

# **Socio-Economic Impact Monitoring of Rural Electrification Projects in Yunnan and Tibet Autonomous Region between 2002 – 2007**

## **A China Case-Study**

**Renewable Energy Seminar on Solar/Biomass  
Technology for Electricity Generation in Community**

**School of Renewable Energy Technology – SERT  
Naresuan University Phitsanulok, Thailand**

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# Outline of Presentation

- Monitoring Objectives
- Approach and Methods
- Selection Criterias for Interviewer
- Key-Facts Tibet / Yunnan Baseline - Study
- Impacts in Tibet & Yunnan
- Conclusions & Outlook

# Monitoring Objectives

- Poverty Alleviation
- Environmental Sustainability
- Education and Health Services
- Income Generation
- Gender
- Migration
- Institutional

# Approach and Methods

- Modified questionnaires on the bases of Energy Poverty Gender (ENPOGEN) Study
- Basic Principle - aiming at a depiction of the individual HH as a whole acc. to one family member interviewed – remained unchanged
- Guidelines for interview between head of village and foreign social science expert elaborated

# Selection Criterias for Interviewers

- Sound & comprehensive knowledge about the region
- Multilingual capability / Computer literacy
- Educational background
- Preferably women
- Experience with Statistical Social Science Software Programme
- Experience with face-to-face interviews







# Execution of Baseline-Studies

- Development of household questionnaire
- Elaboration of guidelines for interviews
- Selection and training of local interviewer
- Performing household interviews
- Village mapping and expert interviews
- Establishment of data processing tools
- Evaluation of Data











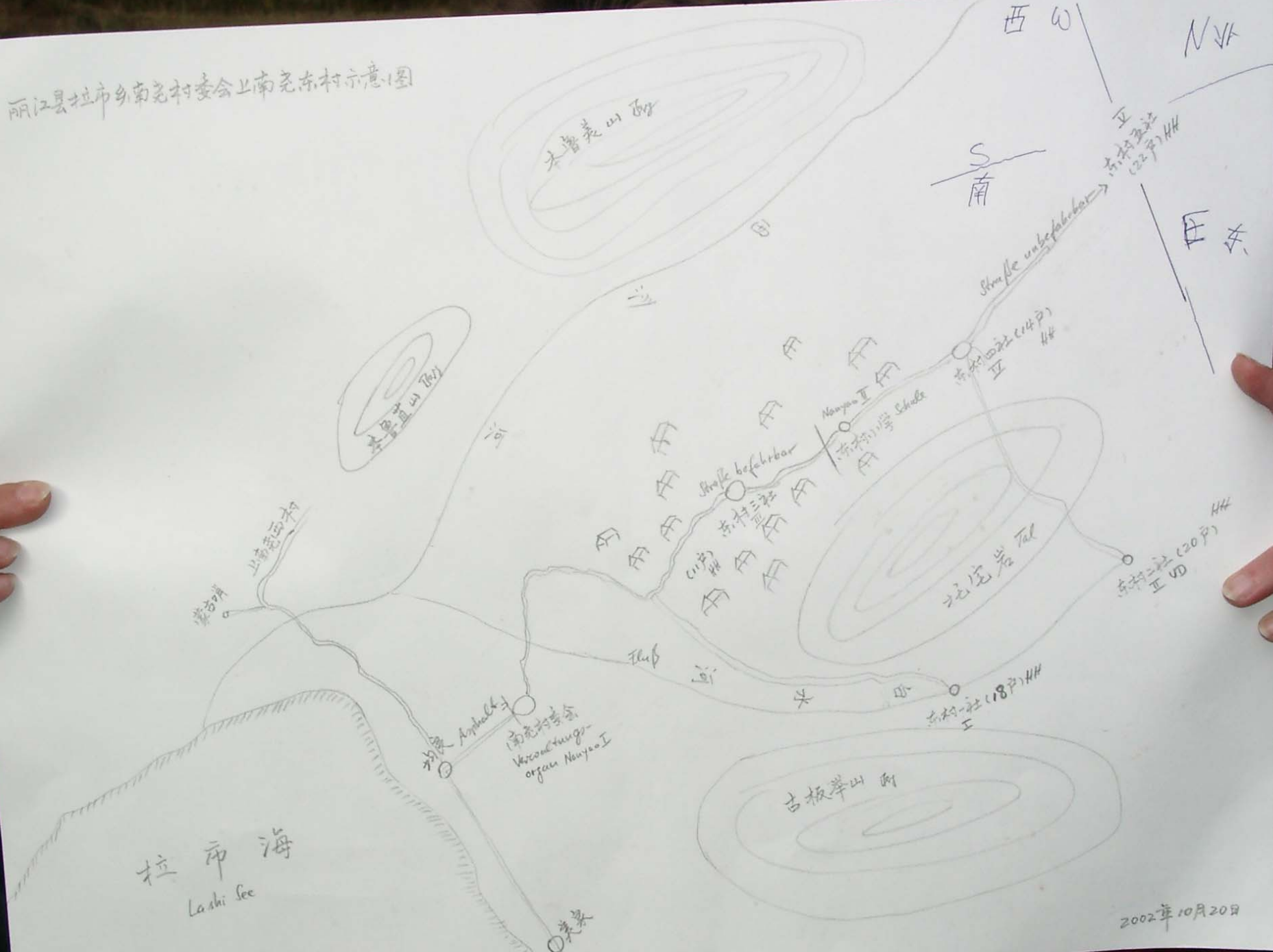








丽江市拉市乡南尧村委会上南尧东村示意图



2002年10月20日



# Key-Facts Baseline Tibet (09/2004)

Village	total No. HH	No. of HH interviewed	% of total HH	Type of HH			Type of electricity supply
				Poor	Middle	Rich	
Deser	78	30	38,5	11	16	3	No electricity
Sangin	63	35	55,5	12	8	15	Village PV/Wind-System, SHS
Tashi Donglam	107	30	28,0	7	15	8	Village PV-System
Gunko	33	26	78,8	9	14	3	Village PV/Wind-System
Numa	89	35	39,3	9	16	10	Grid
<b>Total</b>	<b>370</b>	<b>156</b>	<b>42,2</b>	<b>48</b>	<b>69</b>	<b>39</b>	<b>--</b>

# Impacts in Tibet (07/2006)

- Usage of Electrical Household Appliances for (Information, Communication, Entertainment) increased by 47%
- Importance of Radio decreased at the expense of TV
- Limited capacity of RE-Systems does not allow productive use, but restaurants and shops = income increased by 5%
- Reduced working hours for kids, but for women/men unchanged
- School absence of kids (6-14 years) reduced from 32% to 6% and (15-19 years) from 67% to 24%

# Impacts in Tibet (07/2006)

- Candles/Batteries replaced as main energy supply source
- Dissatisfaction among SHS users, due to poor technical reliability and Village-Power-Systems due to limited time to use electricity
- Expenditures for candles / batteries reduced but compensated by fees to be paid for electricity
- Remaining dry cells (torches) are still carelessly being thrown away

# Key-Facts Baseline Yunnan (10/2002)

Village	total No. HH	No. of HH interviewed	% of total HH	Type of HH		Type of electricity supply
				Poor	Rich	
Nanyao	34	22	64,7	8	14	No electricity
Dongfeng	38	24	63,1	--	--	35 Pico-Hydro, 1 central Hydro for back-up
Jiuzihai	50	34	68,0	--	--	No electricity
<b>Total</b>	<b>122</b>	<b>80</b>	<b>65,6</b>	<b>--</b>	<b>--</b>	<b>--</b>

# Yunnan - Economic Impacts

- **Increase of Cash Income**

Ø100-200 € (2002) ; Ø 200-250 € (2005) ; in 2007

Up to 200 € : 18%

300 – 400 € : 20%

450 – 500 € : 14 %

501 – 2000 € : 30%

- **Possession of TV-Set**

18,8% (2002) ; 59,2% (2005) ; 86% (2007)

- **Purchase of Appliances for Productive Use**

0% (2002) ; 7% (2005) ; 8% (2007)

- **Productive Use of Electricity**

0% (2002) ; 15% (2005) ; 50% (2007)





# Yunnan - Social Impacts

- **Lightning Conditions**

13,8% (2002) ; 100% (2005) ; 100% (2007)

- **Kids School Attendance**

71% (2002) ; 85% (2005) ; 100% (2007)

64% HH state improved conditions & opportunities

- **Daily Work-load for Women/Men**

11-15h (2002) ; 7-10h (2007)

Changes due to electricity?

Women No (32%); more (26%) less (42%)

Men: No (46%) more (14%) less (40%)

- **Migration** 15% (2002) ; 3% (2005) ; 4% (2007)

# Yunnan - Environmental Impacts

- **Consumption of Dry Cells**

77,5% (2002) ; 25,4% (2005) ; 40% (2007)

- **Consumption of Wax Candles**

75% (2002) ; 7% (2005) ; 10% (2007)

# Conclusions & Outlook

- Short, mid and long-term impact
- Direct / Indirect Impact of Energy
- Health Improvement
- Environmental Sustainability
- Social Changes

# Thank you for your attention !

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