PRACTIONERS WORKSHOP

Determining By (quantity of biomass) and fNRB,y (fraction of By that is non renewable) in I.E and II.G

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Contents

- fNRB,y Assessment in Existing Projects
  - Biogas Support Programme (BSP)
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- Survey on NRB Issue - Findings
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Biogas Support Programme

Distribution of Potential and Constructed Biogas Plants

(Biogas Plants Constructed in Nepal under BSP from 1992 to April 05, 2008)

175,000 Plants

LEGEND:

- LPD Construction Figures
- 0
- 1 - 500
- 501 - 2500
- 2501 - 5000
- 5001 - 10000
- 10001 - 15000

Summary:

Total Construction	175,000
Total Potential	1,937,006
% Progress	9.03

Geographical Region wise Total Installation Compared to Total Potential

Remote Hill 801, 0.65% 123,962

Terai 85,766, 7.87% 1,039,445

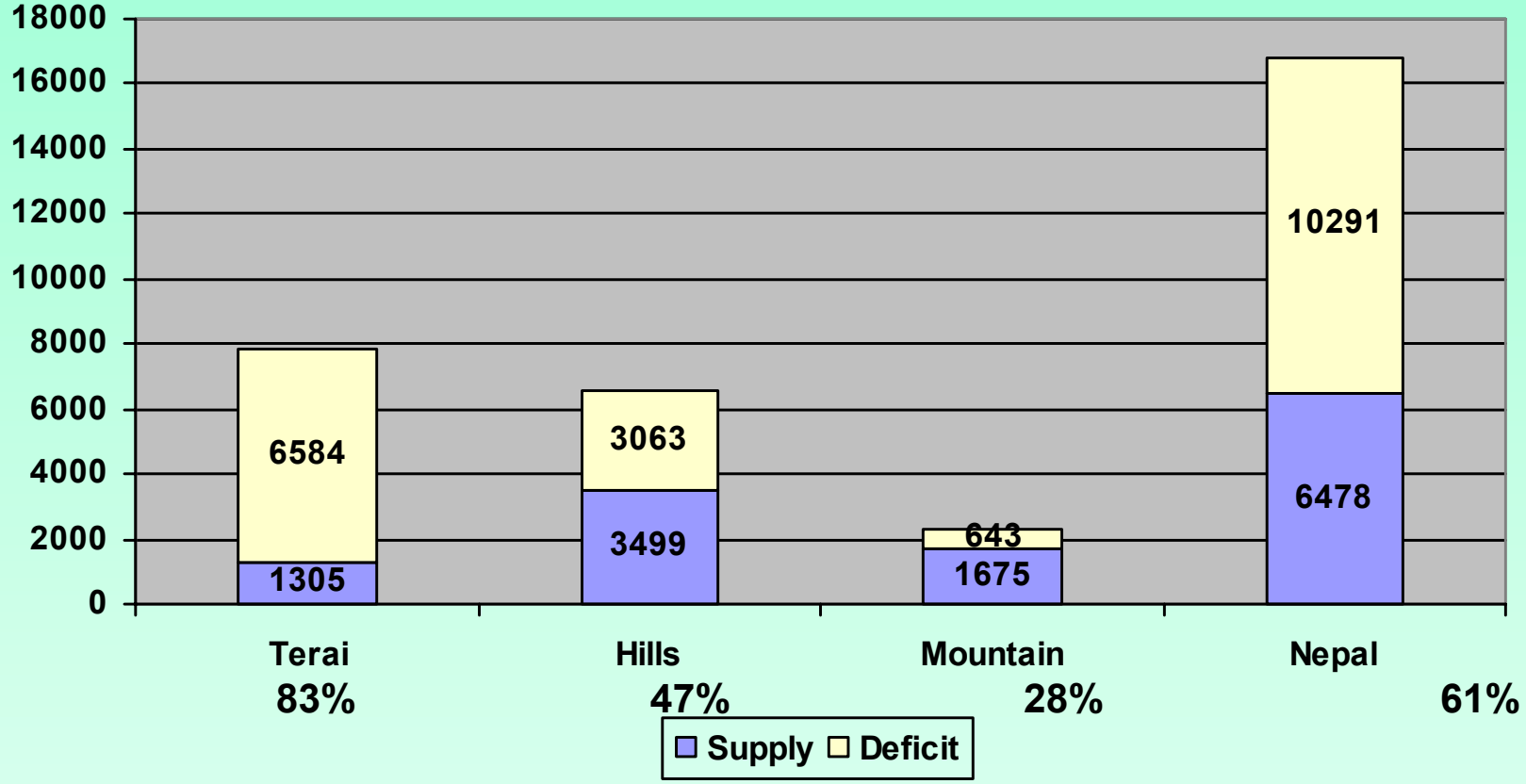
Hill 88,443, 12.22% 723,599

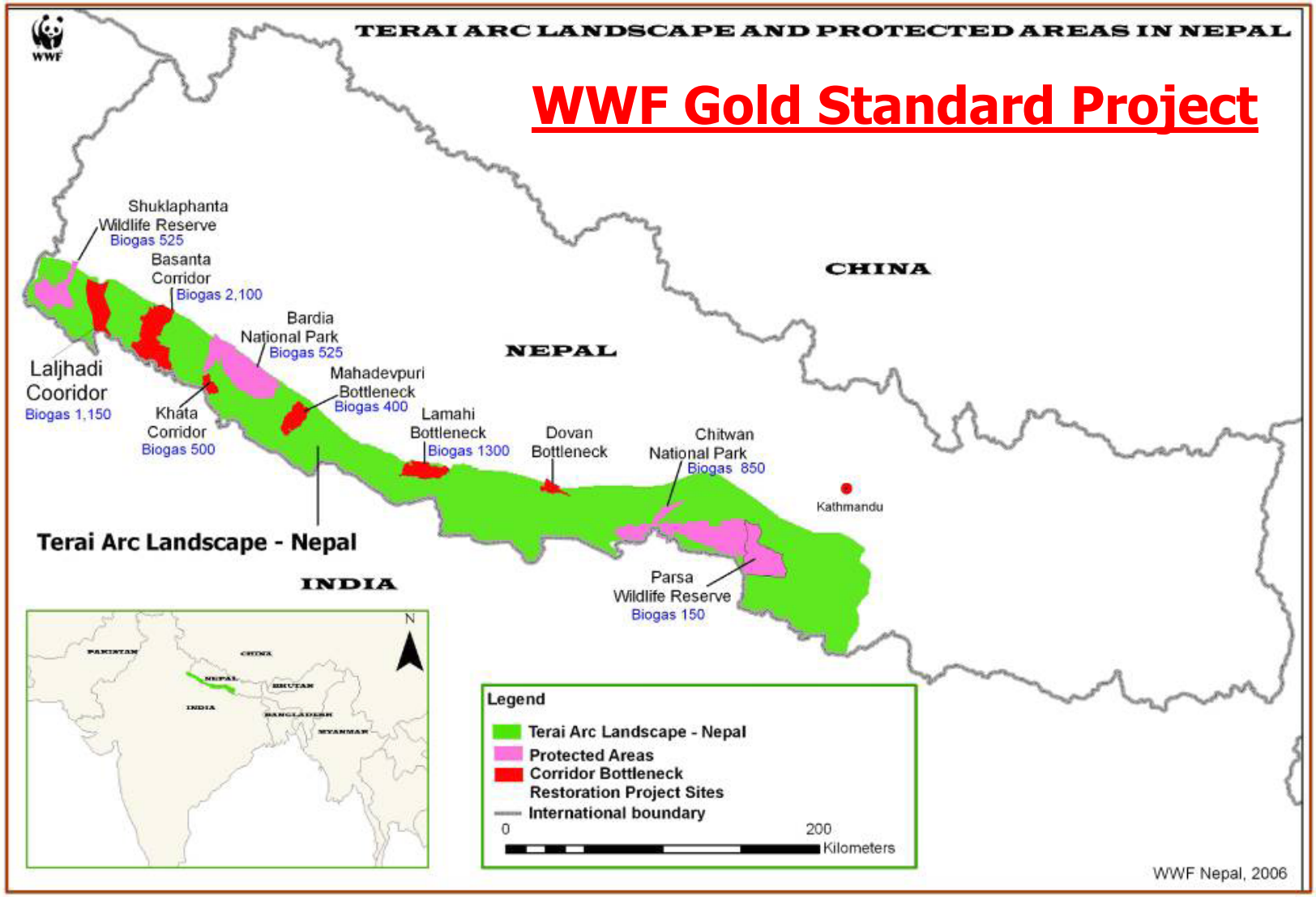
Remote Hill
Hill
Terai

BSP-NEPAL

Production M
April 05, 200

fNRB,y Calculation




TERAI ARC LANDSCAPE AND PROTECTED AREAS IN NEPAL
WWF Gold Standard Project
WWF
Shuklaphanta Wildlife Reserve Biogas 525
Basanta Corridor Biogas 2,100
Bardia National Park Biogas 525
Laljhadi Cooridor Biogas 1,150
Khata Corridor Biogas 500
Mahadevpuri Bottleneck Biogas 400
Lamahi Bottleneck Biogas 1300
Dovan Bottleneck
Chitwan National Park Biogas 850
Parsa Wildlife Reserve Biogas 150
CHINA
NEPAL
INDIA
Kathmandu
Terai Arc Landscape - Nepal
N
Legend
Terai Arc Landscape - Nepal
Protected Areas
Corridor Bottleneck
Restoration Project Sites
International boundary
0
200
Kilometers
WWF Nepal, 2006

fNRB,y Calculation

Activity		Quantity	Unit
Step 1: Identification of Woody Biomass Production Area			
Woody Biomass Forest Area	**A**	59,708	ha
Step 2: Annual Wood Incerement			
Mean Annual Increment	**B**	1.20	m3/ha/year
Annual Increment	**C=B*A**	71,650	m3/year
Density of wood	**D**	0.87	tonnes/m3
Average annual wood increment	**I = C*D**	62,335	tonnes/per year
Step 3: The average harvest of wood fuels from area A			
Avarege number of househlds residing in Area A	**J**	122,351	households
Timber and Industrial Consumption per household	**K**	0.58782	tonnes/year/household
Householdl wood consumption	**L**	3.32	tonnes/year/household
Total Timber and Industrial Harvest	**M=K*J**	71,920	tonnes/year
Total fuelwood consumption	**N=L*J**	406,337	tonnes/year
Total Harvest of wood from area A	**H= M+N**	478,257	tonnes/year
Step 4: The shortage of wooody biomass in the area	**S**		
Shortage of wooody biomass (non- renewable biomass)	S=H-I	415,922	tonnes/year

$$S_{NRB} = \frac{S}{H} = 87\%$$

Survey of NRB Issue

Degradation of forest

Response	Number of respondents	Percentage	Percentage Excluding "don't knows"
Forest is degraded	269	60.6	66.59
Forest is not degraded	135	30.4	33.41
Don't know	40	9.0	-------
Total	444	100	100

Response on the extent of forest degradation

Extent of degradation	Number	Percentage
Highly degraded	91	33.8
Moderately degraded	178	66.2
Total	269	100

Survey of NRB Issue

Effect of forest degradation on firewood collection

Effects	Number of response	Percentage (out of 444 respondents)	Percentage excluding "don't knows" out of 439
Increasing time spent and distance traveled	203	45.72	46.24
Price of firewood increasing due to increased time and distance	183	41.21	41.68
Type of firewood changing to lower quality due to scarcity of firewood	195	43.91	44.41
None of the above	12	2.70	2.73
Don't know	5	1.12	----------
Total	598	------	

Survey of NRB Issue

Firewood collected from sustainably managed forest

Response	Number of respondents	Percentage	Percentage excluding "don't knows" out of 386
Yes	241	54.3	62.44
No	145	32.7	37.56
Don't know	58	13.1	--------
Total	444	100	100

Survey of NRB Issue

Extent of control over forest degradation

Extent of control	Number of Response	Percentage (out of 241)	Percentage Excluding "don't knows" out of 239
Controlled	75	31.12	31.38
To some extent controlled	151	62.67	63.17
Not at all	11	4.56	4.60
Don't know	4	1.65	----------
Total	241	100	100

Survey of NRB Issue

Effect of forest regulations on firewood collection

Effect	Number of respondents	Percentage
Has become easier	43	9.70
No effect	214	48.20
More difficult	187	42.10
Total	444	100.00

- **Effects of Rules and Regulations on Firewood Collection**
- It was observed that the forest users view the community forest provisions and norms (collection of money for firewood, fixed date and time for distribution etc.) as 'difficulties' as they can not bring the firewood from the forest as they wish (quantity, time and part of forest).

Survey of NRB Issue

Type of effects of forest regulations on firewood collection

Effects	Number of responses	Percentage (out of 230* respondents)
Increase in time spent and distance traveled	63	27.39
Increase in price of firewood	42	18.26
Decrease in quality of firewood	140	60.86
None of the above	74	32.17
Total	319	100

- Around 60% percent reported that the forest regulation has resulted in decrease of quality of firewood.

Methodology Conceptual Issues

AMS I.E. and *AMS II. G.* are based on the prerequisite that the **project should replace non renewable resource**

Definition of renewable:

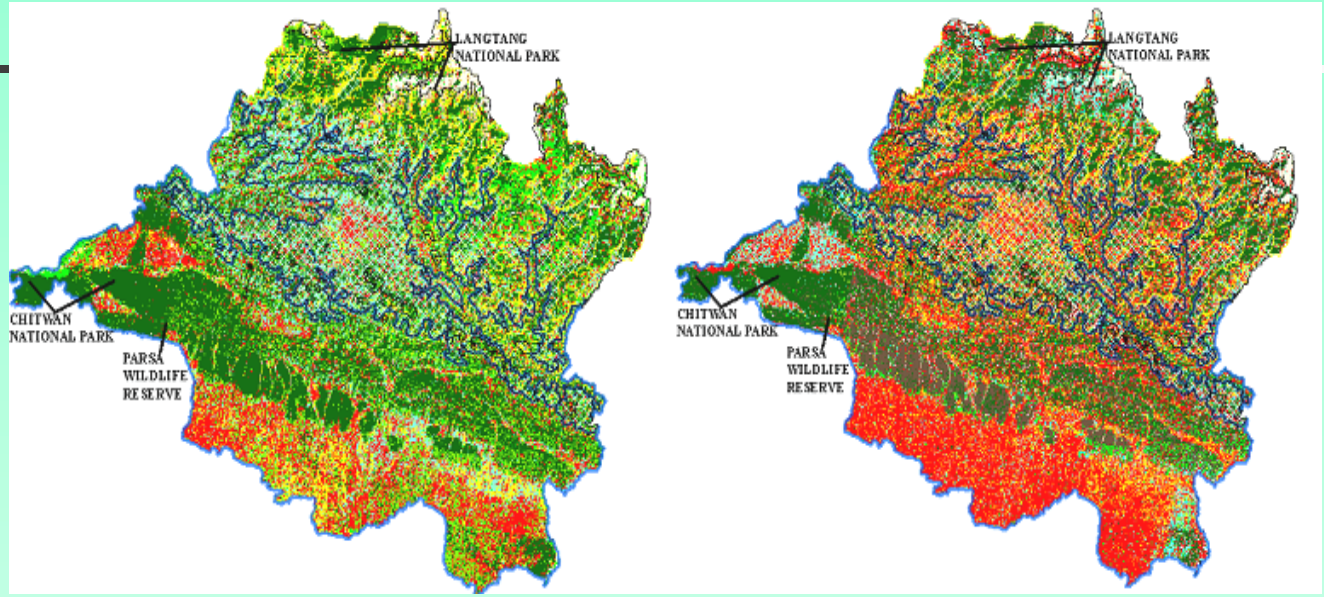
Biomass, originating from forests, is renewable if:

- (a) The land area **remains a forest (= avoiding deforestation or loss of forest area)**

  and

- (b) Sustainble management practices are undertaken ....to ensure that the **level of carbon stocks on these lands does not systematically decrease** over time, carbon stocks may temporarily decrease due to harvesting **(= avoiding forest degradation)**

Deforestation in Central Development Region



Elevation (meters)
- < 1199
- 1149 - 2399
- 2400 - 4999
- > 5000m

LUCC Transition (1975-1990)
- Afforestation
- Bareland
- Cloud
- Deforestation
- Degraded forest
- Farmland
- Mature forest
- Secondary growth

Elevation (meters)
- < 1199
- 1149 - 2399
- 2400 - 4999
- > 5000m

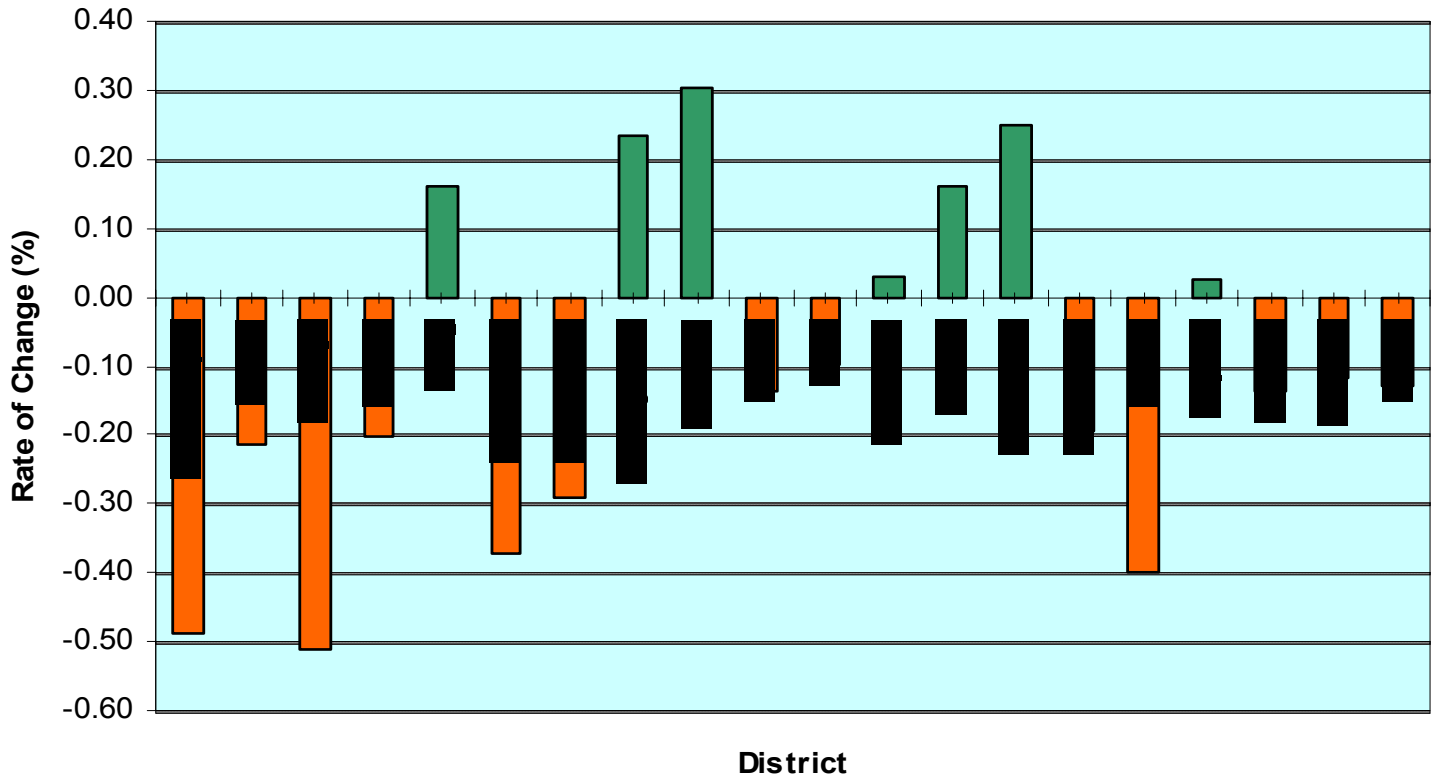
LUCC Transition (1990 - 2000)
- Afforestation
- Bareland
- Cloud and snow cover
- Deforestation
- Degraded vegetation
- Farm plantation
- Farmland
- Forest to secondary growth
- Mature forest
- Mature forest degrades
- Sec. growth to forest
- Secondary growth

Bhattarai (2006)

Forest cover change in 20 Terai Districts

The result of the study shows that thirteen districts have negative change whereas the remaining seven districts have positive change in forest cover between 1990/91 and 2000/01.

Overall situation in these *Terai* districts (excluding protected area) is almost an equilibrium state with nominal annual rate of decrease in forest cover (-0.08 %) in this period.



Source: Amataya and Kandel (2006) Forest cover change Assessment in Nepal

Improved forest conditions due to community forestry

Source: Amataya S.M. And Kandel P.N. 2006 Forest cover change assessment in Nepal

Recommendations and Issues

Spatial approach of CDM projects:

- Prepare VDC baselines and update deforestation/forest degradation baselines at least on district level regularly
- This implies added resources in terms of time and money
- Therefore,
- For Small Scale projects, simplified methodology
- WWF GSP methods could be used where GIS maps are available

Thank You for Your Kind Attention!!!

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