

Will the Inga Hydropower Projects meet Africa's electricity needs?

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Outline of the presentation

- Research background
- Research problem
- Institutional capacity of the DRC
- Logics and dynamics of the economic contract/
social contract trade-off
- Civil Society's Response to Grand Inga

Objectives of the presentation

- Explore institutional capacity of the DRC to run Inga 1 and Inga 2; and question further development of the Inga Falls;
- Explore the logics and dynamics of the economic contract/ social contract trade-off confronted by the government of the DRC as represented in IHP;

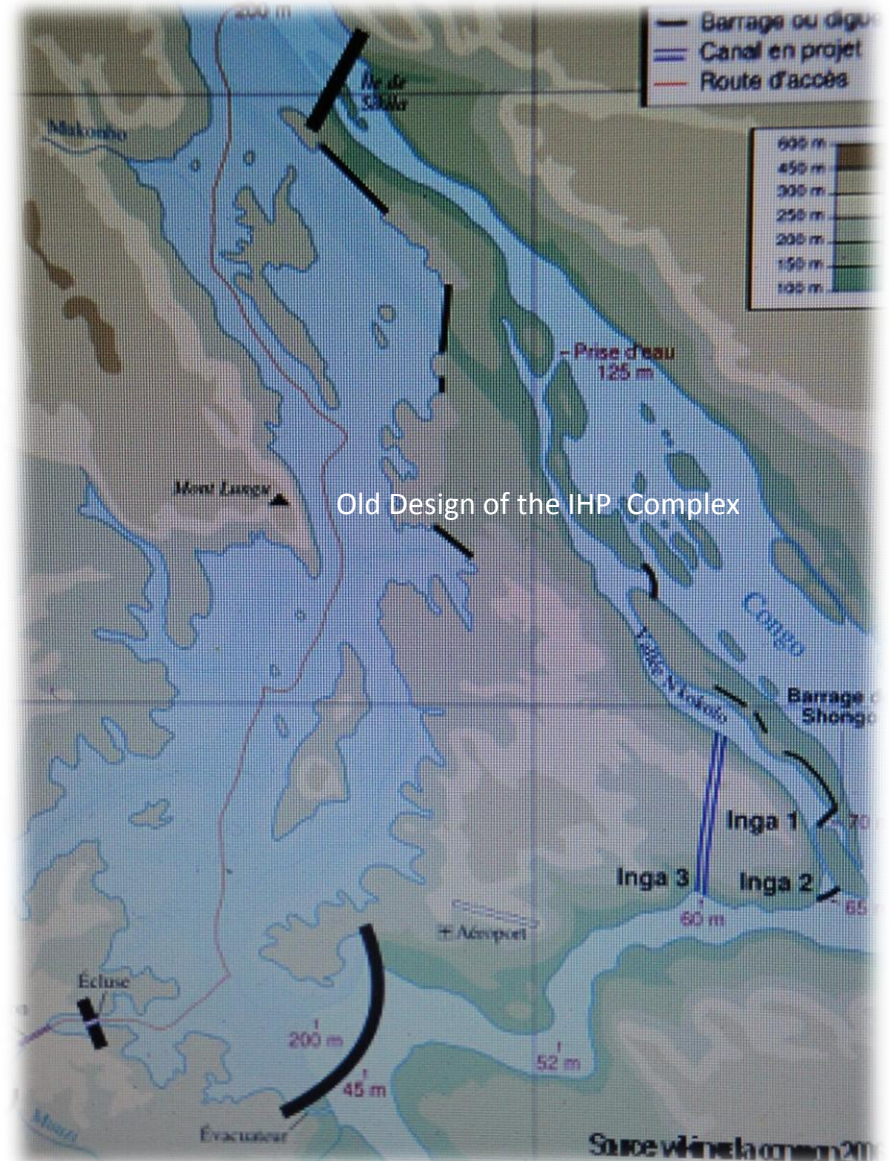
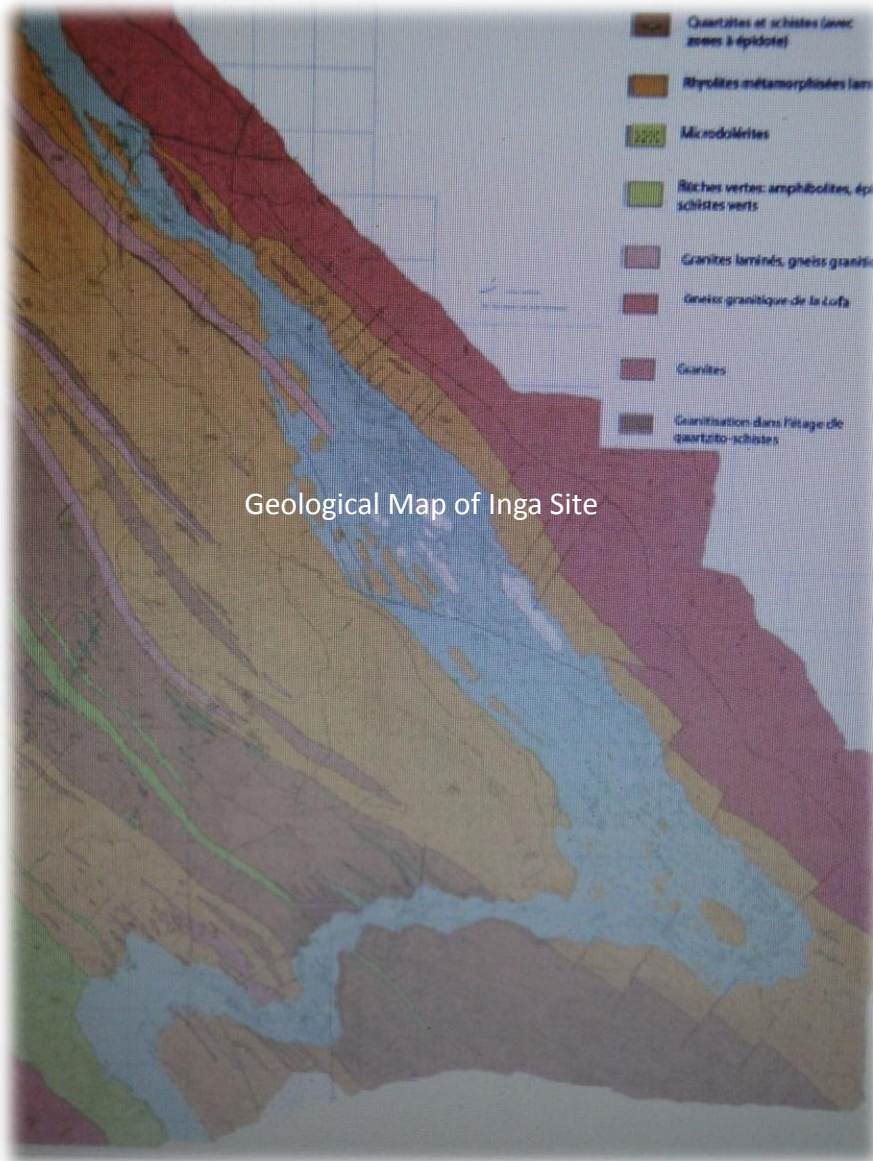
Research Background

- Inga Hydropower Projects (IHP):
 - Are to be completed on the Inga Site/ Falls;
 - Inga Falls were discovered in 1885 by A.J. Wauters
 - Congo River in the DRC; 2nd longest in Africa: 4,700 km; 5th longest in World;
- Inga Falls: characteristics
 - Exceptional regular flow: 40,000 m³/s
 - Congo River is on both sides of the Equator;
 - Congo basin surface: 3,800,000 km² vs. DRC 2,345,000 km²
 - 150 km upstream the mouth; 225 km downstream Kinshasa

Research Background



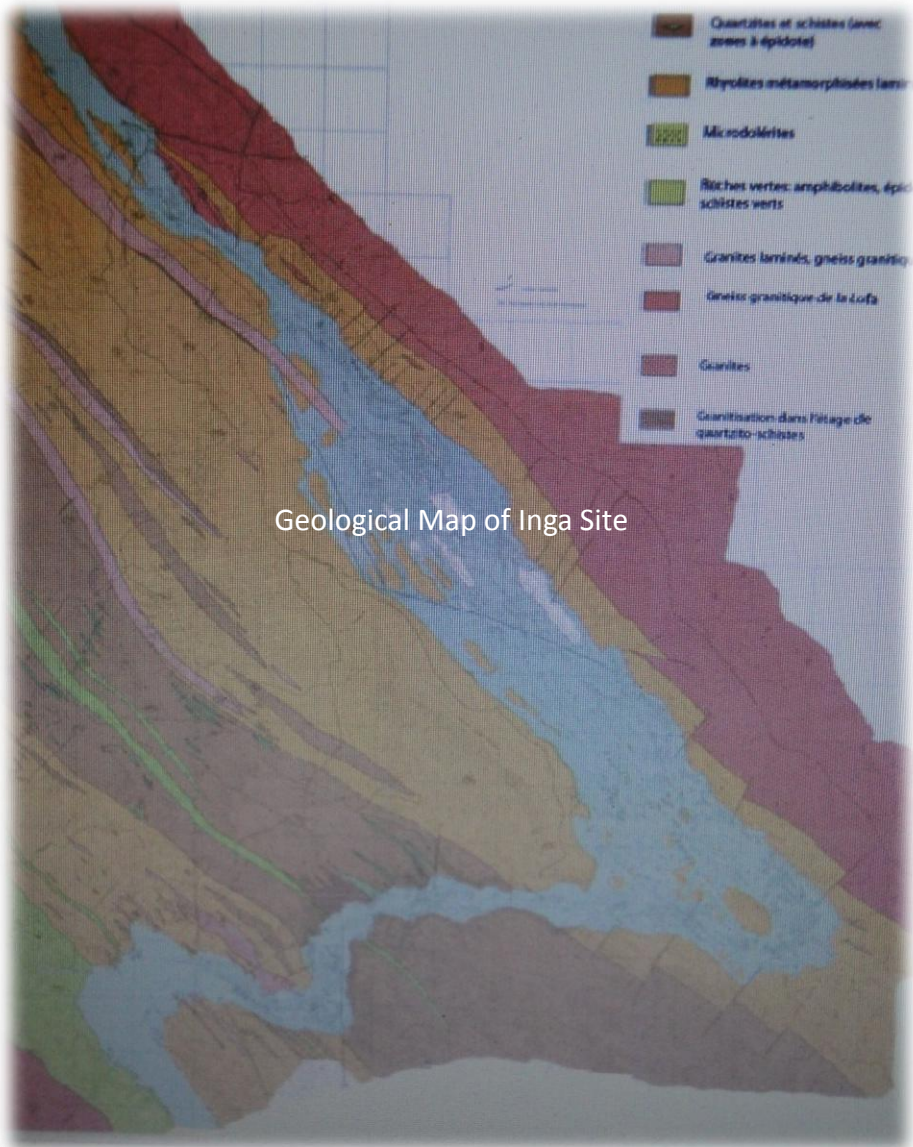
Research Background



Research Background

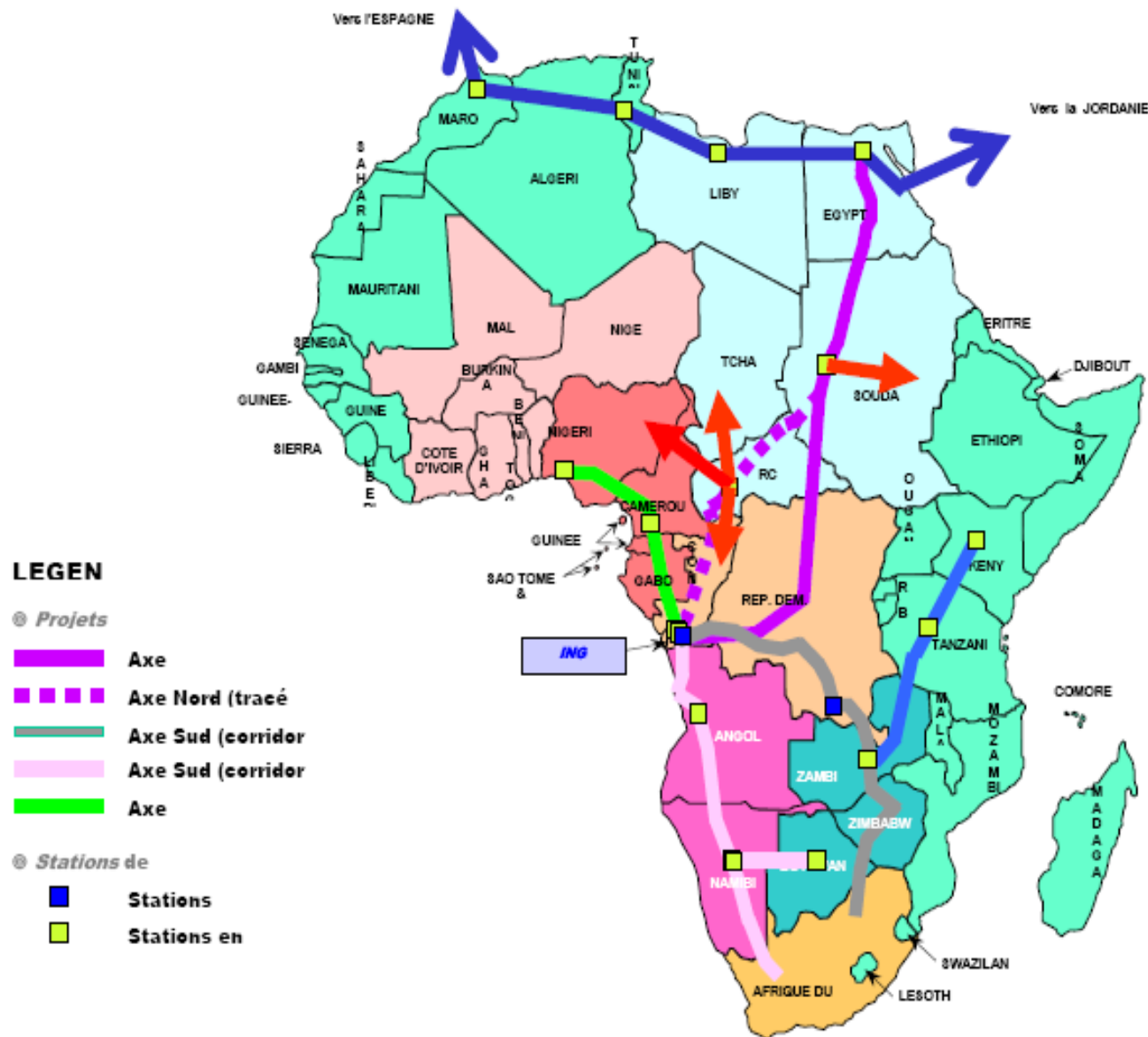
- Inga Falls
 - Four Hydropower Projects
 - Inga 1 (1972): 351 MW; Inga 2 (1982): 1,424 MW
 - Inga 3 (?): 3,500 MW (WESTCOR - Western Power Corridor project -DRC, Angola, Namibia, Botswana, SA. Now dissolved; then MagEnergy, and hopefully by BHP Billiton).
New pre-feasibility study recommends to build Inga 3 as Phase A of Inga 4 because the previous design is very expensive to build; and it could devalue the potential of Inga 4.
 - Inga 4 or Grand Inga (?): +45,000 MW

Research Background



- New Design IHP Complex
 - Advises to build Inga 3 as one of the phases of Inga 4
 - Initial design of Inga 3 i.e. a 8 km-long tunnel for 8 turbines could decrease the value of Inga 4;
 - Inga 3 could be more expensive to build in the initial design than in the new one;
 - There was little experience around the world on old the design; & collapse of Gibe 2 (a 6km-long tunnel)

Research Background



Research Problem

- IHP = Mega development projects (Sykes, 1990):
 - they are owned by the government, or a consortium of private companies, or a mixture of them;
 - they take a long time to be finished (...);
 - they usually are of public interest because of their high socioeconomic and environmental impacts. This gives them a political relevance;
 - the government is involved even if it is not one of the owners due to their economic & environment impact; and
 - they have a major impact on markets.

Research Problem

- Mega development projects (Flyvbjerg, 2005) & (Bruzelius *et al.*, 2002) add that
 - They are “inherently risky due to long planning horizons and complex Interfaces”;
 - There are several actors with conflicting interests in decision making;
 - Almost always there is misinformation about benefits, costs and risks;
 - Long life time of projects.

Research Problem

- Mega development projects have the following characteristics:
 - **Optimum bias:** policy-makers and the projects' stakeholders overlook the costs & overestimate;
 - **Optimism bias:** overlooks the public interests of the communities which will be affected by the projects (little or no compensation for their disrupted livelihoods);
 - **Optimism bias:** reflects a particular way of thinking about development which often excludes the poor from benefiting from 'conventional development models and paths to modernity'.
 - **Cost-benefit analysis:** privileges the national economic interests and underplays the local impacts at the vicinity of the megaprojects;
 - **Megaprojects:** often characterised by corruption, cost overruns, schedule delays, benefit shortfalls;
 - **Megaprojects:** often lead to white elephant infrastructures;
- IHP do not make any exception to this rule

Research Problem

- Research investigates the impacts
 - Inga 1 (1972): 351 MW
US\$16.50 million (1965); US\$ 34.5 million (1972);
 - Inga 2 (1982): 1,424 MW)
US\$140.0 million (1971); US\$ 460.0 million (1982) on
local communities & the DRC in general
 - Inga 3 (?): US\$5 billion (Hathaway, 2005: 6);
 - Inga 4 (?): US\$55 billion in 2005 (Hathaway, 2005: 6);
US\$80 billion in 2008 (Hathaway, 2008; Allo, 2008)...
- Research also investigates the logics and dynamics of the economic contract/ social contract trade-off confronted by the government of the in the IHP, and to assess the ability of civil society to impress civil accountability on the state.

Research Problem

- Electricity Sector in DRC depends on financial management and technical expertise of SNEL;
- SNEL: *Société Nationale d'Electricité*
 - State utility which deals with
 - Generation;
 - Transmission;
 - Distribution; and
 - Commercialisation of electricity in the DRC
 - DRC has five Distribution Networks: Bas Congo, Kinshasa, Katanga, North and South Kivu & Other isolated systems

Institutional Capacity of the DRC

- SNEL & Generation of electricity at IHP
 - Potential capacity: 100,000 MW from hydropower;
 - Installed capacity: 2,400 MW or < 3 % of total potential capacity;
 - Inga 1 (351 MW); Inga 2 (1,424 MW) or 1,775 MW i.e. $\pm 70\%$;
 - Inga 1: 2 out of 6 turbines not working
 - Inga 2: 4 out of 8 turbines not working
- Operate at 30 - 40% they never received maintenance because of a lack of skills, funding, political will.
- Aquatic weed & sand reduce dam reservoir



IHP reservoir invaded by aquatic weeds

Institutional Capacity of the DRC

- SNEL & Transmission of Electricity
 - Transmission system: under significant strain, equipment outdated, insufficient maintenance & minimal investment;
 - Transmission also has inadequate capacity to meet increasing demand;
 - Inga-Shaba Power Line (1,770 km) - very high voltage - (24% DRC debts): carries only 25% of its capacity.
 - Inga –Kinshasa Power Line: under strain
 - Lack of funding for a 2nd Inga-Kin Power Line
 - Situation is not different in other provinces either

Institutional Capacity of the DRC

- SNEL & Distribution of Electricity
 - Distribution Network Connections (WB, 2005)

Distribution Networks	Connections
Bas Congo	35,000
Kinshasa	290,000
Katanga	55,000
North & South Kivu	32,000
Other isolated systems	21,000

- Unreliable, with saturated lines & transformers;
- Dilapidated poles & frequent load shedding:
 - Losses at all levels (generation, transmission and distribution)
 - 25 % distribution losses (10 % technical & 15 non-technical)
- Revenue collection rate: 50% in Kin & 55 % in DRC;

Institutional Capacity of the DRC

- SNEL & Distribution of Electricity (WB, 2005)
 - Revenue Collection Rate

Customer Category	Collection Rate (revenues collected as per percent of sales)
Government and parastatals	23%
Residential	32%
Low-voltage private sector	61%
Export	84%
Medium-voltage private sector	93%
High-voltage private sector	98%
Average (weighed by sales)	53%

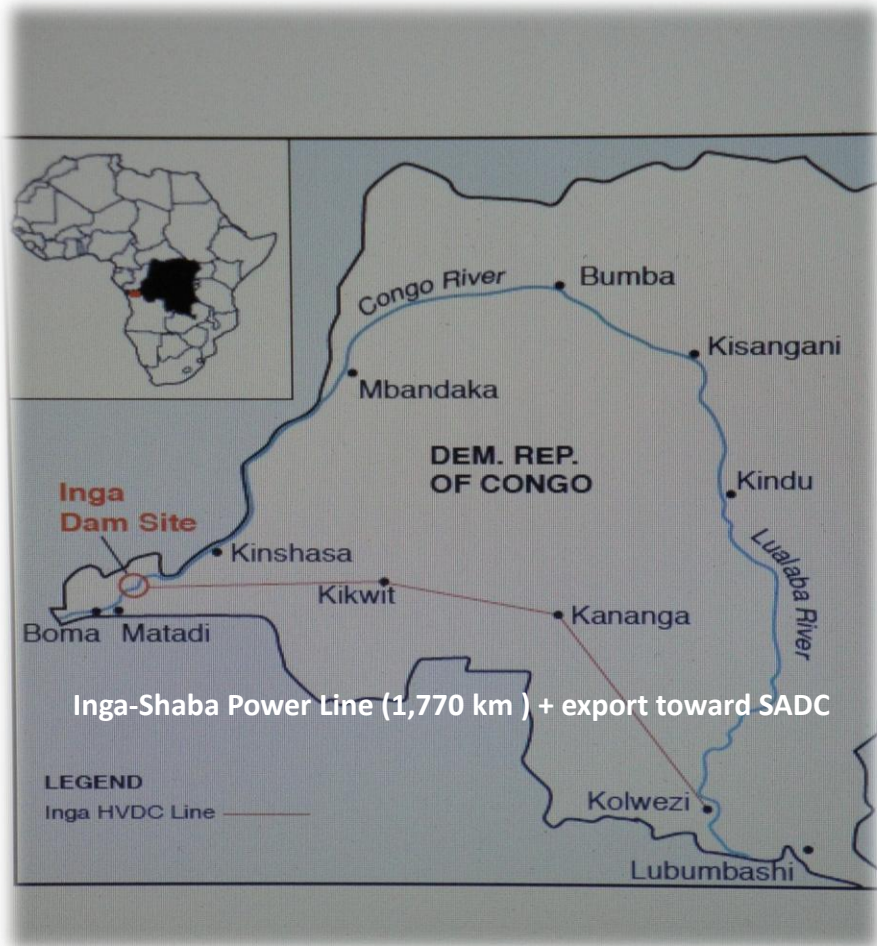
- Improving billing & collection is vital & should be a priority of SNEL financial management.

Institutional Capacity of the DRC

- What did Civil Society learn from Inga 1 and Inga 2: installed capacity: 1,775 MW (from 1972 to present);
 - Ineffective financial management;
 - Low revenue collection rates;
 - Lack of maintenance and repairs;
 - Under performance of Inga 1 and Inga 2;
 - Technical and non-technical losses of electricity;
- The DRC does not have the capacity for efficient, transparent and accountable financial management. Technical expertise is also lacking.
- Thus Grand Inga which needs between US\$ 55 to 80 billion funding to produce \pm 50,000 MW is premature.

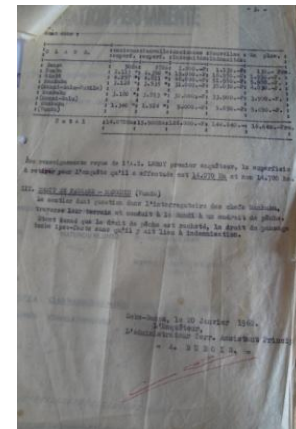
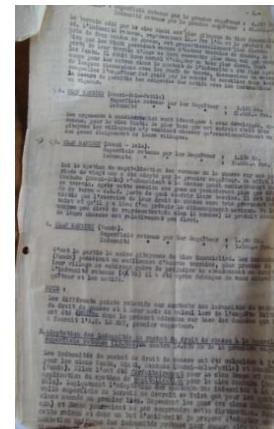
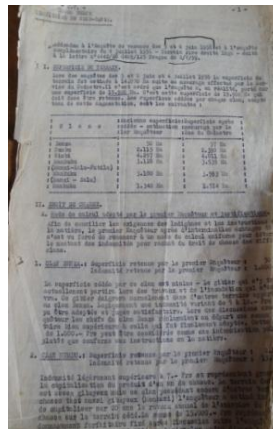
Economic Contract vs. Social Contract

- Mining & Export of Electricity vs. Congolese Citizens
 - Priority to Mining & Export; Not Congolese Citizens

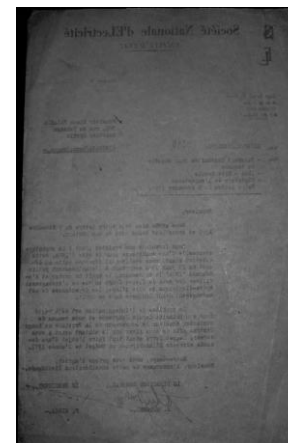
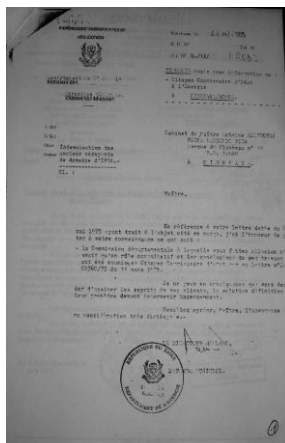
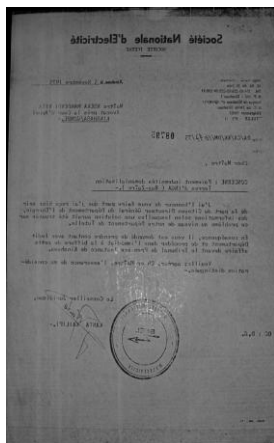
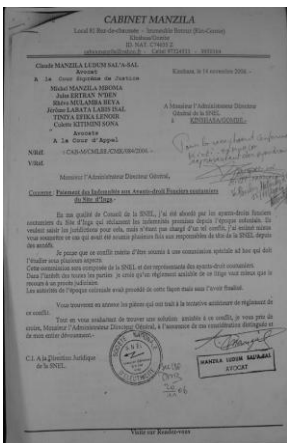


Economic Contract vs. Social Contract

- 52 yrs *Ayants Droits*' Struggles for Justice



- Request for Compensation from Inga 1 & Inga 2



Economic Contract vs. Social Contract

- 52 yrs *Ayants Droits'* Struggles for Justice
 - *Ayants Droits'* demands to IHP
 - Contract d'*Emphytheose*
 - Retrocession of their lands/ waters
 - Modern city with
 - Free houses
 - Free schools
 - Hospitals
 - Roads
 - Access to permanent employment at the IHP

Economic Contract vs. Social Contract

- 52 yrs struggles in Camp Kinshasa: 9,000 residents/ 8 Ha



• En route to other clans & Representatives of *Ayants Droits*



Economic Contract vs. Social Contract

- 52 yrs Struggles Outside Ancestral Lands



Economic Contract vs. Social Contract

- Impacts of Inga 1 & Inga 2 in the Inga Zone according to the dam-affected communities:
 - No free education/ health care, employment...;
 - Increased water born diseases e.g. river blindness, sleeping sickness, malaria, bilharzia & several others;
 - Impoverishment & suffering of three generations;
 - Landlessness and hopelessness;
 - Destruction of community bonds/ social capital;
 - Threats to traditional gender roles;
 - Lack political will to address the legacy of Inga 1 & 2;

Economic Contract vs. Social Contract

- Outcomes of 52 yrs of Struggles for Justice:
 - Two representatives of dam-affected communities attended the int. roundtable on IHP in JHB in 2006;
 - Internationalisation of the struggles of dam-affected communities since 2008 through involvement of
 - International Rivers (IR);
 - *Campagna per la Riforma della Banca Mondiale* (CRBM)
 - Global GreenGrant Fund (GGF);
 - Visit Elena Gerebizza (CRBM) in 2011;
 - “Conrad’s Nightmare The World’s Biggest Dam and Development’s Heart of Darkness” in 2012 by 11.11.11

Civil Society's Response to Grand Inga or Inga 4

- Local & global Civil Society uses lessons learnt in the Inga 1 and Inga 2 to objectively argues that:
 - Further developments of the Inga Falls is premature. Priority should be to improve inefficiencies Inga 1 and Inga 2 & thereafter to undertake Inga 4;
 - Winners of the IHP are mining companies and export; the losers are ordinary Africans and women in particular who need electricity the most to cook, lighting, look after their husbands/ *concubines* and children in better and worse conditions;
 - IHP's net benefits do not match their costs (i.e. repayment of debts, lack of energy and water for the sick, elderly & women; poor or lack of maintenance...)

Civil Society's Response to Grand Inga or Inga 4

- Local and Global Civil Society has two plans in order to supply electricity to the people of Africa:

– Plan A:

- In the Plan A, Local civil and Global Civil Society - the affected communities included - argues that a better approach to the Inga Falls is to refocus the projects' weaknesses in Inga 1 and 2, and learn from them. It is advocating for this cause.
- The DRC could embark on megaprojects only when it is ready, the legacy of Inga 1 and Inga 2 addressed, and their lessons profitably used;

Several agreements signed and cancelled point to the same direction. It is premature for such megaprojects.

Civil Society's Response to Grand Inga or Inga 4

- Local and Global Civil Society has two plans in order to supply electricity to the people of Africa:
 - **Plan B:**
 - In the Plan B, Local and Global Civil Society will use its local, national, and transnational advocacy networks to create more space to voice the concerns of the dam-affected communities at local and global levels;
- Local and Global Civil Society can also use concurrently Plan A & Plan B

Thank You

