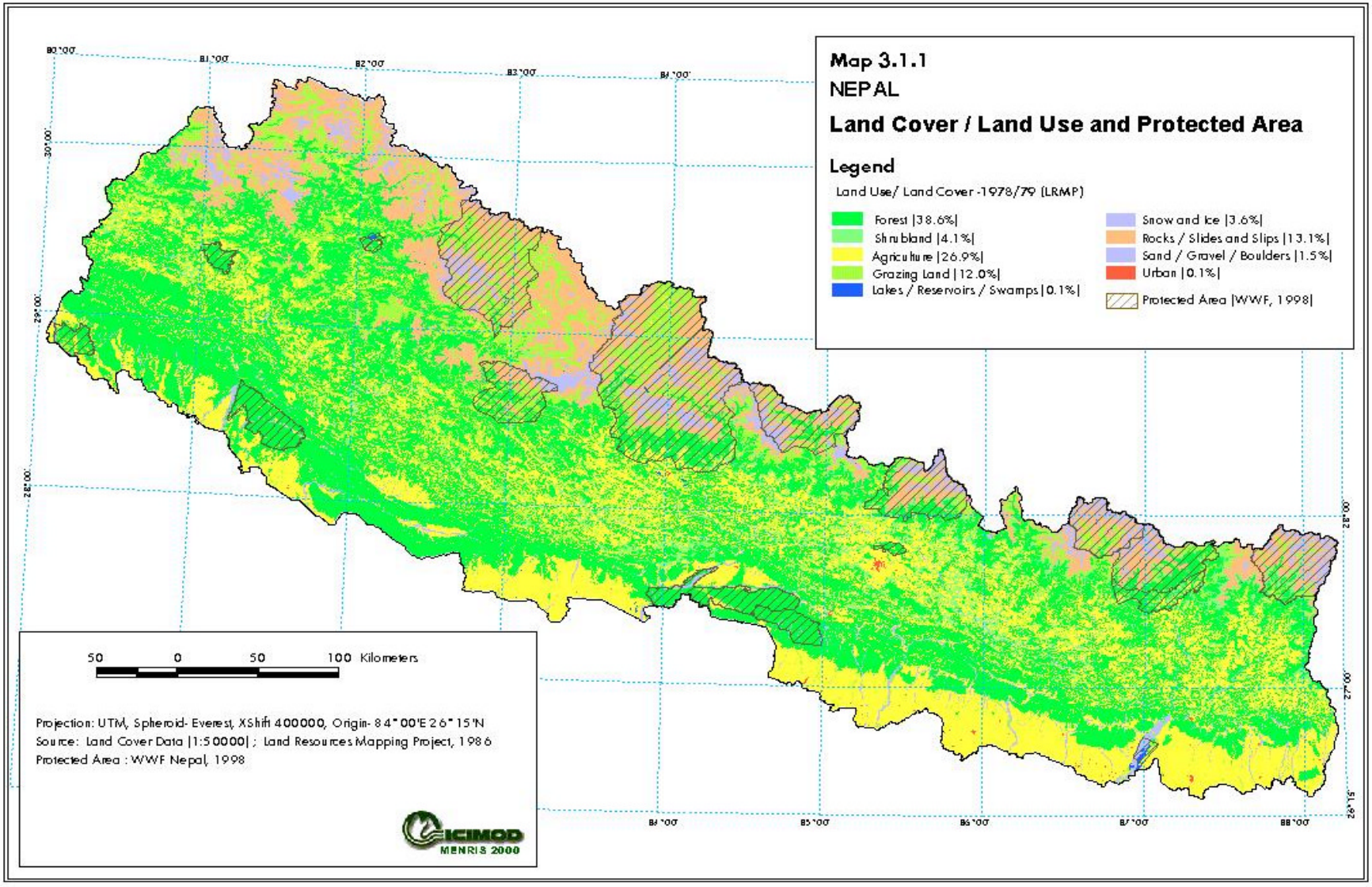
Site Selection

Malé Declaration on control and prevention of transboundary air pollution and its likely transboundary effects for South Asia

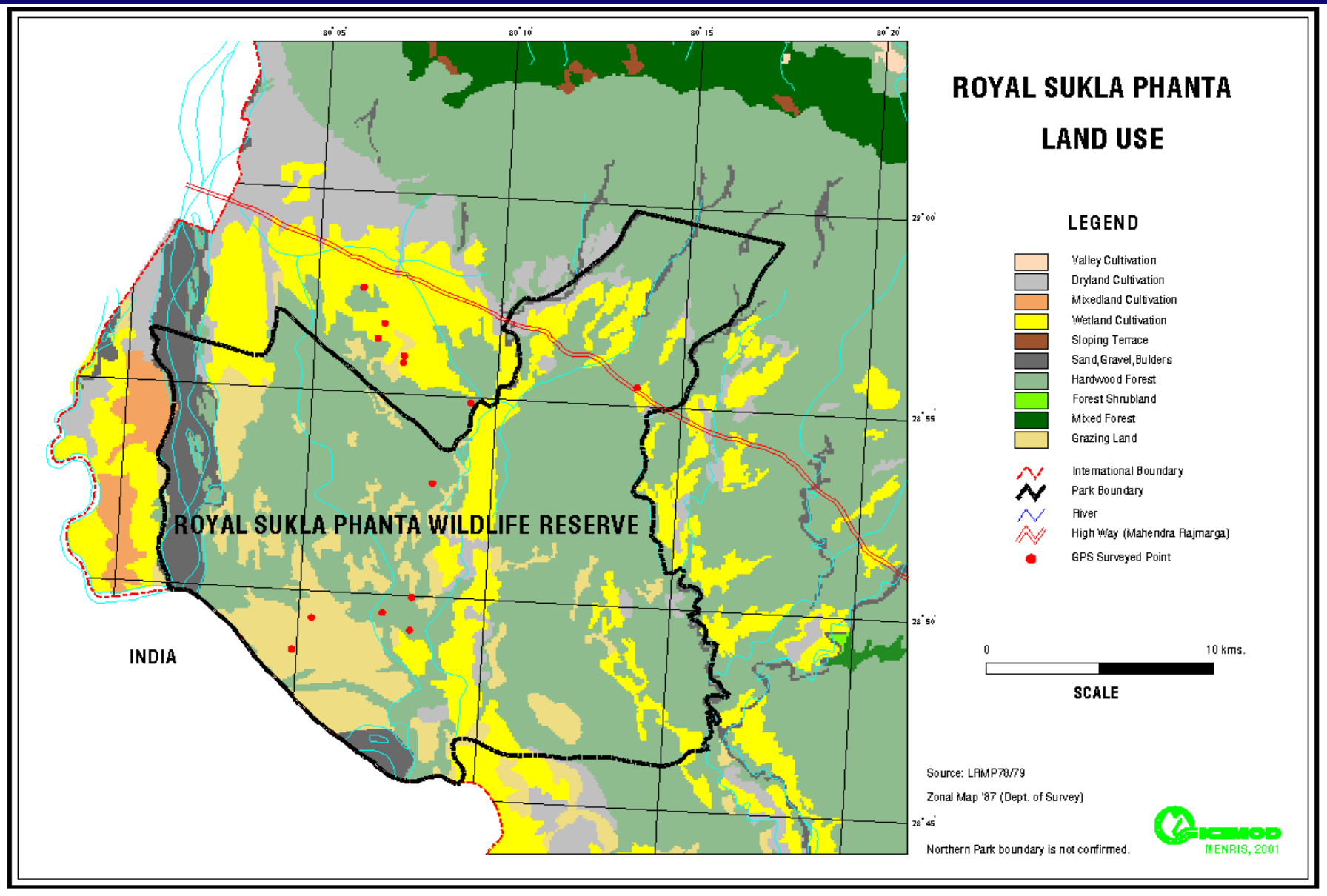
Ministry of Population and Environment

International Centre for Integrated Mountain Development

Protected Areas



Land Use - Royal Sukla Phanta



Dominant Species

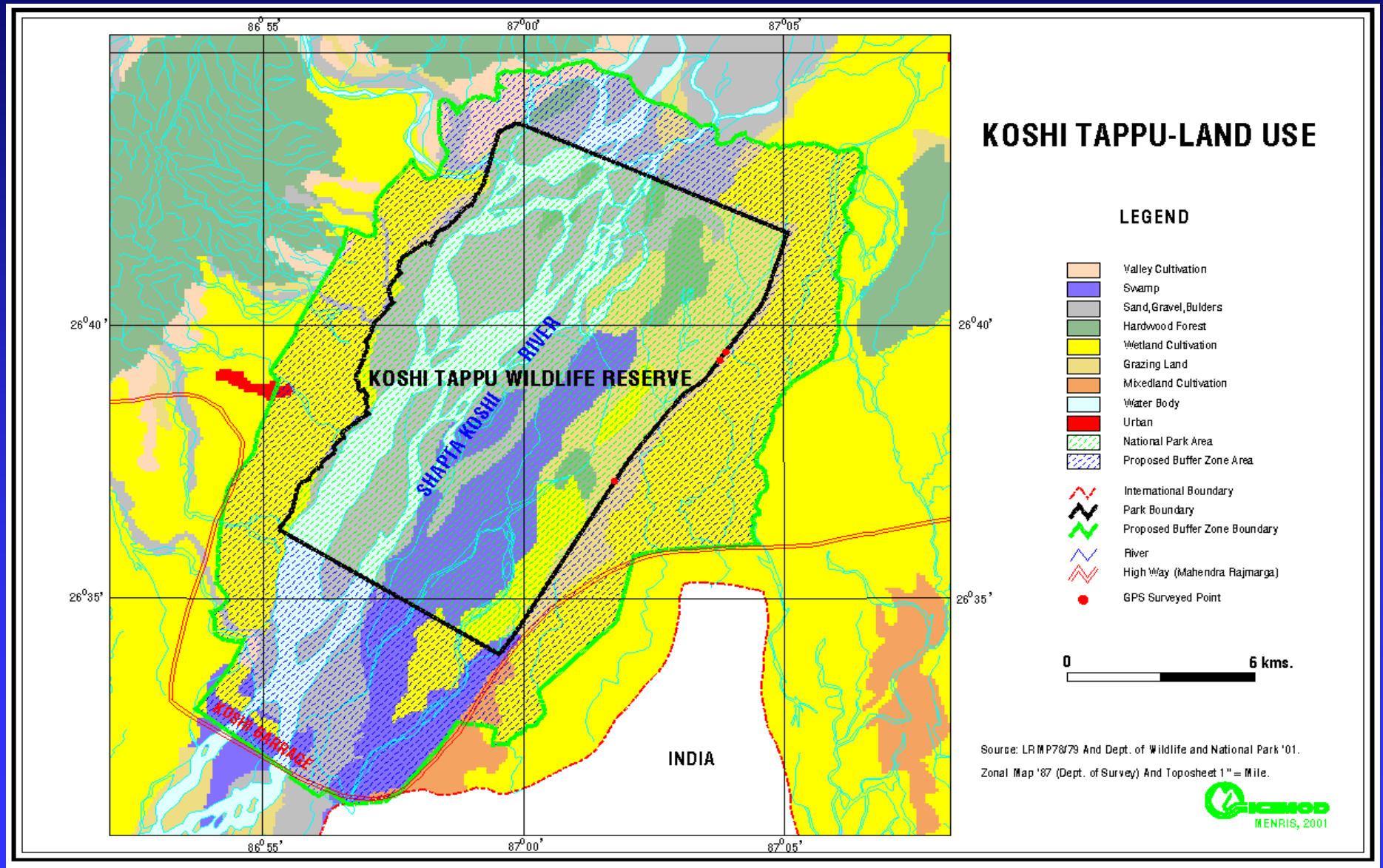
Shorea robusta Gaertn.	Dipterocarpaceae	Sal	Sal tree
Saccharum spontaneum L.	Gramineae	Kans	Thatch grass
Butea monosperma (Lam.) Kuntze	Fabaceae	Palas	Flame of the forest
Dalbergia sissoo Roxb.	Fabaceae	Sisau	Red wood

Royal Bardia National Park

Dominant Species

Shorea robusta Gaertn.	Dipterocarpaceae	Sal	Sal tree
Dillenia pentagyna Roxb.	Dilleniaceae	Tantari	Nepalese elephant apple
Acacia nilotica (L.) Willd.ex Del.	Fabaceae	Babul	Gum arabic tree

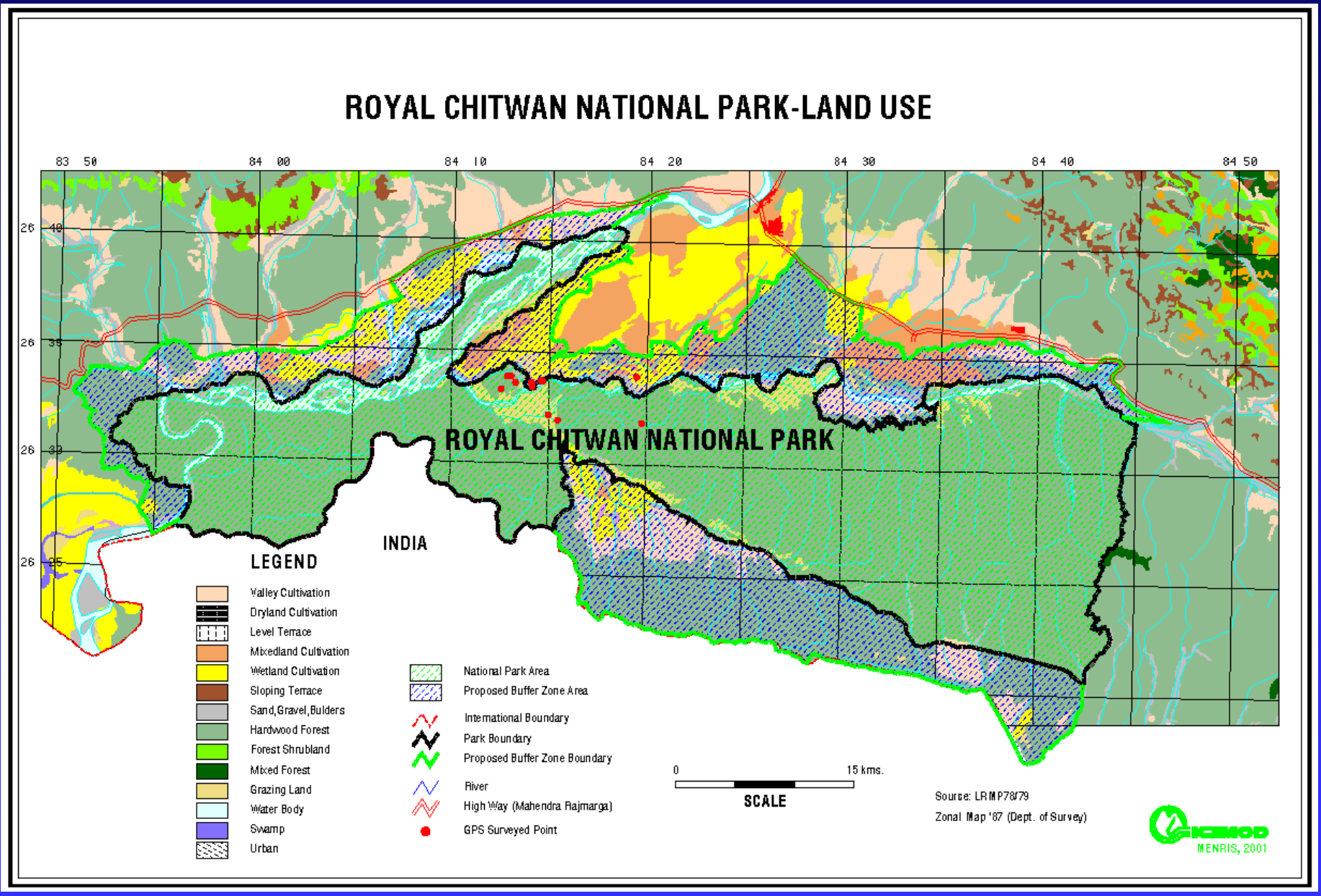
Land Use – Koshi Tappu



Dominant Species

Dalbergia sissoo Roxb.	Fabaceae	Sisau	Red wood

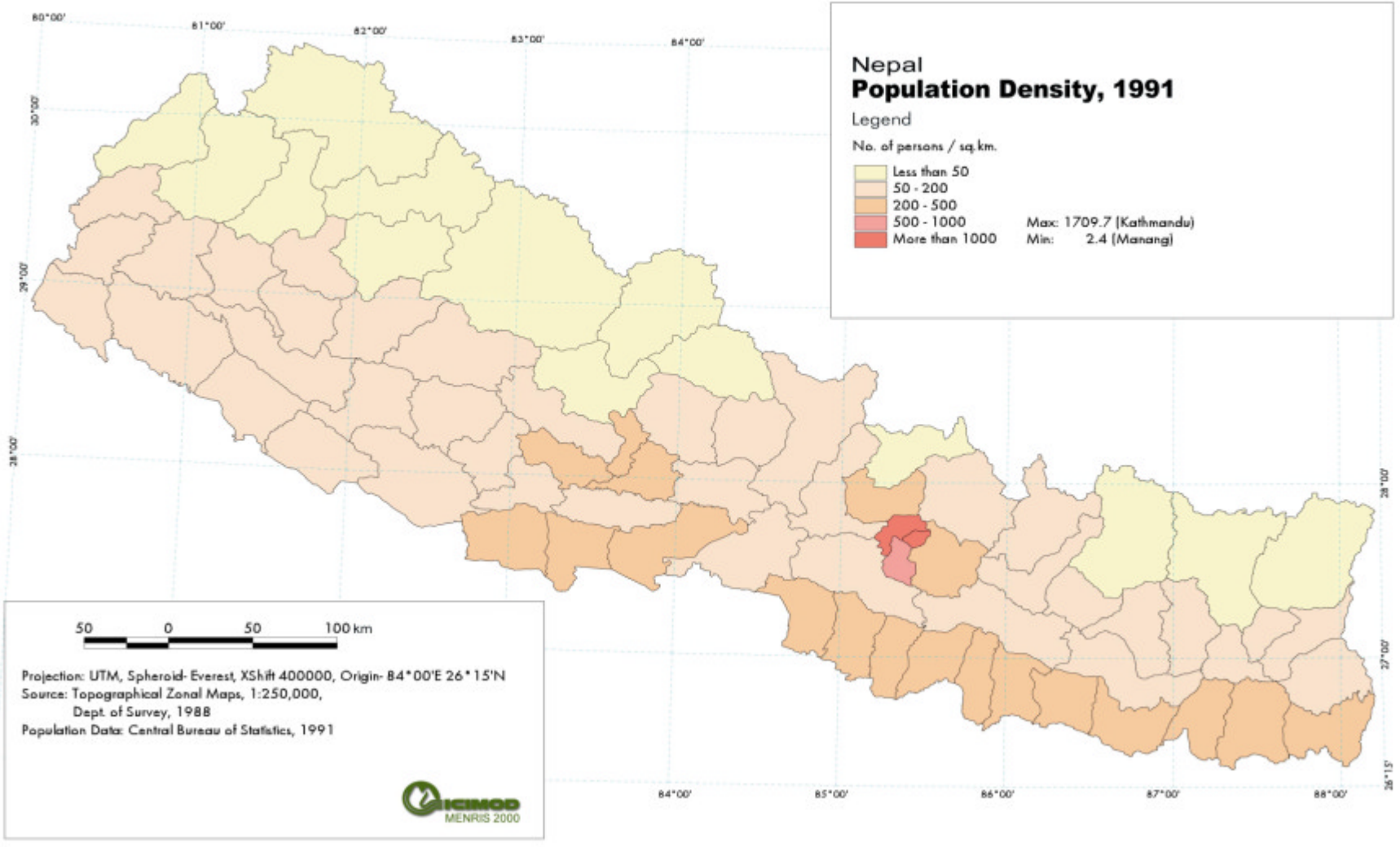
Land Use – Royal Chitwan National Park



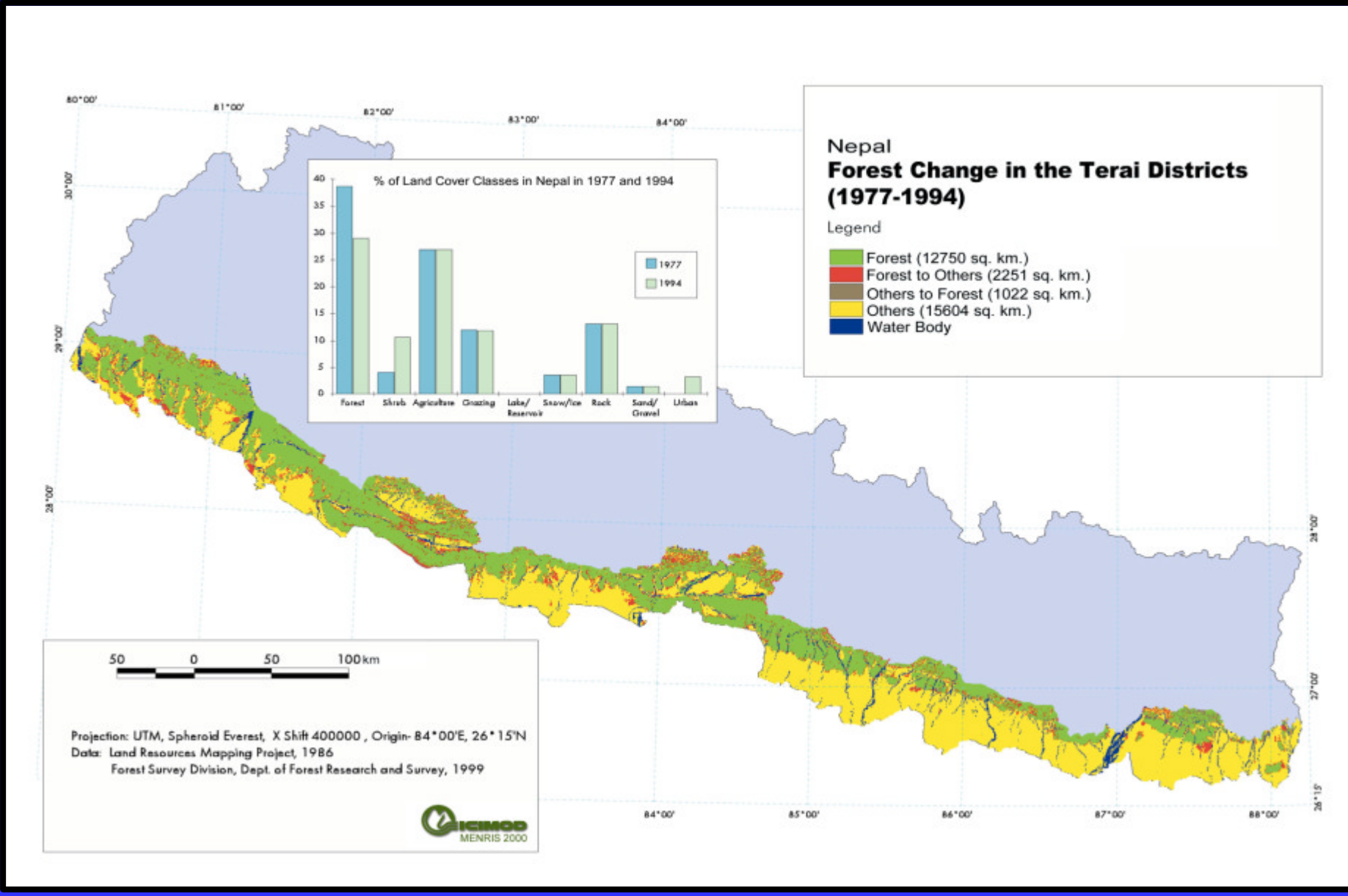
Dominant Species

Shorea robusta Gaertn.	Dipterocarpaceae	Sal	Sal tree
Kuntze	Fabaceae	Palas	Flame of the forest
Muell.Arg.	Euphorbiaceae	Sidhure	Kamala
Bombax ceiba L.	Bombacaceae	Simal	Silk cotton tree
Dalbergia sissoo Roxb.	Fabaceae	Sisau	Red wood
Acacia catechu (L.f.) Willd.	Fabaceae	Khayar	Cutch tree

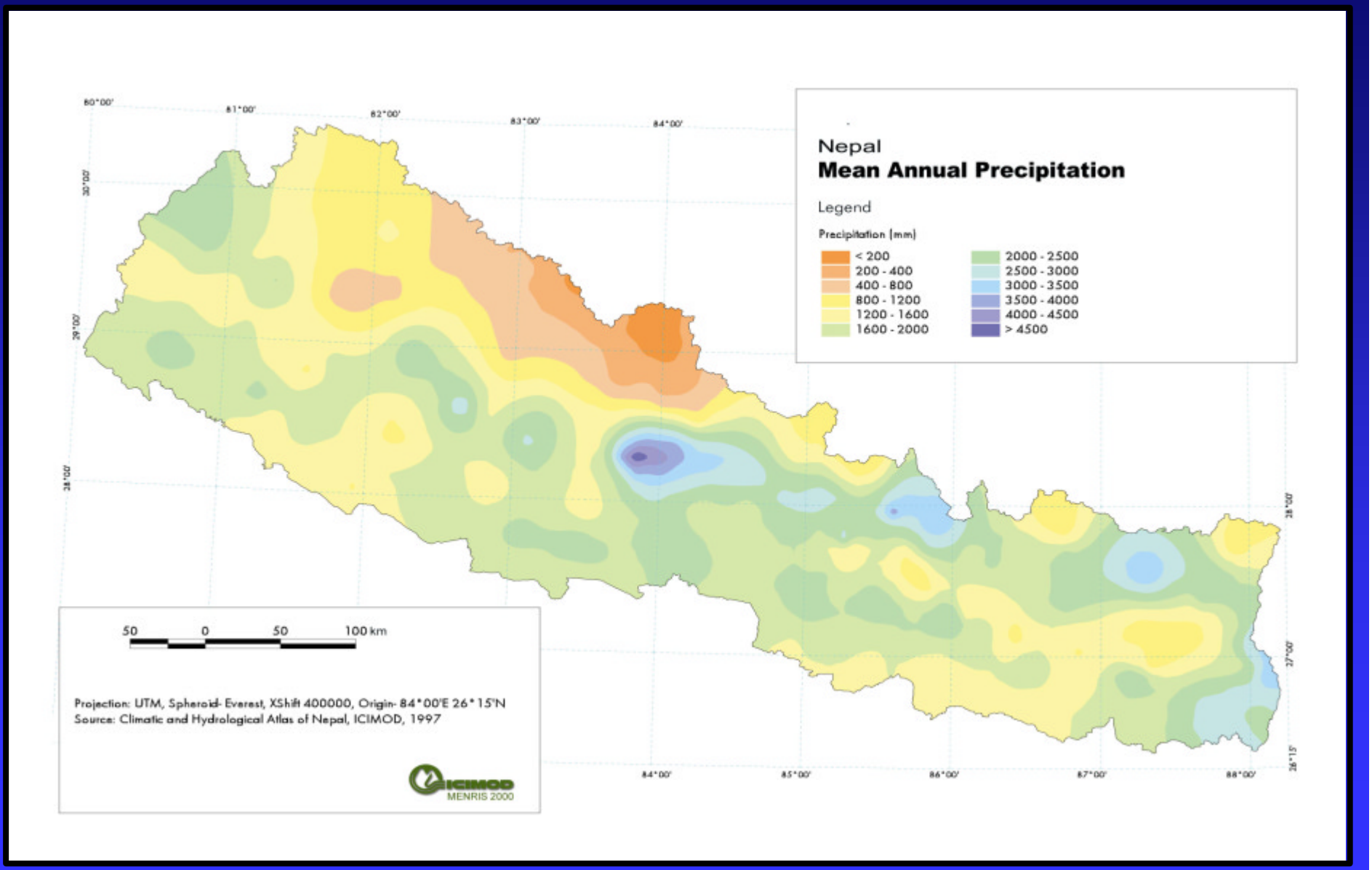
Population Density



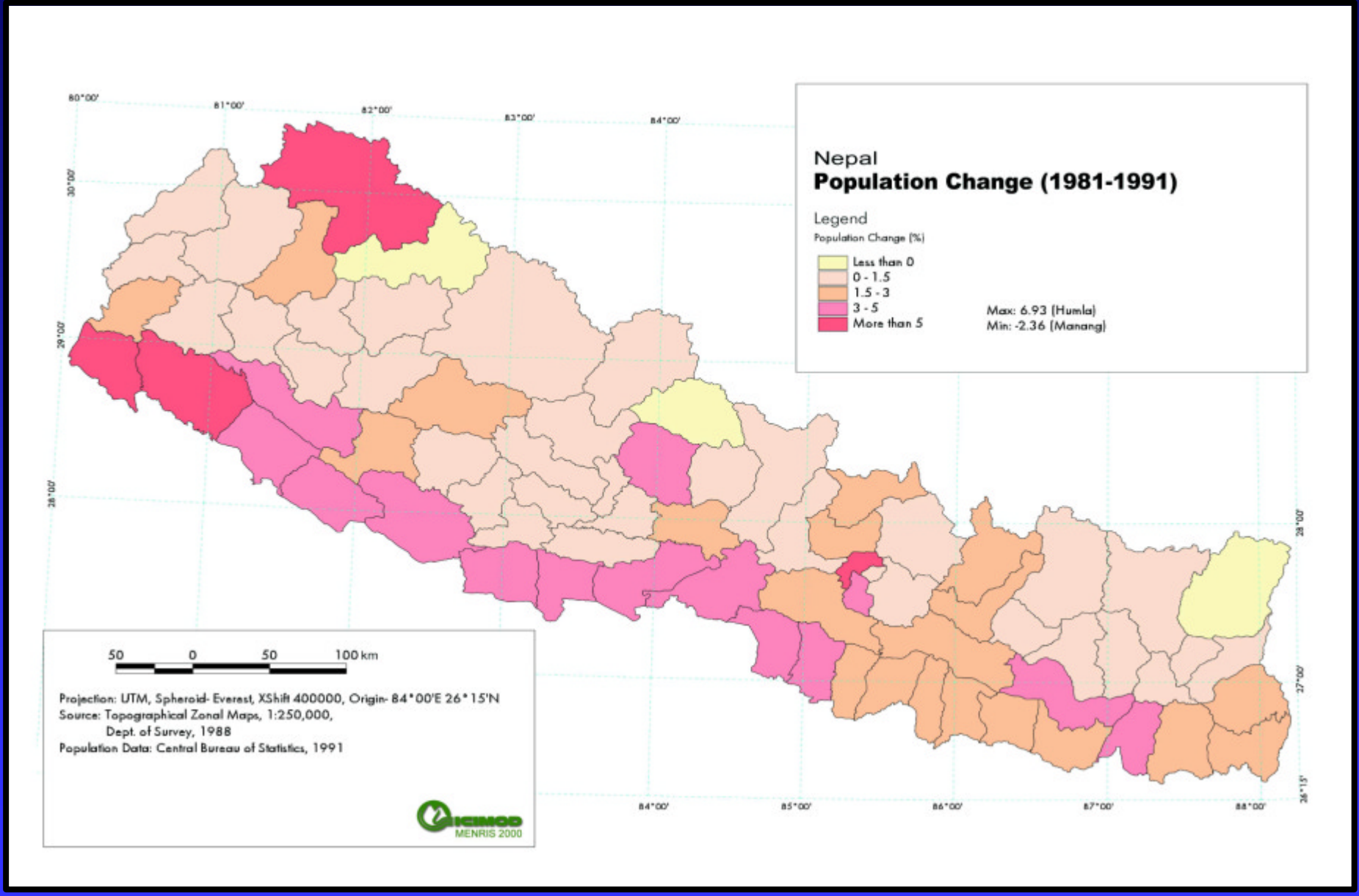
Forest Change



Mean Annual Precipitation



Population Change



Dominant Aquatic Species – Rapti River

Latitude : 27 33’ 26 N

Longitude : 84 14’ 08

Height : 124.88m

Botanical name	Family	Nepali name	Common name
Pistia stratiotes L.	Araceae	Kumbhika	Water lettuce
Hydrilla verticillata (L.f.) Royle	Hydrocharitaceae	Pani uneu	Hydrilla
Marsilea crenata Presl.	Marsileaceae	Dhap uneu	Water clover
Ottelia alismoides Pers.	Hydrocharitaceae		

Benthic Micro invertebrates – Rapti River Chitwan

Site A **Latitude: 27° 33' 26"** **Longitude: 84°14' 07"** **Height: 124.8 m**	**Site B** **Latitude: 27° 33' 42"** **Longitude: 84°14' 34"** **Height: 122.7 m**	**Site C** **Latitude: 27° 33' 40"** **Longitude: 84°14' 40"** **Height: 132.6 m**
TRICLADIDA		
indet.		
MOLLUSCA	MOLLUSCA	MOLLUSCA
Lymnaeidae	Physidae	Lymnaeidae
indet.	*Physella heterostropha*	*indet.*
Physidae	Planorbidae	Physidae
Physella heterostropha	*Gyraulus sp.*	*Physella heterostropha*
Planorbidae		
Gyraulus sp.		
Bivalvia		
Sphaeriidae		
Pisidium sp.		
OLIGOCHAETA	OLIGOCHAETA	
Tubificidae	*Indet.*	
indet.		
CRUSTACEA	CRUSTACEA	CRUSTACEA
Potamidae	Potamidae	Potamidae
indet.	*indet.*	*indet.*
EPHEMEROPTERA	EPHEMEROPTERA	EPHEMEROPTERA
Baetidae	Baetidae	Baetidae
Baetis sp1	*Baetis sp*	*Baetis sp*
	Caenidae	Caenidae
	Caenis sp.	*Caenis sp.*
Ephemerellidae	Ephemerellidae	Ephemerellidae
Torleya nepalica	*Torleya nepalica*	*Torleya nepalica*
Ephemeridae	Ephemeridae	Ephemeridae
Ephemerela sp.	*Ephemerela sp.*	*Ephemerela sp.*
Heptageniidae	Heptageniidae	Heptageniidae
Cinygmina ?assmensis	*Indet.*	*Indet.*
Electrogena wittmeri		

Contd..

ODONATE	ODONATE	ODONATE
Coenagrionidae		
indet.		
Gomphidae	Gomphidae	Gomphidae
indet.	*indet.*	*indet.*
PLECOPTERA	PLECOPTERA	PLECOPTERA
	Perlidae	
	indet	
HETEROPTERA	HETEROPTERA	HETEROPTERA
Nepidae	Nepidae	
indet.	*indet.*	
indet.		
COLEOPTERA	COLEOPTERA	COLEOPTERA
Hydrophilidae	Hydrophilidae	Hydrophilidae
Laccobius sp.	*Indet.*	*Laccobius sp.*
Psephenidae	Psephenidae	
Eubriinae	Eubriinae	
Eubrianax sp.	*Eubrianax sp.*	
MEGALOPTERA		MEGALOPTERA
indet.		*indet.*
TRICHOPTERA	TRICHOPTERA	TRICHOPTERA
Brachycentridae		Brachycentridae
indet.		*indet.*
Glossosomatidae		
indet.		
Hydropsychidae	Hydropsychidae	Hydropsychidae
indet	*indet*	*indet*
	Lepidostomatidae	
	indet.	
DEPTERA	DEPTERA	DEPTERA
Chironomidae	Chironomidae	Chironomidae
Chironominae	Chironominae	Chironominae
Chironomus sp.	*Chironomus sp.*	*Chironomus sp.*
Limoniidae	Limoniidae	
Cf. Dicranot	*Cf. Dicranot*	
indet.	*indet.*	*indet.*
	Tabaniidae	Tabaniidae
	indet.	*indet.*
Tipulidae	Tipulidae	
indet.	*indet.*	

- On the basis of Nepal Biotic Index Score (NEBIOS) based on abundance and diversity of the animals present on the sites, the score acquired by the sites A, B and C are 8, 8.1 and 8.4 respectively.

- Water quality of all the sites belong to class I of Saprobic water quality class - indicates that water is less polluted with organic matter.

- Average abundance of the animals are very low i.e. 1-2 range indicating that the sites have physical disturbance like boating and fishing.

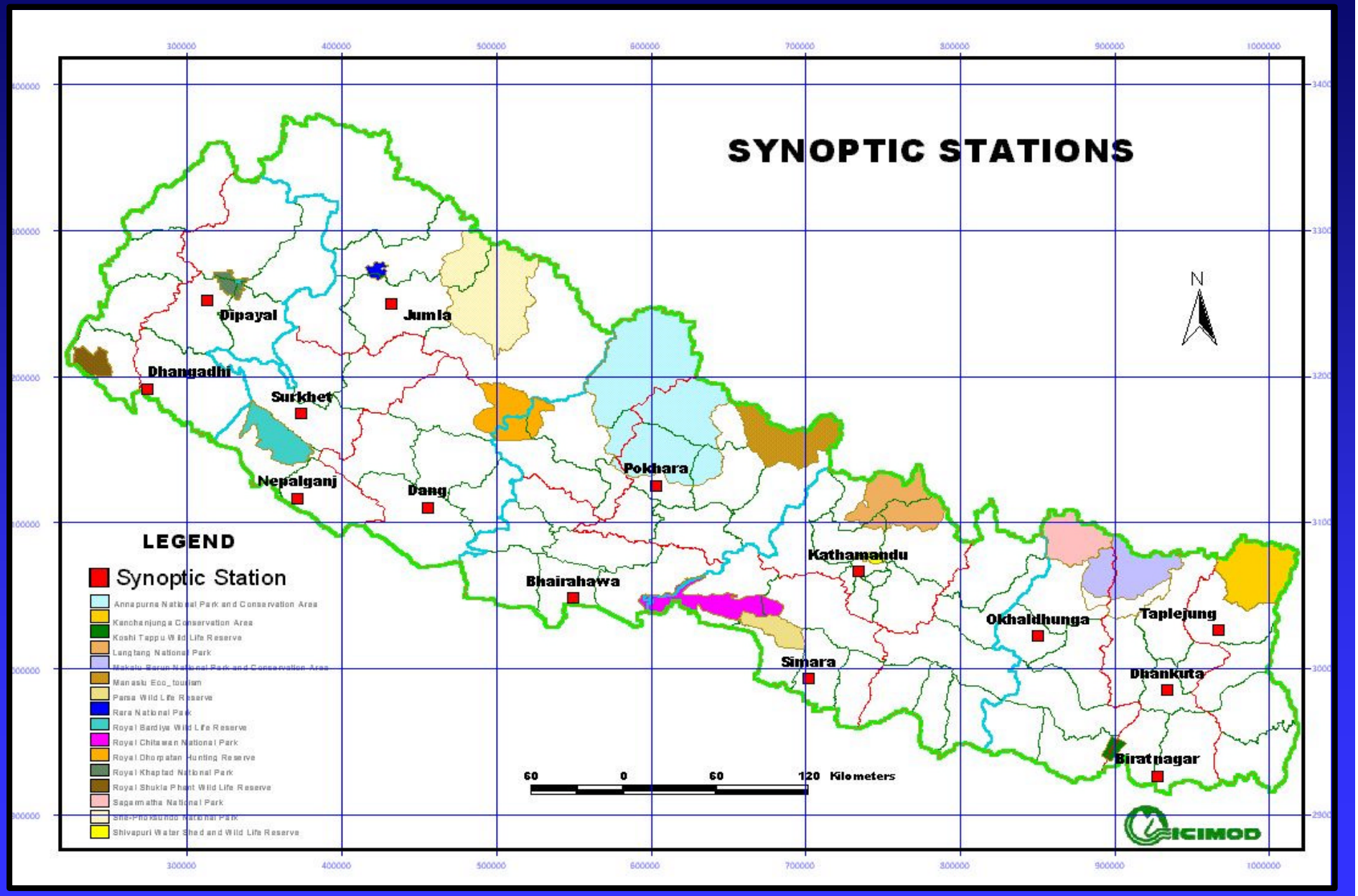
Water Analysis Report of the Rapti River Chitwan

Parameters	Unit	Samples			WHO GV
		RA	RB	RC	
PH (23°C)		8.22	8.27	8.25	6.5 – 8.5
Conductivity	mS/cm	314	303	308	-
Chloride	mg/l	0.43	0.51	0.45	250
Nitrogrn-Ammonia	N-mg/l	0.03	0.04	0.03	1.50
Nitrogen -Nitrate	N-mg/l	ND	ND	ND	10
Orthophosphate	P-mg/l	0.02	0.02	0.01	0.30
TDS	mg/l	146	113	118	-

Source: Field water sample 19 May 2001
WHO GV = World Health Organization Guideline Value for drinking water
ND = Not detected, RA, RB and RC are water samples of the Rapti river at A, B and C sites

- Nutrient level in the water in all the three sites is very low.
- Concentration of chlorophyll is less than 1.5 µg/l - indicating oligotrophic condition with less influenced by organic pollution.
- Considering the saprobic water quality class and nutrient level in the water, justify the quality of water, which is still in very good condition to sustain aquatic biodiversity

Synoptic Stations



Laboratory

Meteriology station

Upgrade the lab. facility in the station.

Train DHM Manpower to handle equipment, monitoring and analyzing.

Tentative Time Frame for Station Set Up

End of this Year

National Advisory Committee

Not Formed Yet


Thank You