

PRODUCTIVE END USE OF MICRO HYDROPOWER PLANTS

Mr. Suraj Baral

Director

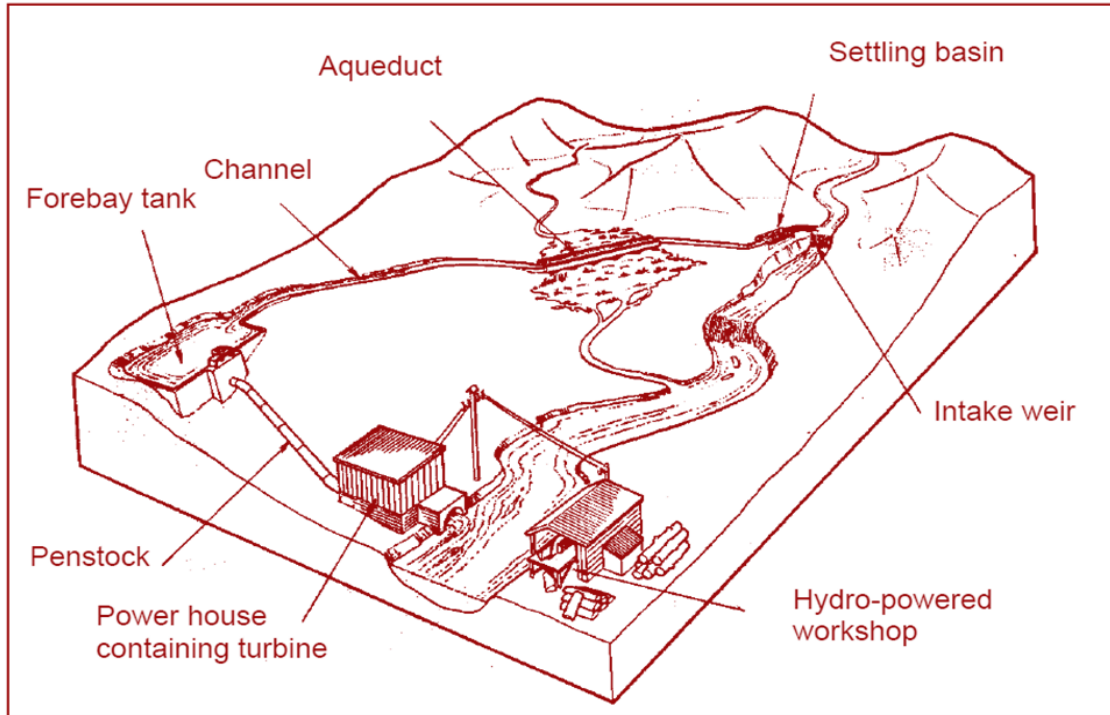
Technology Transfer and Renewable Energy
Management Innovation and Technology Solutions (P) Limited

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Visiting Faculty

EnPe/ Masters Programme in Planning and Operation of Energy System,
Department of Mechanical Engineering, Kathmandu University

MHPs IN NEPAL: A BIRD EYE VIEW



- **Definition: 5- 100 kW**
- **AEPC involvement: up to 1000 kW**
- **Number of MHP: 645**
- **Total Installed Capacity: 12 MW**
- **Planned Capacity: 25 MW in 5 years (NRREP)**



MHP IN NEPAL : CRITICAL ISSUES

SUSTAINABILITY OF MHP IS A CRITICAL CONCERN

CAUSES

POLICY:

- Procurement based approach rather than end-use approach

INSTITUTIONAL :

- Grid and Off grid Divorce
- High political consideration
- Highly Subsidy based
- Subsidy provided NRs/HH

FINANCIAL:

- Utilization (25-40%)
- Lower Demand Based tariff
- 10% PEU criteria

TECHNICAL:

- Repair & maintenance,
- Capacity building,
- Quality of workmanship and equipment



MHP IN NEPAL : CRITICAL ISSUES CONTD..

FINANCIAL RISK & BURDEN:

- Government=19.2 m\$
- Community / private= 10.8m\$

RESOURCE WASTE

MWh/day =172 MWh
Money =2.8 m\$

OTHER:

Environmental
Employment
Confidence level

EFFECTS

SUSTAINABILITY OF MHP IS VERY BIG CONCERN

For the target of 25 MW How much we are putting in stake?



ADDRESSING SUSTAINABILITY

- **Optimal utilization of MHP capacity.**
 - **Productive End-use Development**
 - **Power Evacuation**
 - **Grid connection of MHP**
 - **Mini grid formation and grid connection**

PRODUCTIVE END-USE DEVELOPMENT

**WHY: PEU HAS MORE MULTIPLYING EFFECT IN SOCIO
ECONOMIC DEVELOPMENT OF RURAL AREAS**





600,000 Nepalese every year migrate to India and aboard



नेपालबाट अमेरिका छिर्न
६ महिना
२२ लाख खर्च
विदेशमा नेपाली
३० लाखभन्दा बढी



**BARREN VILLAGES
 HIV AIDS**

Foreign aid dependent

**Stagnant Economic Growth
 and Negative Trade balance**

Remittance based Economy



BIG CHALLENGES

Can / How remittance be used productively ?



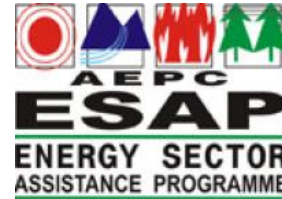
Remittance in 2010/11
Growth:34.7 %,
Total : Rs. 217.76 billion



Can / How MHP be used?



ONGOING INITIATIVES ORGANIZATIONS INVOLVED.



Micro-Enterprise Development Programme

Micro Enterprise. Macro Impact.



Empowered lives.
Resilient nations.

NATIONAL RURAL AND RENEWABLE ENERGY PROGRAMME (NRREP)

- SINGLE DOOR APPROACH (FUNDING TO PROGRAMME LEVEL)
- SEPARATE COMPONENT ON PRODUCTIVE END USE

NUMEROUS PROJECTS AND PROGRAMMES ON LIVELIHOOD AND INCOME GENERATING ACTIVITIES

Multilateral and Bilateral Donors



Local and International NGOs



MANAGEMENT INNOVATION AND TECHNOLOGY SOLUTIONS (P) LIMITED,
PULCHOWK, LALITPUR, NEPAL, TELEPHONE: +977-1-5522429, EMAIL: MIT SOLUTIONS NEPAL@GMAIL.COM

KEY LESSONS LEARNT: TYPES OF PEU



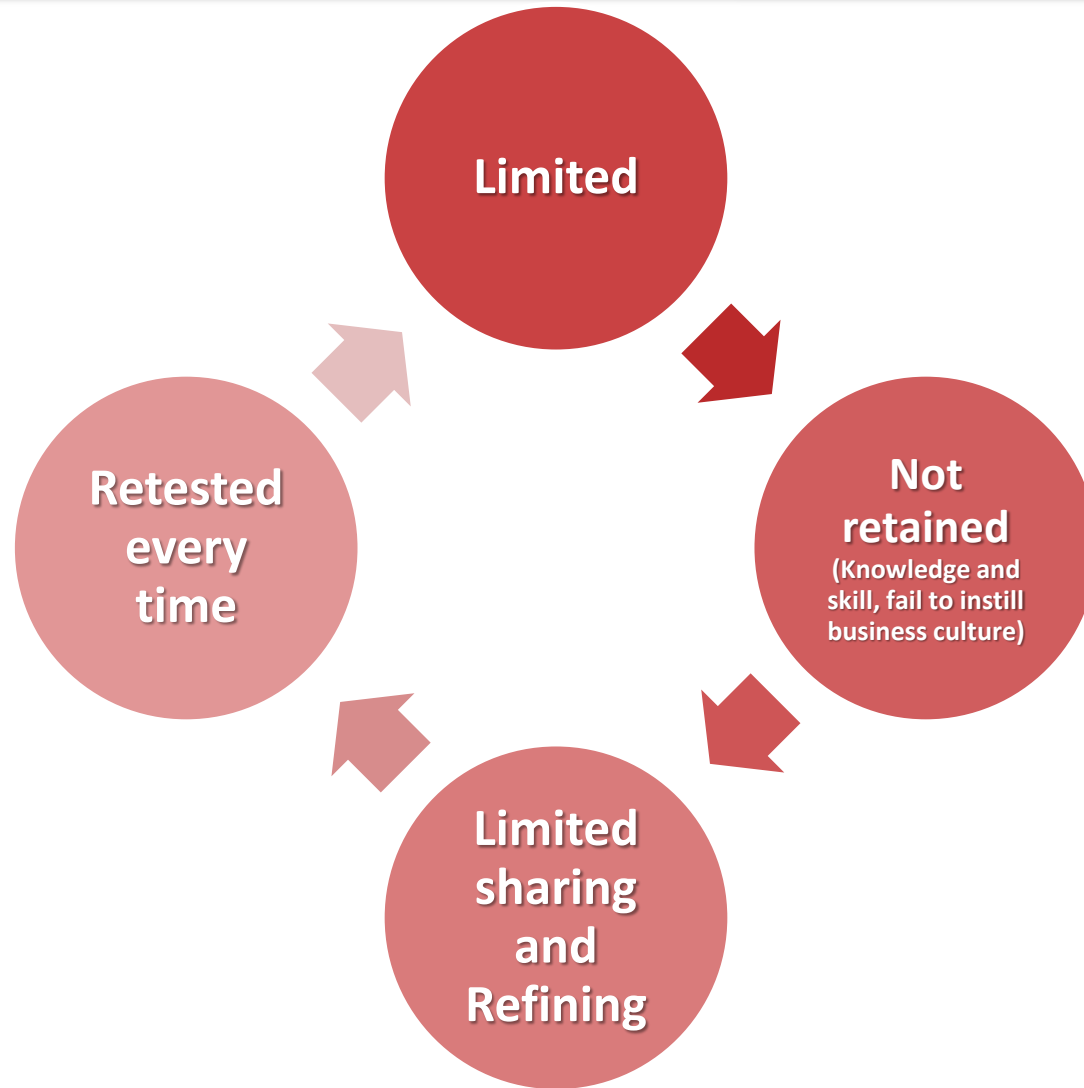
- Direct and indirect use
- Knowledge and experience limited to few types of PEUs only
- Mostly production driven with minimal business thinking
- Missing integration , diversification and value addition concepts

KEY LESSONS LEARNT: FINANCE

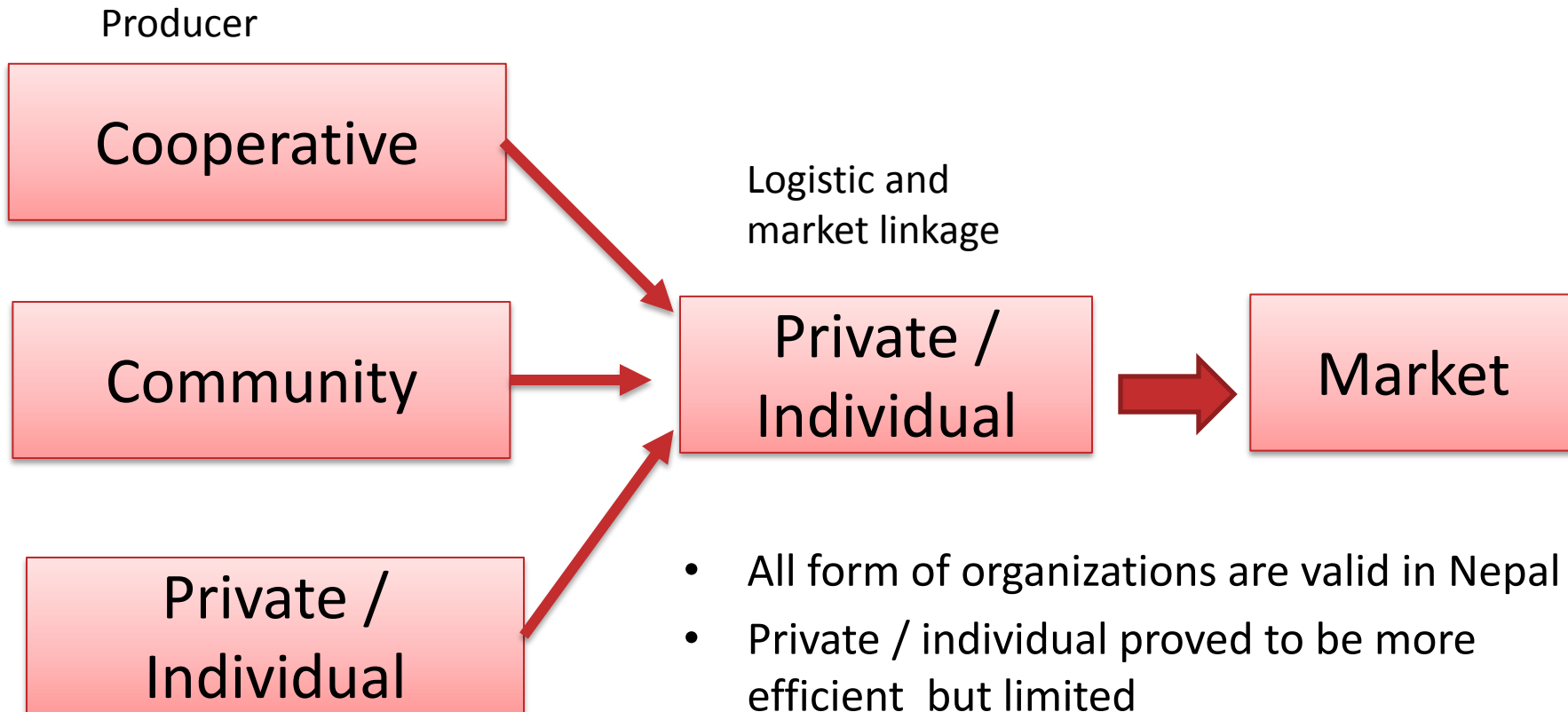
- Subsidy based brought dependence and decreased sense of ownership
- High interest commercial loan not suitable
- Soft interest credit loan most suitable
- Revolving fund mechanism works effectively in community environment
- Saving and lending limited, and mostly done through community , MFI groups. Presence of commercial banks mostly limited
- ***How to use remittance as financial resources is a challenge?***



KEY LESSONS LEARNT: TECHNOLOGY AND TRANSFER OF KNOWHOW



KEY LESSONS LEARNT: ORGANIZATION



- All form of organizations are valid in Nepal
- Private / individual proved to be more efficient but limited
- Community and cooperative being largely promoted
- At logistic and market linkage service Private sector are mostly visible

KEY LESSONS LEARNT: MARKET

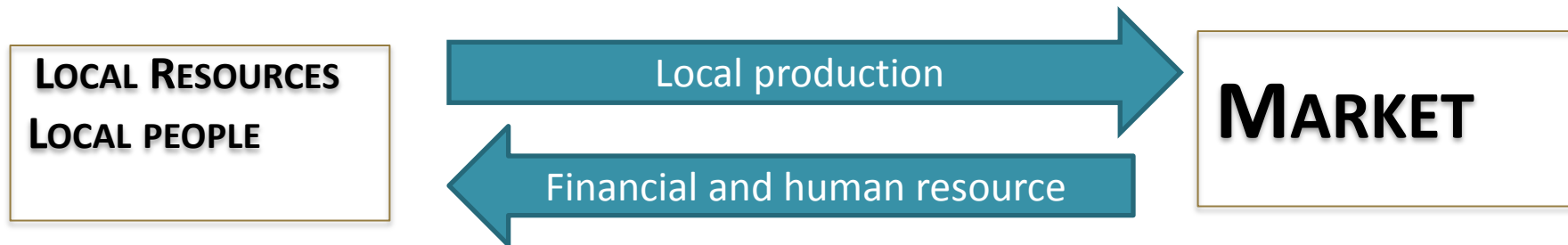
- ***Underdeveloped market condition is less touched & not even experimented***
- Logistics and relevant services are limited and expensive
 - Few service providers
 - Proper government initiatives missing
 - Unattractive market for private sector,
- ***Market not properly linked and creating less competitive business environment***

Producers and consumers are mostly denied from full benefit of the market and centered around few middle man



PEU: VISION

LOCAL PEOPLE USING LOCAL RESOURCES FOR LOCAL PRODUCTION OF GOODS AND SERVICES AND CREATING LIVELIHOOD OPPORTUNITIES FOR LOCAL ECONOMIC DEVELOPMENT



REALIZING THE VISION – GUIDING PRINCIPLES

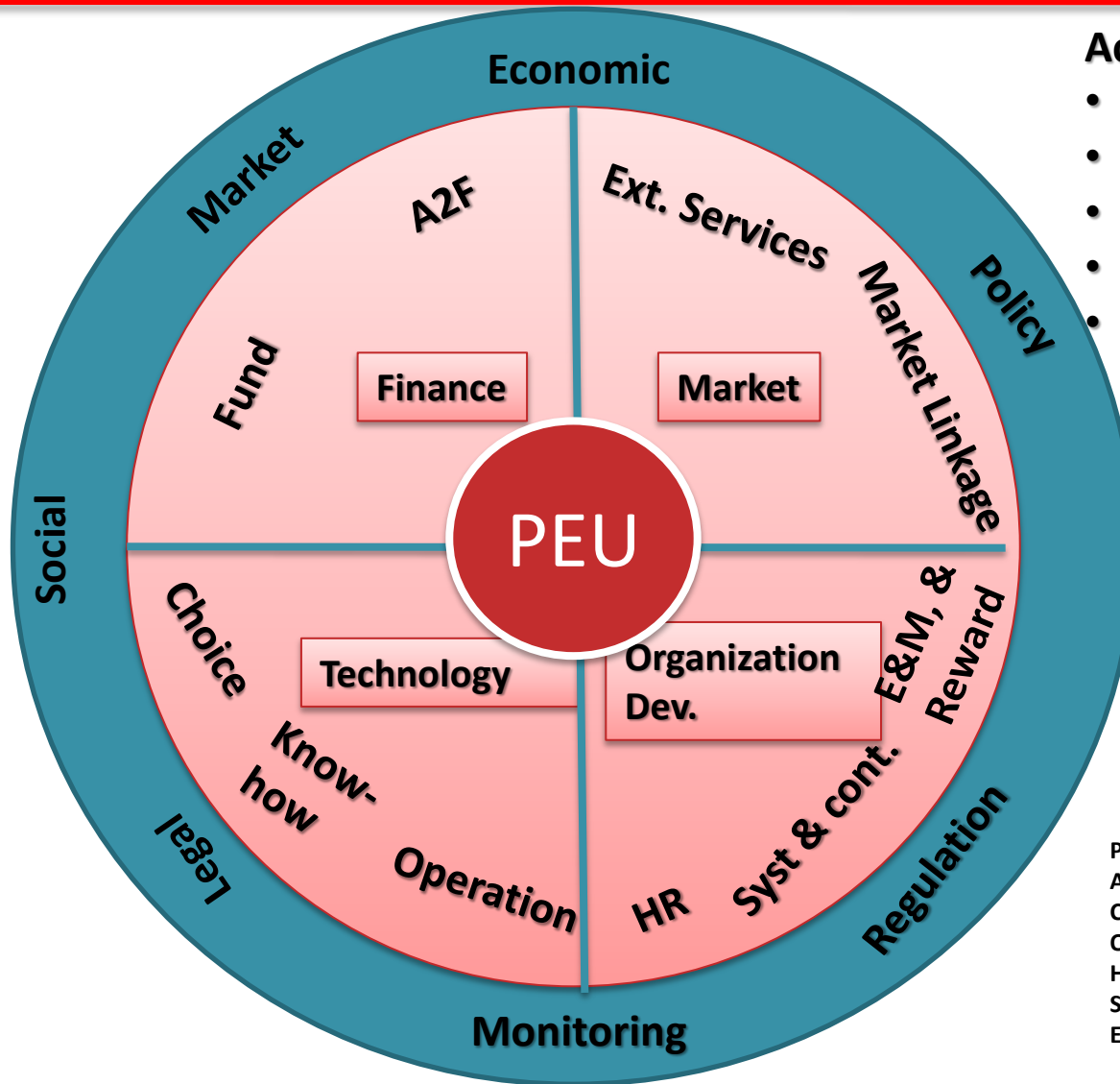
- Breaking the donor dependency cycle
- Developing market driven enterprises
- Diverting remittance for productive purpose
- Focusing on youth involvement
- Facilitating business culture esp. in rural setting

AMONG KEY PRECONDITIONS

Reliable and Quality power supply



PEU implementation



Actors

- Government Inst.
- Donor (Multi/Bi)
- Private Sector
- NGOs/INGOs
- Cooperatives / Community

PSI: Private Sector Involvement
 A2F: Access to Benefit
 Coop: Cooperative
 Org. Dev: Organization Development
 HR: Human Resource
 Syst. : System
 E&M: Evaluation and Monitoring



MY CONCERNS.....

- Do we have
 - Right institutes
 - Proper system
 - Competent HR
 - Proper mind-set

for PEU development?

- Does NRREP –PEU Component has such capacity built-in ?

If not are we not repeating the same mistakes?



MIT SOLUTIONS AND RENEWABLE WORLD WORKING TOGETHER



THE PROJECT

SUSTAINABLE DECENTRALIZED RENEWABLE ENERGY SYSTEM FOR RURAL ECONOMIC DEVELOPMENT (SDRES-RED)

A TWO PHASED PROJECT

1. THOROUGH FEASIBILITY STUDY
2. DEPENDING ON THE OUTCOME OF THESE STUDIES AN IMPLEMENTATION



SELECTED AREA



BASIS

- Diverse Socio-Economy
- Accessible and Inaccessible
- Developed and Underdeveloped Market
- Diverse Resource potentials
- MHPs



PHASE I: FEASIBILITY STUDY

- **DEVELOP DIFFERENT RANGE OF MODELS STRATEGY FOR PEU DEVELOPMENT IN THE TARGET AREAS**
 - Assessing the socio-economic situation, behaviour and attitudes
 - Stocktaking of initiatives and their effectiveness,
 - Identify possible role of different actors
 - Determining the possible enterprises matrix: its market, and local resource potential, human and financial capital needs, their technology and supporting services
 - Mapping out the project implementation modalities
 - Designing and accessing a range of financial and market linkage models
 - Mapping a sustainability path
 - Possibility of youth and women Involvement
 - Creating a SWOT analysis for each suggested enterprise



PHASE II: IMPLEMENTATION

- **IMPLEMENTATION OF THE PROJECT**
 - Creation of social capital
 - Full Business plan development and selection of feasible enterprise for implementation
 - Access to finance and market linkage development
 - Realization of enterprise
 - Capacity Building (Technical, Enterprise development, operation & management, and Finance & Market linkage)
 - Continuous supervision for two years after project practical completion



