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**African Cities and Climate Change:
Planning and Implementing Strategies for Low-Carbon Transitions**

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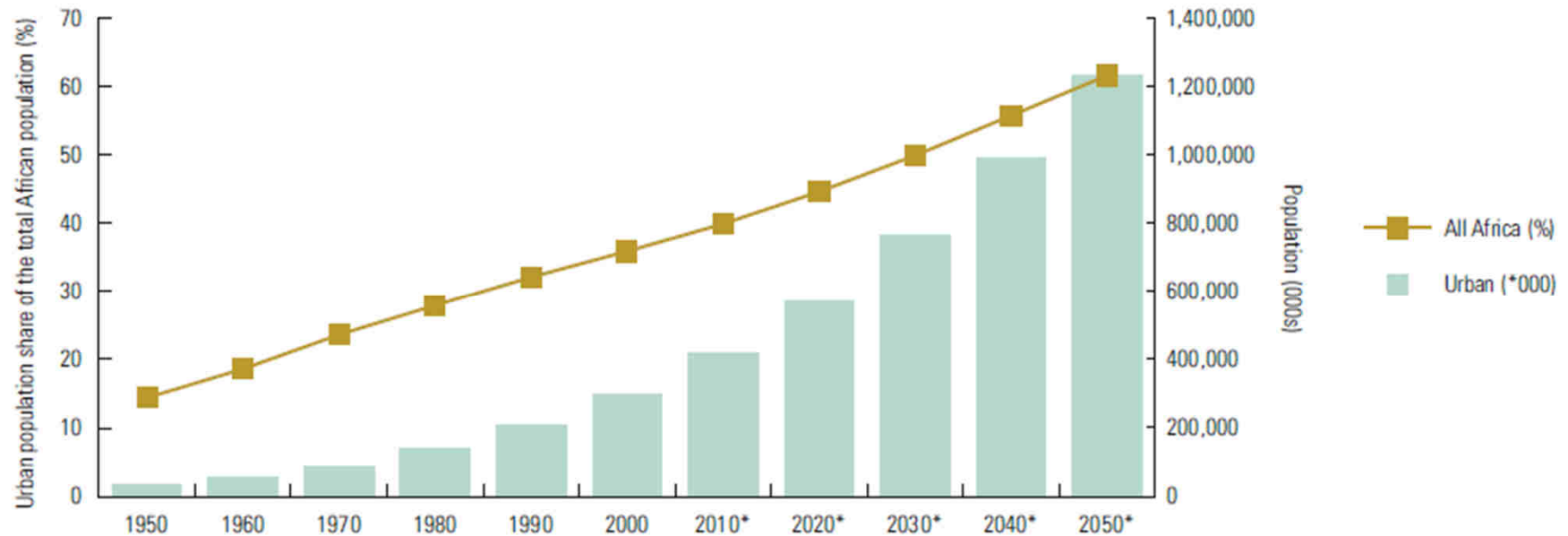


Urban planning in Africa?

- **African cities are hybrid “post-modern” object giving illusion of power for urban elite**
 - More than 60% of the urban population lives in informal settlements in SSA (against 25/30% in Asia/world average – *UN Habitat*) – one of the fastest urbanization rate
- **Post-colonial African context**
 - Most African cities still influenced by habitus/urban practices inherited from colonial rule with a dichotomy
 - Historical centers often left derelict / open to speculation
 - “White” areas (“organized” / Western values)
 - Budget and planning goes to wealthy suburb areas
 - “Black” areas (“informal” / Western values)
 - Peri-urban and informal areas tend to be left to their own fate
- **Western view of urban planning can be challenged**
 - “Informal” is not chaos - un-organized but “self-organized”
 - Planning is not done by urban planners but can be co-produced

Africa fast urbanization rate

GRAPH 1: AFRICAN URBAN POPULATION TREND 1950-2050



* Projections
Source: WUP 2009

World Urbanization Prospects, United Nations, 2009.

Action of municipal authorities

- African municipalities tend to be powerless:
 - Limited political power; limited financial and human resources
 - Poor urban services/quality of life
 - A third urban population has access to piped water; sewage system often inexistent; limited waste collection; electricity intermittent; roads congested and no public transport/huge air pollution, roads traffic accidents
 - Often oscillation between:
 - A mix of ignorance / “Laissez-faire” / tolerance / lack of enforcement of regulations and laws
 - Sudden surge of authoritarianism → eviction of people, enforcement of inappropriate regulations (waste,...)
 - Middle way could be possible?
 - Would imply cooperation/recognition of local communities
 - → political acceptance that official authorities have to share power
 - → find “leader” within local communities & permanence of staff to sustain dialog
 - Often have to compose:
 - Land registry <> established traditional chefferies / Delegation of power
 - Private developers

Public participation of the poor?

- Repeat calls for the participation of local communities in urban planning have rarely been followed by concrete outcomes; perhaps because effective participation challenges the structure of power, and must therefore go beyond participatory methods and techniques (Tapscott and Thompson, 2013)
- A lack of agency among the urban poor may indeed explain the exclusion of the poorest from decision-making processes which impact their daily life (Desai, 2010)

Co-production of urban services?

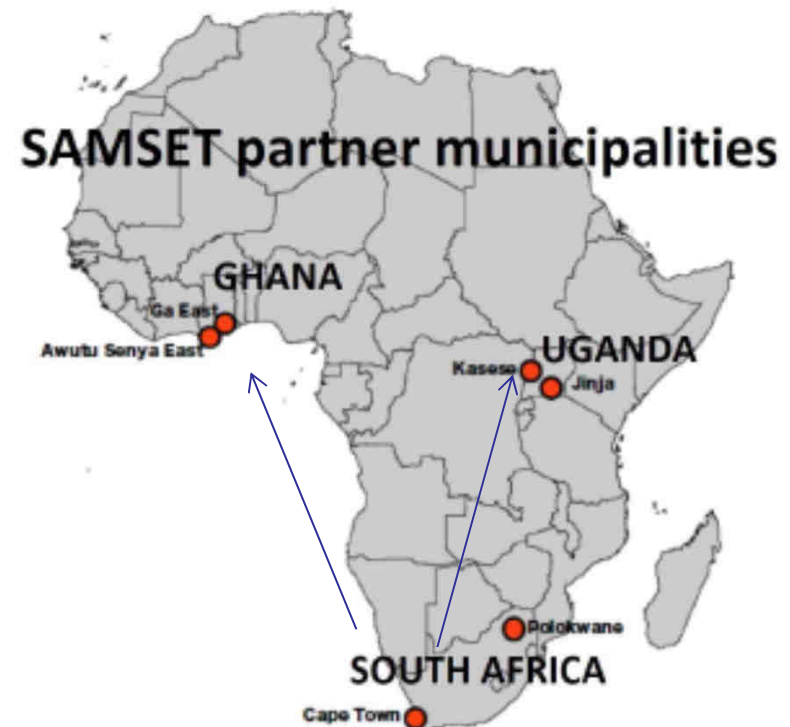
- The co-production of urban services could be a way to rethink the co-existence and mutual relations between formal and informal networks (Dovey, 2012)
- Even if decentralised approaches to urban planning have been shown to be more effective in poverty alleviation (Bhatkal et al., 2015), these complex partnerships, which incorporate both formal and informal networks, are slower to implement (Bhatkal and Lucci, 2015)

Supporting African Municipalities in Sustainable Energy Transition (SAMSET)

4 year international research project – 1,7 million GBP funded by EPSRC-DECC-DfID -Consortium of 7 partners – Principal Investigator at University College London

Action research – aim to establish a knowledge exchange framework on energy transition

- ➔ Put in relation 6 African municipalities
- ➔ Share experience of South Africa
- ➔ South-South exchange of knowledge with input from Northern “experts”
- ➔ “Bottom-up” approach
 - ➔ Priorities defined by each municipality
- ➔ Energy transition: energy access, buildings, transport, waste to energy



The role of municipalities in South Africa

- Since the end of the apartheid, South African municipalities have had a unique experience of engaging with local communities in the provision of basic services
 - Nelson Mandela's government implemented the 1994 *Reconstruction and Development Programme*, which consisted of five key programmes; the first of which was “meeting basic needs”
 - *1997 Constitution /chapter 2 or “Bill of rights”* that every South African should have ‘access to housing and basic services (water, electricity)
- South Africa has:
 - Particular experience of public participation in the design of public policies at a national level (Deegan, 2002)
 - Has a strong community of researchers, civil society organisations and think tanks which participate in public debates notably around energy and climate policies
 - This is a rare occurrence in Africa where investments in (urban) infrastructures are often lacking in transparency

Energy situation in South Africa

- **Apartheid**

- Boycott/ban – production of liquid fuel with coal – self-sufficiency
- All the strategy of South African government has been to attract investors (diamond and gold mining) with cheap electricity produced with coal
 - Important consumption of electricity & pollution (worst emitters of carbon from the African continent - 12th biggest emitters of the world)

- **Post-apartheid**

- Huge increase in the number of connection to the grid (75% electrification rate in 2012)
- No investment in power generation → Power shortage in 2008
- Very significant energy efficiency measures + increase tariff 25% last 6 years + 8 % next 5 years

- **16th biggest South African cities consume half of the energy of the country**

- White suburbs = consumption per capita can be equivalent to European cities
 - Electricity – white engineers jobs to deserve white suburbs
- Townships /black peri-urban = consumption can be as low as 1 tonne carbon per capita
 - Paraffin, candles.... (but now most of them electrified)

- **Transport Inequalities**

- Cars needed to travel in cities
 - Segregation apartheid – urban sprawling – ghetto poorly linked – designed to bring people to working places only otherwise system of permits
- But most black people too poor (to have a car) & inequalities are growing
 - Unreliable public transport (few trains – crowded collective minibus taxis); walking is often the only option → Resentment

Experience of sustainable energy cities in South Africa

- **After the apartheid – lack of expertise**
 - Sustainable Energy for Environment and Development (start since 1998)
 - Identification of local energy issues and partners with NGOs and cities
 - Structured program of capacity building to integrate energy into municipal planning
 - housing, urban planning, electricity, transportation, waste and water
 - 80-100 professionals are part of the network
 - Learning by doing when problem arise & capacity building
- **Sustainable energy strategies in eight South African cities**
 - Actions taken in: Nelson Mandela Bay, Jo'burg, Cape Town, Ekurhuleni, Buffalo City, eThekweni, Sol Plaatje, Tlokwe, Tshwane
- City Energy Support Unit <http://www.cityenergy.org.za/>
 - EE tools for municipalities,...
- **Number of (large-scale) energy projects**
 - Roll-out of 1 million Solar Water Heaters
 - Energy efficiency in townships (materials insulation of roofs/ceiling)
 - Municipal Energy Efficiency Demand Side Management Program

The approach of the SAMSET project

- **To build on this South African experience**
 - Integrate energy issues in planning approach
 - Applied research – acting change within municipalities
- **To develop effective & systematise knowledge transfer framework**
 - Detailed understanding of the complexity of municipal operations and constraints
 - Action research / bottom-up approach with local Universities
University of Ghana and University of Uganda & University of Cape Town
 - 2 cities selected in each 3 countries – meetings to benchmark progress made
- **To generalise to other middle-size cities (around or less than 100.000 inhabitants) in situation of “urban stress”**
 - Important demographic pressure
 - Limited planning resources

Actions taken

- **Net-mapping of stakeholders involved in energy decision**
- **Collection and production of data - Modelling to produce state of energy reports for each six municipalities – then the basis of energy scenarios for each municipality**
 - Modelling as a way to bring stakeholders around a table to discuss energy
 - Capacity building for civil servants now able to use the model themselves
- **Small pilot demonstration projects & events**
 - Solar street lamps, better insulated windows, efficient fridges,...
 - Field visits waste to energy projects, bus transit rapid project, large-scale roof-top solar
 - Exhibition co-organised with inhabitants of informal settlements
- **International and regional networking**
 - with regular network meetings / exchange of experience
 - workshops with local stakeholders
- **Policy documents**
 - Policy briefs
 - Integration of energy in planning and strategy documents
- **Dissemination at a regional and international level**
 - SAMSET website, blog, twitter account; contribution to newsletters, blogs,...
 - National media coverage & Conferences with practitioners

Difficulties linked to the approach

- Bottom-up approach
 - Each municipalities defines its own priorities
 - But does not correspond necessarily to experience or priorities of other municipalities
 - Waste to energy priority for some municipalities
 - Comparative research via cases studies between very different countries?
 - South Africa a lot wealthier than Ghana or Uganda
 - Transfer of knowledge?
 - Include external partners (and not just municipalities)
 - Problem of funding: help municipalities to raise funding? (otherwise knowledge in itself not enough)
- Heterogeneous team
 - Academics: research driven leading to action taking into account specificities of each country
 - Consultants: action driven based on modelling
 - Staff turnover → project helps promotion/train new staff/critical mass

In conclusion

- Research aims:
 - To locate the knowledge exchange (already experimented in South Africa) in a theoretically sound, practically tested framework
 - Which has been replicated throughout other cities to impact on sustainable energy transitions
 - Use of modelling as heuristic tool has been very successful
- Approach:
 - Action-research with bottom-up approach starting from needs of end-users: municipalities
 - Research with impact → integration of people who will benefit from the research from the very beginning!
 - But 3 very specific country contexts
 - International networking for African municipalities on energy transition has an impact but needs persistent action on a long period (case of South Africa - 20 years action)
- **No local authorities can work without income**
 - Collect taxes
 - Land value capture from new development: municipalities to capture part of land value uplifts that private development and planning activity generates
- Recognition of the role of cities in fighting climate change → decentralisation

Thank you!



SAMSET website: <http://samsetproject.net/>
SAMSET blog: <https://samsetproject.wordpress.com/>
SAMSET twitter account: <https://twitter.com/samsetproject>