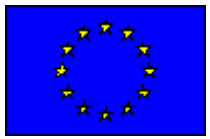
“HydroBioPower: livelihood improvement in rural area through collaborative development of renewable energy sources in Oromia and SNNP Regional States of Ethiopia”



This project is co-funded by European Commission

LVIA and Energy facility project : Micro Hydro Power

Stefano Stirpe – Nairobi 23/24 March 2011

- In Ethiopia the Hydro power is one of the main source of energy at Country level.
- Actually the Government is implementing several big Hydro Plants to improve the distribution at national level.
- Our project is focusing on micro schemes (from 10 to 100 Kws) to give energy to remote and unserved communities.

- Feasibility study :
- Technical assessment (to evaluate the potentiality, to be done during the dry season)
- Socio economic study (energy consumption, cost and purpose, and potentiality related to the income)
- Clearance from EEPCO (Ethiopian Electric Power Corporation) to certify that the site will not be served by the national grid in the next 10 years

- Technical implementation:
- Design of the scheme
- Civil works
- Grid design
- Installation of electromechanical equipments
- Grid installation

- Socio economic activities:
- Constitution and legalization of the users cooperative
- Technical and management trainings
- Collection of shares
- Involvement of the community on the civil works
- Access to REF (Rural Electrification Fund)

The Energy Facility Project

MHP activities

- 3 micro hydropower schemes under construction
- 2 schemes found in Southern region of the country with a capacity of 16kw at Murago site and 13.5kw at Keramo site respectively
- 1 scheme found in Oromia region with a capacity of 55kw at Mewa site

The Energy Facility Project: MHP

Southern region

- At Murago site, the power will be distributed for 73HH ,1 cofee proccessing center and 1 church by 2.5 km grid line installation
- At Keramo site, the power will be distributed for 54HH, 1 church by 2.5 km grid line installation

Oromia region

- At Mewa site, the power will be distributed for 150HH, 1 school,1 health post and 1 coffee processing center by 2.5 km grid line installation

The Energy Facility Project MHP

Beginning of the physical construction (MHP)

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The weir and the main gate structure

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The canal, it deliver the water to the powerhouse to generate power

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The for bay structure for filtering the water before the power house

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The power house where the electric power generated

The Energy Facility Project

- **Sustainability and ownership issues in MHP**
- 3 electric users cooperatives organized (1 for each site)
- They will manage the schemes by own rules and bylaw
- Training and capacity building was done two times by LVIA
- The established committees of the electric users cooperatives were able to register 353 members (200 ETB per memebr) and collected up to now 23200 ETB from registrations and share sale fee
- This will help them to run the schemes in sustainable way

- **Successes:**
- Introduction of the renewable energy source (MHP) in rural area grant the future sustainability of the natural resource consumption trend in the intervention area
- Empowerment of the community through organization of electric users cooperatives enable the rural poors to improve their livelihood by means of renewable energy access
- Experience sharing among the main actors in the energy sector contribute to the development of strong capacity to run MHP projects for the government

Challenges:

- Lack of technical capacity remains an important constraint, including the skills and ability needed to deal with the technical problems of micro-hydro systems.
- The programme experienced challenges at different stages of its implementation initially stakeholders expressed scepticism about the use of micro-hydro as an entry point to development and were reluctant to cooperate.
- Given the upfront capital investment required for micro-hydro infrastructure, the programme expansion was limited by existing three schemes.
- Site accessibility problems and natural challenges contribute for the delay of the physical construction
- Lack of capacity at local level especially for the manufacturing of electro-mechanical equipments

Lessons learned:

- Engagement with the community and local government must be from the initial stage and comprehensive to avoid delays and misunderstandings.
- Some delays in the project arose from bureaucracy, especially when seeking approval permits from the local government.
- Residents were also sceptical of whether the project would be able to provide electricity as promised. Both of these problems were solved through long-term engagement with the community and transparency of the staff.
- The initial success of the project prompted neighbours to express interest in sharing the power through extension of power lines.

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Thank you for the kind attention!