

**South & Central Asia MAB Network
Experiences from Nanda Devi Biosphere Reserve in
Indian Himalaya**



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Biosphere Reserves – context for 21st century



- **Biosphere Reserves are one of the important testing ground for linking conservation with sustainable livelihood needs of local communities**

(Seville Strategy 1995)



- **Biosphere Reserves to be raised as the principal internationally-designated areas dedicated to Sustainable Development in the 21st Century**

for introspection...

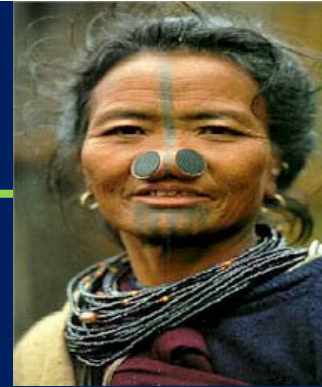
and Central Asia MAB Network (SACAM)

- How have we performed individually and as a network (collectively)?
- Where is the scope for further improvement?
- What should be the strategy to address emerging global priorities?



BRs – *Indian scenario...*

National Biosphere Reserve Programme (1986)



Serve as wider base for conservation **of entire range of living resources**

Bring out representative ecosystems under conservation **and sustainable use on long term basis**

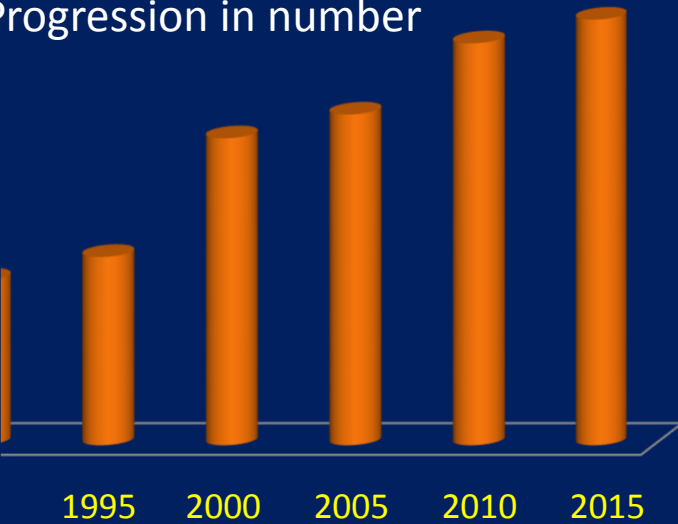
Ensure participation of local inhabitants **for effective management and devise means of improving livelihood**

Integrate scientific research with traditional knowledge **of conservation, education and training**



s in India – *progression...*

Progression in number



➤ Nilgiri – the first designated BR in India (1986)

- *Presently 18; 11 others potential sites*

UNESCO Nominations - 07

Progression in area coverage

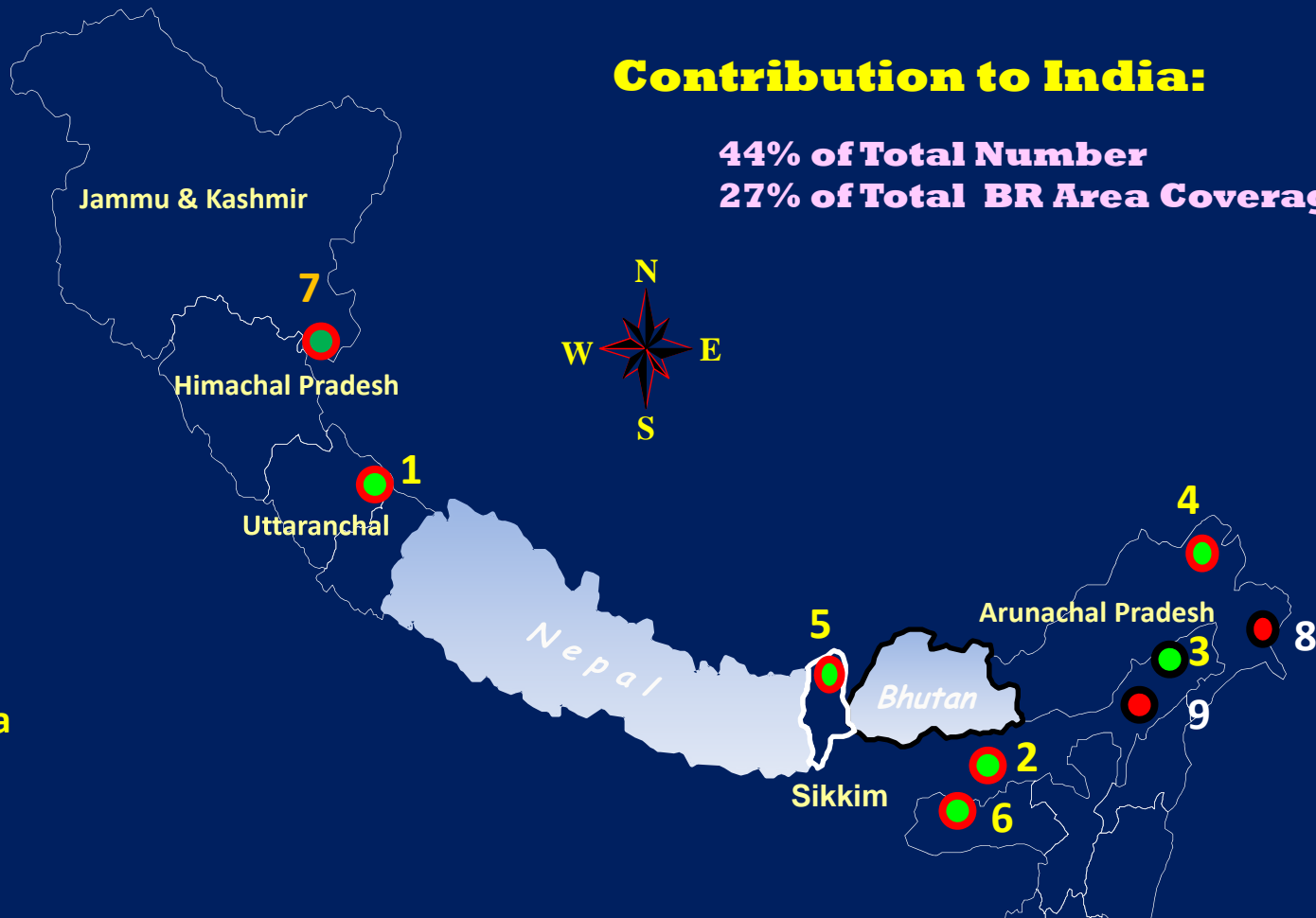


s - IHR representation...

Contribution to India:

44% of Total Number

27% of Total BR Area Coverage



ted:

a Devi

s

-saikhowa

ng-Debang

hendzonga

k

Desert

BRs – IHR representation...

Trans Himalaya

: Cold Desert

Himalaya

:

NW Himal

- **Nil**

W Himal

- **Nandadevi**

C Himal

- **Kanchendzonga**

E Himal

- **Dehang Dibang**

- **Namdapha (proposed)**

North East

:

**Brahmaputra
valley**

- **Manas**

- **Dibru Saikhowa**

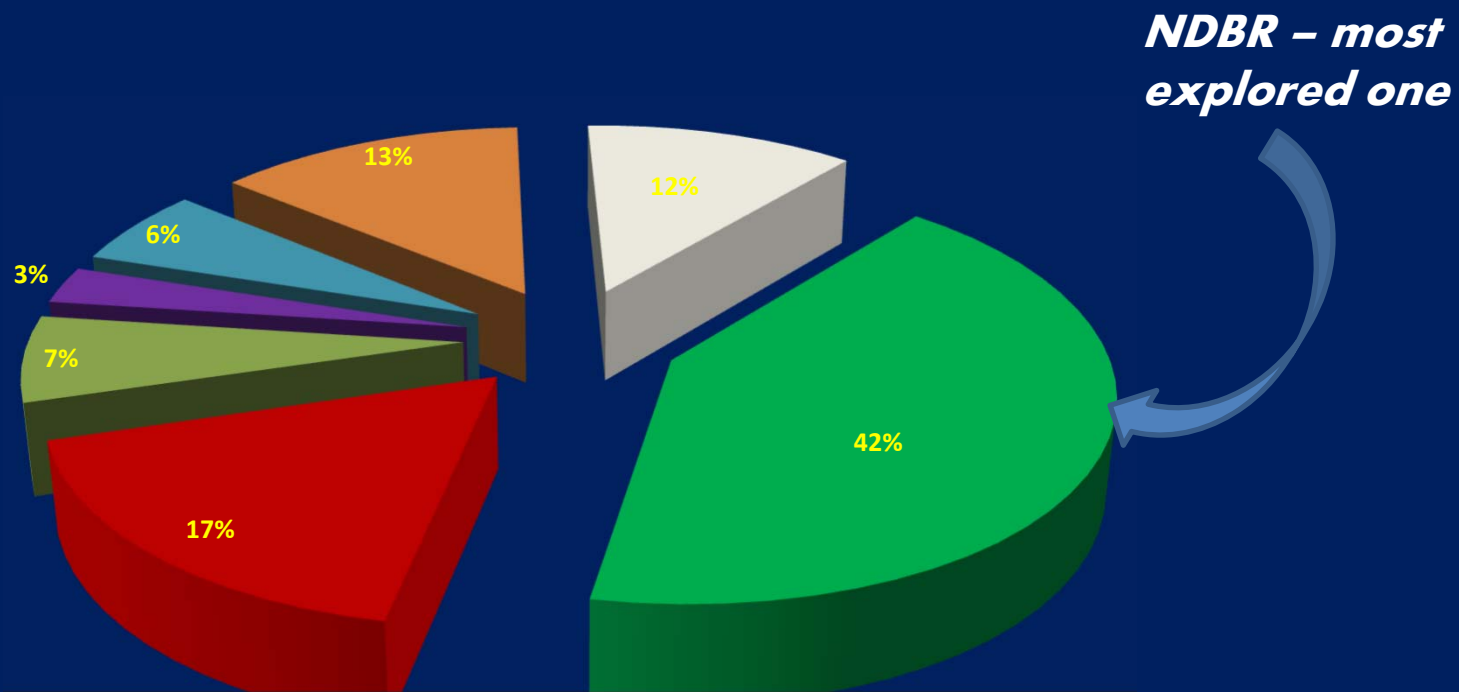
- **Kaziranga (proposed)**

Rs – existing knowledge base...

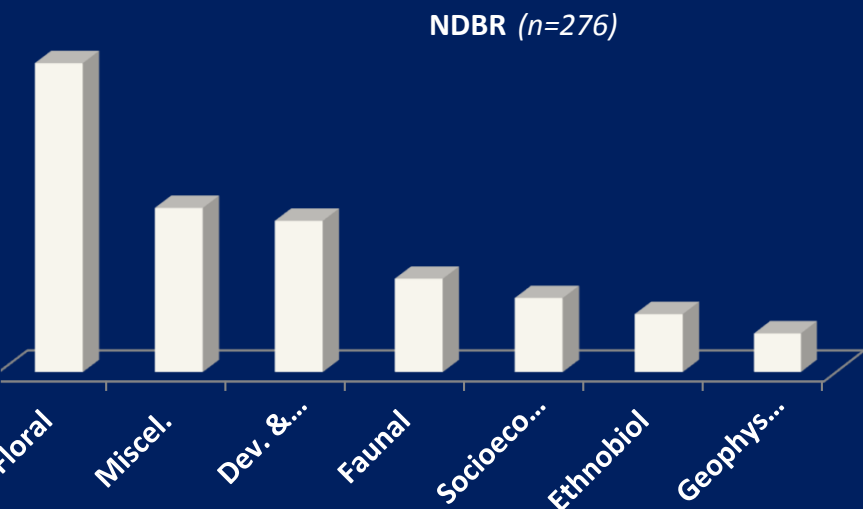
ographic Database (1990 – 2008) : 658 studies

(Excluding Nokrek)

■ NDBR ■ MBR ■ KBR ■ HBR ■ DSBR ■ DDBR ■ CDBR

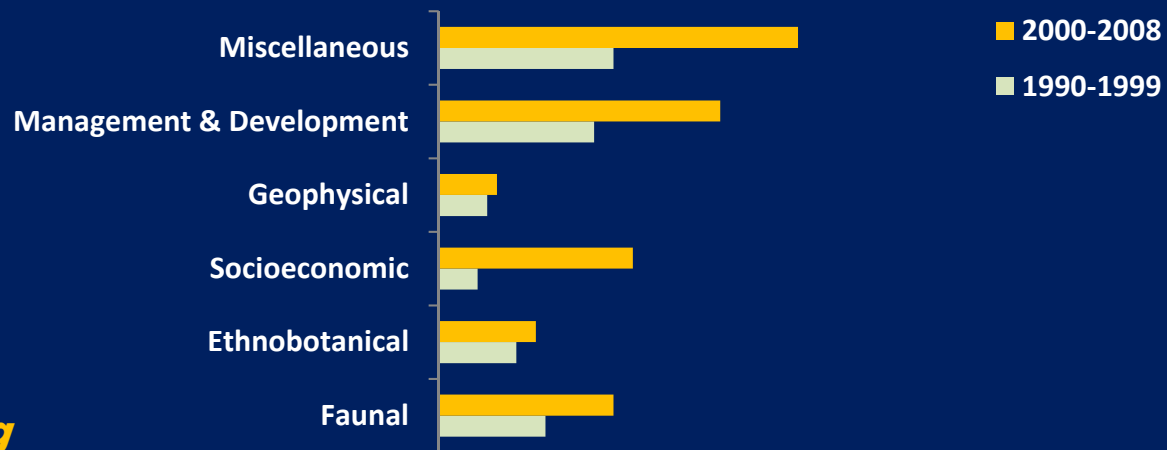


BR – most explored BR...

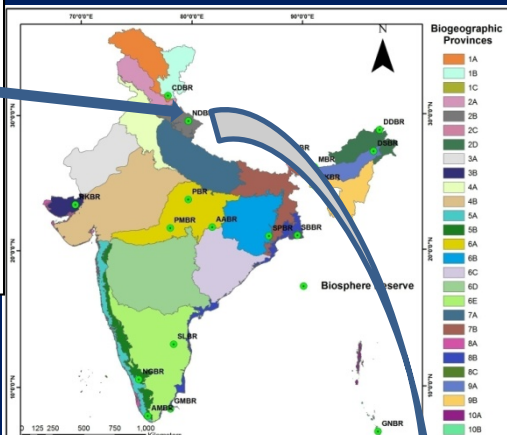
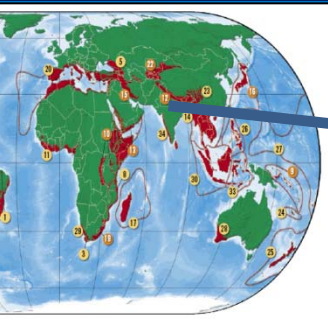


Changing focus

Flora, management & development, socio-economic studies getting



R - area coverage and extent...



Designation Date : 18 January 1988
 [No.1/6/80-ND; January 18, 1988]

Total Area : 6,407.03 km²

Core Area : 712.12 km²

Buffer Area : 5,148.57 km²

Transition Area : 546.34 km²

Altitude Range : 1800-7817 m

R – reserve with unparalleled naturalness...

Core zones (Nanda Devi and Valley of Flowers NPs) **of the reserve** present unique landscapes with outstanding naturalness value.

Both inscribed on the World Heritage List (UNESCO) *Naturalness criteria vii & x*

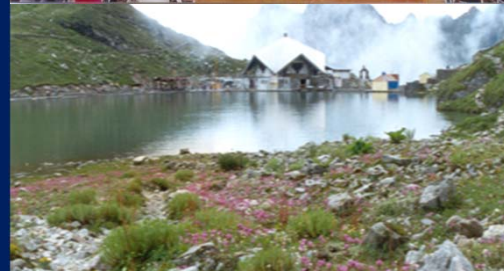


R – reserves values...

the reserve fulfilling the livelihood needs of indigenous communities (47 villages in buffer zone and 55 villages in transition zone)

the reserve is important for its unparalleled ecological services. The glaciers contribute significantly to the mighty Ganges river system. The pristine plant communities protect the delicate soil systems of higher Himalaya and thereby decreasing intensity of damages downstream.

Religious and cultural significance of the area is very high. In Hindu mythology, Nanda Devi is a manifestation of Goddess Parvati, consort of Lord Shiva. Hence the entire area



R – reserves faces conflicts...

In spite of the values, and all good tensions associated with Biosphere reserves, our experiences from the NDBR suggest that the reserve has faced the problem of policy-people conflict.

Park - People Conflicts

The major causes of conflicts between local inhabitants and the NDBR management include:

- Restriction on grazing in core zone,
- Ban on non-timber forest products collection and mountaineering
- Restriction on removal of dead logs from Vanpanchayat forests,
- Livestock killing and damage crops, fruits/horticultural plants ,etc., by wildlife.

on tourism - loss of income and global connect

Annual income from tourism before establishment of NDNP in 1982.

	During 1962-1971 period	During 1972-1981 period
Employment (days/hh/yr)	1156	1264
Number of people engaged as porters	78	65
Number of people engaged as guides	22	15
Income to villages located at trek-start points (Rs/hh/yr)	10829	22342
Average income to buffer zone village community (Rs/hh/yr)	7823	7904

Eliminated an important source of cash income, apart from household goods gifted to local guides/people

Community based reorientation of programmes...

Promoting Eco-tourism

Mobilizing local youth
Home stay
Accommodation



Promoting local cuisine in
Home stay to enhance
Economy & conserve
Additional crops & culture



Building capacity for technology adoption...



Adoption of protected Cultivation Techniques...



Capacity building for conservation and cultivation of high value plants



Changing Attitude of People

- The pilot interventions have resulted in improvement in income of people thereby motivating other farmers
- They now better recognize the values of the reserve for their sustainable development
- People now look into the reserve with a positive mindset



Reserve faces challenges...

The issues which hamper NDBR in meeting its overall goal of long-term conservation and sustainable development include:

- ❖ **poor infrastructure for management and conducting long term studies**
- ❖ **Un-regulated mass religious tourism in certain sites (e.g. Badrinath & Hemkund Saheb)**
- ❖ **lack of appropriate marketing channels for agricultural/ horticultural produce and traditional crafts**
- ❖ **non existence of mechanisms for integration with international projects/protocols**
- ❖ **rare use of modern tools/technologies (i.e. IT) for information generation, dissemination and management**
- ❖ **inadequate capacity building (as per international standards) mechanisms for BR personnel and researchers**
- ❖ **unaccounted value of ecosystem services generated by the reserve**

ing with changing global thinking...

Considering the experiences with NDBR, and in view of fast changing global thinking on Biosphere reserves, following can be suggested as priority:

- Development of a Perspective Plan (5 year) and its effective implementation
- Improving monitoring and networking of BR through use of modern tools
- Development of specific training capsules for diverse groups of stakeholders considering their needs
- Development of user-friendly information portal
- Establish baseline information on value of ecosystem services emanating from the BR
- Developing alternate modals/strategies for sustainable use and management of BR resources under changing climate and economic scenarios

It is high time when we need to collectively analyse and accept our weaknesses and identify our strengths so that the targets slated for Biosphere Reserves to contribute for Sustainable Development in 21st century are met.

This is possible if we think in unison and work together.

Thanks

