Small Hydro Projects And Green Development

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Fundación Solar is an NGO with 20+ years experience, working two main areas: water and energy in Guatemala. It has implemented renewable energy in projects and pilots, as the means to add value to local products, for education access, illumination, communications and risk management. It also facilitates environmental and renewable energy policies.

It works for poverty reduction and the compliance of the MDGs. It serves as the conducting line between the bottom social and economic reality and Government, proposing and facilitating policies that supports sustainable development.

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SMALL HYDRO PROJECTS

- FS has completed 5 community owned SHP. FS concentrates on social aspects, organization, training, education, watershed management and governance components of the projects. In only two of them it has been responsible for construction or refurbishing.
- These projects are helping communities to understand the value of hydro and its benefits. It ties in environmental, economic, and the concept of rights and
- responsabilties.

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Chel, in Quiché, 157 kW. Ownership in exchange for labor. Part of the turbine, the electricity poles and cable. It was a donation from 8+ institutions

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Mini HP

- Three additional MHP were financed by the Government of Japan, with Austrian equipment: Las Conchas, Jolom Ijix and Seasir, in isolated indigenous communities with capacities around 100 kW.
- One more, Los Angeles was refurbished in an old MHP in a coffee plantations, that the locals purchased from the original owner. A storm hit the area and destroyed the penstock. 100 kW.
- In all of them the community has ownership and control. All establish their tariffs, have an operating unit and an administrative unit to run their plant.

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Lessons

•Demand driven work. Let communities ask for a project. Then you can set conditions.

•Establish level of organization in the community, and work it up.

•If possible, use equipment that is built locally, or

•Pick very low maintenance equipment, with a long term guarantee clause.

•KIS- keep it simple¡ the more complex equipment is, the more difficult to train people to operate, and access for repairs.

•Educate, educate, educate. Men, women and children

•Incorporate the tariff concept from the beginning

•Water is a fuel, it has to be cared for. Good environmental practices and watershed management have to be included.

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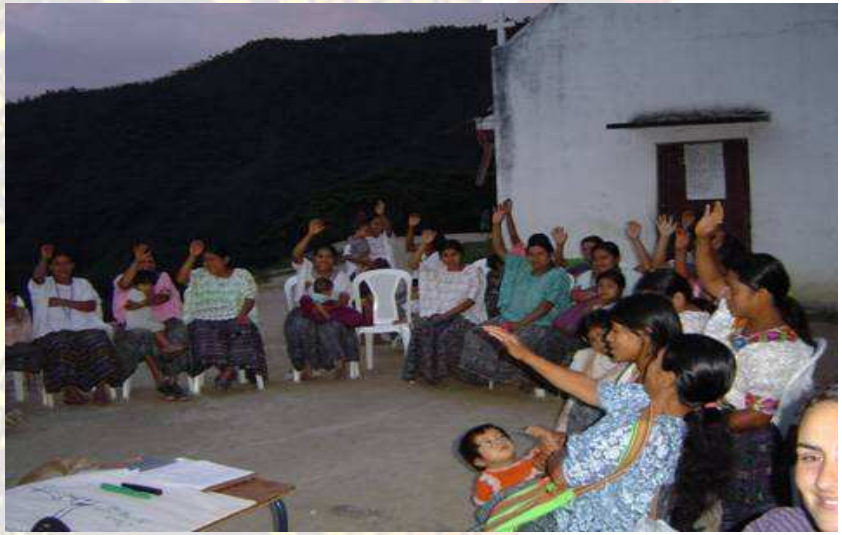
Lessons

•If possible, use new equipment

•Involve many actors – Central and local Government, donors, municipality, churches, press, etc. Keep community informed.

•Include women. Cultural background stops women from speaking when men are around. Divide. Use translators if they speak a different language.

•Always work with the concept of rights and obligations.



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Advantages of Community MHP, **BUT**

- Renewable energy resources are used to generate clean power.
- Electricity brings development, commercial activity, education, value added to local products, etc.
- Empowerment to local communities, resiliency to climate change effects. Knowledge of environmental practices, the way HP works. Ideal for education.

But, they imply considerable investments, and poor people cannot afford them, and in general, rural communities REJECT private HP

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Why small and micro HP are so important

- There is an irrational opposition to hydro projects
- There are misinformation movements to stop hydro power development
- There is a very unfortunate past experience being exploited to the max
- Non explicable NGO foreign initiatives against hydro

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Why are Hydroelectric Projects Rejected?

- The communities in the area are not informed. Surprises relating to water management can be explosive.
- When hydro projects are developed, local employment is generated and there is a economic activity in the area. Some people work direct non skilled labor, there is transportation, food provision, etc. Once construction is completed, the surrounding communities generally don´t have electricity, and go back to being poor. The Government is not strong enough to provide services, and the poor have no money to pay.
- There is no sharing of the income and tax revenues generated. Of course, private investors are running risks, investing, have to pay loans, etc. and its not their obligation to support the surrounding poor.

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How to tie it in, socially, economically and equitable?

- Private investors are adding clean and renewable energy to the local energy matrix. They have their own financing.
- The Government has to provide a stable investment legal framework.
- Local communities don't have to –condition

- - investors into taking Government responsibilities.
- Poverty reduction is a government goal and can be supported sharing revenues.
- Poor local governments can have a new source of revenue with new development projects in a green agenda.
- Private investor can, as social responsibility, help civil society local organization to have a voice (democracy)

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Sustainable PV

FS has implemented PV projects for the last 15 years, and would like to share it's sustainable model:

Even in the donor is giving the panels for free, charge a fee for them.

- Create a community fund
- Install technical capacity
- Charge a monthly fee for:
  - O&M
  - Battery replacement
  - Pay for internet connection
- Create a solar store
- Create a convergence center in the school with computers for learning and internet for education, price consultation, legal consultation with central Government, coordination with disaster relief institutions, meteorological information etc.

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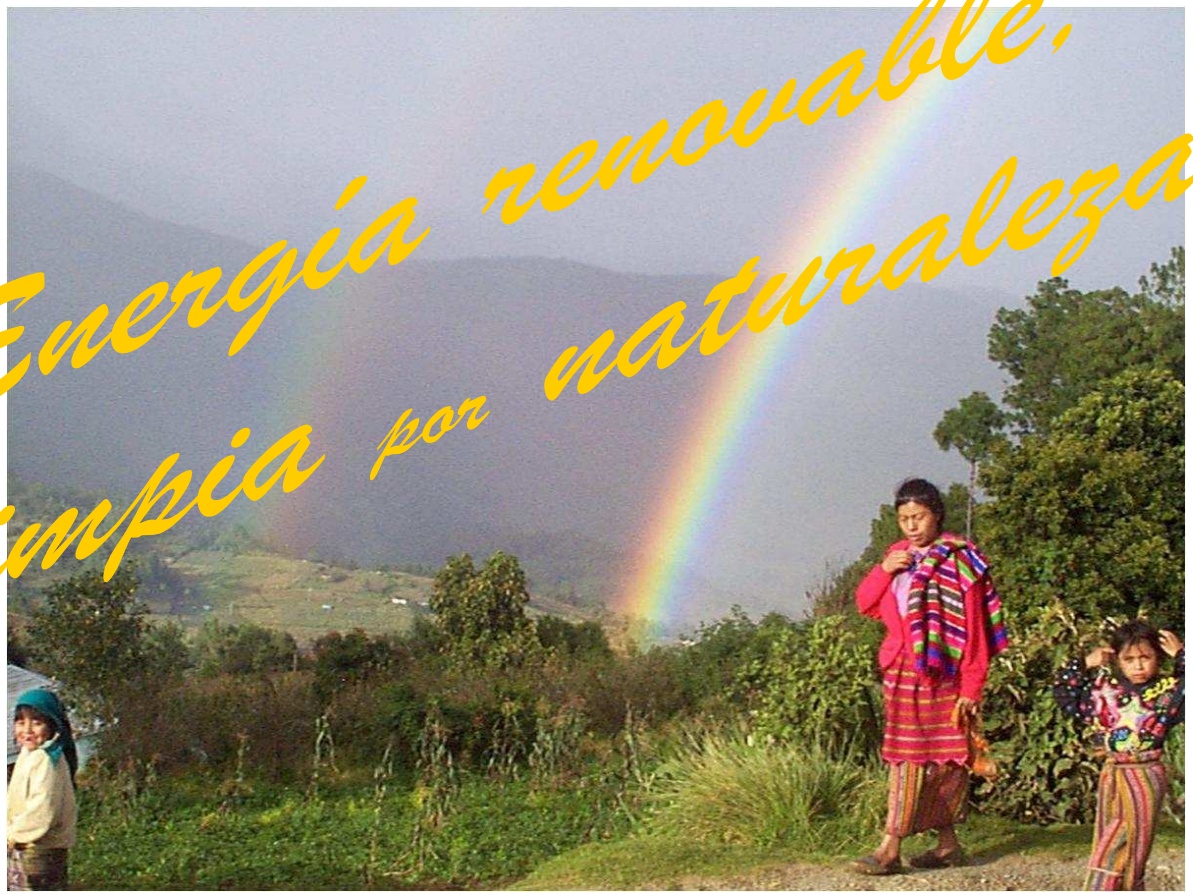
Energía renovable, limpia por naturaleza



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