

“JASTIP-net - Local energy governance and **Community** Renewable Energy (CRE) in Vietnam”

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What is CRE and Why is it Important?

CRE (Community Renewable Energy) is energy system initiated, owned, managed, operated by a *community* such as group of residents

Factors in CRE

1. Initiator
2. Owner
3. Manager
4. Operator
5. Benefitting



Community is involved in these stages.



4D by CRE

- Decarbonizing
- Decentralizing
- Democratizing
- Demonstrating



Useful for
Environmental and
Social SD

Outline of our study and this slides

Outline of our study

1. Clarifying present situation of RE in VN.



2. Clarifying hurdles to and benefits from introducing CRE in VN.



3. Proposing a concrete project to introduce CRE



Social Implementation

Outline of this presentation

- 1 Introduction of Our Investigations
- 2 Present state of Household Renewable Energies(HRE) in VN



Bio Gas

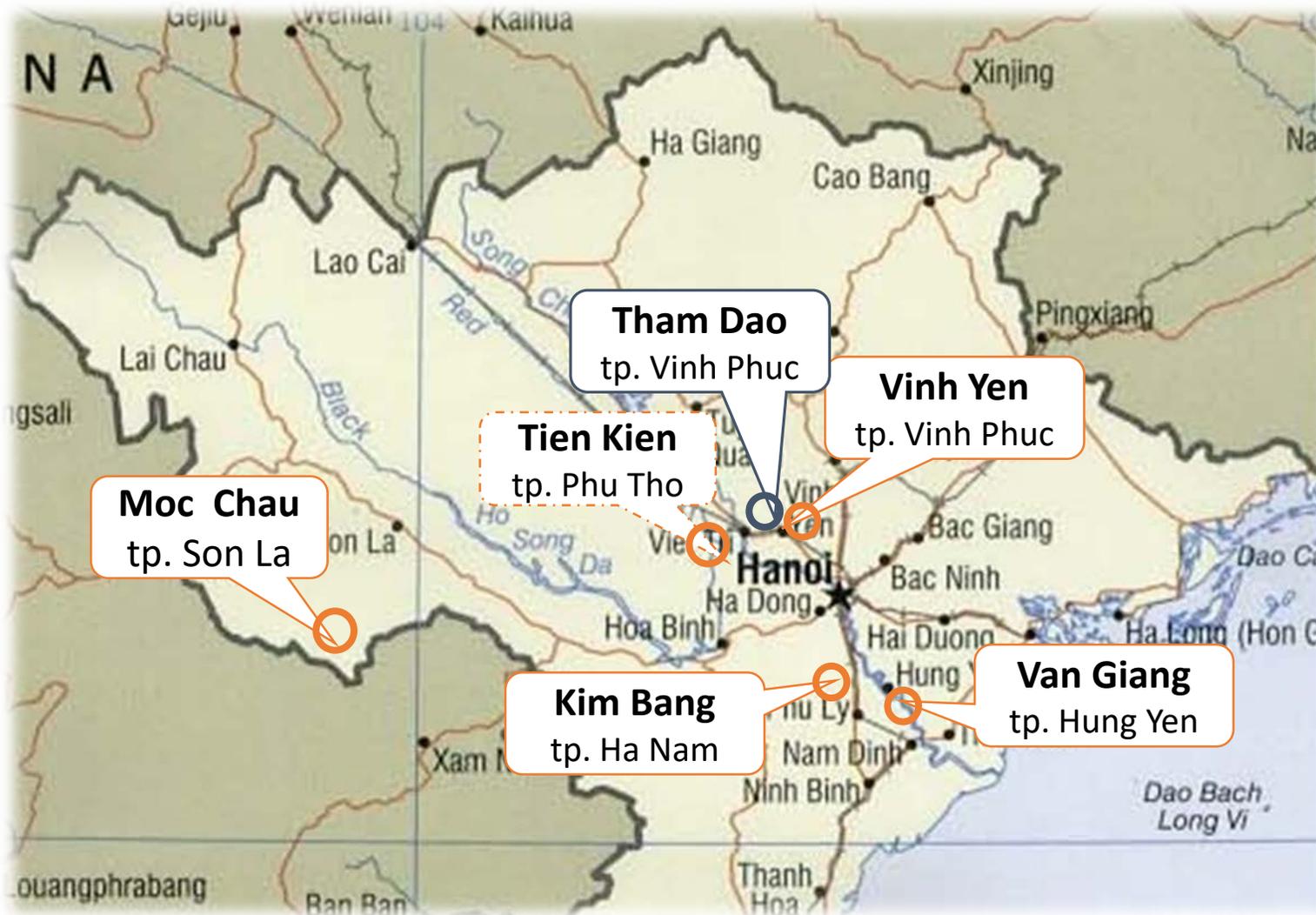


Pico Hydro

- 3 Conclusion
- 4 Future Development
- 5 Discussion

Introduction of the investigations

Purpose was to define present situation of RE in VN



4+1 study trips (05/2016)

Bio Gas

-Moc Chau*

-Kim Bang

-Vinh Yen

-Van Giang

-Tien Kien(03/2015)

Pico Hydro

-Tham Dao

Interviewed with about 100 HHs

Interviewed with about 11 HHs

Questions

HHs with RE – Initiator, costs, benefit, trouble...

HHs without RE- Obstacle, reason, future plan....

Present state of Biogas

19 with Biogas 12 without it in Ha Nam
 15 and 15 in Van Giang
 15 with Biogas and 15 without in Vinh Yen

1. Costs of Bio Gas

-Initial Cost (average)

Kim Bang(19Hs)=13.4mil VND
 Van Giang(15Hs)=11.4mil VND
 Vinh Yen(15hs)=12.0mil VND

-Assist

Only in Vinh Yen, 2mil VND assist from MONRE

Running Cost= 0!

2. How did you know Biogas and install?

- Program by MONRE (Vinh Yen)
- Heard from neighbors

3. Why did you install Biogas?

- Save money on LPG
- Save time on gathering firewood
- **Dispose manure**

4. Degrees of satisfaction.

1. Very unsatisfy ~ 5. Very satisfy
 Ha Nam(19Hs)=4.5
 Van Giang(15Hs)=4.5
 Vinh Yen=(15hs)4.7
Most HHs are very satisfied



Benefits of Biogas

1. Reduce LPG bill by 60%
 Average LPG bill/month

Family type	Biogas	No Biogas
2 generation	18,700VND (23Hs)	80,000VND (16Hs)
3 generation	46,000VND (16Hs)	94,000VND (23Hs)

- 2. Reduce Firewood – Saving forest
- 3. Protect local Environment

Saving LPG is Not so large profit for a households in one from raising pig (1000VND/kg live weight).

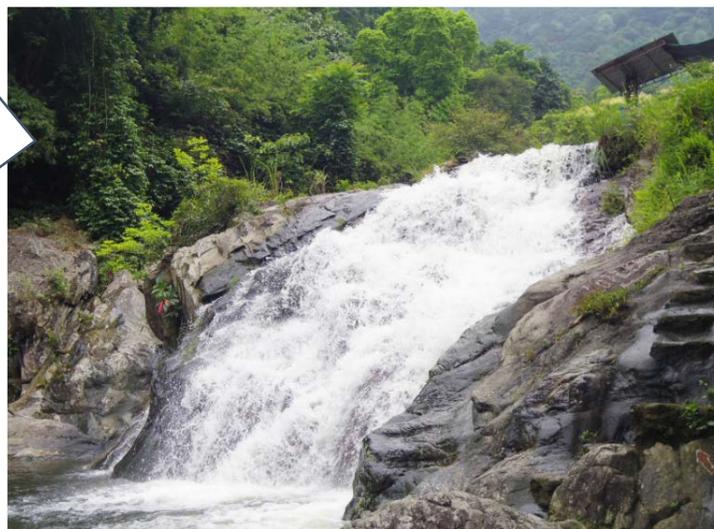
Biogas is just by-product of pig! It largely depends on condition of pig market

Present state of Pico hydro: 11 households with PH

1. When did you install PH?
 1989= 3 households
 1990~1995= 4 Hs
 1996~2000= 2Hs
 2001~= 2Hs
 Some of them upgraded their PH systems from 0.3~0.5kw to 2~3kw

2. Costs of Pico Hydro
 -Initial Cost (average)
 1.4mil VND/ 0.5kw turbine
 3.0mil VND/ 3kw turbine
 + if needed
 Cost for constructing dam
 Cost for Cable(0.4~1.0mil VND)
 -Running Cost
 100~250thous*2times/year

3. How did you know PH?
 - First household saw it in China
 - Some of others saw it in a shop
 - The others heard from neighbors



Benefit
 3kw x 3 turbines for Lighting,
 2 freezers, 1 TV, 4fans
 →Reduce elcentricity bill by **95%** (compared with Hs without PH)

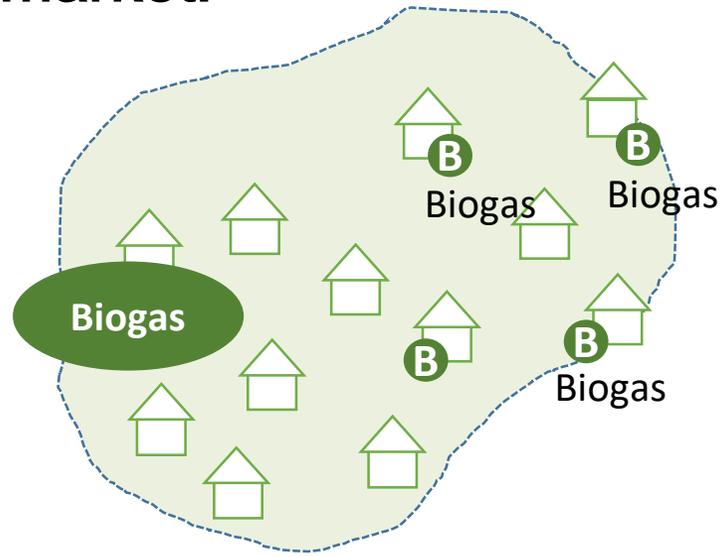
Most Hs installed their PH by trhemselves as DIY.

4. Degree of satisfaction
4.5
Most Households are satisfied

! Troubles with PH!
 - Unavailable in flood season
 - Clogged with leaves or trash
 - Get an electric shock
 - Electronics in house are broken and fire
 - Bite by a snake

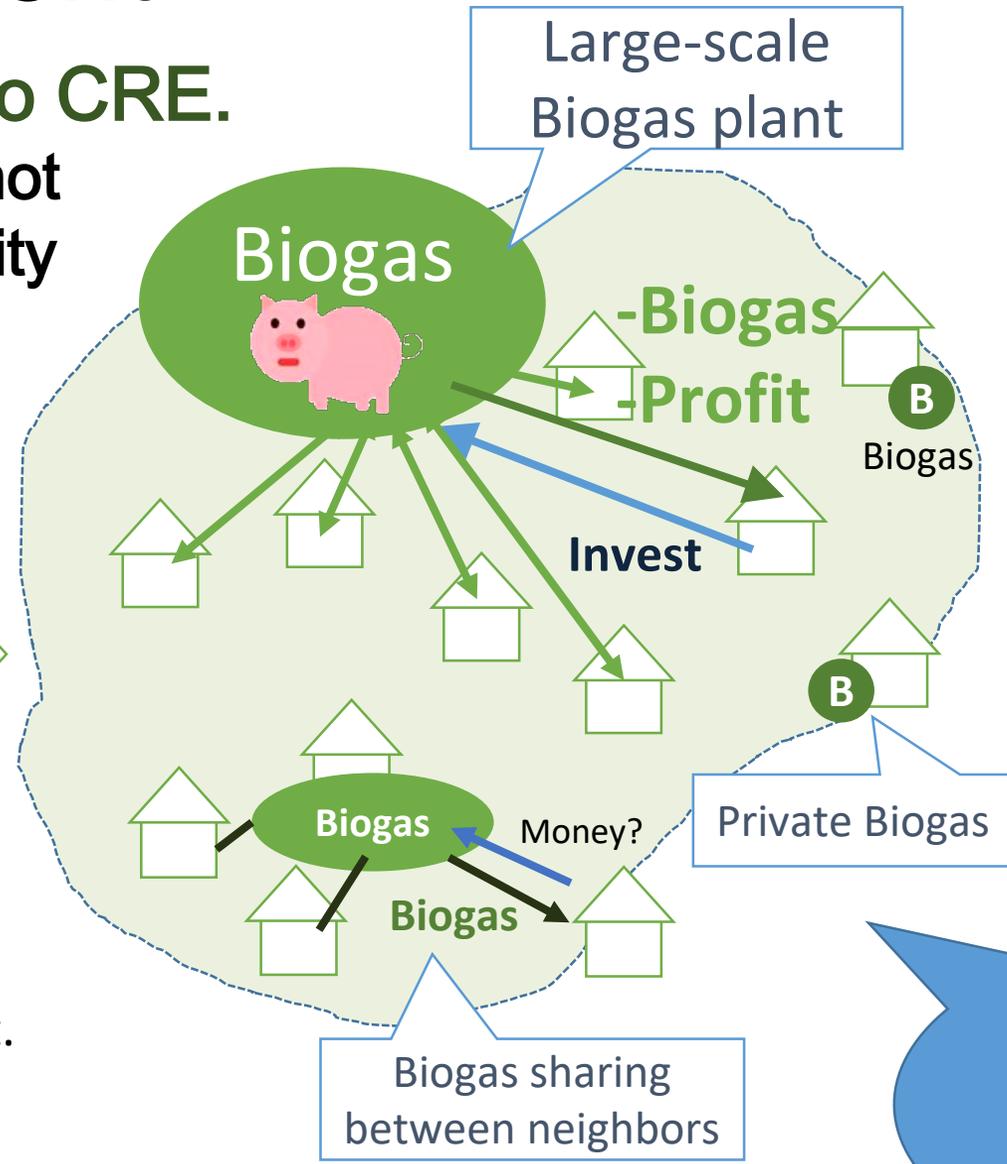
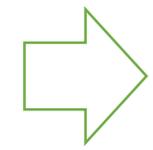
Future Development

Biogas is a promising RE to CRE.
 REs generating electricity are not because of low price of electricity market.



Present situation

1. Household has Biogas Independent.
2. No connection between Biogases.
3. Biogas is used in a household.
4. Excess gas was emitted.



Three types of Biogas in CRE

Who will be...?

<p>Initiator Community, Hop Tac Xa</p> <p>Owner, Operator Community members</p> <p>Manager Professional, NGO, Univ</p> <p>Benefit Biogas, Profit from pigs</p>
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We are planning to verify this model as the next step.

Conclusion: Steps to develop HRE to CRE

1. Biogas is just by-product of pig

Present states of agricultural activities must be taken into account.

2. Define benefits of introducing CRE

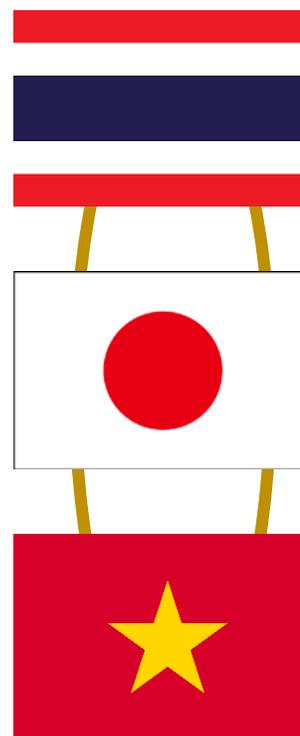
No clear benefits for them, HHs are not willing to change.

3. Initiator will be the key factor

External organization should assist a community.

4. Demonstration effect will be large

Unlike Japan, household RE is familiar and well introduced in rural Viet Nam. That may be both an advantage and disadvantage to CRE.



Thailand has useful references on Biogas including CRE. Japan has references on Finance scheme. such as Ohisama-shinpo(Nagano Pref.).

Vietnam has community and RE.

We should cooperate more to make for SD based on CRE!



Thank you for your attention!
Please Let us know any CRE case you know.

