



RIO 6 – World Climate & Energy Event
LAREF 2006 – Latin America Renewable Energy Fair



***ELECTRIFICATION POLICY FOR ISOLATED COMMUNITIES IN BRAZIL
AND SUSTAINABLE DEVELOPMENT INDICATORS***

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Our premise...

The insertion of technologies that generate renewable energy, in isolated rural communities, provokes alterations in their socio-economic and environmental profiles.



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Our objectives

This work attempts to outline scenarios that represent the alterations which can result in the regions of the North and Northeast of Brazil, in the communities of Veredãozinho, Arrojelândia, Maracá and Puçazeiro.



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Where are the communities?



Main Renewable Energy and Agricultural Projects at the University of Brasília

1. Hydrokinetic Turbine Construction - Edital
MCT/CNPq: 021/2004
2. Gasification and Integrated Biomass System for the Electrification of Isolated
Communities
Convênio MME: 004/2005
3. Introduction of Sustainable Practices for the Strengthening of Family Farming
in the Veredão dos Gerais in Western Bahia
Edital CNPq: 20/2005
4. Poraquê - Renewable Energy for the Valley of the Maracá River Extration
Reserve Edital CNPq: 20/2005



University of Brasília Research Team, made up of

07 permanent doctorates professors;

30 Masters;

40 undergraduated students;

05 research engineer.



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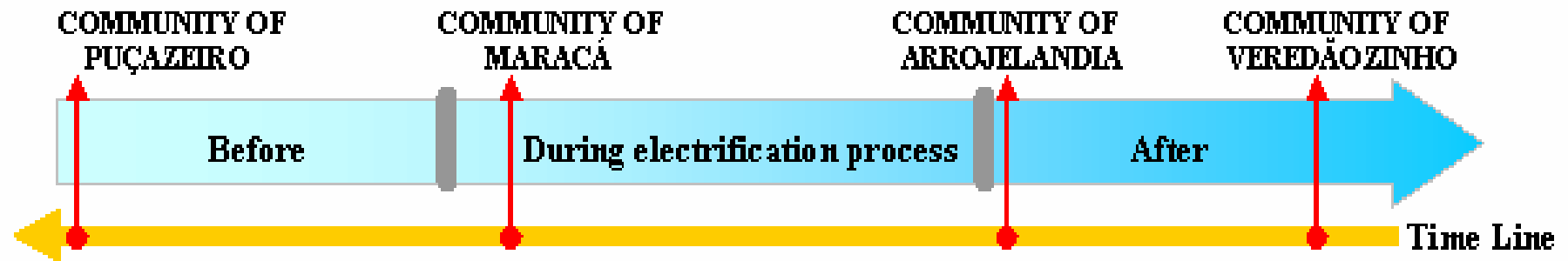
Veredãozinho Community

It has been inhabited for 12 years, with three families residing there.



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Electrification achieved 11 years ago by means of a hydrokinetic turbine, at the request of philanthropic doctor.



Outlined Scenarios

- A- Identification and development of local productive vocations;
- B- Consolidation of the research community and extension area of the University of Brasília;
- C - Conclusion of activities with teams from the University of Brasília.

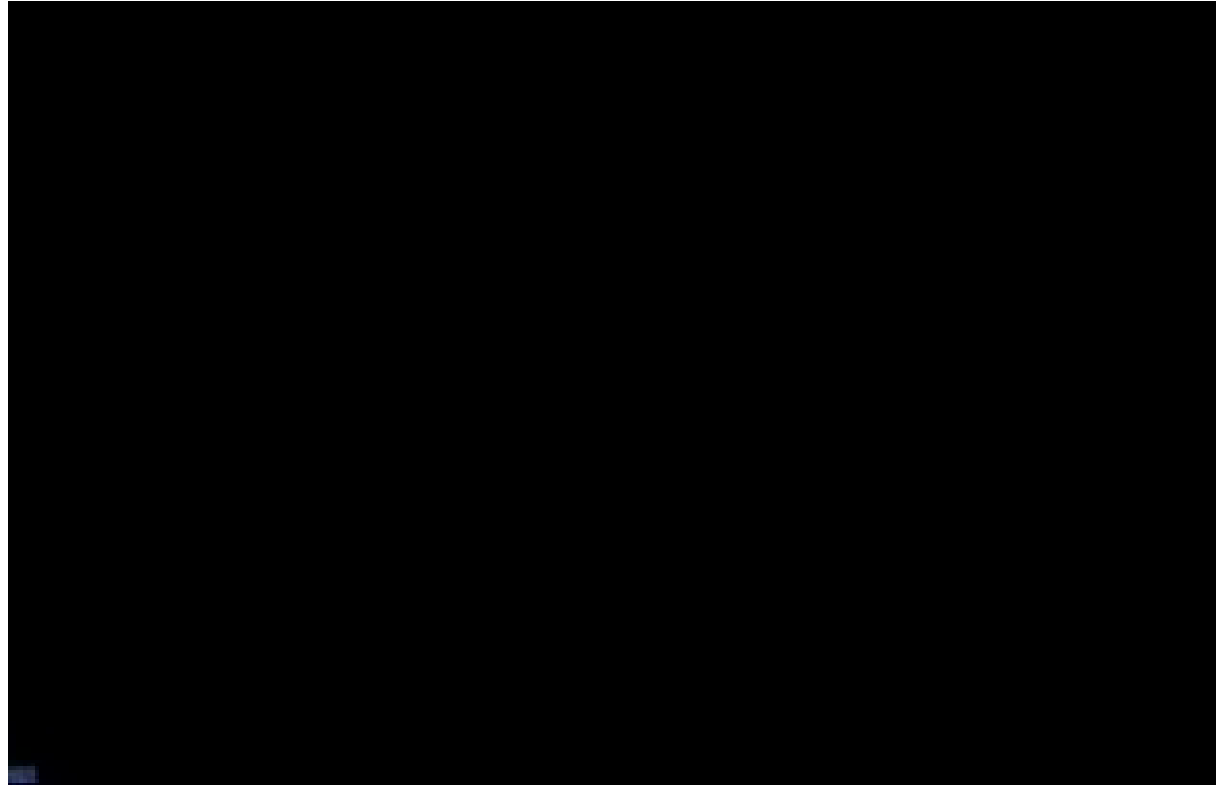


The First Hydrokinetic Turbine - 11 Years



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Veredãozinho's Hydrokinetic Turbine



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Arrojelândia Community

It has been settled for about 80 years with 100 families residing there .



Traditional Network Grid

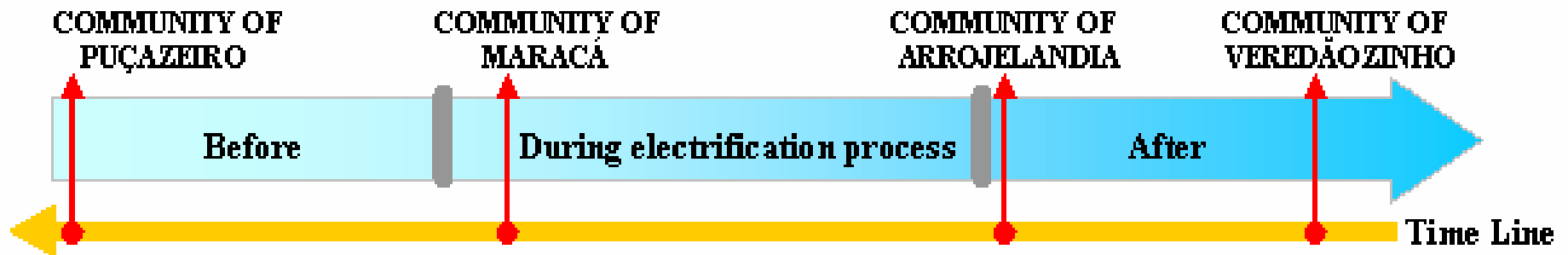


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Arrojelândia's Type of Habitat



Electrical energy was installed in the community, eight months ago, by means of federal policies using grid network.

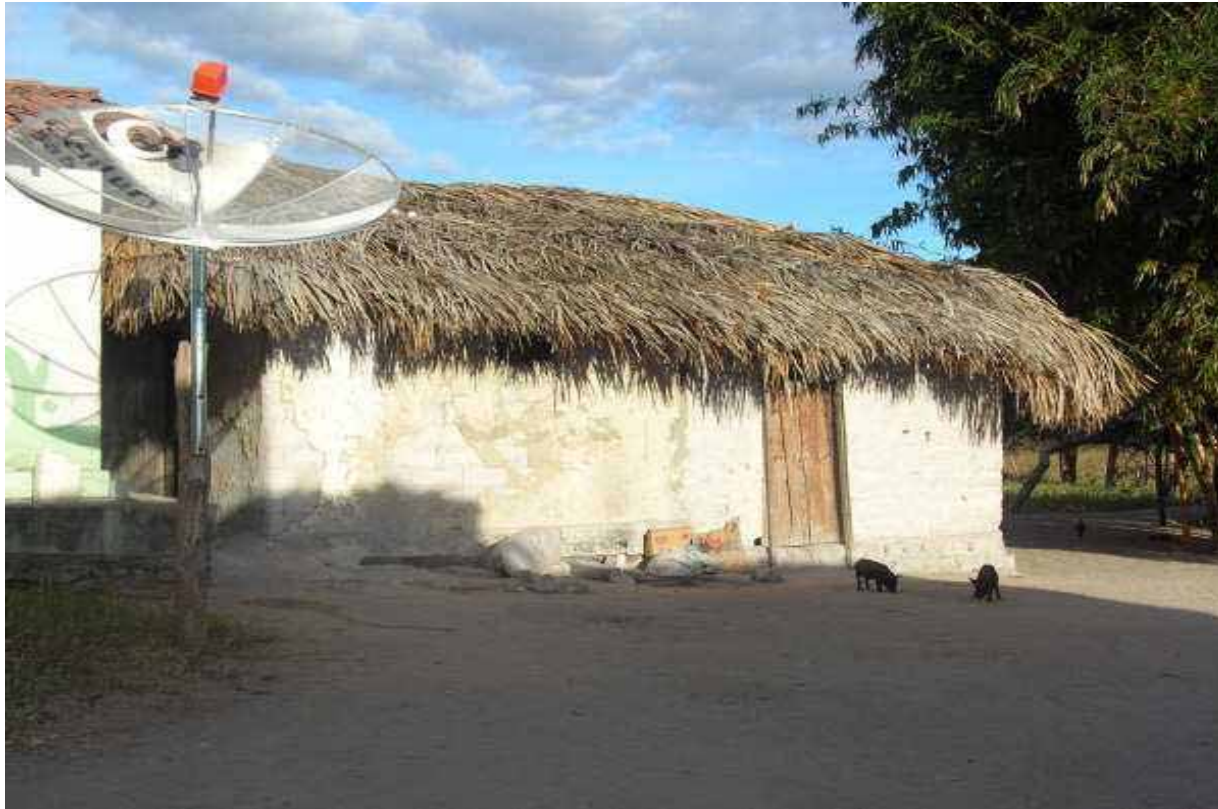


Outlined Scenarios

- A) Utilization of energy in production activities;
- B) Growth in commerce and the flow of money;
- C) Environmental alterations caused by the appropriation of natural resources, aimed at increasing household income.



Development or Modernity ?



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Alto Maracá Community

It has been inhabited about 20 years with 20 families which reside there.



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Brazil nuts - Bertholletia excelsa

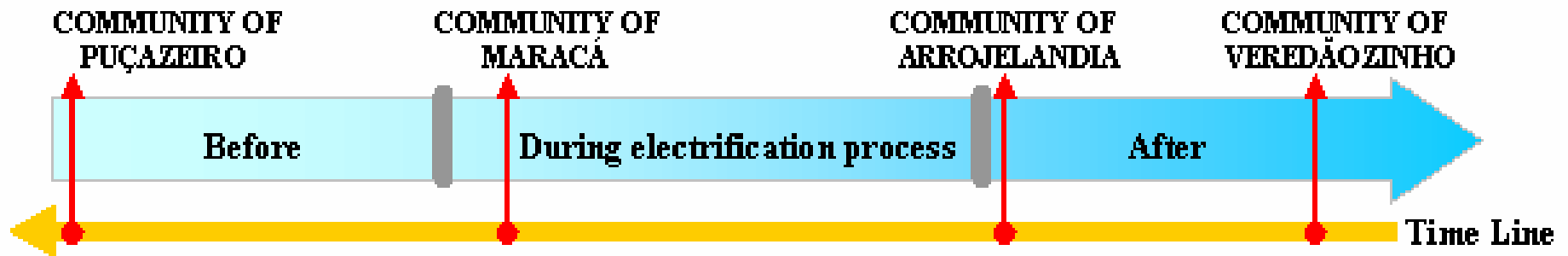


Social Capital



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Initiative by association of workers from an extraction encampment in Maracá, formalized by the National Council of Rubber Tree Tappers along with the University of Brasília.



Outlined Scenarios

- A - Growth in productive activities, with an increase in profits and verticalization in the production chain of Brazil nuts;**
- B - Private appropriation of generated energy and social migration to nearby areas;**
- C - Disinterest in technologies for energy generation due to the operational and/or maintenance difficulties.**



Alto Maracá's Hydrokinetic Turbine



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The Puçazeiro Community

It has been inhabited for about 60 years in which reside sixteen families.



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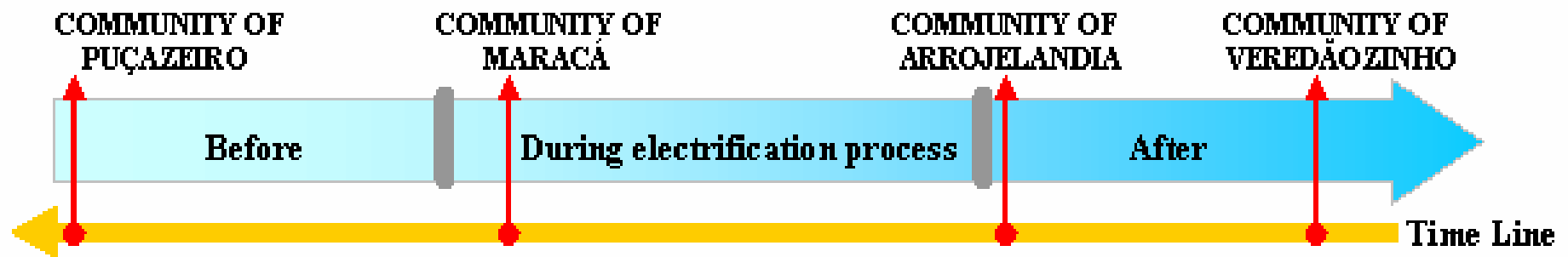
Tradicional Family Farming



Social Capital



Initiative of the University of Brasília, seven months ago, finds itself in the strategic and participative planning stage.



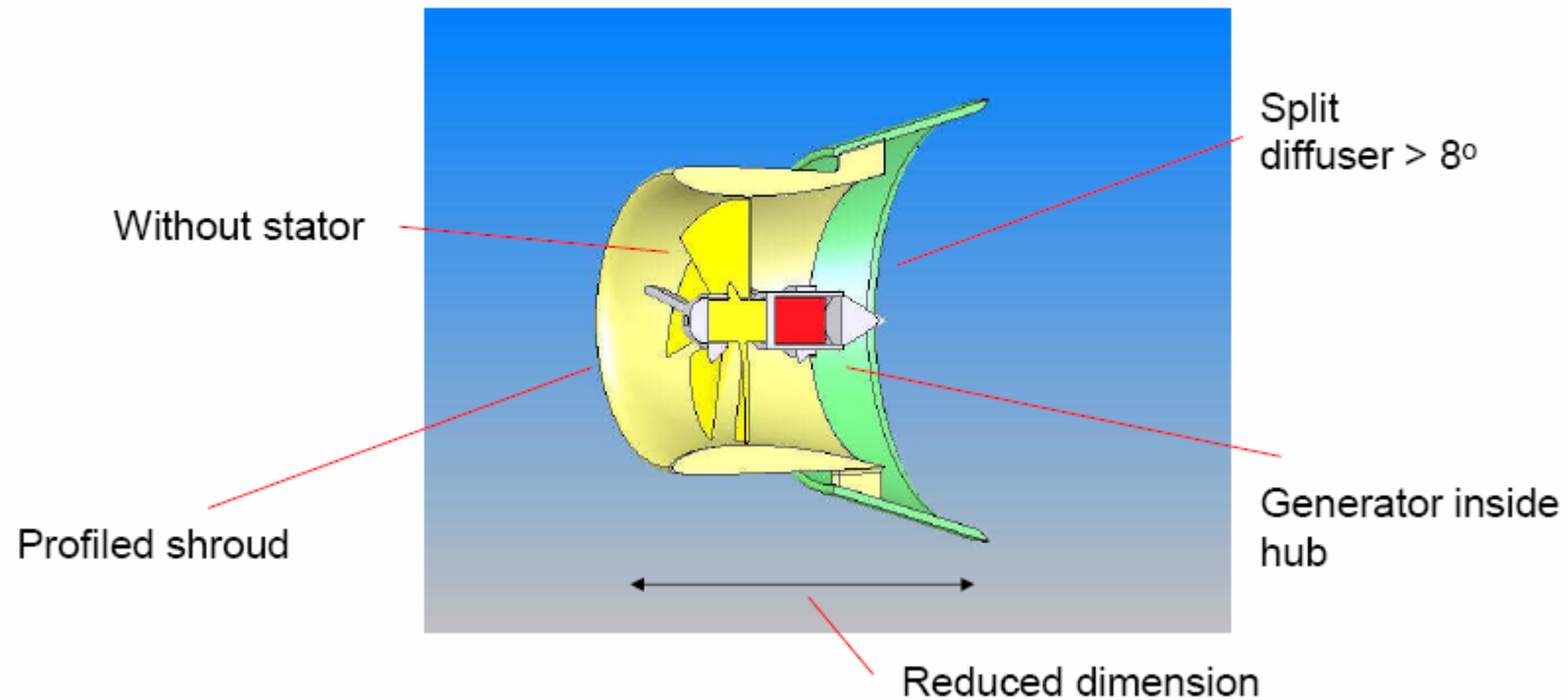
Outlined Scenarios

- A) Social inclusion and the adoption of new sustainable practices for strengthening family farming, favoring the permanence of the rural population;
- B) transformation of the community into a University of Brasília extension;
- C) apathy for the energy available, utilizing it only for domestic use.



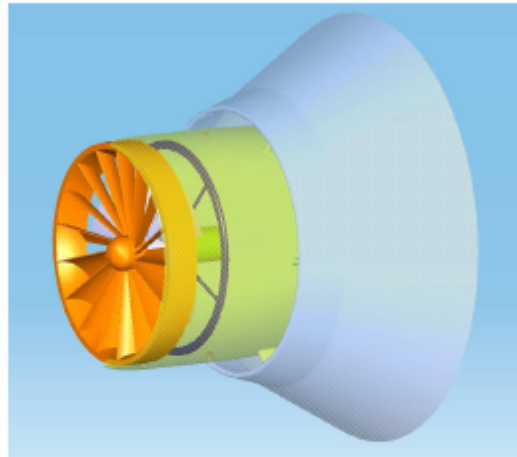
Generation III Hydrokinetic Turbine

December 2004 design → ELETRONORTE/UnB Project

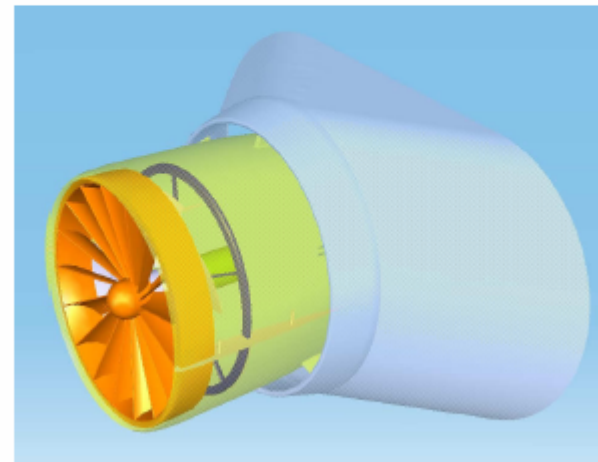


Generation III Hydrokinetic Turbine

March 2005



May 2005



Cooperation UnB-ENSAM/PARIS

We thanks,

- Prefeitura de Correntina - Bahia**
- Governo do Estado da Bahia**
- Ministério das Minas e Energia - MME**
- Ministério da Ciência e Tecnologia – MCT**
- Conselho Nacional de Pesquisa - CNPq**
- Escola Fazenda Agrícola Santana - Bahia**
- As pessoas da Bahia e do Amapá.**



Elinor Ostrom - *REFORMULATING THE COMMONS*

“Larger regimes can facilitate local self-organization by providing accurate information about natural resources systems, providing arenas in which participants can engage in discovery and conflict-resolution processes, and providing mechanisms to back up local monitoring and sanctioning efforts”.

“The probability of participants adapting more effective rules in macro-regimes that facilitate their efforts over the time is higher than in regimes that ignore resource problems entirely ou, at the other extreme, presume that all decisions about govenance and management need to be made by central authorities”.





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