

Mitigation and adaptation in agricultural sector: Case studies in Asia

Asia – Europe Environment Forum COP14 Side Event

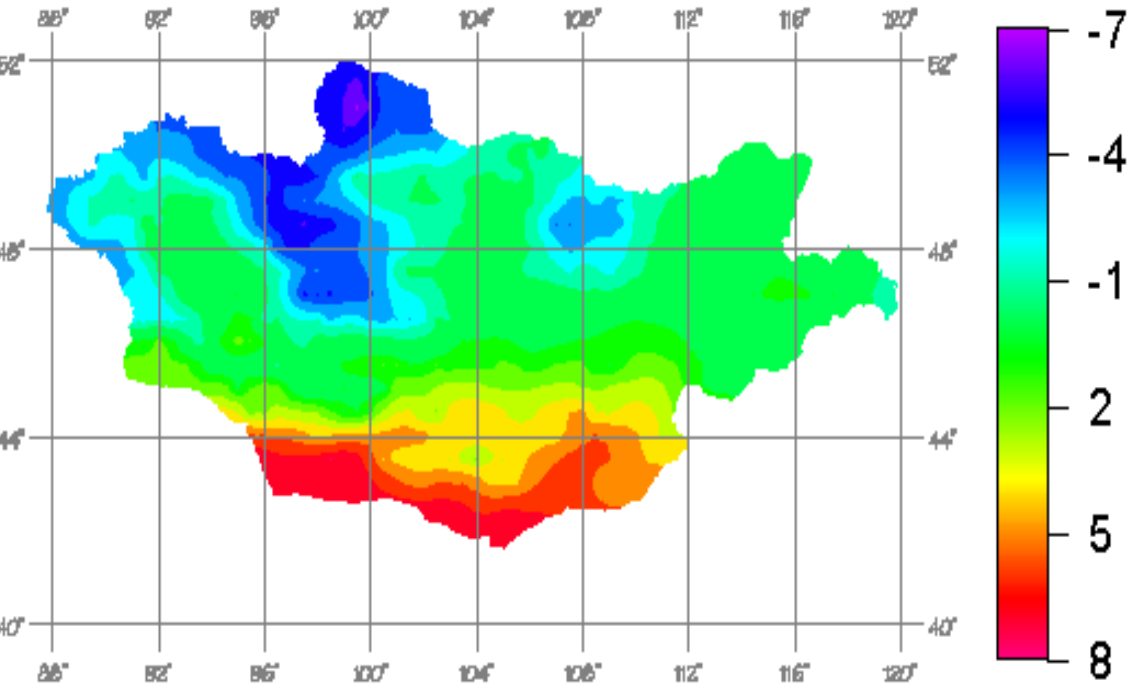
Towards integrated adaptation and mitigation measures in agriculture

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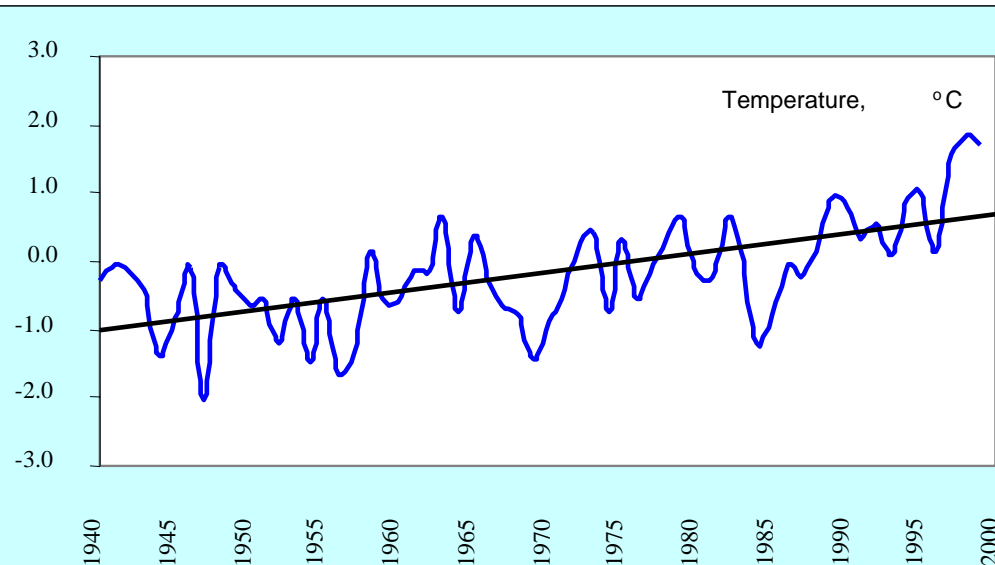
Poznan, Poland
4 December 2008



Fig.1: Climate Change in Mongolia

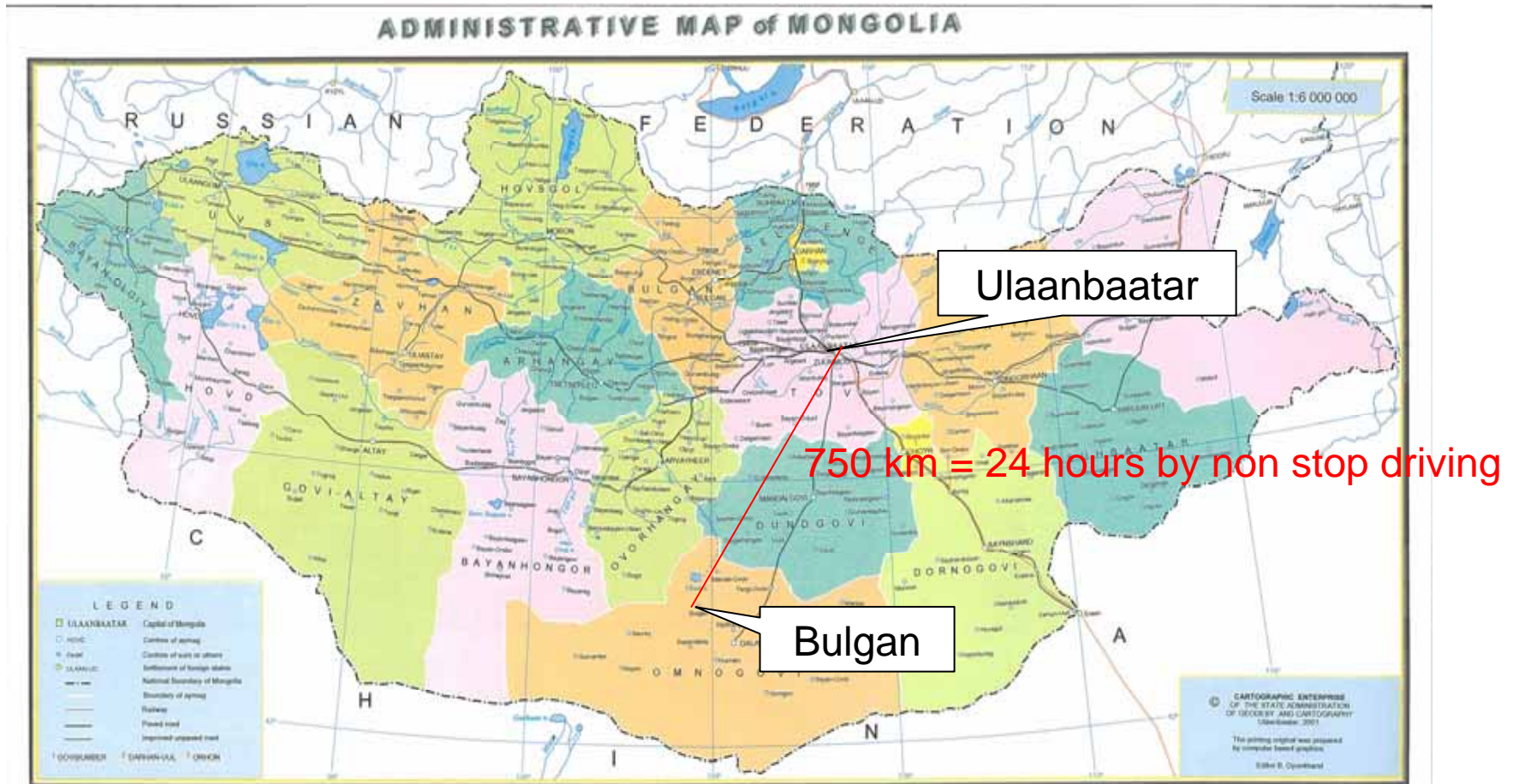


□ Temperature increase in Mongolia: 1.66°C
breakdown:
Winter 3.61
Spring 1.5
Summer 0.3 decrease



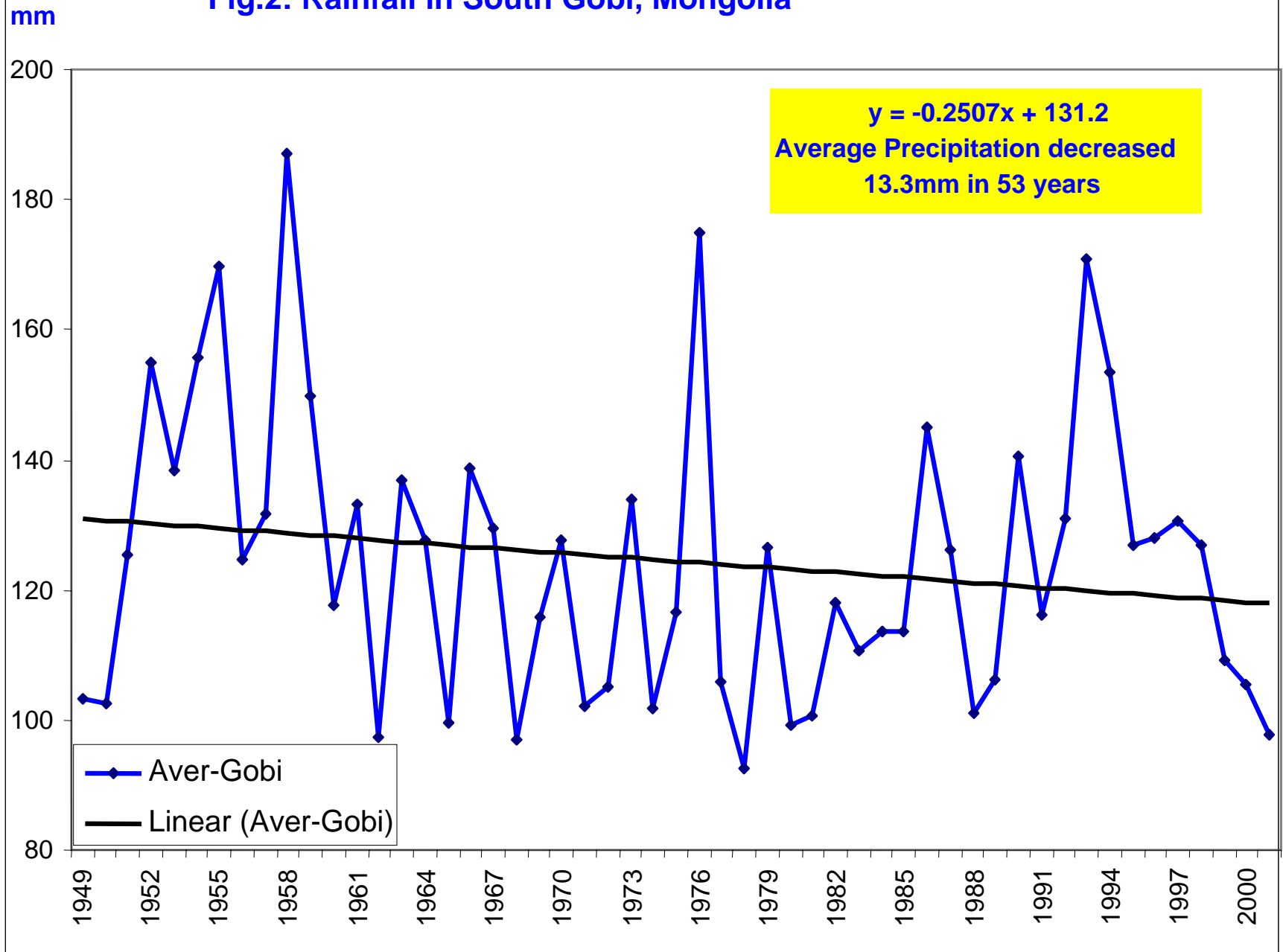
Institute of Metrology and Hydrology,
Mongolia (IMH) 2004

Site location of project “Alternative livelihood development in protected areas and peripheral zones”



Geo-ecology Institute (2008)

Fig.2: Rainfall in South Gobi, Mongolia



Protecting Saxaul forest areas



Livestock and illegal *goyo* (fungi) collectors threatens saxaul forests



Degrading forests and releasing carbons

Demonstrating saxaul regeneration and raising public awareness




Fencing saxaul forest areas and placing a sign board explaining the significance of saxaul forest



Measuring saxaul regeneration rate and people's perceptual changes

Creating income generation alternative to livestock farming



- Establishing fenced farmed land,
 - Using pipes for irrigation
- 
- Need investment for drip irrigation
 - Limited agricultural returns

Project – Disaster management and development in Bangladesh

Project sites

Dinajpur

Gaibandha

Jamalpur

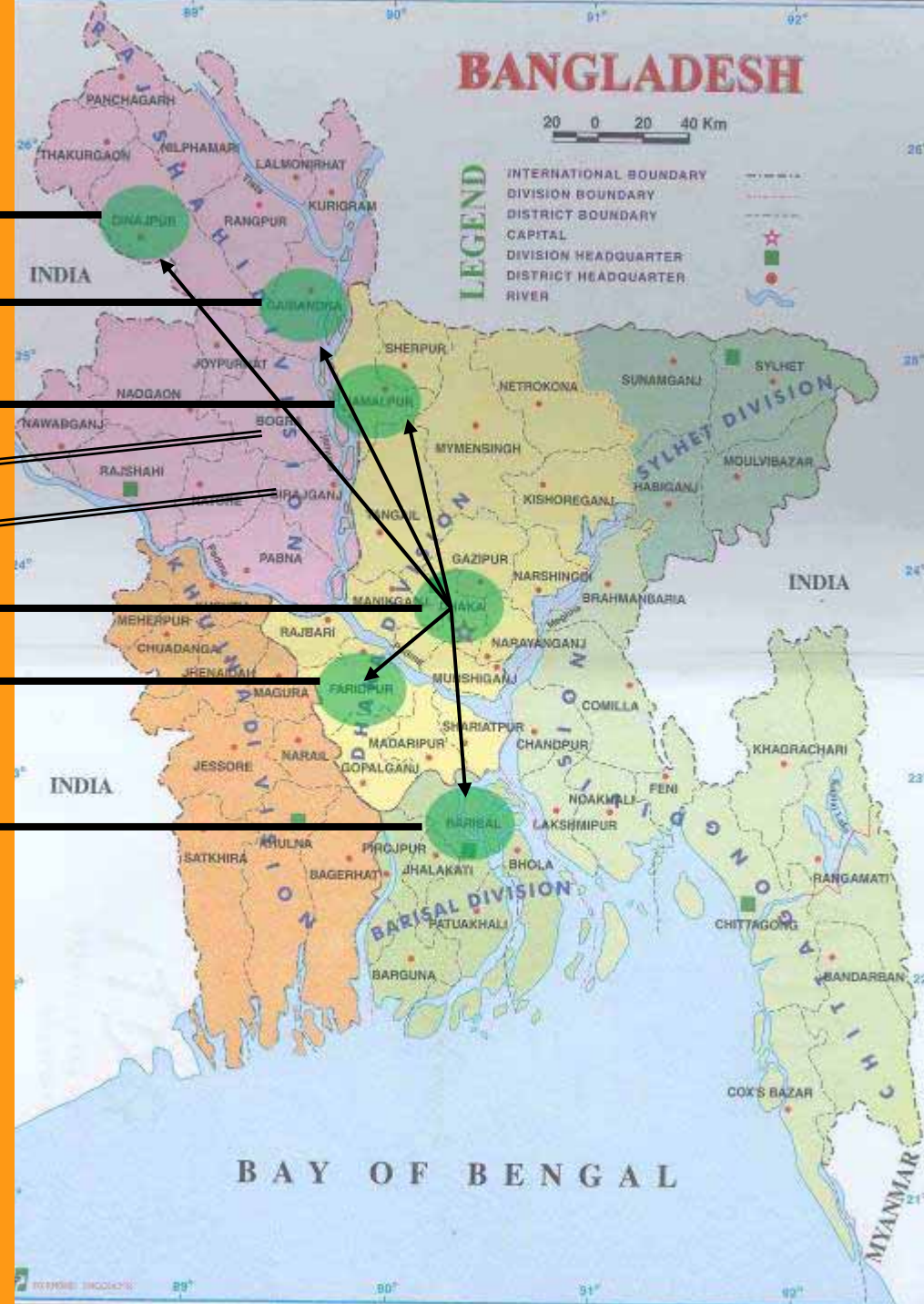
Bogra

Sirajganj

Dhaka

Faridpur

Barisal



2007 Ryutaro Hashimoto
APFED Award Gold Prize

MAJOR DISASTERS and CHALLENGES IN BANGLADESH



FLOOD



CYCLONE



RIVER EROSION



TORNADO

PROGRESS TO DATE

AGRICULTURE

Reached to 5836 (F- 4508 M- 1328) beneficiaries through training and demonstration activities with the following options

PRODUCTION ON FLOOD PROTECTION EMBANKMENT



Source: Practical Action

FLOATING VEGETABLE GARDEN MEANS OF SURVIVAL



Source: Practical Action

FISHERIES

Trained 2030 to date on different technology options and has provided demonstration support to show the impact



Community Based Fisheries



Cage Aquaculture



Fingerling Production in Hapa

Source: Practical Action



Wild Catch for non-resource base HH

LIVESTOCK

Trained 2460 to date and Demonstrated technologies for improve income



Duck Farming



Beef Fattening



Fodder Management

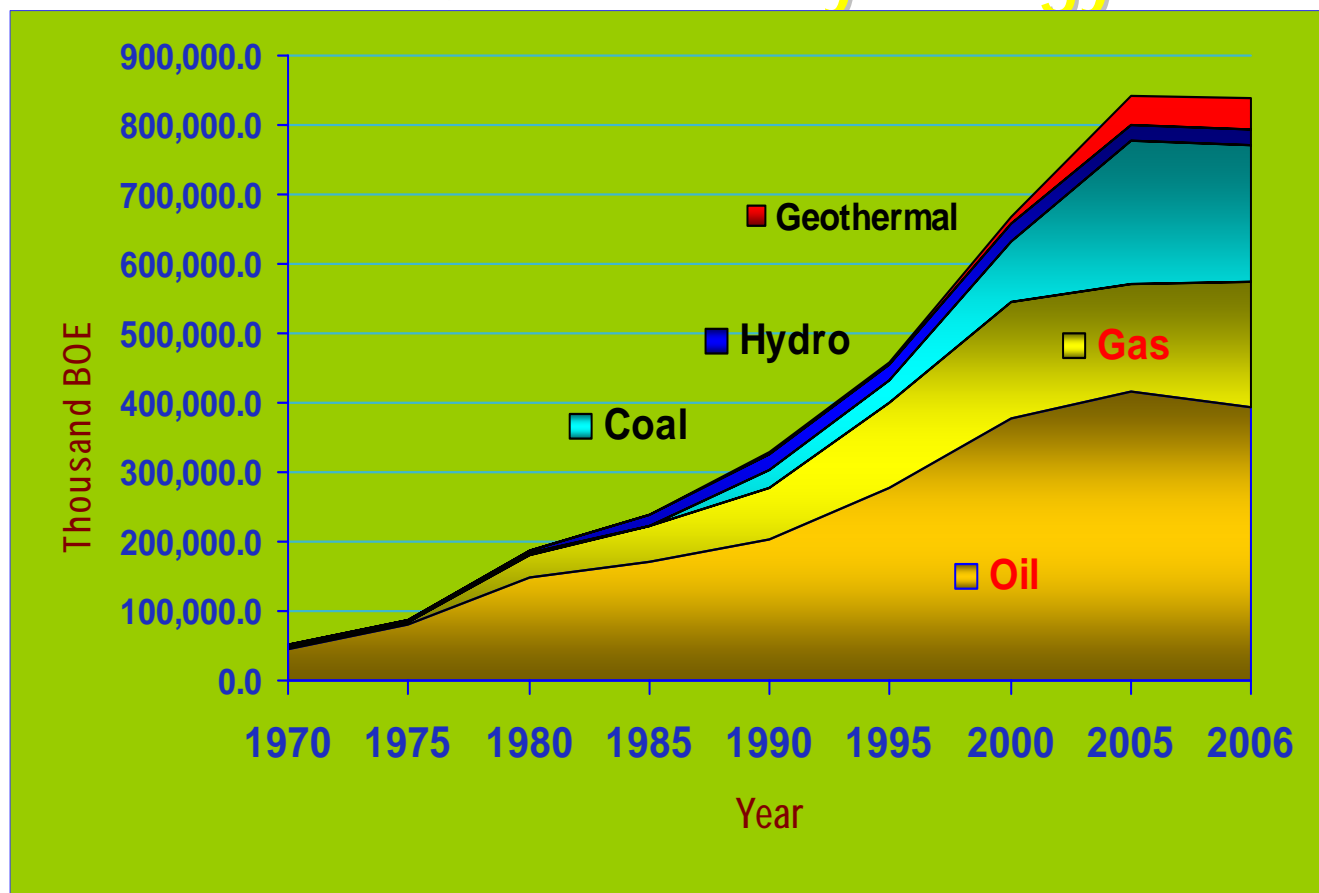


Goat Farming

Source: Practical Action

Micro-hydro promotion in Indonesia

Growth of Primary Energy



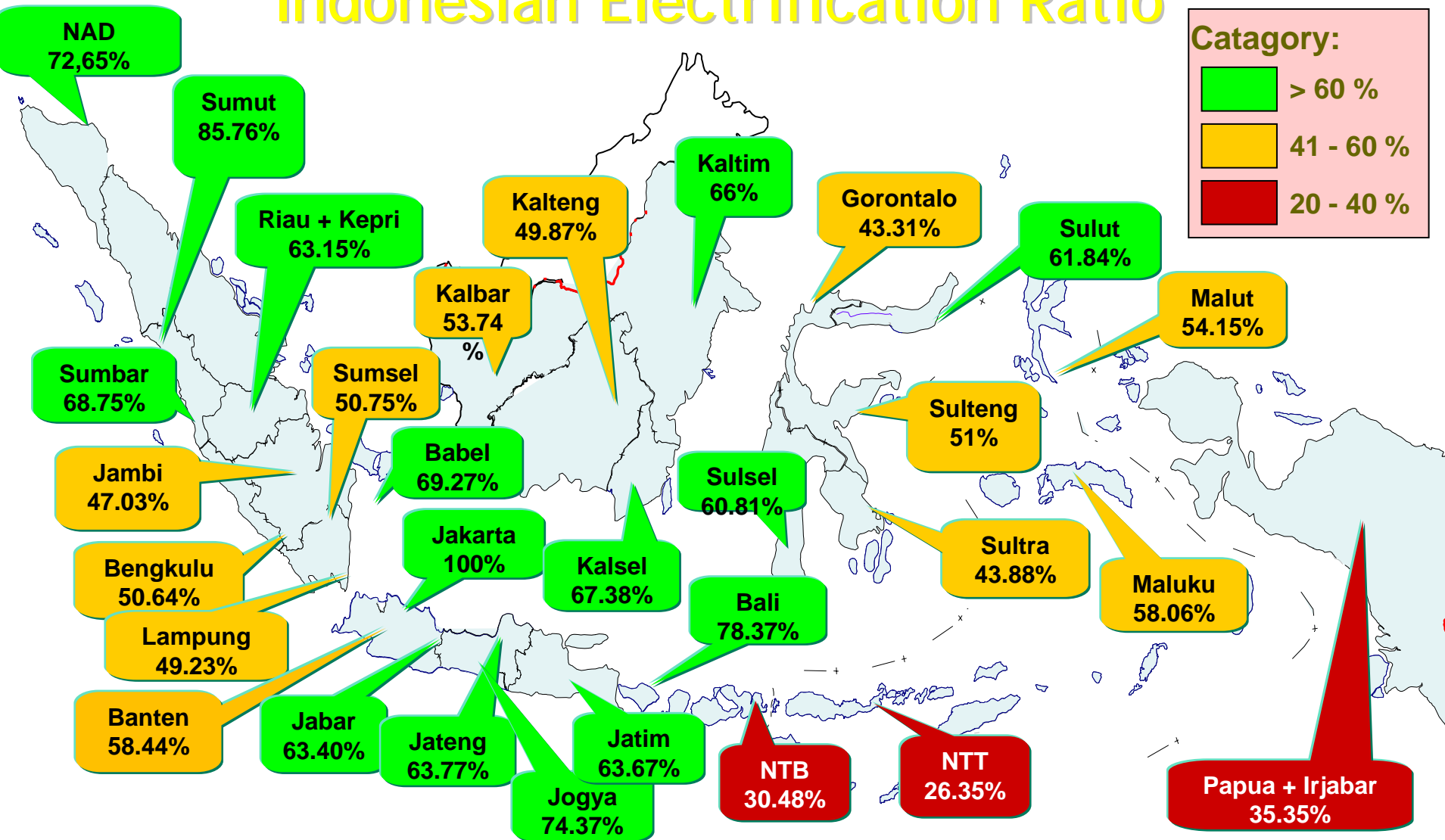
→ Average Growth of Primary Energy 1970-2006 = 7%/year

Source: DGEEU, 2005

Renewable Energy Potential

Non Fossil Energy	Potential	Equivalent	Utilization	Installed Capacity
Water	845 million BOE	75,67 GW	6.851 GWh	4.200 MW
Geothermal	219 million BOE	27 GW	2.593,5 GWh	1045 MW
Mini/Micro hydro	500 MW	500 MW		84 MW
Biomass		49,81 GW		445 MW
Solar Power		4,80 kWh/m ² /day		12 MW
Wind Power		3-6 m/second		0,9 MW

Indonesian Electrification Ratio

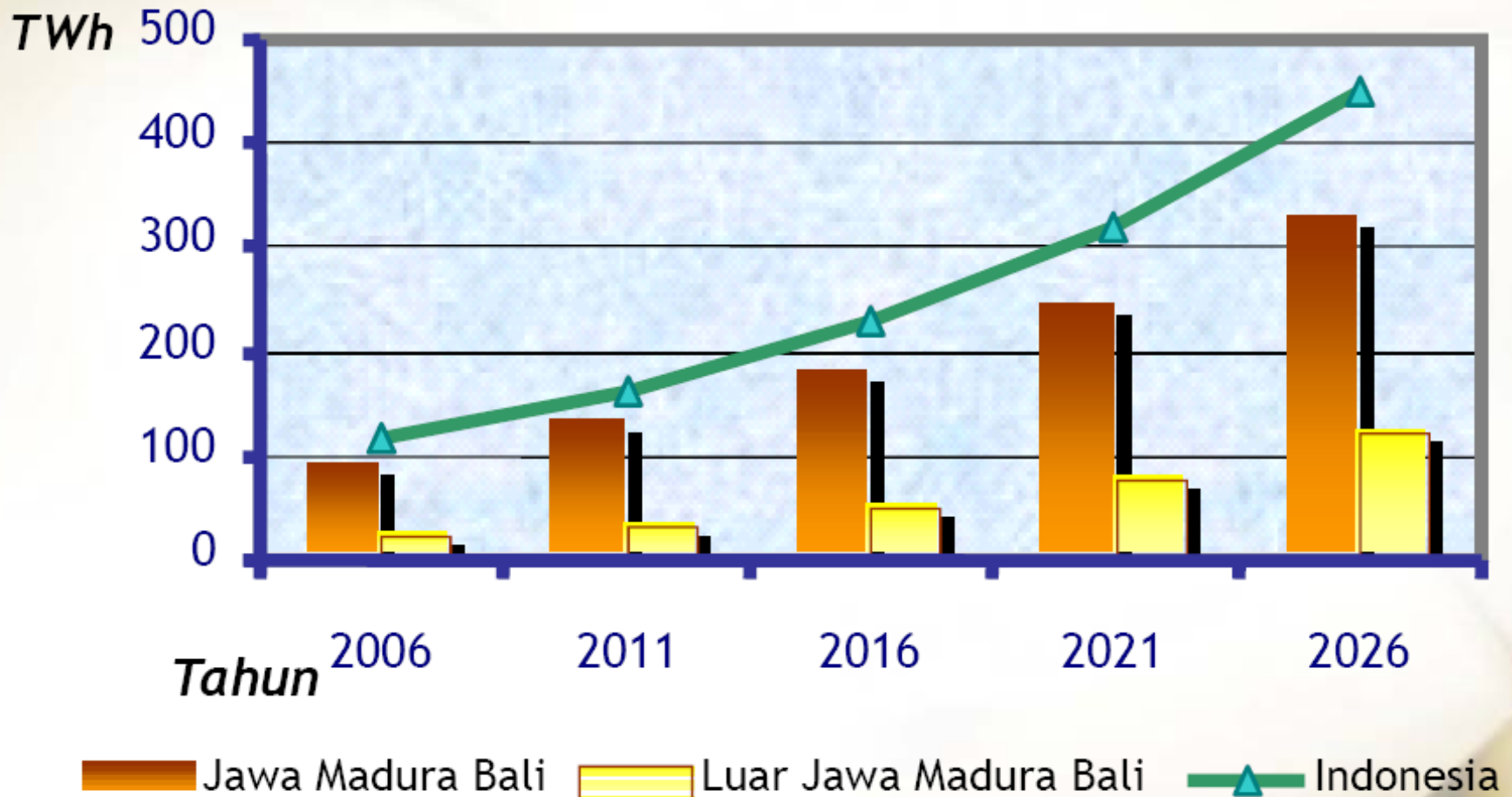


	Year							
	1980	1985	1990	1995	2000	2005	2006	2007
Electrification Ratio	8%	16%	28%	43%	53%	62%	63%	64%

Source: LIPI

National Electricity Demand

(National Electricity Plan 2006-2026)



Bogor. West Java





Photo 1: A stream runs in Village Sukaharja



A stream runs in Village Sukaharja



Micro-hydro turbine manufactured in the country

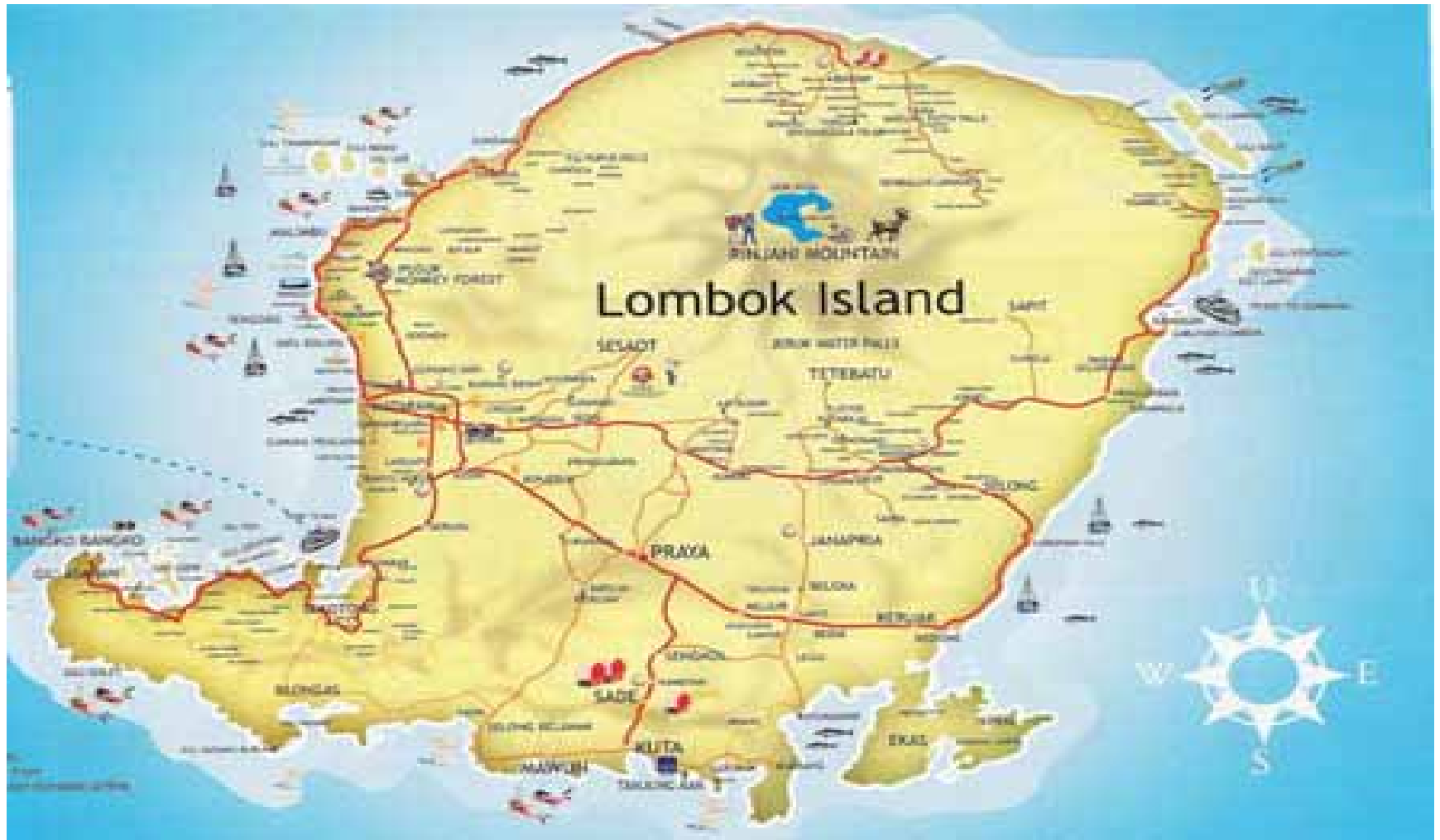


Hole where a micro-hydro turbine will be installed



Paddy land in Village Sukaharja

Lombok Island





- Southern part
- Encountering water shortage and no grid access
- Dry/rainy season



Solar/hydro hybrid desired



- Northern part
- Abundant water from mountains
- Rice cultivation
- Affluent communities connected with grid

Observations

1. Shared perception of climate change,
2. Lack of climatic data – Increasing temperature, declining precipitation, increase in disasters
3. No technical skills and knowledge for measuring carbon sequestration,
4. There is always a weighted emphasis on either of mitigation or adaptation,
5. Poor and marginalized communities have less mitigation options and adaptation capability,
6. Optimal use of land and water is a key,
7. Legislative and market reforms haven't been promoted in a way to promote investment

Actions to be pursued

1. Verifying the people's shared perception of climate change,
2. Quantifying mitigation and adaptation potential and impacts,
3. Assisting poor and marginalized communities in obtaining mitigation options and developing adaptation capability,
4. Identifying legislative and policy gaps and market deficiency, and proposing changes/reforms to promote investment in mitigation/adaptation measures in agricultural sector,
5. Sharing good practice on co-benefit activities for tackling climate change in agricultural sector