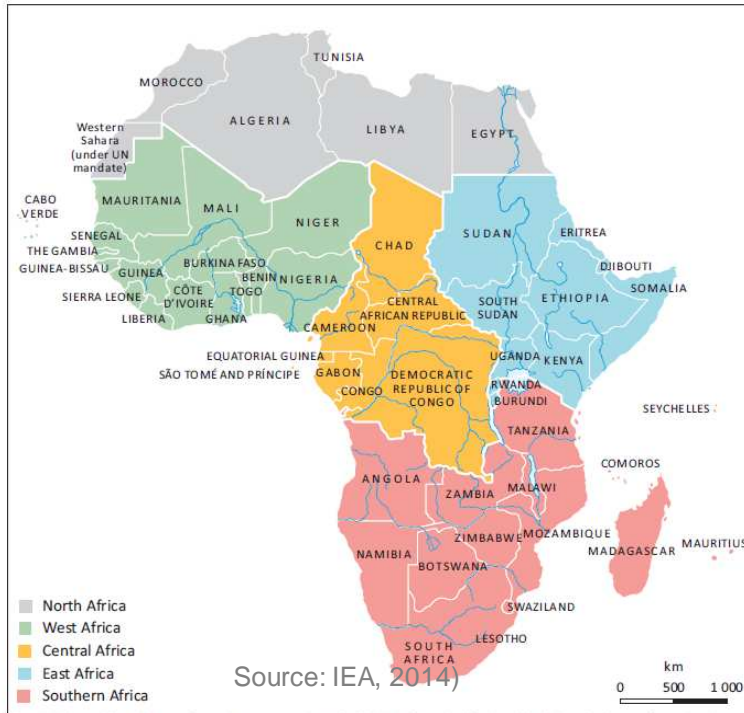


Influence of the colonial inheritance

# DRC-DEMOCRATIC REPUBLIC OF CONGO



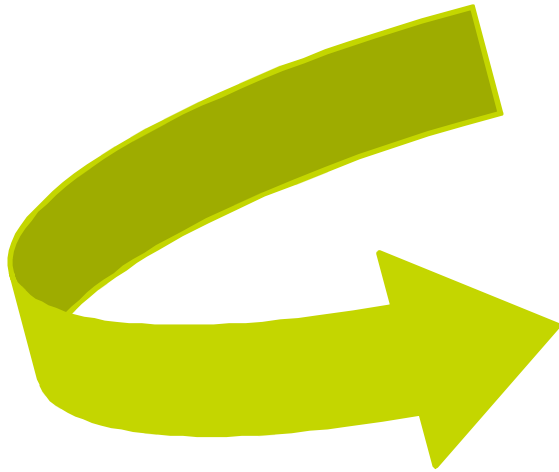
- Surface = 2 344 799 Km<sup>2</sup>
- Estimated density (2010) = 25 inhabitants/km<sup>2</sup>
- Population = 75 Millions of inhabitants (WorldBank, 2014)  
50% under 16 years old  
5 members per households Women: head of 20% of households:  
**Urbanization rate** : about 65% in 2014 but a weak national territorial integration.



- Central geographical situation
- Current « democratic » transition process after years of conflicts (African Great Lakes district – end in 2009)
- Stable economic growth: 7,7 % average per year between 2010 & 2015
- DRC Government committed to reform economic governance and promote the transparency of the public contracts (World Bank, 2010)

# BUKAVU CITY CASE STUDY AMONG HOUSEHOLDS

- **Bukavu city's main districts :**
- Bagira, district built in the colonial period but degraded since 1960
- Ibanda, central district where are public institutions and wealthy people,
- Kadutu, popular districts
- There are also a lot of slums round the city with no commodities (refugees)



## Empirical work-

- Quantitative (500 households) and qualitative (30)
- Carried out by students of the LEAD (Lab of economics applied to development) – University of Bukavu



# STRUCTURAL CONDITIONS OF ENERGY DEMAND



- A **right** to energy access but no implementation
- Weakness of the **State**, collapse of the public services
- Lack of a **regulation** system
- Difficult situation of the national **supplier** (SNEL)
- Deficit of electric **supply** for households (only 15% of electrification rate (World Development Indicators, 2010))



# CONSEQUENCES ON DOMESTIC ENERGY USE AND CONSUMPTION



Le Congolais - 27/01/2012

Congolese National Society of Electricity : « Sorry, Sir, I cannot register your claim for I have myself no electricity »

## A difficult situation for users

- Blackouts
- Unannounced interruptions
- Low voltage
- Deterioration of electric appliances

## Although people long for electric comfort...

« A life without electricity is a black (bad) life »

Development of appliances and uses

## And manage to get electricity

In many alternative ways ...



# INDIVIDUAL ADAPTATIVE STRATEGIES

## Mobility gives ideas for new/different uses

- Drink fresh beer
- Use 2 appliances at the same time (kettle & shaver)
- Mobile phone

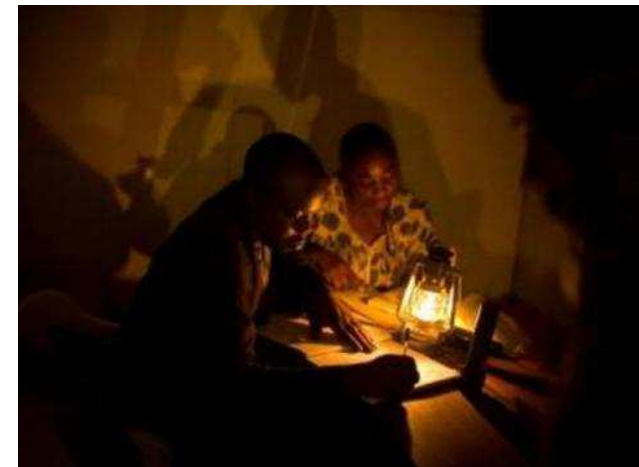
## ...But that requires permanent access to power

### Wealthy people :

- Pay additional charges to get permanent electricity access (access to priority lines, corruption of SNEL agents)
- Buy generators (expensive and polluting)

### Poorer people who cannot afford it :

- Buy torches, candles, petrol lamps (lighting)
- Buy charcoal (cooking)





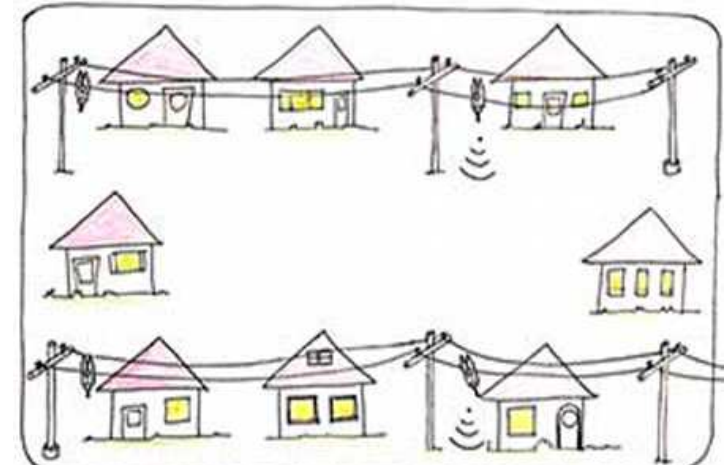
# COLLECTIVE ADAPTATIVE STRATEGIES

## The *DAHOU*LAGE Institutionalisation of illegal connection practices

“to fetch ambers from the neighbour” (Maschi language)

## Other forms of ‘social innovations’

- *The Ki-GROUPÉ* - Collective purchase and use of generators
- *Citizens’ committees for Electrification*



**BACK UP  
(MIGRATION PART)**

**ENERGY DEMAND DYNAMICS  
BEYOND BORDERS:  
AN EXPLORATORY CASE STUDY OF  
CONGOLESE (DRC) MIGRANTS IN FRANCE**



In partnership between :

**LEAD (UBC) – Bukavu – DRC**

**EDF Lab – Saclay, Research  
and Development – France**

# ENERGY DEMAND DYNAMICS BEYOND BORDERS:

An exploratory case study of Congolese (DRC)  
migrants in France

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Buchekuderhwa, C., Legris-Desportes, C., Estibals, O.*



## CONTEXT

We know the cultural influences on energy demand (Lutzenhiser, 1993)

In a context of globalization and massive population movements, which is the importance of cross-cultural factors ?

If there is an important literature on transnational migration, few studies develop energy demand dynamics

## HYPOTHESES

When arriving in a new european context – as the conditions of access to electricity services are very unequal -, how do migrants react ?

- are they forced to get used to the new conditions ?
- do they import practices from their native country ?

## SOCIOLOGICAL FIELD :

- Cross-cultural studies did not pay much attention to energy demand
- This societal trend may deeply transform energy demand in both countries
- A partnership between EDF Lab & Bukavu Economics Applied Lab (LEAD -UCB) :
  - **Bukavu** : a quantitative survey (3 districts, 500 households) & a qualitative survey
  - **Great Paris** : an exploratory qualitative survey (7 households, mediators); specific difficulties of a migrants' survey



Great Paris



Bukavu – DR of Congo





# STRUCTURAL CONDITIONS OF ENERGY DEMAND

Native country



Host country



- A **right** to energy access but no implementation Weakness of the **State**, collapse of the public services
- Lack of **regulation** system
- Difficult situation of the national **supplier** (SNEL) 
- Deficit of electric **supply** for households (only % of electrification rate, consequences of wars, population growth, uncontrolled urbanization, corruption)

- Implementation of the **right** to energy access
- **Public services** tradition
- Strong **regulation** system
- A main **supplier** (EDF) and several competing suppliers
- Equal **supply** of electricity for the **whole country** (electrification of the whole country since the 50s)



# CONSEQUENCES ON DOMESTIC CONSUMPTION IN CONGO



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# ADAPTATIVE STRATEGIES IN CONGO

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Use 2 appliances at the same time (kettle & shaver)...

## But that requires permanent access to power

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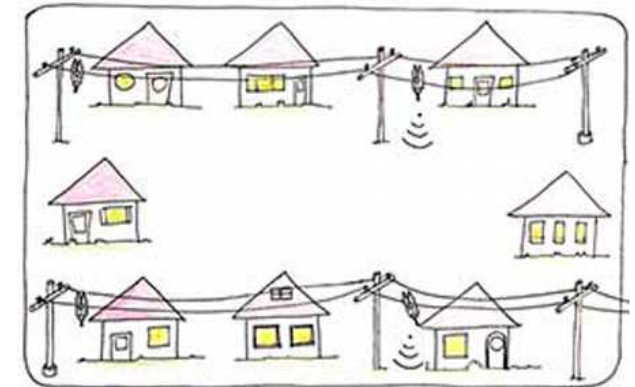
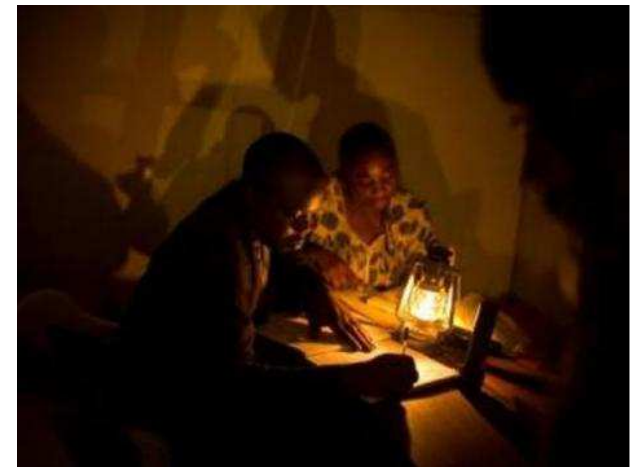
- Pay additional charges to get permanent access
- Buy generators

### Poorer people who cannot afford it :

- Buy torchs, candles, petrol lamps (lightning)
- Buy carbon wood (cooking)

### People may also :

- Practice illegal connection (**dahulage**) encouraged by some associations
- Negotiate in a collective way with the supplier (**Ki-groupé**)



# FRENCH CASE STUDY

Two highly contrasted local contexts → Beyond People's migrations, how do end-uses energy related consumption and habits circulate, are appropriated and translated?



## □ France, a growing multicultural Society

- 11% of French population : individuals whose at least one parent was born in a foreign country (INSEE Report, 10/10/2012)
- French people of African origin: 5.6% (Maghreb), 1.9% (Sub-Saharan Countries) (INSEE 2008)

## □ A case study still in progress, current sample interviewed

### ➤ 7 households:

- 2 migrations' waves : access to higher education (70'-80'), economic and political motivations (since the 90')
- 'Talkers': males, educated, working
- Greater Paris region

### ➤ PIMMS (Point of Information and Mediation Multi-services)

- Social mediators (who receive a lot of newcomer migrants)



# DISCOVERING NEW CONDITIONS OF ACCESSING TO AND USING ENERGY AT HOME IN EVERYDAY LIFE

- ❑ **A discovery disconnected from energy supply and service costs' concerns**
  - French life begins in University or in social network (friends, family ...) accommodations
- ❑ **All the best from “modernity”**
  - Quality of electricity and its permanent access through a reliable infrastructure
  - Security of access (no danger related to infrastructure)
  - Capacity to operate several devices at the same time without being in trouble
  - Expressed ‘basic needs’ expectations easily satisfaction: communication/ICTs’uses, cooking, heating



# RECEIVING THE FIRST BILL

## ❑ High quality service has a cost

- Is the amount of the bill fair? « *Is it sure that I should pay that amount?* », “*In DRC the bill was really low, it had not sunk in yet*”.
- Bills are getting more and more expensive and restrain the family budget

## ❑ Which, even considered (too) high, remains to be legitimate

- Mostly confident in the meters that measure the consumption of electricity: “no need of “dahoulage” in such a different a context”
- Most of interviewees don't verify their invoice also because it is difficult for them to understand the amount of government taxes

# AN APPRENTICESHIP PROCESS

## ❑ Trust and legitimacy of information sources

- Peers-to-peers, fellow countrymen, newspapers and internet, social mediators, suppliers' documentation

## ❑ Energy savings: a progressively embedded notion, an 'enculturation' process\*

- Being deprived of something that seems essential is (in interviewees own words) not part of "Congolese cultural feature"
- Practical knowledge and know-how: A 'social learning' process ground on exposure to friends and relatives' practices living in France for a longer time
- Congolese who have been living in France for a long time notice the way new comers are wasting electricity and identify that such habit "*comes from Bukavu*"

\* Mauss, 1936 cited by Wilhite, 2013.



# CONCLUDING REMARKS

- ❑ **Two highly contrasted ‘models’ in terms of access to energy services, infrastructures and end-users’ posture**

EX. Energy management consumption

- ❑ **A ‘boomerang effect’ due to the to-ing and going people between DR of Congo, France and other local contexts**

- Changed views about what is *socially acceptable* in daily life of Congolese: “*it is time to develop energy for all in Congo*” (Man, 60 y.)
- Economic difficulties experienced in France make Congolese migrants more sensitive to the cost of energy.... And energy savings.

- ❑ **In a more general way**

- Questions and issues around social learning, representations of modernity, institutions, as well as infrastructures and daily habits and routines are central to better understand social norms dynamics underpinning energy demand and related practices in a globalized context
- Migrations between continents are an illustration of the complex interactions at work in the current global world and the globalization of economy and cultures

