



Programme of Activities CDM Alternative Energy Promotion Centre, Nepal



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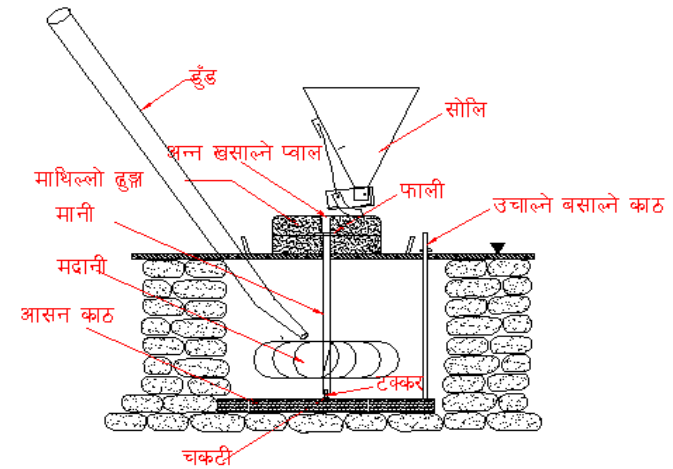
Assistant Director

Alternative Energy Promotion Centre



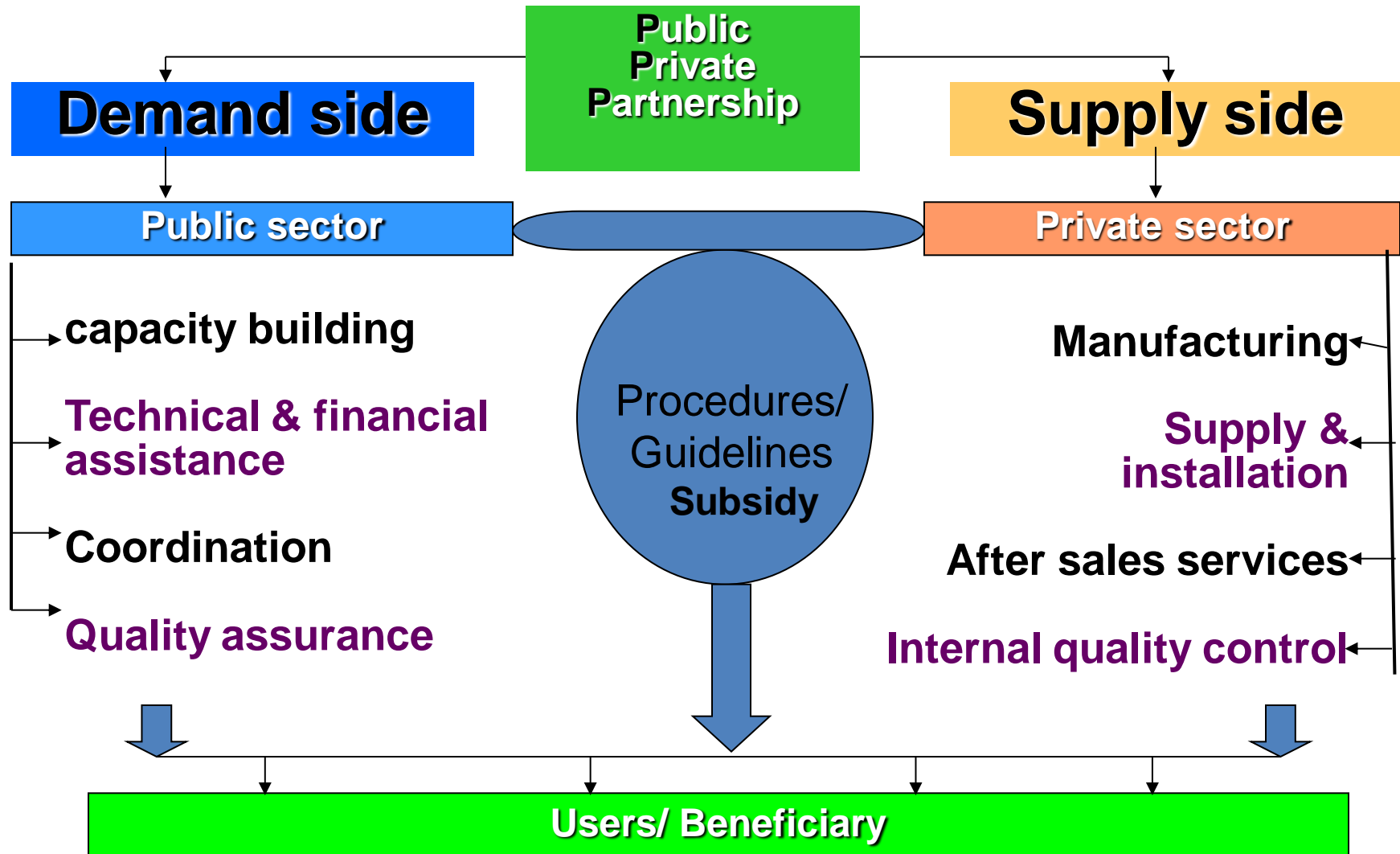
Introduction of AEPC

- Established in 1996 as **National Executing Agency for Renewable energy programmes and projects**
- For improving people's livelihoods and protecting environment through RET promotion
- **Mandate:** policy and plan formulation, resource mobilisation, technical support, M & E, quality assurance and coordination in promotion of RETs.





AEPC APPROACH FOR PROGRAM IMPLEMENTATION



CDM PoA/Projects Managed by AEPC

SN	Project Name	No. of System bundled	Status	Annual Expected CER	CER Buyer/Trustee
1	Biogas Activity 1	9,692	Registered	26,926	World Bank
2	Biogas Activity 2	9,688	Registered	24,992	
3	Biogas Activity 3	20,254	Registered	56,919	
4	Biogas Activity 4	20,348	Registered	56,487	
5	Micro-hydro Promotion	450	Registered	40,535	World Bank
6	Biogas PoA	Annual 20,000 (till now 160,000 plants are included)	Registered	Around 3 per biogas per year	Atmosphair, Germany (Transfer by KfW)
7	ICS Program of Activities PoA	Per CPA 22,000 & annual 4-5 CPAs	Requested for registration	Around 1.5 per ICS per year	FCF-ADB (negotiation ongoing)
8	IWM PoA	Annual 1200	Requested for registration	25000	FCF-ADB



IWM PoA

- CME & implemented by AEPC
- Initiated in 2010, yet to be registered
- Technically supported by ADB
- Double validation
- Incomplete submission for registration
- Requesting registration
- 1 CPA in two years
- CER buyer/Trustee: ADB-FCF





The Baseline

TWM



- Diesel mills that would be used in the baseline to cater the increasing processing needs.
- Statistics depict the increased proliferation of the diesel mills in recent past.

DM



- Statistics shows 19,000+ TWMs exist in Nepal i.e. in absence of the PoA there is equal chance of diesel mill invasion

The Project Scenario



- Traditional water mills is displaced by IWM. Alternately an IWM is installed by new user who might possibly have been the diesel mill entrepreneur.
- Avoidance of the diesel and diesel induced emission attributable to diesel mills.



Traditional Vs Improved Water Mill



Increase in Efficiency & Service diversification

Traditional Water Mill

For grain grinding only

Not efficient:

Available power 0.5 kW

Processing capacity :
10-20 kg / hour



Improved Water Mill

For grain grinding and
other end-uses

Efficient

Available power: 1-3 kW

Processing capacity:
20-50 kg/ hour



Short Shaft

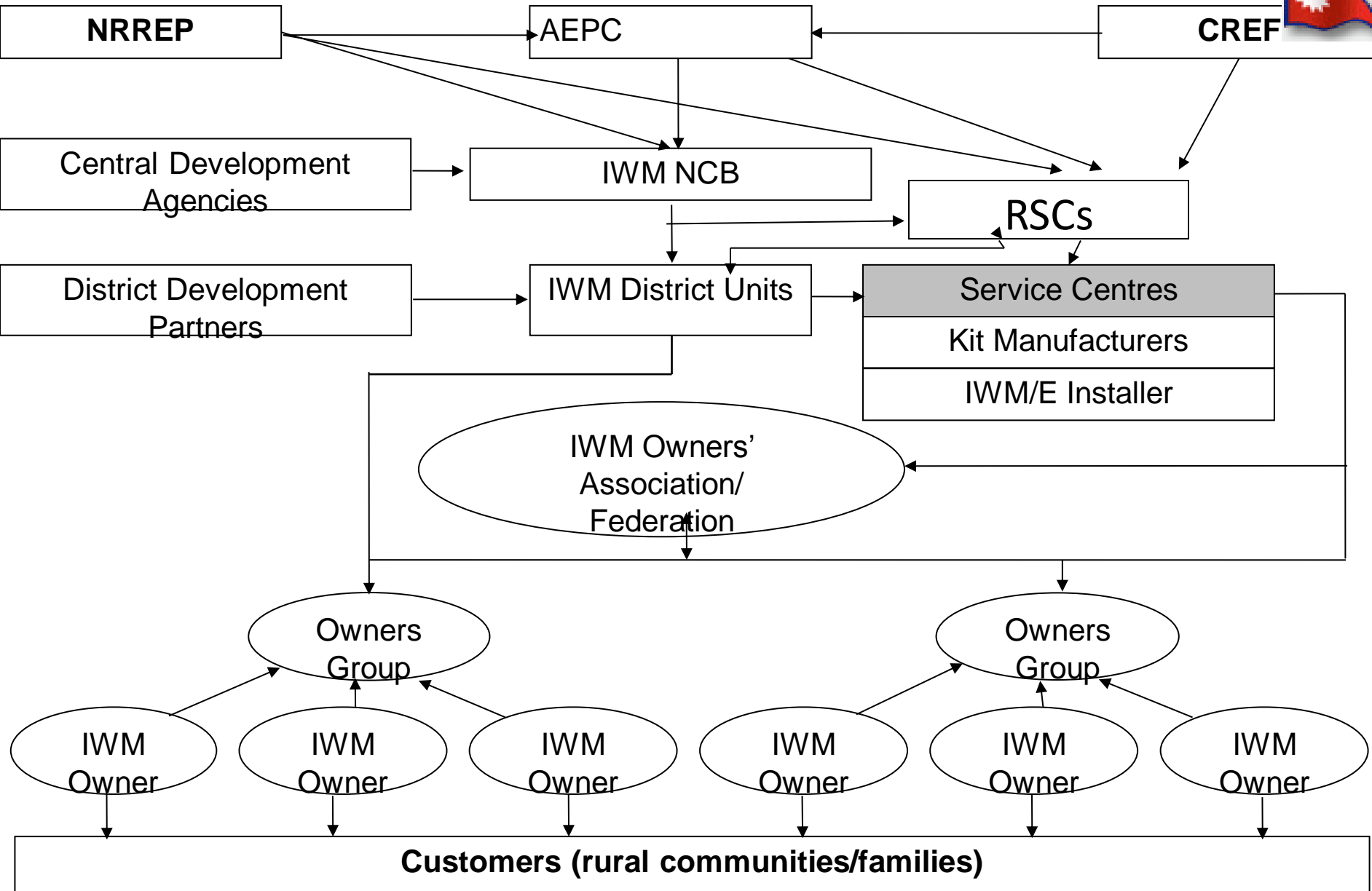
Only for efficient
grain grinding



Long Shaft

Opportunities for
grinding and various
end-uses like: paddy
hulling, oil expelling,
saw milling, electricity
generation etc.

Implementation Structure



Sustainable Development Benefits: Eligible for Gold Standard



☐ **Economic Well Being**

- Diversified agro-processing services will be available for rural households from this project.
- Development of local entrepreneurship
- Program acts as a cost effective solution to address the country's energy crisis

☐ **Social Well Being**

- Faster milling and less waiting time with more efficient mills.
- Reduction of workload (mainly for women and children) from mechanized milling of paddy and pressing oil thus avoiding drudgery related to manual milling

☐ **Environmental Well Being**

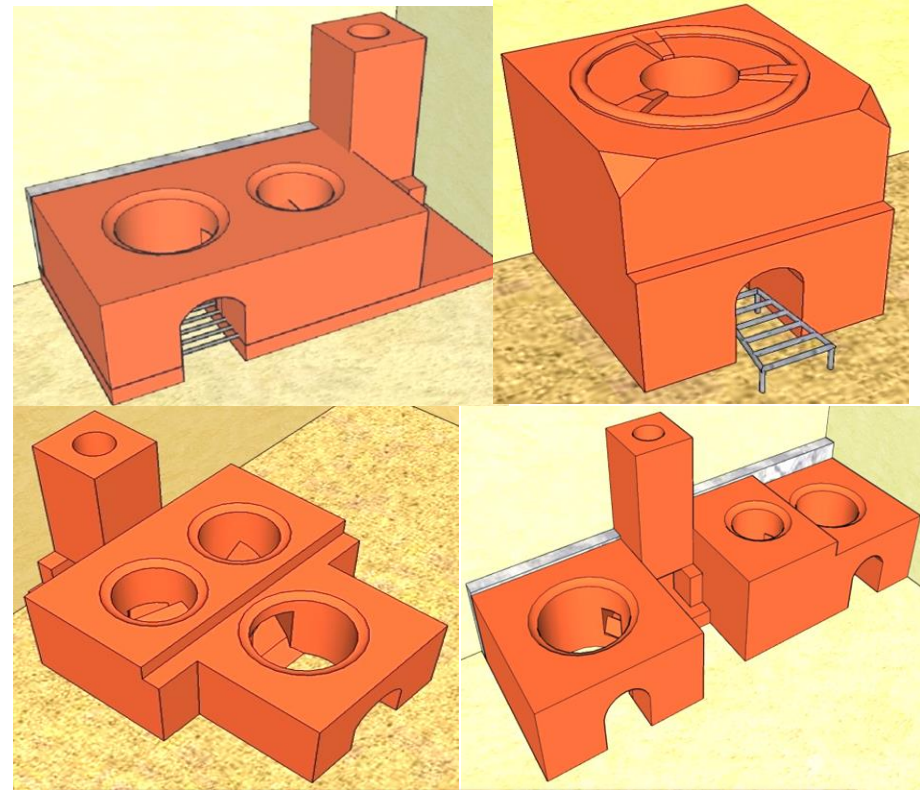
- Project produces real and measurable reductions in GHG emissions
- Avoid local pollution from diesel mills in communities
- Reduce dependency on fossil fuels

☐ **Technological Well Being**

- Increase access to basic energy services to rural people
- Program promotes sustainable energy efficient technology

Improved Cooking Stove (ICS) PoA

- CME & implemented by AEPC
- Initiated in 2010, yet to be registered
- Technically supported by ADB
- Double validation
- Incomplete submission for registration
- Requesting registration
- Annual around 4 CPAs
- CER buyer/Trustee: ADB-FCF (Negotiating Ongoing)



Baseline Scenario



Three-stone cook stove

Chuli



Aghu



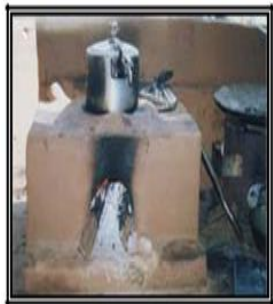
Makkal



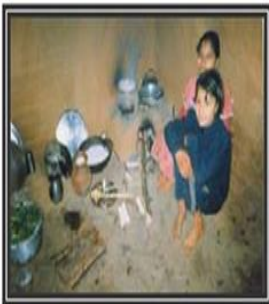
Bhuse stove



One pothole stove



One pothole stove



Two potholes mud-stone stove



Three pothole stove in Dang

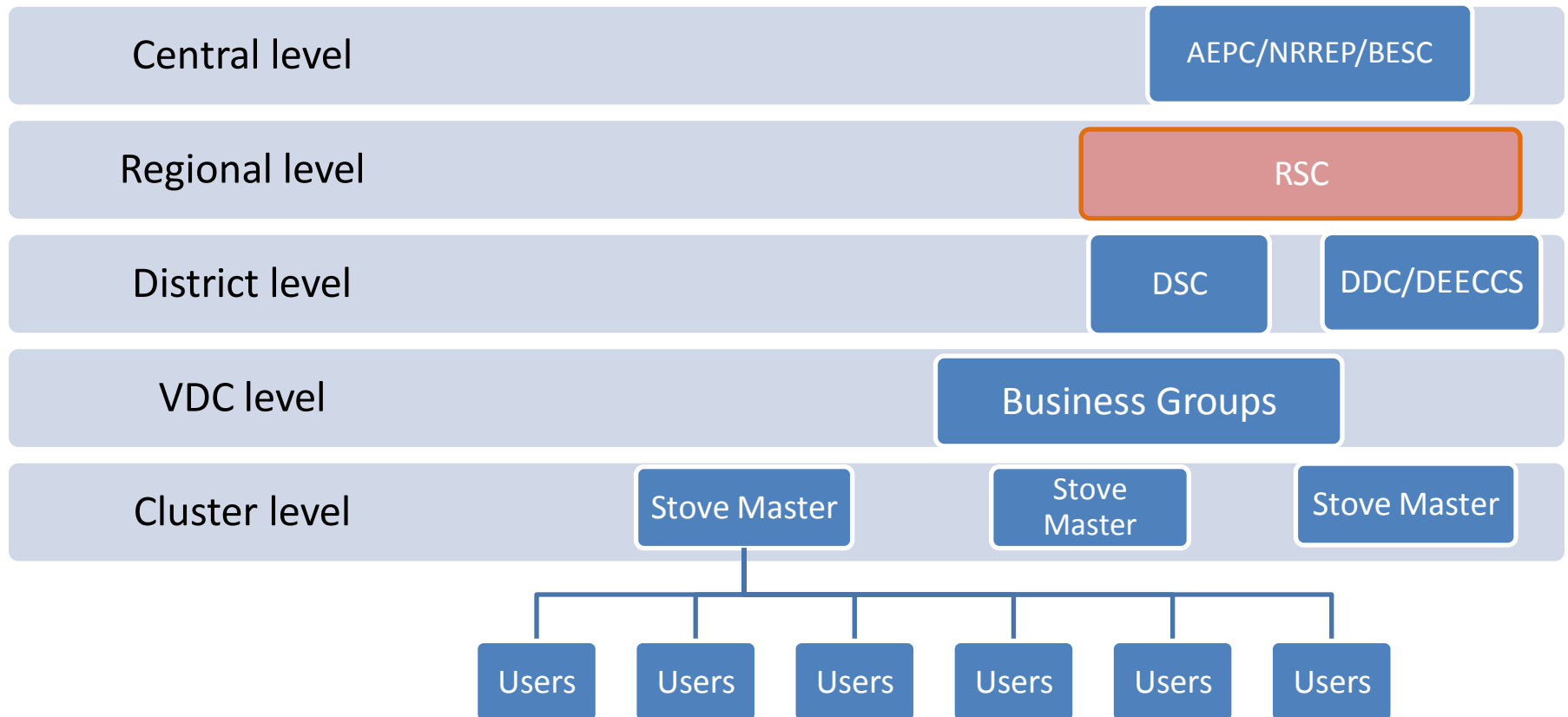
- The existing traditional stoves used in Nepal are simple structures made from clay or having stone or metal tripods.
- These stoves are very inefficient because they have poor air flow and insulation.

Project Scenario

- The proposed PoA will introduce activities that improve efficiency over the existing traditional cook stoves which will save non-renewable biomass in the baseline scenario
- The metallic ICS for the high hill region for both cooking & space heating



Service Delivery Route and Actors (Demand driven model)



Sustainable Development Benefits: Eligible for Gold Standard



Environmental Well Being

- Natural recovery of forests and/or reforestation through reduction in the wood consumption,
- Reduction in Indoor Air Pollution from wood smoke and avoid smoke related health disorders
- protection of standing forests will ensure the maintenance of
- Prevention of fire hazards in the household kitchen

Technological Well Being

- Introduction of locally manufactured technology with improved energy efficiency helps in technological self-reliance in the area

□ Economic Well Being

- The fabrication, operation and repair and maintenance of ICS's generate employment to the local people
- The costs incurred in the purchase of firewood will be reduced through increased efficiency of the ICS thus leading to lesser firewood consumption

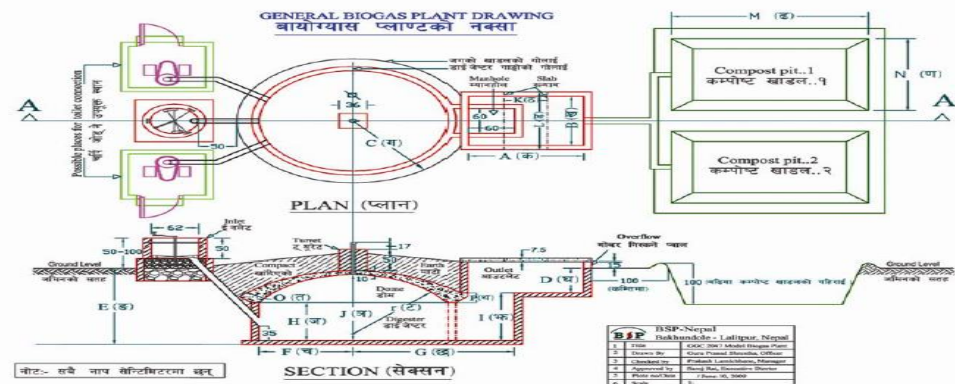
□ Social Well Being

- Preservation of wood resources avoid inter-communal and/or inter-religious conflict over resources.
- Reduce workload as a result of reduced in time for collecting the firewood
- Effectively address gender issues through increased economic activities and employment



Biogas PoA

- CME & implemented by AEPC
- Initiated in 2008, yet to be registered
- Technically supported by KfW
- Registered in January 2013
- 5 CPA included so far
- Annual at least 1 CPA inclusion
- CER buyer: Atmosfair





Baseline Scenario

- The existing traditional stoves used in Nepal are simple structures made from clay or having stone or metal tripods.
- These stoves are very inefficient because they have poor air flow and insulation.



Three-stone cook stove



Chuli



Aghu



Makkal



Bhuse stove



One pothole stove



One pothole stove



Two potholes mud-stone stove



Three pothole stove in Dang

Project Scenario

- Target group are households with at least one head of cattle (generally cows or buffalos) who currently use non-renewable biomass (firewood) for cooking purpose
- Biogas is used as a fuel for cooking, therefore the displacement of NRB and GHG emission reduction



A biogas plant with inlet connected to toilet



Dome



Biogas stove

Cooking with biogas



Mixing water in the inlet

Partners for Biogas dissemination

AEPC

NBPA

BSP-N

MFIs

DDC/DEES

Other Dev.
Partners

Networks/local
organisations

Sustainable Development Benefits: Eligible for Gold Standard



Environmental Well Being

- Natural recovery of forests and/or reforestation through reduction in the wood consumption,
- Reduction in Indoor Air Pollution & avoid smoke related health disorders
- Prevention of fire hazards in the household kitchen
- GHG Emission Reduction

Technological Well Being

- Introduction of locally manufactured technology with improved energy efficiency helps in technological self-reliance in the area

☐ **Economic Well Being**

- The fabrication, operation and repair and maintenance of biogas generate employment
- The costs incurred in the purchase of firewood will be reduced
- Utilization of saved time in economic activities

☐ **Social Well Being**

- Preservation of wood resources avoid inter-communal and/or inter-religious conflict over resources.
- Reduce workload as a result of reduced in time for collecting the firewood
- Effectively address gender issues by utilizing saved time in economic and social activities



Reduce Kerosene for Lighting



Reduce Deforestation by Firewood Saving



Reduce Petroleum Consumption of vehicle



Reduce Consumption of Diesel for Milling



Women empowerment



Awareness Raising



Income Generating Activities



Reduced Health Risk



Pump Irrigation - Agricultural yield



Safe drinking water pumping

Mitigation

Adaptation