

Needs Assessment of Small Wind Power Utilization in Asian Rural Areas

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Outline

- ❑ Socio-economic assessment
- ❑ Resource assessment
- ❑ Technology assessment (wind/solar/biogas, storage)
- ❑ Market potential evaluation and policy options

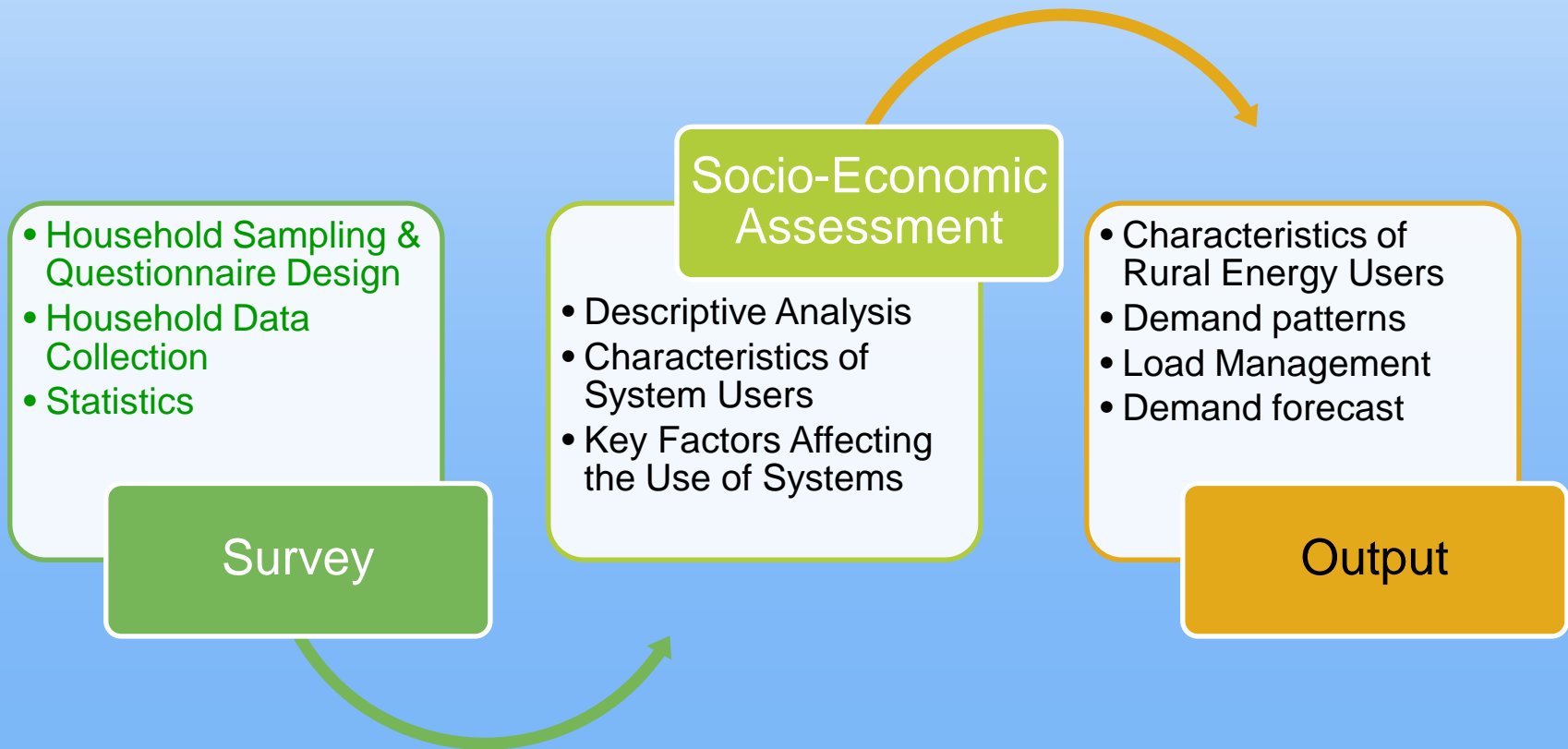
Objectives of Socio-Economic Assessment Study

- ❑ Target: typical windy poor rural communities
- ❑ Evaluate energy and economic performance of small wind systems in selected DMCs
- ❑ Characterize rural energy users in selected DMCs
- ❑ Understand socioeconomic conditions that affect the use of small wind systems in selected DMCs

Objectives of Socio-Economic Assessment Study (Continued)

- ❑ Determine market potential of small wind power systems
- ❑ Identify and select priority locations for small wind power systems
- ❑ Identify barriers to the market development of small wind power systems
- ❑ Examine policy options for stimulating commercialization of small wind power systems

Conceptual Framework of Socio-Economic Assessment Study



Resource ,Technology and Market Potential Assessment

- ❑ Resources Mapping (Wind, Solar, Biomass Resources- Biogas in this project)
- ❑ System Configuration
 - ✓ Technology- wind, solar, hybrid
 - ✓ Size
 - ✓ Siting
- ❑ Prediction of Potential Market Size
- ❑ Identification of Policies to Capture Market Potential

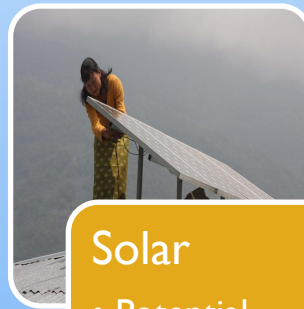
Resource Assessment Study

Renewable Energy Resources Mapping



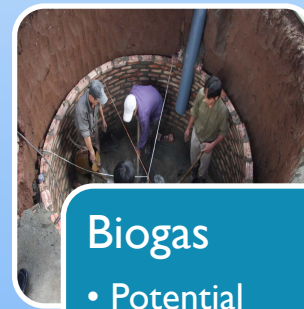
Wind

- Potential
- Resource Map (GIS)
- Levelized cost



Solar

- Potential
- Resource Map (GIS)
- Levelized cost

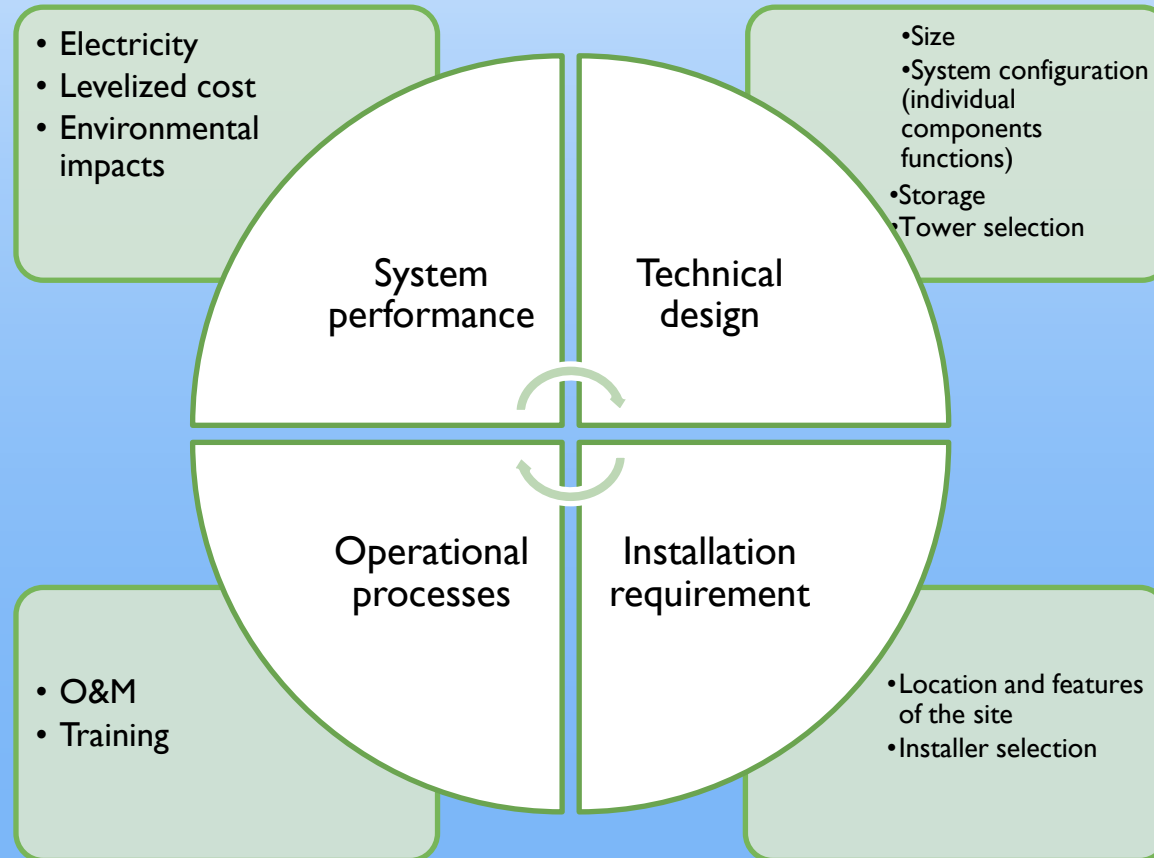


Biogas

- Potential
- Resource Map (GIS)
- Levelized cost

Technology Assessment Study

Wind System Evaluation



Energy Storage Evaluation of Wind Systems

- ❑ Renewable energy is often intermittent (wind/solar)
- ❑ Storage Option Evaluation (technology feasibility, cost effectiveness, environmental impacts)
 - ✓ Compressed air
 - ✓ Flywheels
 - ✓ Hydrogen
 - ✓ Batteries (traditional for small systems)
- ❑ Storage Balance Optimization

Market Potential of Renewable Energy System Integration

- ❑ Renewable Energy Resources
- ❑ Load Profile and Demand Forecast
- ❑ Establish a Sustainable Business Model
 - ✓ Innovative financing
 - ✓ Institutional capacity building
 - ✓ Local technicians training
 - ✓ Metering

Thank You!