

HPNET
HYDRO EMPOWERMENT NETWORK

MINI-GRID RELIABILITY:
**THE ROLE OF TRAINING CENTERS
FOR MICRO AND MINI HYDROPOWER**

MINI GRIDS WEBINAR SERIES 2019

WEBINAR 1

28 MARCH 2019

MINI-GRID WEBINAR SERIES 2019



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MINI-GRID RELIABILITY: THE ROLE OF TRAINING CENTERS FOR MICRO/MINI HYDROPOWER

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MINI-GRID SUSTAINABILITY: TRANSITIONING TO ENTERPRISE-BASED MICRO-HYDROPOWER

JUNE 2019

WEBINAR 3

MINI-GRID FINANCING: ENABLING THE ROLE OF LOCAL BANKS

SEPTEMBER 2019

WEBINAR 4

MINI-GRID PLANNING: DATA MAPPING TOOLS FOR MULTI-ACTORS

DECEMBER 2019

PARTNERS



HYDRO EMPOWERMENT NETWORK

Knowledge exchange and advocacy platform to advance small-scale hydropower across 10+ countries of S/SE Asia with global membership



www.wisions.net

WISIONS OF SUSTAINABILITY

Wisions promote the transition to sustainable energy systems in the global South.



ENERGYEDIA

Wiki platform for collaborative knowledge exchange on renewable energy, energy access, and energy efficiency topics in developing countries

PARTNERS



www.wisions.net

WISIONS promotes the transition to sustainable energy systems in the global South. Its mission is to empower individuals and communities to transform the production and use of energy so that it effectively enables sustainable development.

The initiative is run by the Wuppertal Institute, a German think tank, and has been supported by the Swiss-based foundation ProEvolution since its inception in 2004.

In addition to supporting HPNET, WISIONS has supported a multitude of pico and micro hydro projects and knowledge exchanges.

More info here: <http://wisions.net/pages/seps-energy-projects>

PARTNERS



www.energypedia.info

EnergyPedia UG is a non-profit organization that runs and maintains the wiki-based platform, www.energypedia.info.

It is an online platform for collaborative knowledge exchange on renewable energy, energy efficiency and energy access in the context of development cooperation.

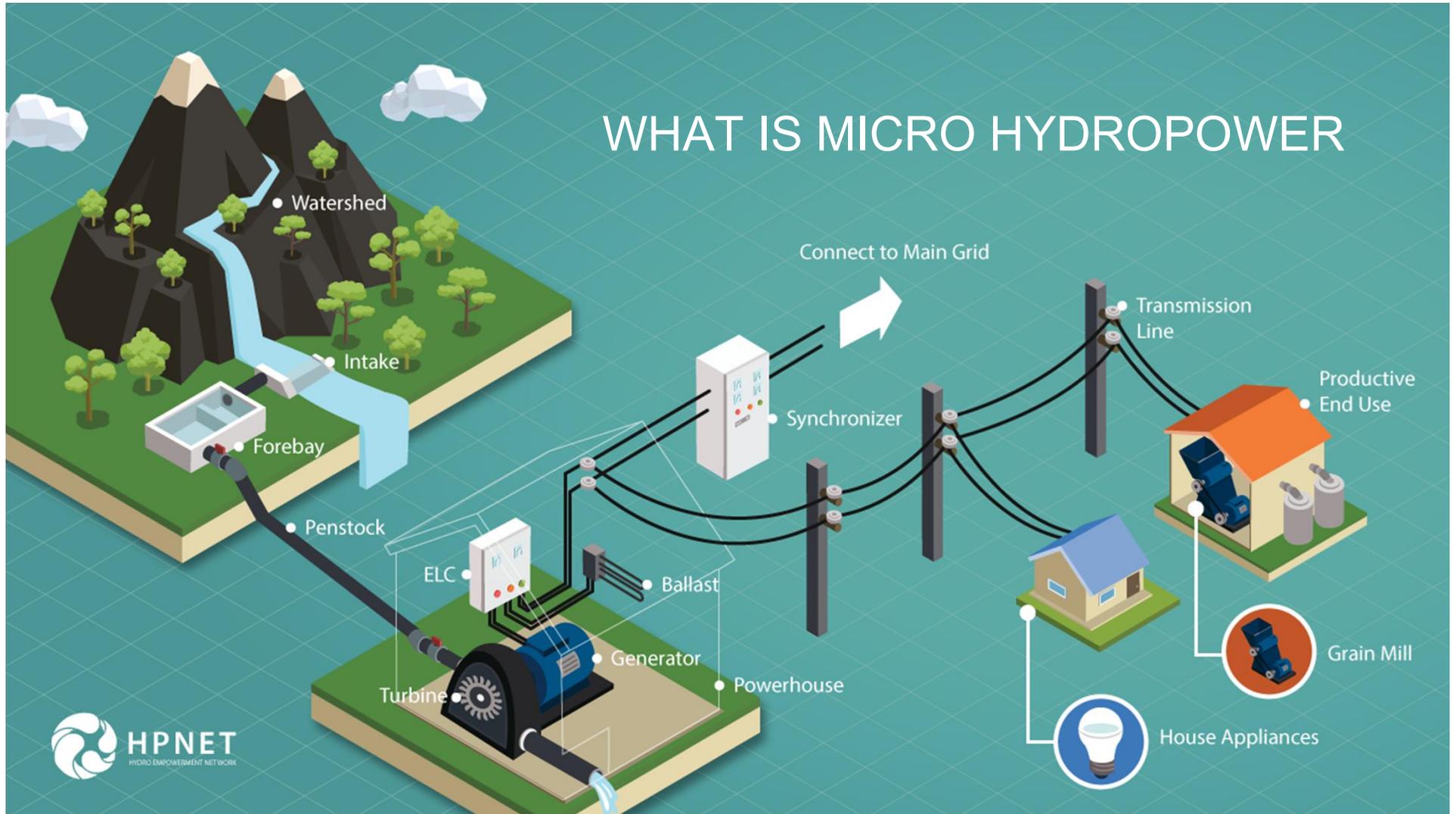
You can access the following resources, developed in collaboration with HPNET, pertaining to small-scale hydropower:

[Micro/Mini Hydropower Library \(MHL\)](#) – A collaborative, searchable repository of publications and multimedia on micro/mini hydropower for energy access around the globe.

[Mini-grid Webinar Series 2017](#) – Prequel to this webinar series, the 2017 series featured mini-grid **technology differentiation, grid-interconnection, and productive end use.**

[Hydro Portal on energypedia](#) – A gateway to all hydropower information on energypedia.

WHAT IS MICRO HYDROPOWER



ROLES OF HPNET



KNOWLEDGE EXCHANGE

Capacity building events (online and in-person)
Knowledge exchange tools for multi-actors
South-South and peer-to-peer exchange



STRATEGY ADVOCACY

Platform for local practitioner voices
Multi-stakeholder facilitation
Data and mapping to quantify impact



THEMATIC FOCUS AREAS

Technology and skills advancement
Socio-environmental sustainability
Enabling financing and policy for scalability



A photograph showing two men in a workshop. The man on the right is operating a lathe machine, turning a metal part. The man on the left is observing. Both are wearing blue shirts. The background shows various tools and equipment.

**MID 1990 TO EARLY 2000
STRONG INTERNATIONAL SUPPORT
FOR LOCAL CAPACITY BUILDING**

FABRICATION TRAINING, 1994 DFID-APEC TRAINING IN NEPAL
LEFT: HON. SENATOR ADRIAN BANIE LASIMBANG, MALAYSIA EXPERT
RIGHT: KUS RAHARJO, INDONESIA EXPERT
PHOTO CREDIT: A. LASIMBANG

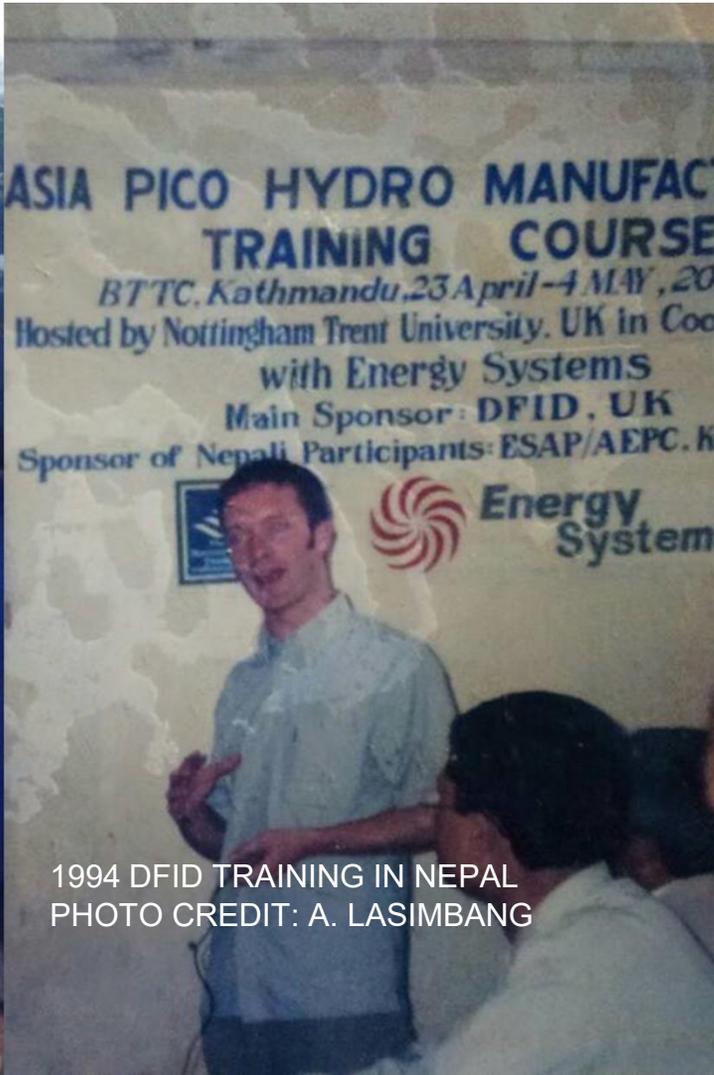
1994 1 1



ADAM HARVEY, MICRO HYDRO
TRAINER AND AUTHOR
PHOTO CREDIT: RAMS V.



1994 DFID-APEC NEPAL
C: HON. LASIMBANG (MALAYSIA
EXPERT), R: NAZARIO CACAYAN
(PHILIPPINES EXPERT)
PHOTO CREDIT: A. LASIMBANG



1994 DFID TRAINING IN NEPAL
PHOTO CREDIT: A. LASIMBANG

ASIA PICO HYDRO MANUFACTURING
TRAINING COURSE
BTTC, Kathmandu, 23 April - 4 MAY, 2000
Hosted by Nottingham Trent University, UK in Cooperation
with Energy Systems
Main Sponsor: DFID, UK
Sponsor of Nepali Participants: ESAP/AEPC, Nepal
Energy System



DESIGN TRAINING, 1994 DFID-APEC TRAINING IN NEPAL
RIGHT: HON. SENATOR ADRIAN BANIE LASIMBANG, MALAYSIA EXPERT
LEFT AND CENTER: UNKNOWN
PHOTO CREDIT: A. LASIMBANG



skat Swiss Resource Centre and
Consultancies for Development



OTHERS:
BORDA
DFID
GTZ/GIZ
UNIDO
WORLD BANK GROUP

IN-COUNTRY FACILITATORS
APEC, NEPAL
AKRSP, PAKISTAN
YAYASAN MANDIRI, INDONESIA
OTHERS

SITE VISIT, 1994 DFID-APEC TRAINING IN NEPAL
LEFT: HON. SENATOR ADRIAN BANIE LASIMBANG, MALAYSIA EXPERT
RIGHT: UK TRAINER
PHOTO CREDIT: A. LASIMBANG



30 YEARS LATER: LOCAL EXPERTS / LOCAL TRAINING CENTERS

Philippines



JADE ANGANGALAO

Malaysia



HON. ADRIAN BANIE
LASIMBANG

Indonesia



GERHARD FISCHER



SPEAKER 1

HON. ADRIAN BANIE LASIMBANG

In 2018, Hon. Adrian Banie Lasimbang became a senator for the national government of Malaysia, representing the state of Sabah. With extensive experience in participatory mapping, conducting community awareness workshops, enrichment planting, gravity water supply systems, and designing community-based micro-hydro systems, his work centers on improving the socio-economic conditions of rural indigenous communities in Sabah and Sarawak. He has been the Executive Director of TONIBUNG, a local NGO promoting localized renewable energy solutions, including CREATE Borneo, a village-based workshop and training facility, educating the next generation of indigenous engineers in renewable energy technologies. In 2004, Senator Lasimbang was awarded the Seacology Prize for Indigenous Conservationist of the year for protecting watershed areas and improving livelihoods in rural indigenous communities in Borneo. In both 2007 and 2008 he received the Outstanding Young Person Sabah (TOYPS) award for his work integrating natural resource management and rural indigenous communities. He also runs Penampang Renewable Energy, a renewable energy consultancy company. He is a technical advisor for Indigenous Peoples Network of Malaysia (JOAS).



Tonibung Center for Renewable Energy and
Appropriate Technology (CREATE), Malaysia



SPEAKER 2

JADE ANGNALAO

Jade Angangalao is the coordinator of SIBAT's renewable energy program, and the supervisor of SIBAT's Center for Renewable Energy and Appropriate Technology (CREATech). She oversees the administrative needs of the center's operations, including electro mechanical equipment fabrication and research on electronic load controllers. Her supervisory role also extends to the implementation of actual micro hydropower and solar projects; wherein she is very involved in field work, particularly in community organizing and conducting feasibility studies. Other areas of work she is involved with include liaising with technical foreign partners and academe. Jade is an Agricultural Engineer by profession.



SIBAT Center for RE and Appropriate
Technology (CREATech), Philippines





SPEAKER 3

GERHARD FISCHER

Gerhard Fischer has over 35 years of professional experience in the development of hydropower. He is specialized in technology transfer, concentrating on turbine design and manufacturing and has working experience in 27 countries. He worked 6 years as a researcher on the University Stuttgart in the hydraulic laboratory of the Institute for Hydraulic Machines and Fluid Dynamics. During this time he was in charge of construction and installing the hydraulic laboratory and research on simple turbine designs. Then he worked 5 years in Switzerland as project engineer for hydropower projects and trainings in a small engineering company (Chapallaz Engineering). From 1995 - 1997, he was an engineer with SKAT (Swiss Centre for Development Cooperation in Technology and Management), St.Gallen, Switzerland. From 1997-2013, he worked for entec AG Switzerland on several assignments covering all aspects of hydro power development in Switzerland, South America, Africa and Asia. From 2005-2013 until March 2013 he was director of PT entec Indonesia, a consulting and engineering company active in the hydro power sector in Bandung, Indonesia. In 2011 he helped to establish the ASEAN Hydropower Competence Centre (HYCOM), a hands-on training center for small-scale hydropower, located in Bandung, Indonesia. He has a diploma in mechanical engineering from the University Stuttgart and post graduate study in energy management in developing countries (TU Berlin). Gerhard lives in Bandung, Indonesia, tending his backyard biodiversity forest.



ASEAN Hydropower Competence Centre
(HYCOM), Indonesia

HIGHLIGHTS OF 3 PRESENTATIONS



MALAYSIA: HON. ADRIAN BANIE LASIMBANG

- Established by an **indigenous movement** for all RE
- Transition from **imported to indigenous** technology
- **Longer-lived** projects and repair of defunct projects



PHILIPPINES: JADE ANGANGALAO

- Transition from **imported to locally manufactured** technology
- Training for **multi-actors**
- Design & fabrication of **productive end use machines**



INDONESIA: GERHARD FISCHER

- **Demo micro hydro** and grid interconnection units at HYCOM
- Access to **local professional micro hydro sector** -- a result of local capacity building

CLOSING POINTS

MICRO HYDRO CAPACITY BUILDING

- Local ability **critical to the reliability and replication** of hydro mini-grids
- **Matured local expertise** in S/SE Asia **harnessed at local training centers**
How to **best utilize local knowledge centers** for 2030 SDG 7 targets?

ENGAGE WITH HPNET

Sign up for our quarterly newsletter, the *HPNET Flow*, at www.hpnet.org

Next newsletter: video tours of training centers

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