

KNOWLEDGE SHARING ON ENSURING SUSTAINABILITY OF MICRO-HYDRO PLANTS THROUGH THE PRODUCTIVE USE OF ENERGY (PEU) APPROACH

EXCHANGE ACTIVITY'S AIM: GATHERING EXPERIENCES AND BEST PRACTICE ON THE APPLICATION OF PEU APPROACHES TO MICROHYDRO IN SOUTH AND SOUTHEAST ASIA

Location:

Nepal, Indonesia, Philippines, Myanmar, Malaysia, India

Technology:

Micro Hydro

Costs:

Total: € 61,128
WISIONS financial support: € 25,000

Partners Involved:

Practical Action South Asia Regional Office
(www.practicalaction.org/south-asia)

Energizing Development (EnDev) Indonesia,
(<http://endev.info/content/Indonesia>)

Sibolng Agham at Teknolohiya (SIBAT, Inc.)
(<http://sibat-inc.org>)

Renewable Energy Association of Myanmar
Green Empowerment, Malaysia
(www.greenempowerment.org)

Energypedia, Germany (<https://energypedia.info>)

Duration:

08/2015 – 05/2016



Picture: WISIONS

EXCHANGE NEED AND OBJECTIVE(S)

Evidence shows that the provision of offgrid power in low-income communities works best when carried out hand-in-hand with the promotion of income-generating activities. Productive uses of electricity which generate revenue result in larger load factors in the offgrid system, hence supporting its long-term sustainability. As demand for electricity grows, say from use for lighting in households in the evenings, to use for powering rice mills, sowing machines or refrigerators for storing surplus produce, the local livelihoods and the capacity of the energy provider to finance the operation and maintenance of the offgrid system both improve.

In this context, the Hydro Empowerment Network (HPNET) - a network of South and Southeast Asian MHP practitioners set up in 2013 with support from Wisions- sees the increase in load factors and the

strengthening of the cash flow of MHP systems in rural areas of South and South East Asia as key to realizing the full potential that this technology offers for the achievement of electricity access goals.

This exchange aimed to contribute to the sustainability of existing and future MHP systems in South and Southeast Asia by promoting the application of best practice in productive end uses (PEU) approaches. The project's goal was to raise awareness among decision makers on the benefits of PEU approaches for the sustainability of MHPs along with the creation of rural livelihood opportunities.

PARTICIPANTS & TARGET GROUP(S)

The exchange was coordinated by the South Asia regional office of Practical Action and involved six organisations, one of which is the HPNET.

ACTIVITIES

The project consisted of three activities:

- Compilation and analysis of proven PEU approaches, tools, and best practices based on case-studies in six countries: Nepal, Indonesia, Myanmar, the Philippines, India and Malaysia.
- Production of a video on the potential of PEU approaches for ensuring the long-term sustainability MHP systems.
- Creation of an online compendium on Energypedia, to share knowledge on PEU for MHP globally.

The compilation of PEU approaches entailed the identification of different productive end uses that are relevant in the context of low-income rural communities in the six participating countries. The end uses selected were those which lead to significant revenue streams when stable off-grid electricity is available, e.g. rice milling, mechanical and carpentry workshops, crafts production, refrigeration

of fresh meat and produce.

The study then went on to draw out the key features of business models that are working in the PEU-MHP context, and flag up particular models that are ready for replication and scale up. The steps needed to apply best-practice PEU approaches as well as the policies and institutions that can support PEU-related MHP projects were laid out in the reports. Finally, the reports served as reference documents as well, containing project names, locations, as well as a number of other features.



RESULTS & IMPACT

Based on the six country-specific case studies, a summary [report](#) has been developed which will be used in future initiatives aiming at strengthening the financial base of MHP projects.

The following points sum up the best-practice criteria that must be fulfilled when applying a PEU approach in an MHP system, and which are being advocated for by the participants of this exchange:

- Long-term technical viability of the MHP system: including protection of the watershed, good quality of the installation, local capacity for operation and maintenance, etc.
- Rural market linkage: existing

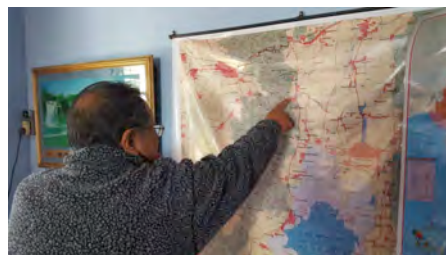
technical skills for specific PEUs, e.g. agroprocessing, knowhow on sustainable business models for rural enterprises, capacity building for ownership and management.

- Seed capital for PEU: most MHP communities cannot self-finance the start up of PEUs, and donors are not always aware of the funding needs.

The [video](#) and Energypedia project [compendium](#) are available online and are used for advocacy during visits of key decision-makers and planners from HPNET member countries. As a follow up to this project, the coordinators currently aim to produce a more refined guiding document on the approach and tools available to promote PEU in MHP in South and Southeast Asia, via further consultation among the organisations who participated in the exchange.

LESSONS LEARNED

The findings of this exchange confirm the perception that often microhydro power systems are seen as provision of basic services rather than as drivers of economic development. This is not just a missed opportunity, it also hinders the optimal utilisation of the MHPs.



PEU approaches have not been as yet systematically integrated with MHP development in the South and Southeast Asian countries under study. There are isolated efforts which are showing that PEU approaches:

- are effective at ensuring the long-term sustainability of the system,
- help enhance women entrepreneurship,
- create additional income, especially in

the agro-processing sectors.



An important finding from this study is that PEU enterprises have higher chances of success when they are planned from the early stages of development of MHP systems. Promoting PEUs in MHP systems requires careful planning, coordination and implementation. Adequate attention must be given to building the capacity of MHP developers, PEU entrepreneurs as well as other stakeholders responsible for successful promotion of PEU enterprises. Finally, policies for the promotion of PEU approaches in MHP –and other offgrid technologies- should be in line with policies from the promotion of rural entrepreneurship.

Source: Final Report submitted to WISIONS by Practical Action in June 2016

Picture: WISIONS