International seminar

on

Energy Efficiency

"Energy Efficiency in Nepali Industries – Experience and way forward "

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Federation of Nepalese Chambers of Commerce and Industry (FNCCI)

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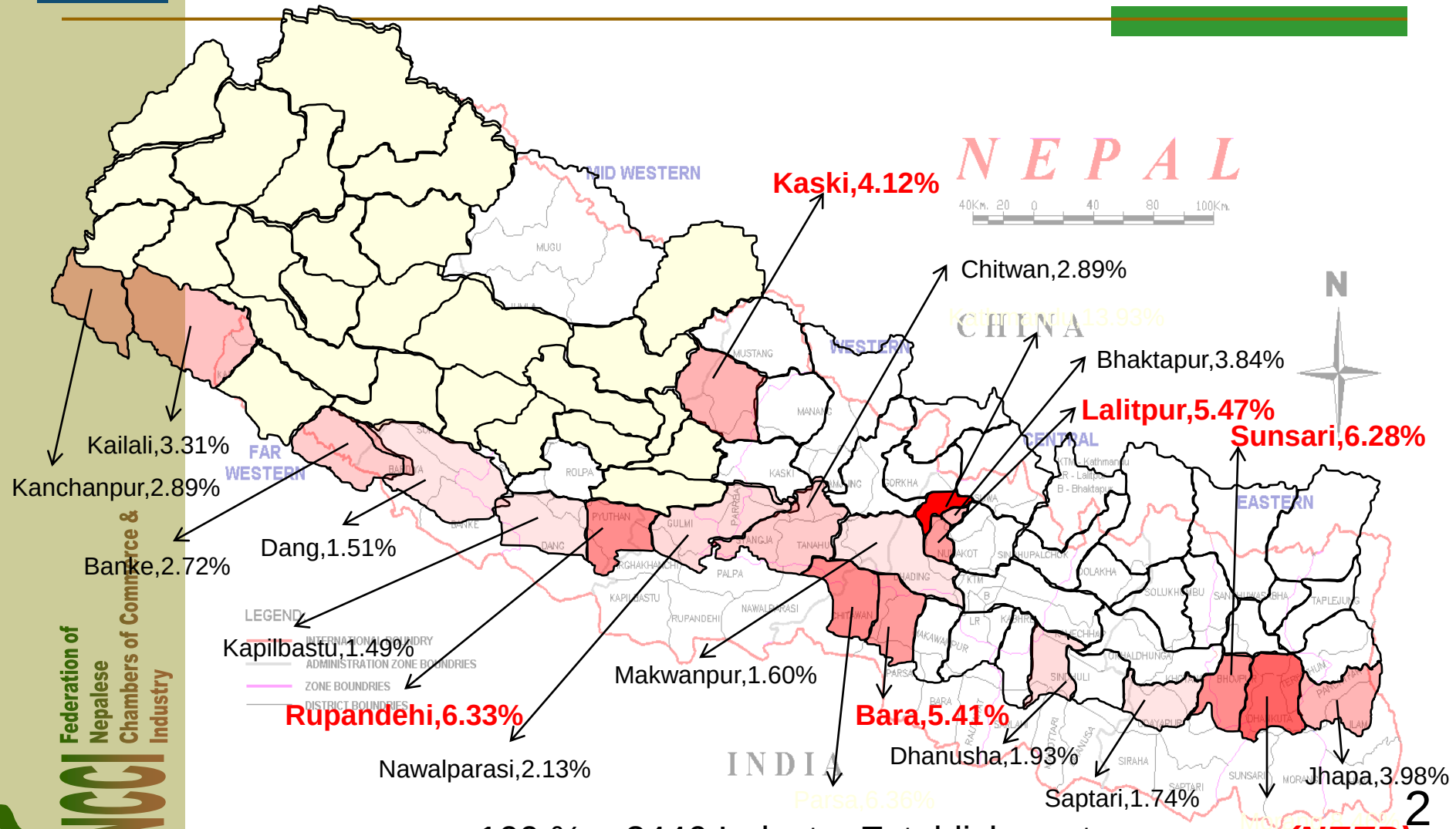
Kathmandu

Federation of Nepalese Chambers of Commerce & Industry

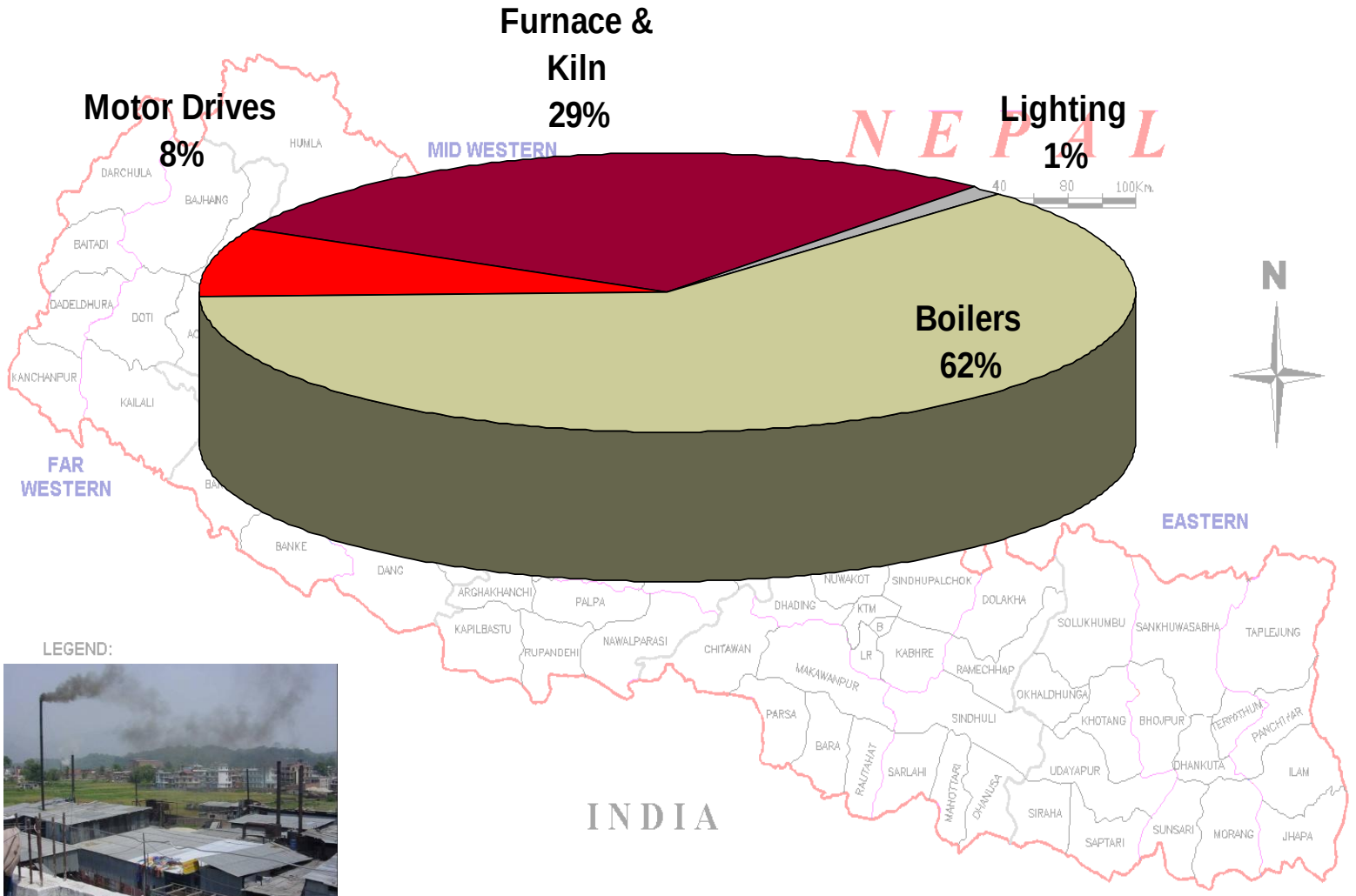
Distribution of manufacturing industries in the country



100 % = 3446 Industry Establishments

(NEEP)

Energy Use in Industries



Historical Context: Experiences of energy efficiency in industries

UNIDO

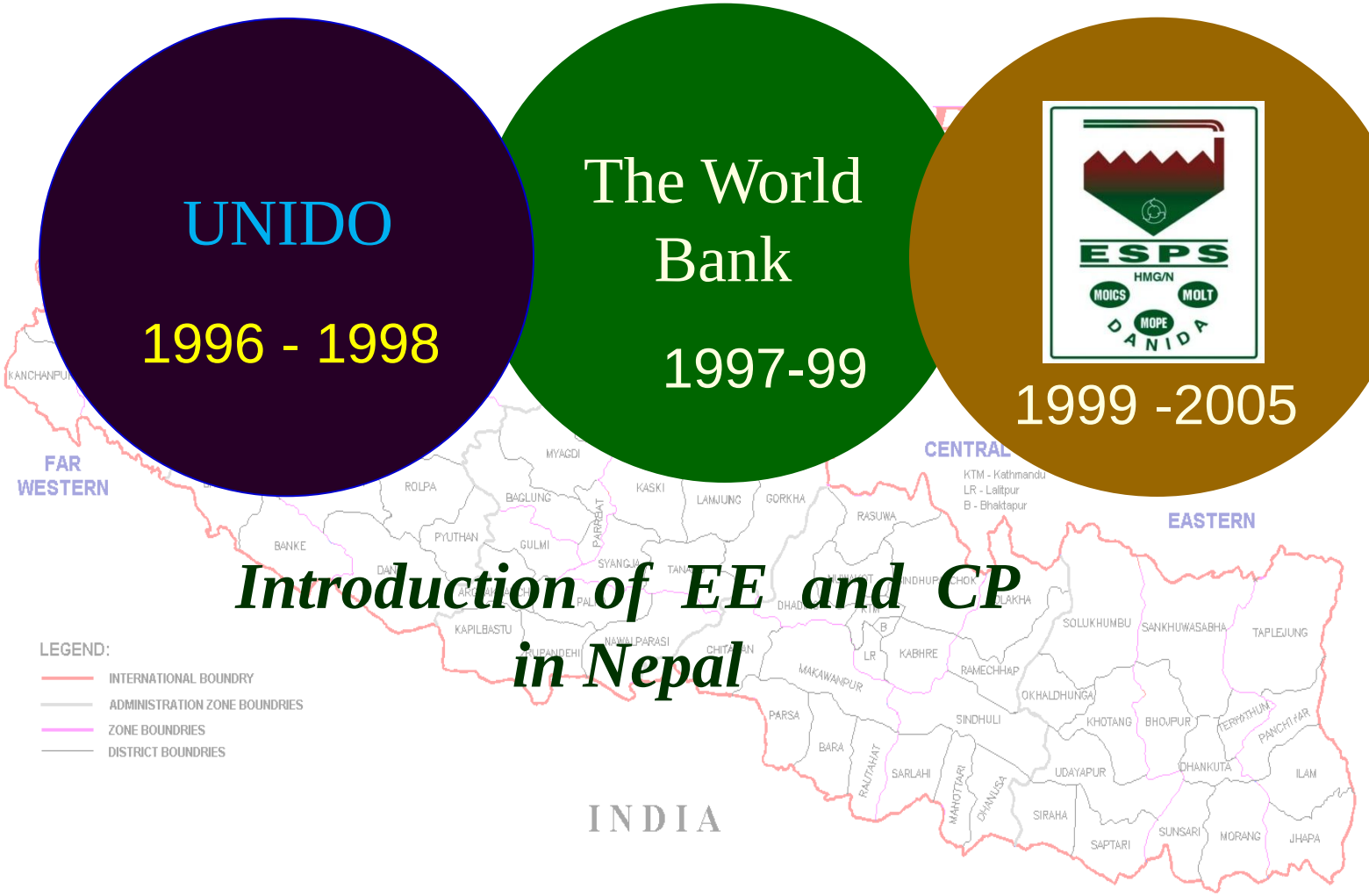
1996 - 1998

The World Bank

1997-99

ESPS HMG/N MOICS MOLT MOPE DANIDA

1999 -2005



Introduction of EE and CP in Nepal

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ESPS Intervention in Industries

Industries participated: 360

- Cottage & Small : 66%
- Medium: 21%
- Large: 13%

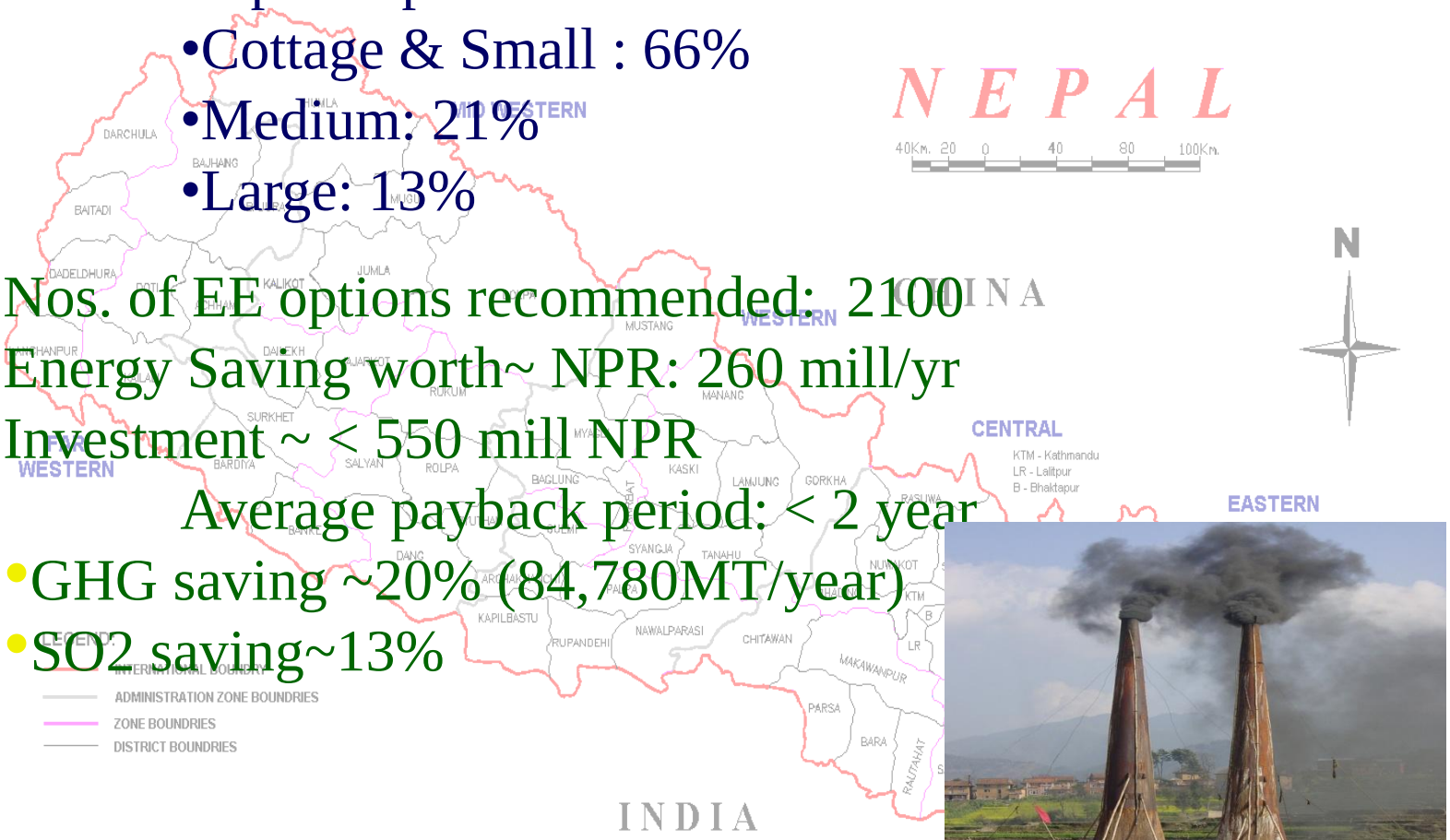
Nos. of EE options recommended: 2100

Energy Saving worth~ NPR: 260 mill/yr

Investment ~ < 550 mill NPR

Average payback period: < 2 year

- GHG saving ~20% (84,780MT/year)
- SO2 saving~13%

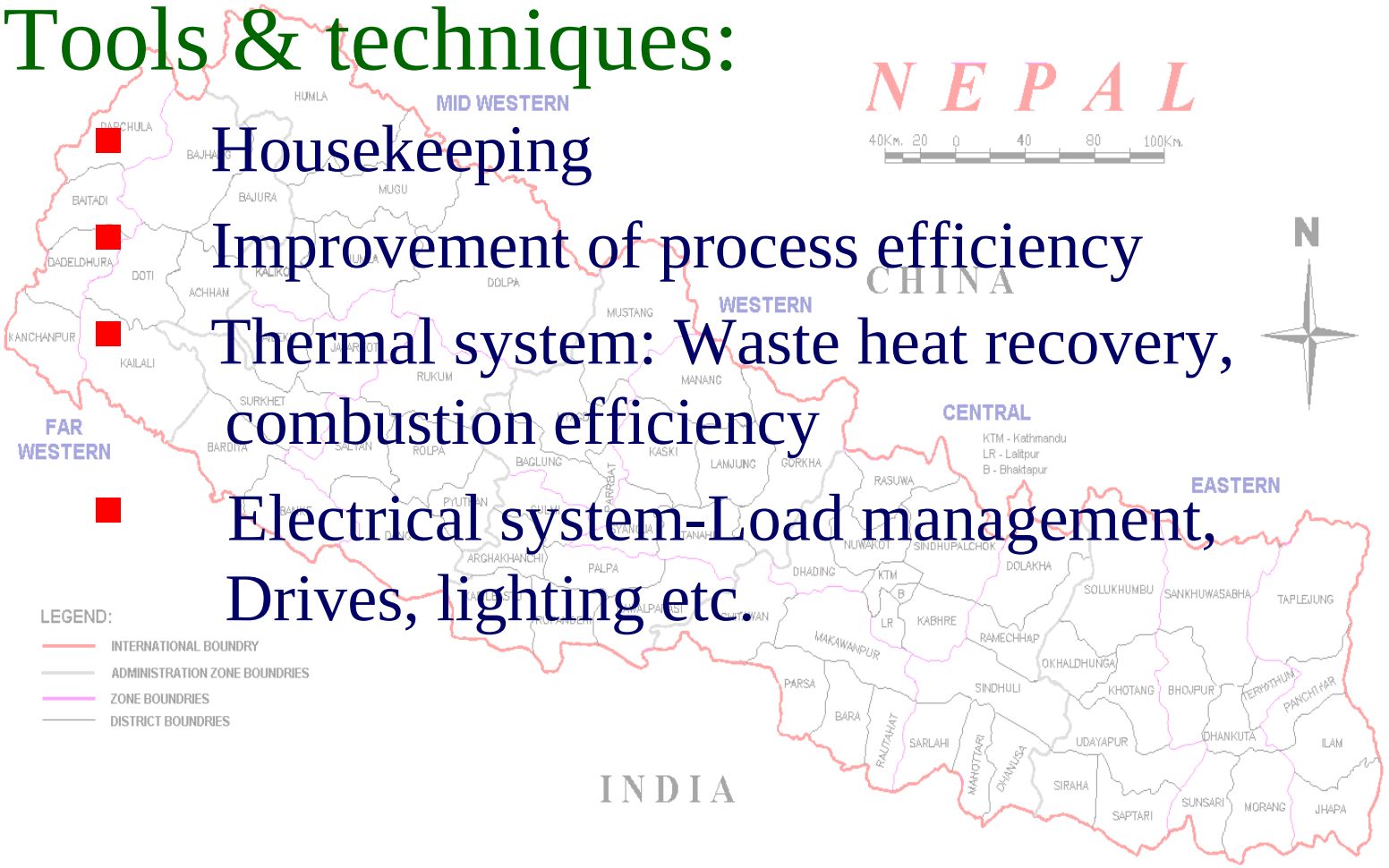


Air Pollution

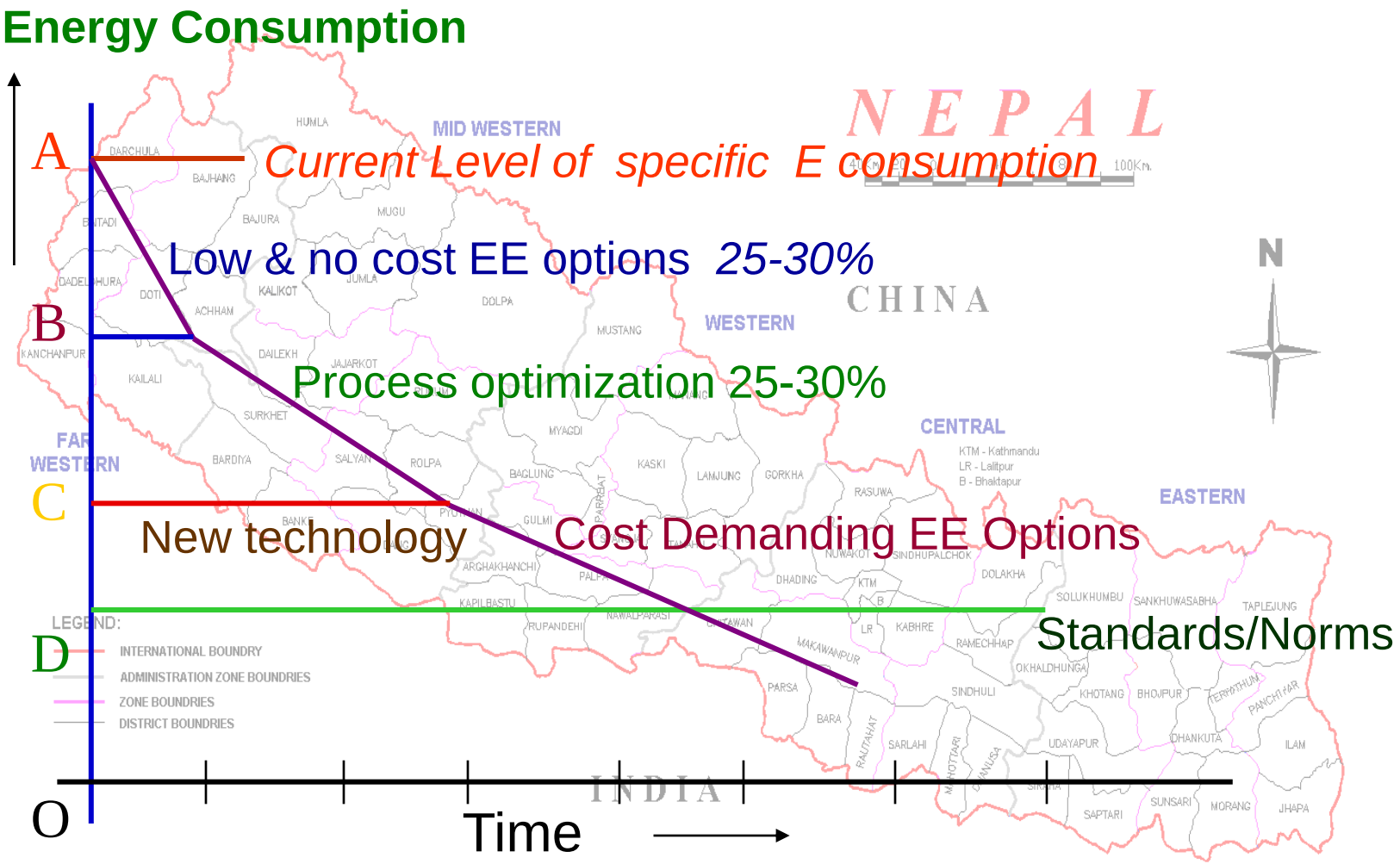
Energy Saving

Tools & techniques:

- Housekeeping
- Improvement of process efficiency
- Thermal system: Waste heat recovery, combustion efficiency
- Electrical system-Load management, Drives, lighting etc.



Energy Efficiency intervention



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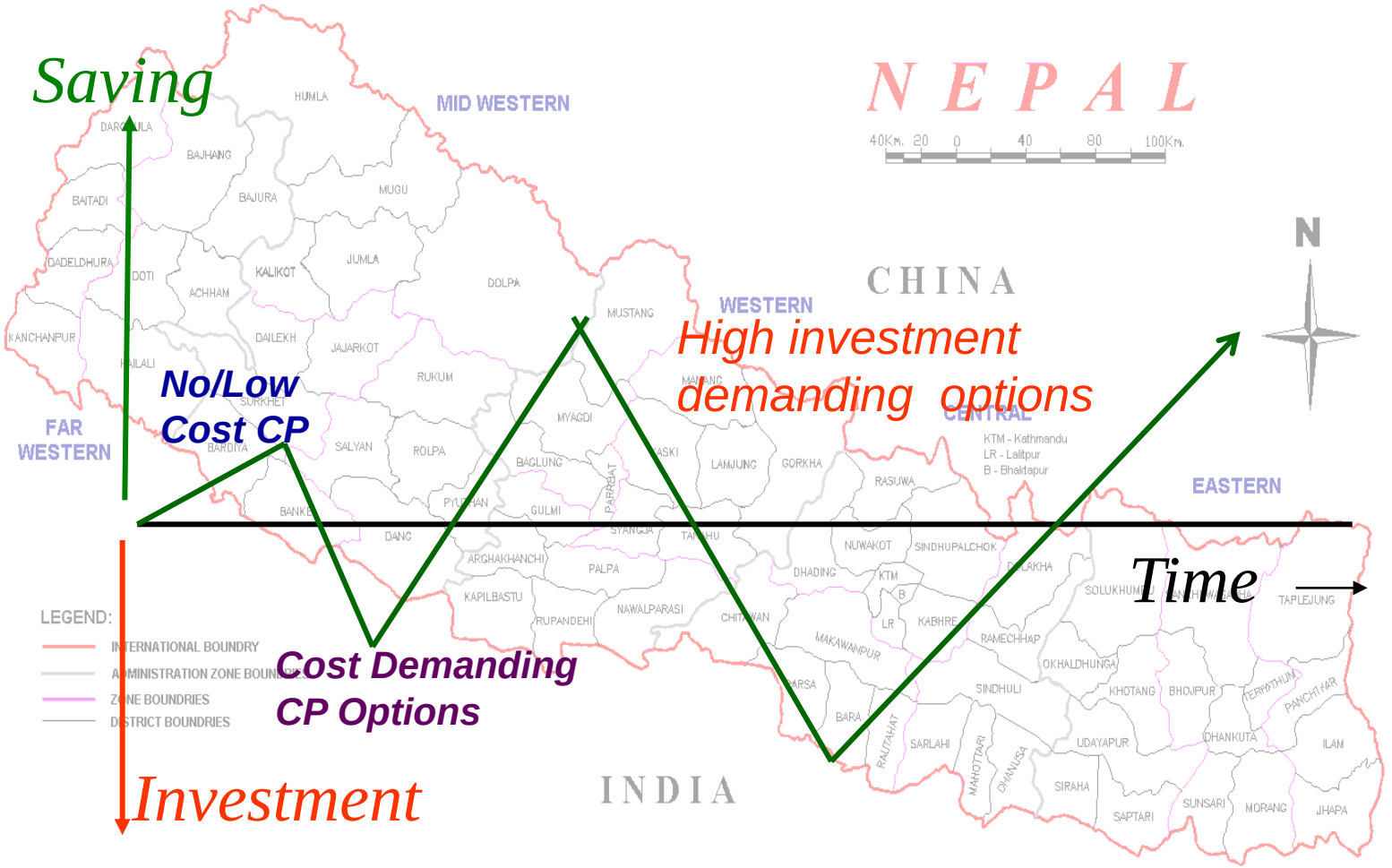
Investment, Saving & Sustainability



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Why previous EE program could not sustain?

- First integrated project: attitudinal barriers
- lack of demonstration project for replicate effect
- no energy efficiency policy or legislative requirement
- Uncertainty about outcome
- lack of feeling of ownership
- No self EE assessment and government monitoring mechanism was in place -EMS
- Follow up on the industry
- Activities not institutionalized

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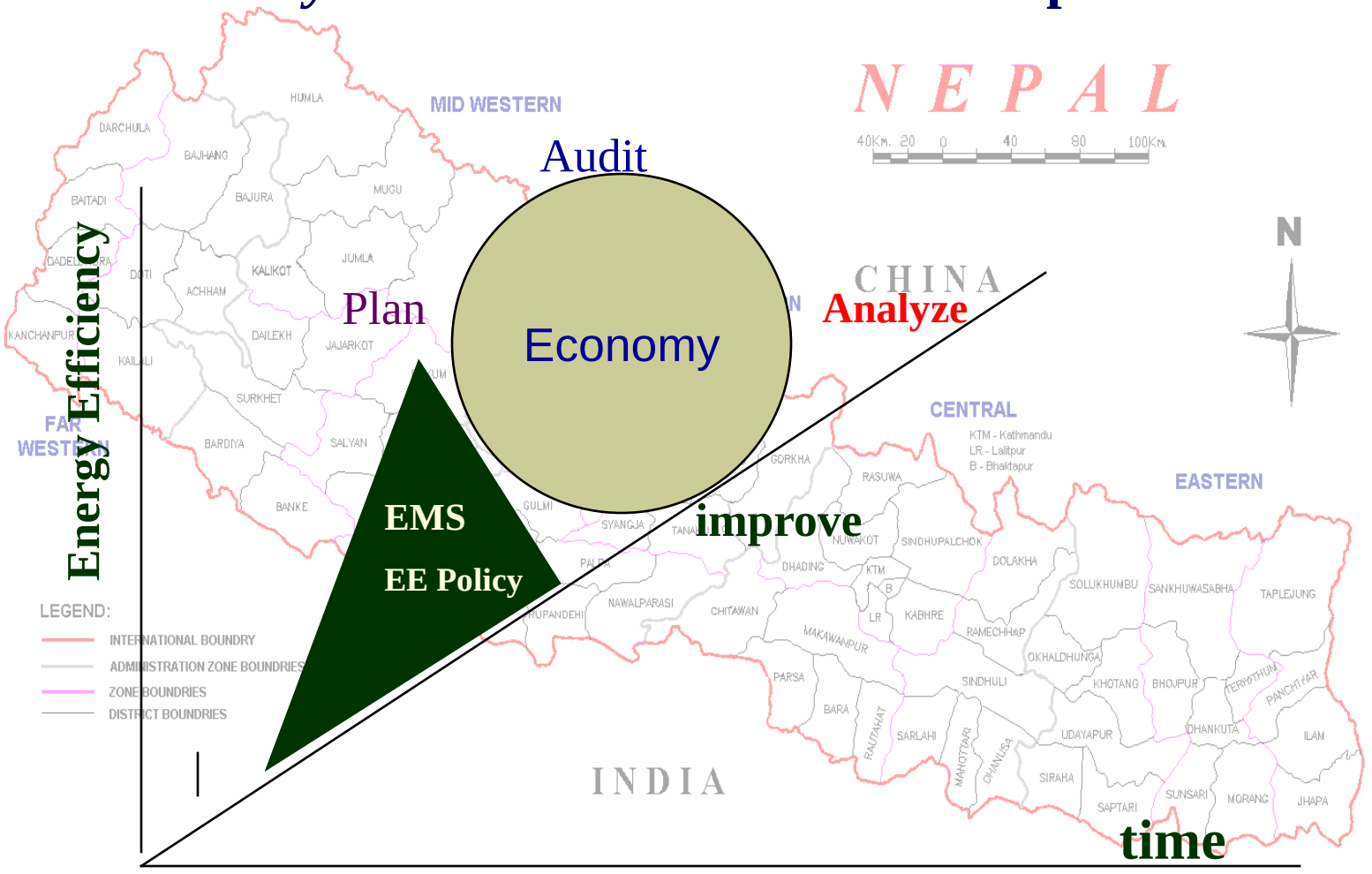
Way forward planning for sustainability

EE in industry: vehicle for Economic Development



Success case study

Evaporative Condenser

Case DDC: Condenser with open panel and fouled condenser tube with scales.

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After Cleaning & encapsulating

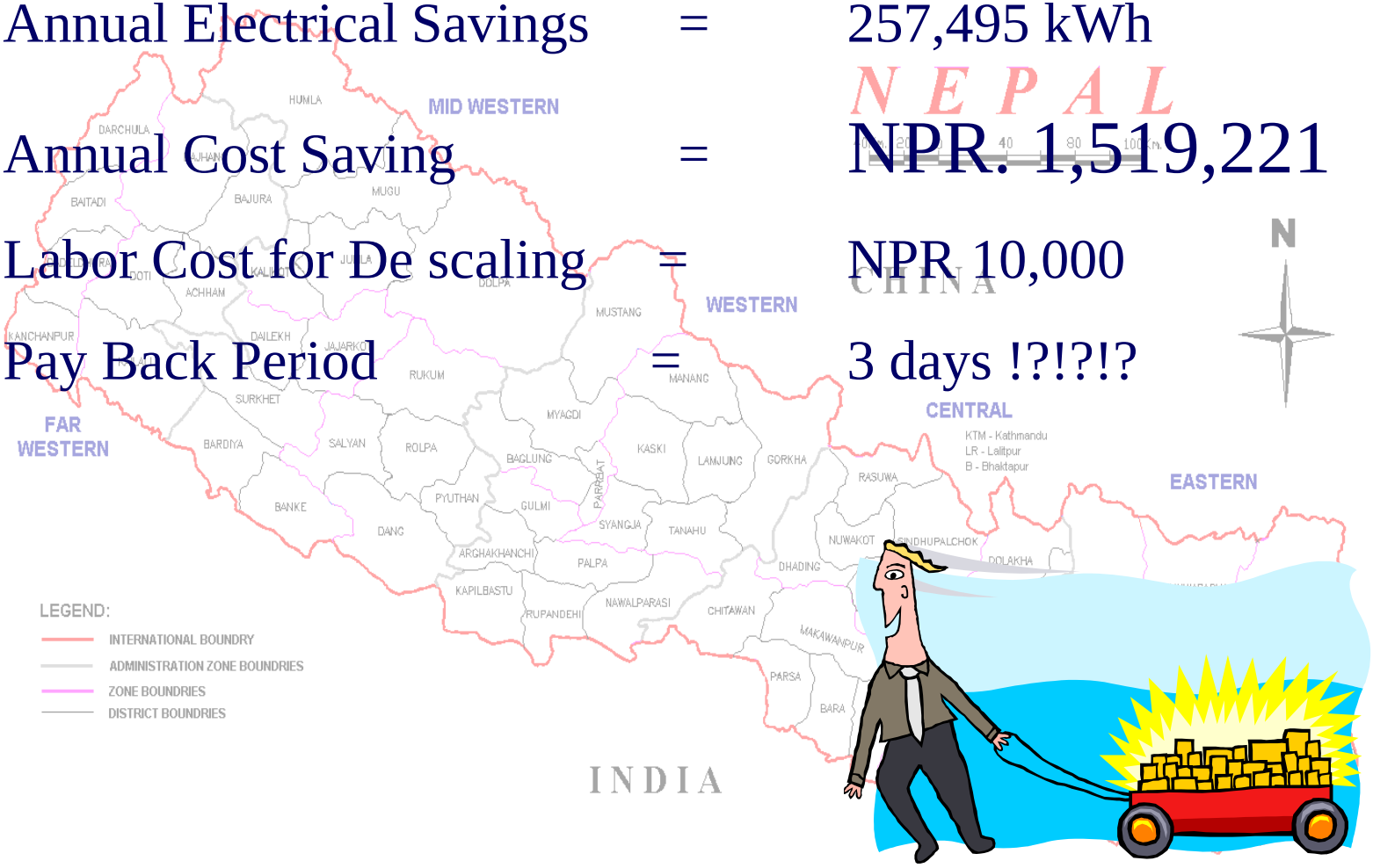
Savings:

Annual Electrical Savings = 257,495 kWh

Annual Cost Saving = NPR. 1,519,221

Labor Cost for De scaling = NPR 10,000

Pay Back Period = 3 days !?!?!?

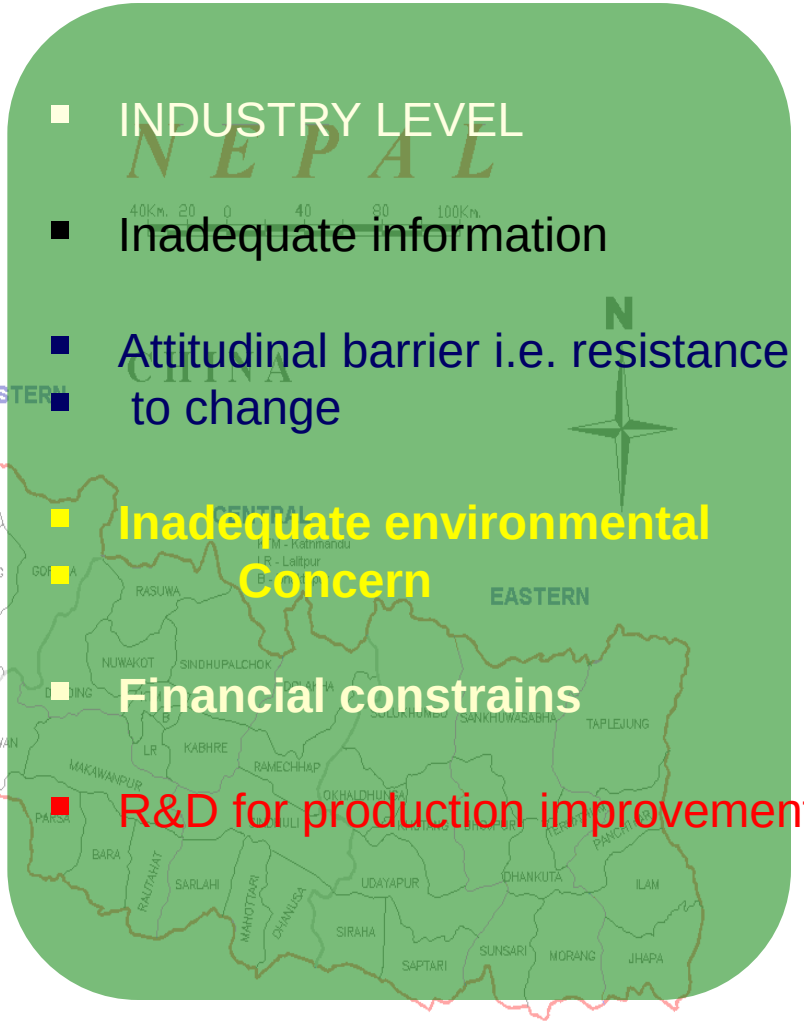


Barriers to EE in Industry

POLICY LEVEL:

- Government's Commitment
- Bench marking, and Energy management Planning
- Financial Incentives and Penalties for Non-Compliance
- Energy Audit: Voluntary to Mandatory

- INDUSTRY LEVEL
- Inadequate information
- Attitudinal barrier i.e. resistance to change
- **Inadequate environmental Concern**
- **Financial constrains**
- R&D for production improvement



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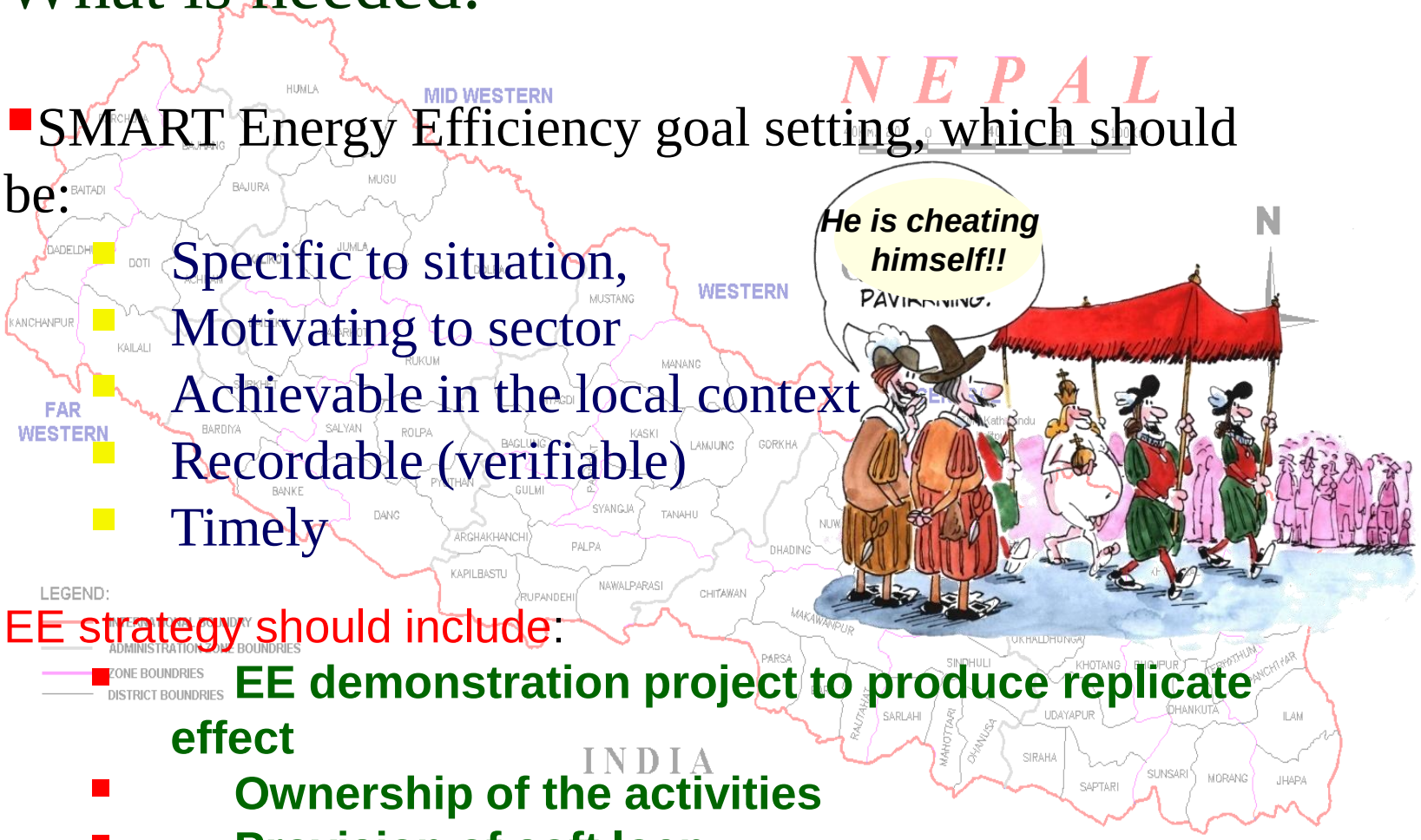
No more emperors new cloth

What is needed:

- SMART Energy Efficiency goal setting, which should be:
  - Specific to situation,
  - Motivating to sector
  - Achievable in the local context
  - Recordable (verifiable)
  - Timely



EE strategy should include:

- **EE demonstration project to produce replicate effect**
- **Ownership of the activities**
- **Provision of soft loan**

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Why Energy Management?

- Indicator of national economic development
- Social responsibility
- Financial benefit
- Technical innovation
- Better working conditions

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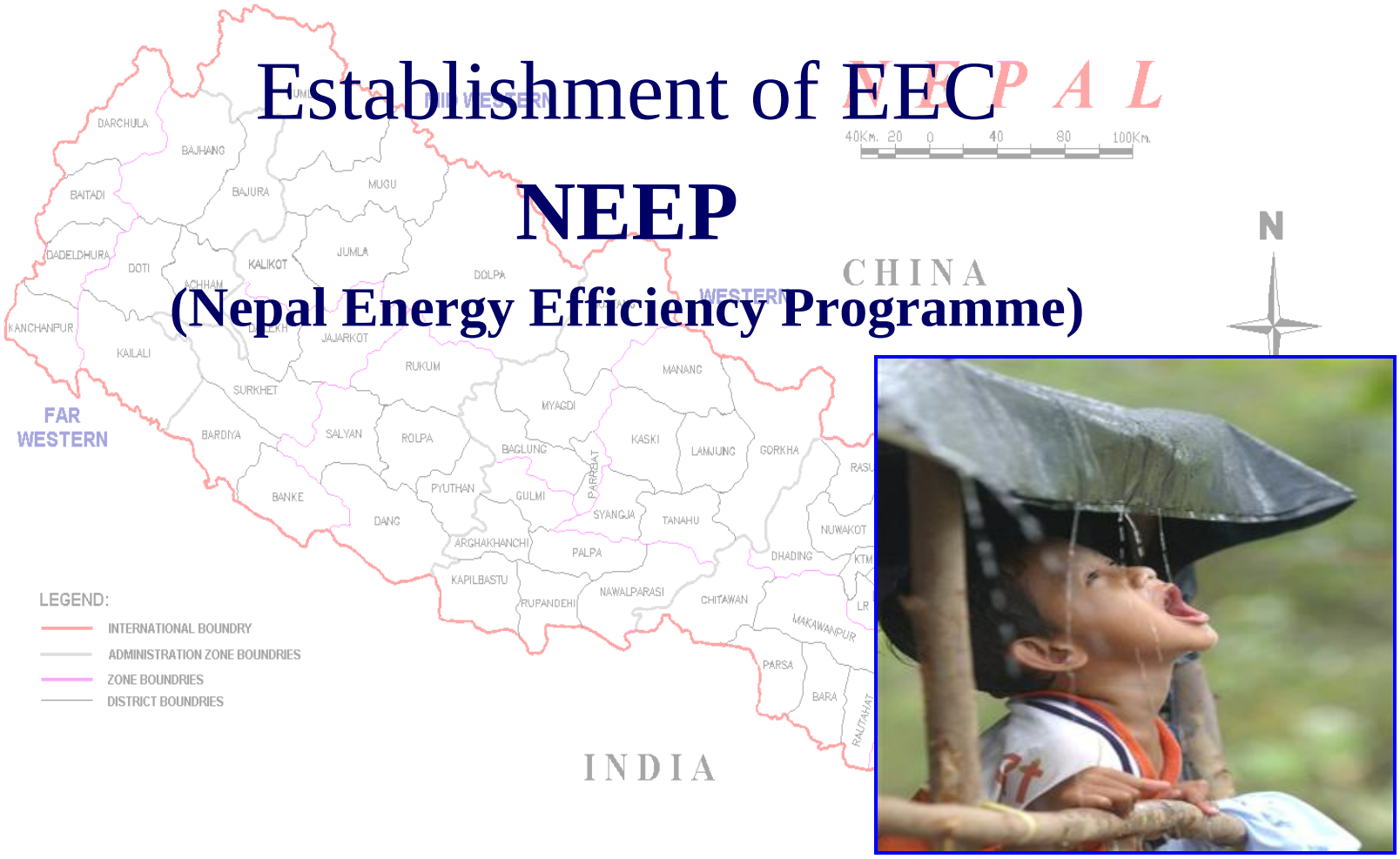
New Initiative towards Industrial Energy Management

Establishment of EEC

NEEP

(Nepal Energy Efficiency Programme)



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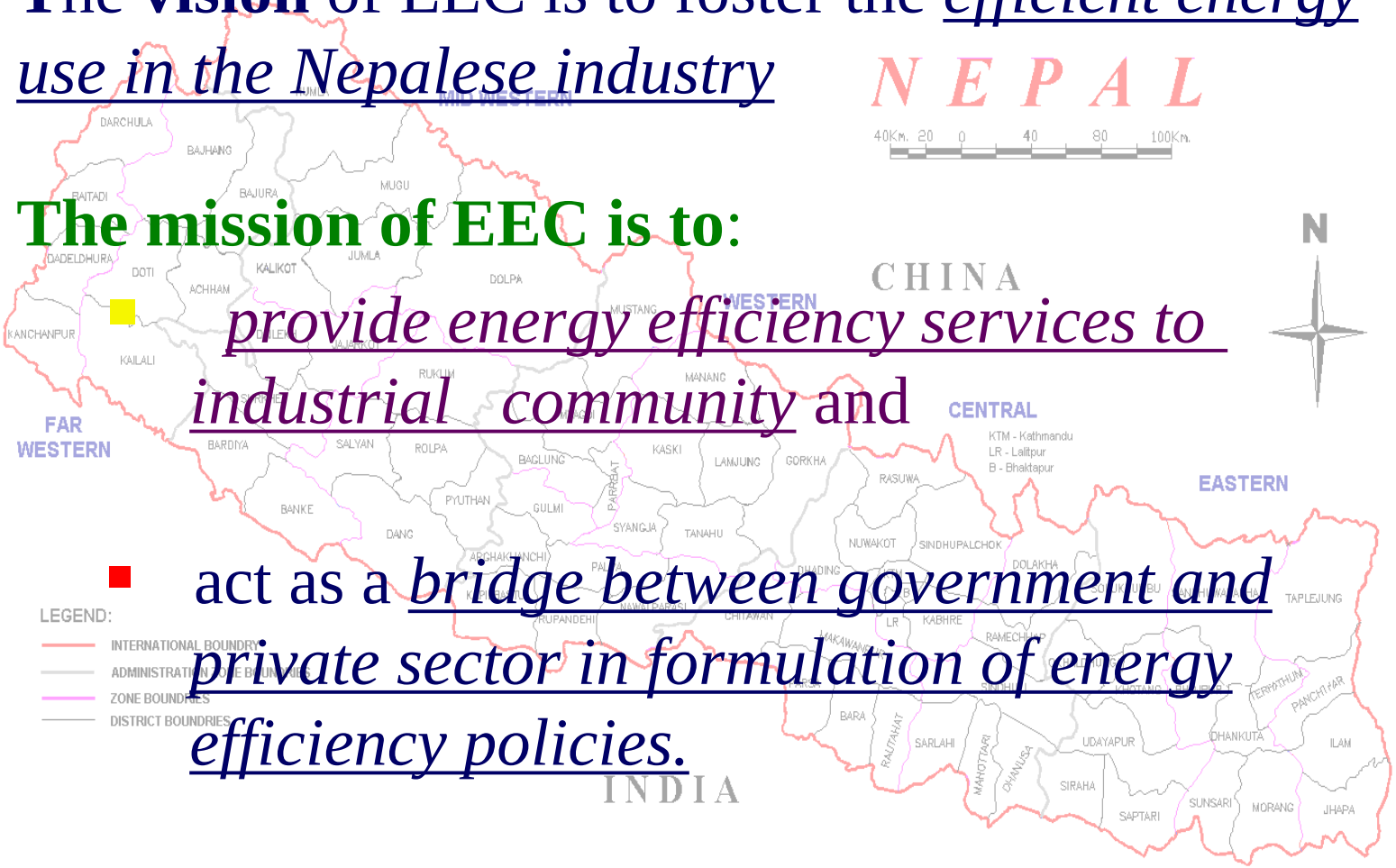
Strategy

The **vision** of EEC is to foster the *efficient energy use in the Nepalese industry*

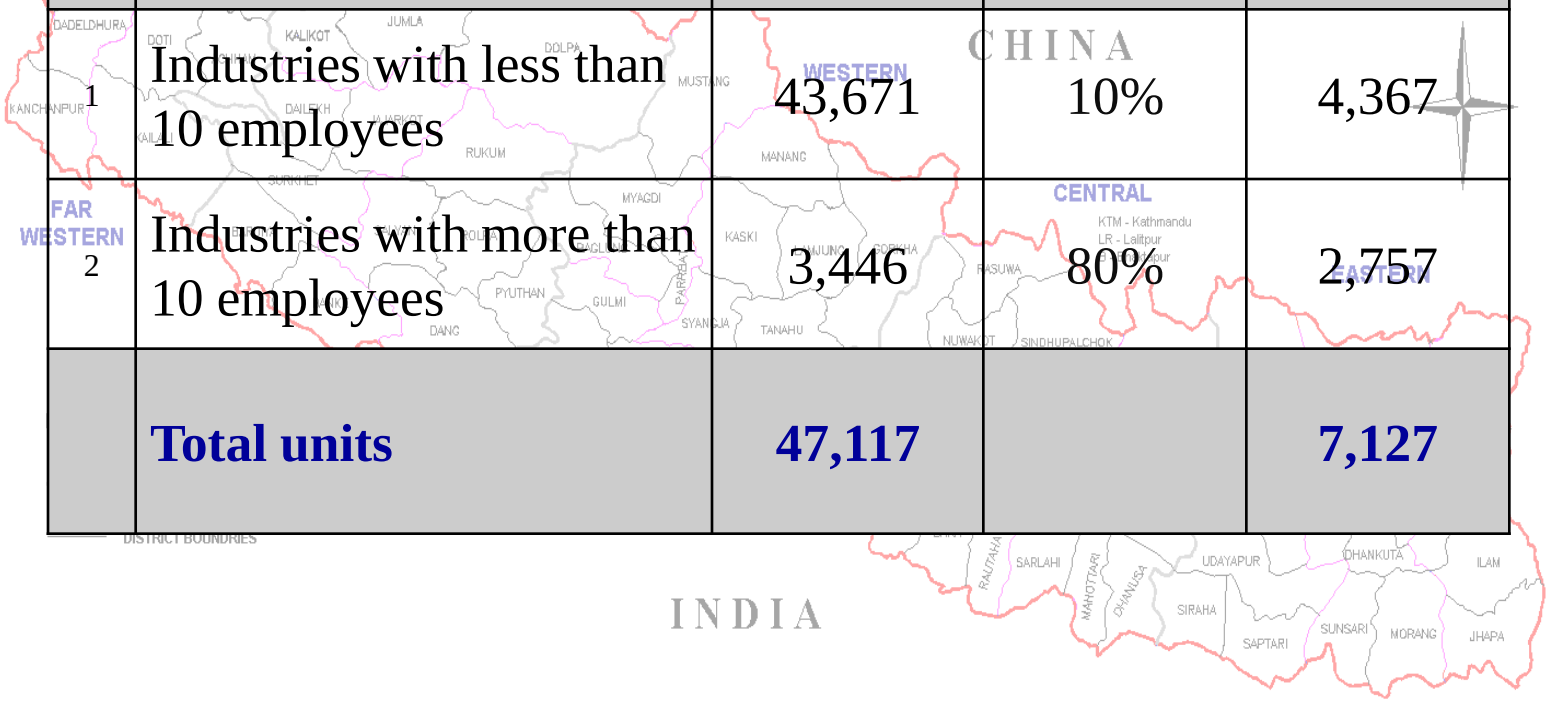
The mission of EEC is to:

- *provide energy efficiency services to industrial community* and
- act as a *bridge between government and private sector in formulation of energy efficiency policies.*



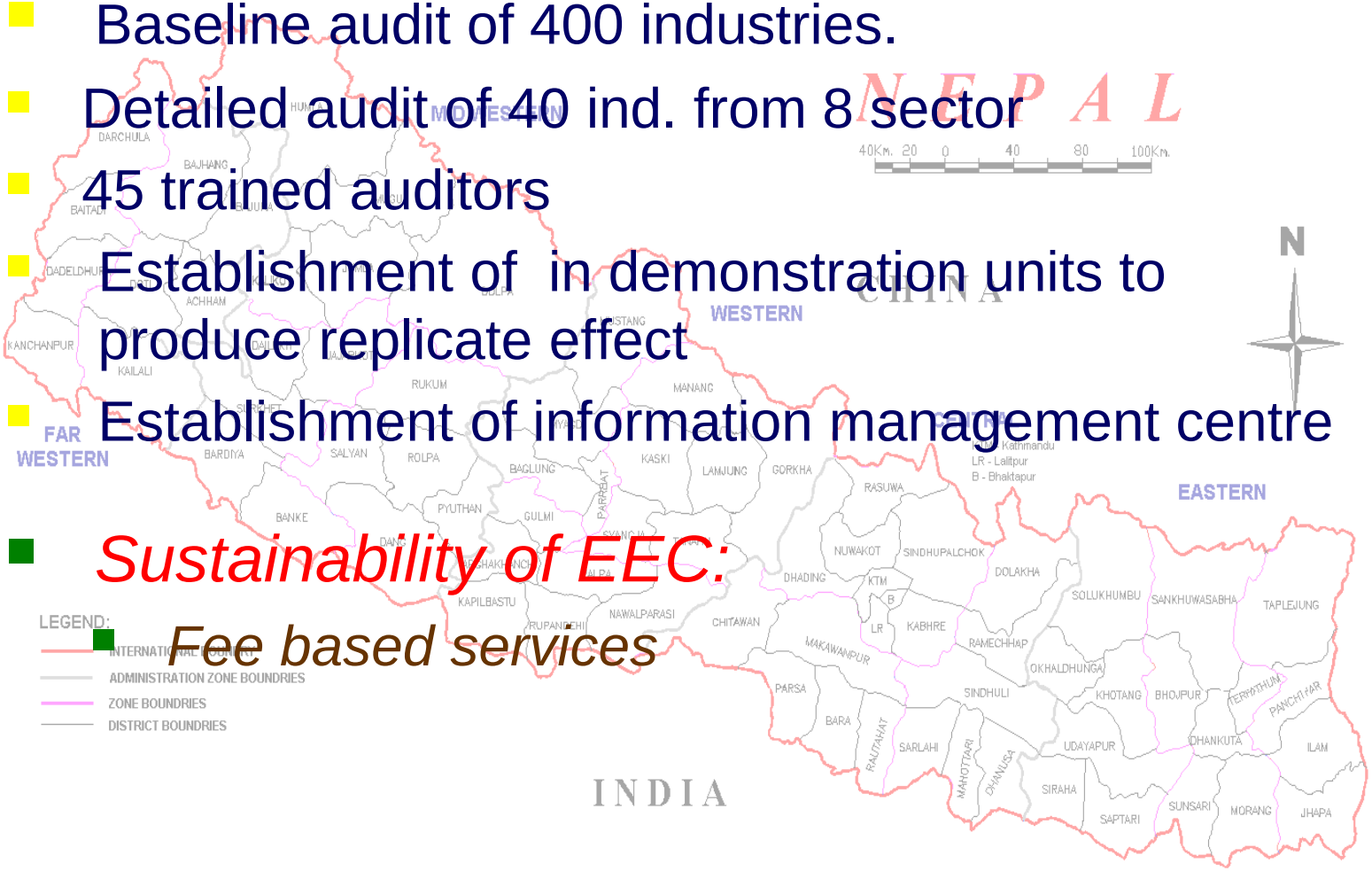
Potential Number of Industries for EE Intervention

S. N	Industrial Category	Total No.	% Candidate	POTENTIAL NUMBER
1	Industries with less than 10 employees	43,671	10%	4,367
2	Industries with more than 10 employees	3,446	80%	2,757
	Total units	**47,117**		**7,127**



Envisaged outputs and outcomes

- Baseline audit of 400 industries.
- Detailed audit of 40 ind. from 8 sector
- 45 trained auditors
- Establishment of in demonstration units to produce replicate effect
- Establishment of information management centre
- *Sustainability of EEC:*
  - *Fee based services*



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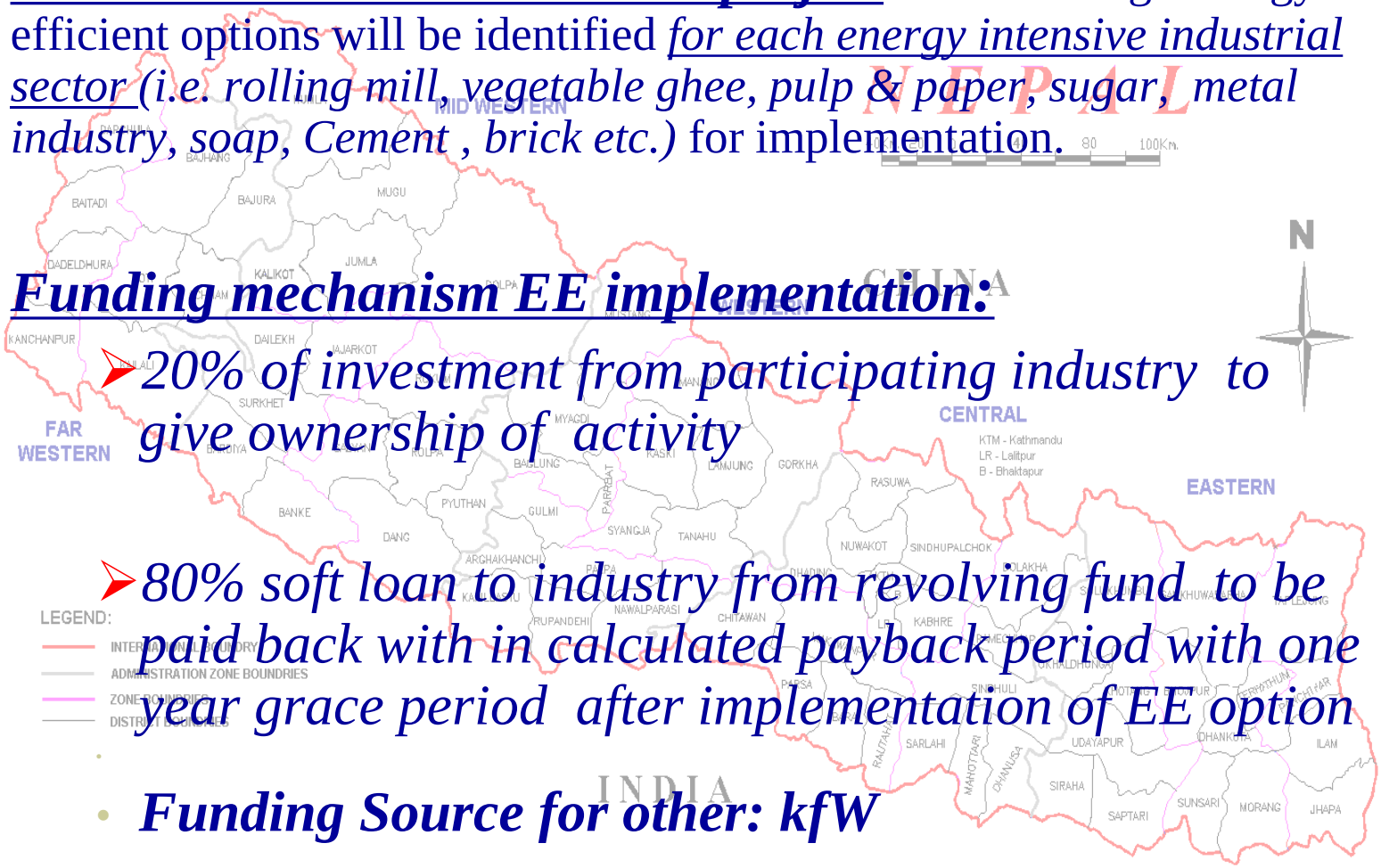
Strategy to Generate Replicate Effect of EEC Inputs

Establish Pilot demonstration project: Feasible High energy efficient options will be identified *for each energy intensive industrial sector (i.e. rolling mill, vegetable ghee, pulp & paper, sugar, metal industry, soap, Cement , brick etc.)* for implementation.



Funding mechanism EE implementation:

- *20% of investment from participating industry to give ownership of activity*
- *80% soft loan to industry from revolving fund to be paid back with in calculated payback period with one year grace period after implementation of EE option*
- ***Funding Source for other: kfW***

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Long term Information Sustainability

Establishment of

"KNOWLEDGE *MANAGEMENT* CENTRE WITHIN EEC/FNCCI"

A knowledge management centre will be established within the framework of EEC/FNNCI as national information service centre for promotion EE in industries

The cell will develop network with national, regional and international knowledge management centre / industry association/ institutions etc. to share information on best practices and experiences

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Current Industrial Management Practices and EEC for gap closing!

- Poor leadership / interpersonal relation
- Poor communication
- No shared vision / goals

- **Capacity development to use opportunity !**
- **Ownership of activity**
- **Defined goal and shared vision**
- **Demonstration for better result**
- **Available financial resources**

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Thank you for your Attention!

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