LAC. GENERAL 8
LOG.

LAC-GENERAL 8.1.1.\LOG\ STATUS CHART\ VER. 1, AK, SP\ 13.7.2000
LAC-GENERAL 8.1.2 \LOG\ STATUS CHART\ VER. 2, AK, SP\ 17.7.2000
LAC-GENERAL 8.1.3 \LOG\ STATUS CHART\ VER. 3, AK, SP & BCIL\ 25.7.2000
LAC-GENERAL 8.1.4 \LOG\ STATUS CHART\ VER. 4. AK, SP\ 2.8.2000
LAC-GENERAL 8.1.5 | Log | Status Chart | Ver. 5 AK, SP | 24.8.2000
LAC-GENERAL 8.1.6 | Log | Status Chart | Ver. 6 AK, SP, BT | 4.9.2000
LAC-GENERAL 8.2.1.|LOG| STATUS OF MOU & DDS| VER.1, BCIL |2.9.2000
LAC-General 8.1.8|Log|status chart|ver.8 AK & SP, BT |14.10.2000
LAC-General 8.1.9| log| status chart | ver.9 AK & SP, BT, BCIL|30.10.2000
LAC-General 8.1.10|log| Status Chart | Ver.10 BCIL \25.11.2000
LAC
LAC-General 8.1.12| log| status chart|ver.12 BCIL, AK|8.12.2000
LAC-General 8.1.13| log| status chart| ver.13 BCIL | 12.12.2000
LAC-General 8.1.14| Log|Status Chart|Ver.14 SP| 26.1.2001.
LAC-General 8.1.15| Log|Status chart| Ver.15 | 24.3.01
LAC-General 8.1.16| Log|Status chart|ver.16|SP, 11.5.01
LAC-General 8.1.17|log| Status chart|ver. 17|KK, KC, 21.7.01
LAC-General 8.1.18|Log|status chart|ver.18,KK, KC, BCIL, 4.9.01
LAC-General 8.1.19|Log|.
LAC-General 8.1.20|Log|status chart|ver.20|KK KC BCIL, 28.10.01
LAC-General 8.1.21| Log| Status chart|ver.21| SP, 3.1.2002.
LAC-General 8.1.22| Log| Status chart|ver.22|KK KC, 22.2.02
LAC-General 8.1.23| Log| Status Chart| ver.23|KK, KC |2.5.02
LAC-General 8.1.24|Log| status chart |ver.24| SP, 28.6.02
LAC-General 8.1.25| Log| Status Chart|ver. 25, SP, 21.8.02

LIST OF BSAP DRAFTS RECEIVED FROM SUBSTATE SITES (As on 6.5.02)

S. No.	Substate sites	Received 1st draft, date	Commented on, by whom	Comments sent, date	Received 2nd draft, date	Commented on, by whom	Comments sent, date	Comments to be sent	Urgent follow-up	Peer Review	Send to MoEF
1.	DECCAN, ANDHRA	Yes	AK	Yes	Yes						Yes
2.	NORTH COASTAL BELT, ANDHRA	Yes	KK	Yes							
3.	KARBI ANGLONG, ASSAM	Yes 29.1.02	SP, AK	Yes, 22.2.02							
4.	KACHCHH, GUJARAT	Three chaps, 1.2.02 Full draft 3.4.02	SB	Yes 26.2.02				SB		Neetabhah/Gopal Bitapi (W11) GEC? ✓Panwar	
5.	LAHAUL SPITI	~~Yes~~ Zero draft							VS		
6.	LADAKH								Is June OK? ✓		
7.	UTTARA KANNADA	Yes, Coastal and Marine, Agriculture	DS AK	Dec 19th '01 13.1.02				DS (once draft comes)		I/Sc	
8.	BILASPUR	Yes, drafts for Jashpur and Sarguja districts	BMS						BMS		
9.	NAGPUR	Yes	AK, Utkarsh	Dec 23rd '01				MS to be sent			
10.	VIDARBHA	Yes, 22.1.02	AK	Yes					AK		
11.	WEST GARO HILLS	Yes, Jan 02	AK, SP	Yes, Mid march					PCB		
12.	CHEDEMA	Initial SAP chap							PCB/KS		

?

INTEGRATED DECISIONS AND SYSTEMS (INDIA) PVT LTD
PUNE 411 004

Payment Voucher

No. : **CPPP/678** Dated : **13-Jul-2001**

Particulars	Amount
Account :	
COMPUTER SUPPLIES - S/W DEVELO	**1,400.00**
SOFTWARE DEVELOPMENT 1,400.00 Dr	
Through :	
PETTY CASH-ON HAND	
On Account of :	
BIENG CASH PAID TO SUJATA COMPUTERS PVT. LTD. AGAINST BILL NO. 3466/13.7.2001 FOR PURCHASE OF CARTRIDGE HP29A FOR DESKJET PRINTER	
Amount (in words) :	
Rs. One Thousand Four Hundred Only	
	1,400.00

Receiver's Signature

Authorised Signatory

13.	SIMLIPAL	Summary chapter Full draft, mid march 02	Shruti Devi	Dec 01			
14.	ARVARI	Yes, 20th Dec '01	KK AK	Jan 02 3.2.02			
15.	RATHONG CHU	Yes, 29th Dec '01	SB	Yes Jan '01	Yes		
16.	MUNSIARI	Yes, 8/5/02					
17.	NAHIN KALAN						
18.	SUNDERBANS						

SD

MS

Bibash Pandav
L.A.K. Singh
Biswajit Mohanty?
~~[illegible]~~?

Anupam Misra?

~~KK~~?

KK/AK

Abandon?
↓
Ask Sambhu?

PCB

INTEGRATED DECISIONS AND SYSTEMS (INDIA) PVT LTD
PUNE 411 004

Payment Voucher

No. : **CPPP/677** Dated : **13-Jul-2001**

Particulars	Amount
Account :	
MEALS & ENTERTAINMENT-SOFTWARE	**51.00**
SOFTWARE DEVELOPMENT 51.00 Dr	
Through :	
PETTY CASH-ON HAND	
On Account of :	
BEING CASH PAID TO HANUMAN PROVISION STORES FOR PURCHASE OF SNACKS FOR TEA TIME FOR ALL	
Amount (in words) :	
Rs. Fifty One Only	
	51.00

Receiver's Signature

Authorised Signatory

LIST OF BSAP DRAFTS RECEIVED FROM SUBSTATE SITES (As on 7.11.02)

Substate sites & Name of coordinator	Received 1st draft, date	Commented on, by whom	Comments sent, date	Received 2nd draft, date	Commented on, by whom	Comments sent, date	Received 3rd version, date	Commented on, by whom	Comments sent, date	Summary received	Sent/ endorsed by MoEF	Remarks (including Comments to be sent, and urgent follow up)
DECCAN, ANDHRA Suresh Reddy	Yes	AK	Yes	Yes							Sent Endorsed	
NORTH COASTAL BELT, ANDHRA K. Sanyasi Raju	Yes	KK AK	Yes Yes									Festival held in October 02. Shruti to have helped in revising the plan
KARBI ANGLONG, ASSAM Bibhab Talukdar	Yes 29.1.02	SP, AK CORE	Yes, 22.2.02 Yes 7.11.02	Yes Dec 02								Revised draft expected soon. PCB requested to contact Bibhab for latest status. Urgent follow up required
KACHCHH, GUJARAT Y D Singh	Three chaps, 1.2.02 Full draft	SB SB Mr.	Yes 26.2.02 Yes	Yes, September 2002						Yes	Sent Endorsed	Could be recommended for endorsement

Shruti to follow up.

MoEF letter to be sent.

26 NT	27	GMC	Group Block	Populate a GS (master), GB(master), Gbzero(Master), GS(cubgrp), GB(Subgrp) and GB(master). Make sure that all GB msgs are for same date. Start the application.Invoke GMC.Retrieve data for a suitable date range for which GB msgs are populated.Double click on a row to get the group block details.In the group block section , navigate to the super-group.Click on the twistie (+) adjacent to the title of the super group.1=> The expanded tree does not display the name of the Master Group. 2=> In the row for the Master Group the twistie is displayed as expanded (-) by default. 3=> If the expanded twistie (-) displayed for the Master Group is clicked the tree branching beyond the Master Group is collapsed. If the collapsed twistie (+) displayed for the Master Group is clicked the tree branching beyond the Master Group is expanded and the name of the Master Group is Displayed. 4=> Now if the twistie is again hit (to expand) then the Master Group is displayed in RED colour.	Servers on AIX	3.35.08	3.35.09		YTR
27 NT	28	GMC	Group Block	The Group Block section displays DASHES for all the groups in the CONTRACTED BLOCK cloumn.	Servers on AIX	3.35.08	No Action		No Action
28 NT	29	GMC	Group Block	The twistie at the Master Group branching is to be displayed for the Multi IC scenario.Presently , the operation of the twistie has no role , since the current release is meant for a single IC set up .	Servers on AIX	3.35.08	No Action		**Closed**
29 NT	30	GMC	Group Block	The values of system wash rooms , system wash %, Expected wash rooms and expected wash % are displayed incorrect (-40, -100,-40, -100).	Servers on AIX	3.35.08	3.35.10	PG	**Closed**
30 NT	19	GMC	Group Block	The Group Block section does not display the names of the Rate buckets in the Group Block section.	Servers on AIX	3.35.07a	3.35.08		No Action
31	31	GMC	Group Block	Send a GX msg for a sub-group where master group is not cancelled. Open GMC and fetch block data for the date when GX msg is sent. Block grid still shows the cancelled sub-group.	Servers on AIX	3.35.08	3.35.09		YTR
32	32	UMG	IYGUDR~~~	IYGUDR~~~ does not get deleted after the GUI is closed by 1-> Hitting the exit button on the toolbar 2-> Hitting the close button on the IYG active window title bar 3-> Selecting the exit command from the "File" drop down menu of IYG 4-> closing the iy.exe from the taskmanager.	Servers on AIX	3.35.08	3.35.12	Kedar	YTS
33	33	GMC	GMC-TCase 19	If multiple clients are connected simultaneously with only one dataserver running the second client gets the message 'Data Server Unavailable'. If we say OK to this message one more error message appears " 1.14.1.4-Unable to Connect to the server".		3.35.09	3.35.11	PG	YTS

	3.4.02	Panwar	6.6.02									
LAHAUL SPITI Subhash Negi	Yes, zero draft.	VS	Yes 28.5.02									Appraisal meeting on 2nd Nov to finalise plan, held with State nodal agency and Shiwaliks EWG.
LADAKH Sonam Dawa	Yes SAP Chief Jan 31st 03									**Yes**		Two day meeting held in Leh in October to discuss the draft plan. One or two more meetings with concerned departments being planned to try and get commitments to actions.
UTTARA KANNADA Subhash Chandran	Yes, Coastal and Marine, Agriculture Forests	DS AK End June02	Dec 19th '01 13.1.02							**Yes**		Coordinator said that the full report is almost ready.
BILASPUR	Yes, drafts for	BMS										Electronic version

42	42	GMC	Details	Garbage values can be seen in System Wash Rooms and Expected wash rooms columns. See attachment for details	Click	3.35.09	3.35.10	Kedar/PG	YTR
43	43	GMC	Block	All the Master groups are shown at the top of the block grid, irrespective of the alphabetical order.		3.35.09			No Action
44	44	Test case number 3	Group identification	The super group should be notified with a " * ".When the tree view is in a collapsed state , the " * " is displayed. But when the tree is expanded , the " * " is not visible.		3.35.09	3.35.10	Vandana	**Closed**
45	45	GMC	GMC Dialog Resizing	Start the client.Invoke GMC.Maximise the GMC dialog.Just below the close button , there is a window resize utility. 1=> When the GMC dialog is resized this utility should be positioned at the extreme right bottom corner of the resized dialog.In our case its position needs to be changed. 2=> If this resize utility is dragged downwards , the toolbar on windows desktop which displays the " Start button" , the " quich launch toolbar ", " the system tray " etc vanishes.		3.35.09	3.35.10	PG	**Closed**
46	46	Test case number 8 and 10	Wrong Calculation	The total block of the master group is 786.There are 3 sub groups.Prior to the wash the super group displays the " Expected wash rooms " equal to zero.If one of the sub groups with a block of say 70 , is washed by 50% , then the expected wash rooms for that sub group is displayed as 35 which is correct.BUT the expected wash rooms for the SUPER GROUP is displayed as 393 which is wrong.		3.35.09	3.35.10	Kedar	WIP
47	47	Test case number 11 and 13	Wrong Calculation	The total block of the master group is 786.There are 3 sub groups.Prior to the wash the super group displays the " Expected wash rooms " equal to zero.If the Master Group with a block of say 600 , is washed by 50% , then the expected wash rooms for that sub group is displayed as 300 which is correct.BUT the expected wash rooms for the SUPER GROUP is displayed as 393 which is wrong.		3.35.09	3.35.10	Kedar	WIP
48	48	GMC	Tree behaviour	In the group details dialog , expand the groups by hitting on the "+/-" .Wash the super group.Without saving or cancelling , collapse the tree and expand it again.The washed values are lost.They should be retained.		3.35.09	3.35.10	Kedar	WIP
49	49	Test case number 39	Message	In the group details section , edit wash value double click on another group without saving the previous wash.The application does not give any message to the user to save the previous wash.The values of the previous wash are simply lost.		3.35.09	3.35.10	Vandana	WIP

Member, Secretary or Chairman, Tribal Development Society	Jashpur and Sarguja districts											required
NAGPUR Ramesh Ladkhedkar	Yes	AK, Utkarsh	Dec 23rd '01	Yes 11.6.02	Utkarsh	Yes	Yes, Aug 02			**Yes**	**Sent** Endorsed	
VIDARBHA Satish Gogulwar	Yes, 22.1.02	AK	Yes									Reminder email sent by Kothari on 15.10.02. Needs urgent follow up
WEST GARO HILLS P. G. Momin	Yes, Jan 02	AK, SP	Yes, Mid march									PCB has received the SAP chapter. Will meet the coordinator and finalise the plan.
CHEDEMA Khriketoulie Tracy Medoum	Initial SAP chap											PCB to call. Requires urgent follow up.
SIMLIPAL Deepak Pani/ MASS	Summary chapter Full draft, mid march 02	Shruti Devi	Dec 01	Yes, Oct 02						**Yes**		Comments received from 5 persons. Shruti to comment.

AK to follow up

close to endorsement

50	50	New Requirement	Time span	IDeaS has had groups booking 31st Dec 1999 , even 12 years in advance.As such Group related modules like GMC should not have dates clamped.The iyfudate for the present test setup is 5th March 2002 and the maximum end date is 21th May 2008.This range needs to be increased.The COMM messages for this reservation are accepted , but the GUI does not permit a date like 01st May 2020.The maximum date for the calendar is 31st dec 2027 although there is no data for this date.In case of GMC it is likely that there may be a group for such a distant date.		3.35.09	3.35.11	PG(to be discussed with Ben)	limitation
51	51	GMC	Date range - CRASH	Start the application.Invoke GMC.Select the start date as 21st May 2008.The end date also swaps to the same date automatically.Hit the "Retrieve Data" button.The data server CRASHES.		3.35.09	3.35.11	PG(to be discussed with Ben)	Recommendation
52	52	GMC	Block	IC field for all mastergroups is blank.		3.35.09	3.35.11		**Closed**
53	53	GMC	Block	TC07.txt. GS and GB for master group and subgroups. Cancel Mastergroup. Fetch block data. The subgroup 1 is displayed as master group.		3.35.09		PG (James/Petra for reply)	**Closed**
54	54	GMC	Details	IC field is blank for all the records in DETAILS dlg.		3.35.09	3.35.10	PG	**Closed**
contd	55	contd	contd	Besides , the messages are ambiguous.Furthermore the second client which did not save the wash is shown to have deleted the wash in the audit trail, whereas it neither changed , nor deleted the wash.	contd	contd	No Action		No Action
26 NT continued	56	GMC	Group Block	defect num 26 continued ..... 4=> As soon as the Master Group is displayed in RED colour , its name vanishes.	continued	continued	No Action		
	57	GMC	Group Console	In the Group Console Screen, GEM data was not shown properly. It used to appear for only first day in the date range		3.35.09	3.35.10		**Closed**
	58	WED		Note dialog is modified to display existing NOT_SAVED note.		3.35.09	3.35.10	PG	**Closed**
	59	WED		Notes dialog was formatted.		3.35.09	3.35.10	Vandana	**Closed**
55	60	GMC	Block	IC fileld shows "std" for some groups (conflicting with 52?). "std" is NOT the correct IC name		3.35.09	3.35.10	Vandana	**Closed**
56	61	GMC	Block	Clicking "+" or "-" (to expand or collapse) any SuperGroup, moves the focus to first record in the grid		3.35.09	3.35.10	PG	**Closed**
57	62	GEM	Rate Level	For the existing Rate Level, change the End Date and click Apply. IYG hangs; Crashes at times		3.35.09	3.35.11	Kedar	YTS
58	63	GMC	Details	There is a discrepancy in wash % figures in Block screen and in Details. For 1 Dec 2002, SUB-GRP9.4 has -100% wash in Block. Details dlg for same group and date, shows 0% wash.		3.35.09	3.35.11	Amol	WIP
								Vandana	WIP

ARVARI Rajendra Singh / Arvari Sansad	Yes, 20th Dec '01	KK AK	Jan 02 3.2.02	Yes, Oct 02	KK Nov 02	yes Nov '02				**Yes**		
RATHONG CHU Sandeep Tambe	Yes, 29th Dec '01	SB	Yes Jan '01	Yes May 02			Yes Sept 02	CORE	yes 11.7.02	SB		Draft approved by Forest Secretary, Sikkim
MUNSIARI Emmanuel Theophilus	Yes	KK, MS	Yes 2.6.02	Yes, Oct 02	Pankaj Sekhsena Madhu Sarin	yes Dec'02 yes Dec'02						
NAHIN KALAN Vividhara	Yes, SAP chapter	AK	Yes 28.12.02									Sent to Bharat Dogra for peer review
SUNDERBANS Amalesh Choudhury												No progress. Action by MoEF suggested.

KK looking at it

59	64	GMC	Block	Populate msgs from TC17. Retrieve data for 1 Jul 02. Expand the tree for MASTER170. Double click on MASTER170 to get the details dlg. Application crashes. Restart client and fetch details dlg for same MASTER170 for same date. This time data is displayed. But the Expected wash rooms and System Wash Rooms fields display garbage values for 5 Jul 02.		3.35.09	3.35.10	PG	WIP
60	65	GMC	Details dialog	Start the application.Log in as a normal user.Invoke GMC.Fetch data for any day(group console).Fetch the details for any date.Double click on any group in the group block section to fetch its details in the details dialog.In the the details dialog , the GROUP TYPE as well as the group name are right aligned.The name of the group is not displayed to its full length.The column displaying the group name cannot be resized so as to read the name to its full length as in the group block section.		3.35.09	3.35.10	PG	WIP
61	66	GMC	Details dialog	The IC column is displayed blank for all the dates and all the groups in the group details dialog		3.35.09	3.35.10	PG	**Closed**
62	67	GMC	Value of wash percentage	Start the application.Log in as a normal user. Invoke GMC.Fetch the details for a group which has at least one sub group.In the group block section change the wash percentage of a sub group from x% to y%.The value of wash percentage at the super group level also changes to y%.		3.35.09	3.35.10	Kedar	WIP
63	68	Special Event	Dates	The application allows the user to create a special event in the past (01st Jan 1970).It also saves the notes , audit trail of the event.The user should be prevented from creating events in the past.		3.35.09		PG	YTR
64	69	GMM	Show/Hide	1. Retrive the Group Block data for 1 day. 2. See that show/hide button is enabled. 3. Again click on the rwo of Group Console. 4. Show/Hide Button gets disabled.		3.35.09	3.35.11	Vandana	YTS
65	70	GMM	Show/Hide	Enter some value in Expected Wash %(Above/below the immediate row of any cancelled group) while 'Show Hide Cancelled Group is in 'Hide' mode. Click on Show/Hide. The edited value is shown in Cancelled group row.		3.35.09		Vandana	YTR
66	71	GMM	Show/Hide	CRASH: 1. Invoke data for 1 day say 03/06/02. Edit the wash for the days just below and above the cancelled group in group block.3. Click on show/hide button.4. Continue doing this for multiple times. 4. Client will crash. See Screen Image. NOTE: The scenirio is quite hard to find that 'when its crashing'?		3.35.09		Vandana	YTR

LAC General 8.2.1 \ Log\ Status of MoUs and DDs \ Ver1, BCIL \ 2.9.2000

List of confirmed LAC (sub state) coordinators to whom MoU has been sent

1. Shri Amalesh Choudhuri,
Choudhury Bari,
D – 44, Amravati Sodpur,
24 – Parganas (North) - 743 178
West Bengal

2. Shri K. Sanyasir Raju, Coordinator,
Grameen Punnarnirmana Kendram,
5 – 174, Palace Road, Village Kurupam,
Distt. Vizianagaram,
Andhra Pradesh

3. Shri Khrikeitoulie Tracy Medoum,
DVEZI Society,
82, East View, D Block,
Kohima – 797 007,
Nagaland

4. Dr. P.G. Momin,
Society for Environmental Protection and
Rural Development (SEPARD),
Department of Geography,
North East Hill University (NEHU), Mayurbhaj Complex, Nongthymmai,
Shillong – 793 014,
Meghalaya
DD sent on 1.09.2000

5. Shri Sandeep Virmani,
Forum for the Planned Industrialization of Kachchh,
Sahjeevan, 104 A, Lotus Colony,
Bhuj-Kachchh,
Gujarat

6. Shri Satish Gogulwar,
Amhi Amachya Arogyasathi,
Att. And P.O. Kurkheda,
Distt. Gadichiroli – 442 209,
Maharashtra

7. Dr. Subhash Chandran,
Department of Botany,
Dr. A.V. Baliga College,
Kumta – 581 343
Karnataka
DD sent on 30.09.2000

8. Shri Subhash Negi,
Member Secretary,
Tribal Advisory Committee and
Commissioner-cum-Secretary Tribal Development,
Department of Tribal Development,

The first step in evaluating $G^{(\mathrm{WKB})}$, then, is finding the appropriate classical paths. More than one type of path always contributes. There is exactly one parabolic trajectory of form (2.5), and taking only nonnegative radius values, between any initial and final points $(R_0, 0)$ and (R, t). Specifically, this trajectory has parameters

$$\alpha = \frac{8}{t^2}\left[\left(R_0 R + \frac{t^2}{4}\right)^{1/2} - \frac{R_0 + R}{2}\right] \tag{3.2a}$$

and

$$t_0 = \frac{t}{2}\,\frac{\left(R_0 R + \frac{t^2}{4}\right)^{1/2} - R_0}{\left(R_0 R + \frac{t^2}{4}\right)^{1/2} - \frac{R_0 + R}{2}}\,, \tag{3.2b}$$

and action

$$\begin{aligned} S^{(0)} = &-\frac{3t}{2\alpha}\left[1 - \frac{\alpha^2}{12}(t^2 - 3tt_0 + 3t_0^2)\right] \\ &+ \frac{R^2}{2}\ln\left|\frac{2 - \alpha(t - t_0)}{2 + \alpha(t - t_0)}\right| - \frac{R_0^2}{2}\ln\left|\frac{2 + \alpha t_0}{2 - \alpha t_0}\right|\,. \end{aligned} \tag{3.3}$$

Because paths are restricted to the half-space of positive radius values, there are also classical trajectories which are piecewise of form (2.5), but which "bounce" one or more times at zero radius; extremizing the action determines the bounce times. Such a path which bounces just once, at time t_1, has action

$$\begin{aligned} S^{(1)} = &-\tfrac{1}{4}[t_1(t_1 + 2R_0) + (t - t_1)(t - t_1 + 2R)] \\ &+ \tfrac{1}{2}\left(R^2\ln\left|\frac{R}{t - t_1 - R}\right| - R_0^2\ln\left|\frac{t_1 - R_0}{R_0}\right|\right)\,. \end{aligned} \tag{3.4}$$

For the bounced path to contribute to the WKB propagator (3.1), this should be extremal with respect to variation of t_1. That condition is

$$(t - t_1)^2(t_1 - R_0) - t_1^2(t - t_1 - R) = 0\,. \tag{3.5}$$

Each real solution of this equation with $t_1 \in [0, t]$ corresponds to a contributing trajectory. Since the left-hand side of Eq. (3.5) changes sign between $t_1 = 0$ and $t_1 = t$ there is always one such solution, and may be three. A classical path bouncing more than once, at times $t_1, \ldots, t_n$, has action

$$\begin{aligned} S^{(n)} = &-\tfrac{1}{4}[t_1(t_1 + 2R_0) + \sum_{j=2}^{n}(t_j - t_{j-1})^2 + (t - t_n)(t - t_n + 2R)] \\ &+ \tfrac{1}{2}\left(R^2\ln\left|\frac{R}{t - t_n - R}\right| - R_0^2\ln\left|\frac{t_1 - R_0}{R_0}\right|\right)\,. \end{aligned} \tag{3.6}$$

Govt. of Himachal Pradesh, H.P. Secretariat,
Shimla – 171 002, H.P.

9. Shri M.M. Upadhayay,
Chairperson, Tribal Development Society,
IFAD Assisted Tribal Development Programme,
Commissioner Office,
Bilaspur, Madhya Pradesh

The Hamiltonian is

$$H = P\dot{R} - L = \frac{2R}{1-\dot{R}^2} \ . \tag{2.9}$$

The Hamiltonian cannot be expressed in terms of R and P in closed form, since the transcendental relation (2.9) between $\dot{R}$ and P/R cannot be inverted explicitly.

It should be noted that the "energy" corresponding to this Hamiltonian is not to be identified with the ADM mass of the wormhole, which is zero by construction. To thus fix the "energy" would reduce the equation of motion to first order, and the classical initial-parameter space to one dimension, making canonical quantization impossible. In fact the Hamiltonian (2.9) corresponds to the classically conserved "mass" $2(2\pi R^{3/2}\sigma)^2$ appropriate to the equation of state (2.3). [The Einstein field equations imply the conservation law $d(4\pi R^2\sigma)/dt + pd(4\pi R^2)/dt = 0$; Eq. (2.3) then implies that $R^{3/2}\sigma$, hence H, are classically conserved.] This can take on various values for different wormhole states. In this respect our treatment contrasts with the analyses of Hájíček *et. al.* [18] of the quantum mechanics of a collapsing dust shell. Those authors take the Hamiltonian to correspond to the ADM mass of the system, which may take on different values in different states. They treat the classically conserved proper mass of the shell as a fixed parameter.

Of course the wormhole action is not uniquely defined by the equation of motion specifiying its extrema. A variety of actions, of other than Einstein-Hilbert form, can be constructed corresponding to Eq. (2.4)—or to equations obtained from other equations of state. Actions can be obtained which avoid some of the complexities encountered with the geometric action (2.6), e.g., the complicated kinetic term, and the transcendental relation (2.8). The construction of such actions and their implications for wormhole quantum mechanics are examined in another paper [12]. The rest of this paper treats the quantum dynamics obtained from the geometric action.

B. Quantum dynamics

In this minisuperspace model, then, the quantum wormhole is to be described by a wave function $\psi(R,t)$. With the Hamiltonian constraint (2.2a) imposed classically, i.e., incorporated into the reduction of the wormhole's phase space, no Wheeler-de Witt equation imposes "time independence" of ψ [11]; instead its evolution in wormhole-exterior time t is generated by the Hamiltonian (2.9).

There is no hope of treating the corresponding Schrödinger equation directly: The transcendental nature of relation (2.8) and the form of H imply that the Hamiltonian contains all powers of the momentum P, or as an operator on ψ, of $\partial/\partial R$. It is therefore a nonlocal operator, similar to that for a relativistic particle, but rather more unwieldy [14]. Operator ordering in H is problematic as well. But the *solution* of the Schrödinger equation can be treated. The general solution, i.e., the time evolution of any wave function, can be given in terms of a propagator:

$$\psi(R,t) = \int G[R,t;R_0,0]\,\psi_0(R_0)\,dR_0 \ . \tag{2.10}$$

LAC General 2.1.1/corr/ Invitation letter to state nodal agencies/ver.1/ 5.4.2000

KALPAVRIKSH

कल्पवृक्ष

Environmental Action Group

24/5/2000

Dear

The Ministry of Environment and Forests (MoEF), Government of India, has initiated a project to prepare India's National Biodiversity Strategy and Action Plan (NBSAP). Such a Plan has been a long-felt need in the context of the rapid loss of biological diversity in India, and is also in keeping with India's obligations under the UN Convention on Biological Diversity. In 1999, the MoEF came out with a Macro-Strategy on biodiversity; the NBSAP, which is supported by the Global Environment Facility (GEF) through UNDP, will attempt to flesh out this macro-strategy in the form of very detailed action points and time-bound programmes.

The aim of the project is to evolve a plan relevant to the country as a whole, tackling the range of biodiversity concerns and the different levels at which biodiversity is impacted. To this end, it is envisaged that action plans will be prepared for 14 themes relating to biodiversity at the national level, for the 31 states and union territories, for 9 inter-state ecoregions, and for about 20 sub-state, local sites. All kinds of biodiversity will be focused upon: wild plants and animals, domesticated livestock and crops, micro-organisms, and ecosystems. In all this, the greatest stress will be on maximum participation of women and men from all sectors: local communities, scientific organisations, NGOs, government agencies of all kinds, political leaders, artists, and others. There will be special focus on issues of gender and equity, ethical concerns, livelihoods linked to biodiversity, threatened species and ecosystems, and community-based conservation.

A layered organizational structure has also been instituted for drawing up the NBSAP. The National Project Directorate (NPD) is situated at the MoEF. This NPD along with the Steering Committee provides guidance and assistance for the process. A Technical and Policy Core Group (TPCG), consisting of experts from various fields and different parts of India, from both government and outside, is the main planning and executing body of the NBSAP. An administrative coordinating agency (BCIL, New Delhi), is overseeing the logistic aspects. Themes will be handled by appropriate Working Groups, and state or local level processes by appropriate nodal agencies and steering committees. These groupings will consist of a cross-section of sectors, interests and professions.

I have been asked to coordinate the TPCG, on behalf of Kalpavriksh. I am now writing to informally intimate you that the TPCG has recommended you to be the nodal agency for the sub-state site of _____, in the context of the NBSAP. As a nodal agency, you will be required to initiate and coordinate the preparation of the action plan for your site. In this, you will be guided by a Local Advisory Committee (LAC), comprising of people from various sectors. We will suggest to you the composition of the LAC, though of course you will perhaps want to choose some of the members yourself.

We do hope that you will agree to take on this responsibility. You will soon receive a formal intimation of this from the MoEF. **Meanwhile, we would also like you to book the dates of June 23/24, to participate in the Inaugural National Workshop on this project, in New Delhi.** You will be intimated further details of this workshop very soon after we have received your concurrence.

We look forward to working with you on this exciting process. Thank you, sincerely yours,

(Ashish Kothari)
Coordinator, Technical and Policy Core Group
National Biodiversity Strategy and Action Plan

Apt. 5, Shree Dutta Krupa, 908 Deccan Gymkhana, Pune 411 004, India.
Telefax: ~~(0212) 354239~~ 020-5654239 • Email: ashish@nda.vsnl.net.in
(Delhi Address: c/o B-25, Defence Colony, New Delhi 110 024)
Email-kvriksh@vsnl.com.

LAC General 6.3.4\ Lists\ Nodal Agencies with Email ID\ Vol 4, BCIL\ 14.3.01
6.3.4

LIST OF LOCAL (SUBSTATE) SITE COORDINATORS

S.No.	Local (substate) sites	Coordinator	Email Address
1.	Andhra Pradesh - Deccan area	Suresh Reddy Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260	suri_9reddy@rediffmail.com ddshyd@hd1.vsnl.net.in
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram – 535 524, Andhra Pradesh Tel.: 08963-65146	
3.	Assam - Karbi-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path, P.O. Beltola, Basistha Road, Guwahati 781 028 Telefax: 0361-266087 Mobile: 9864060706	bibhab@gw1.vsnl.net.in
4.	Gujarat - Kachchh	Y.D.Singh, Gujarat Institute of Desert Ecology, Patwadi Naka, Bhuj, Kachchh 370 001. Tel.: 02832 – 50234 Fax 02832 – 52834	desert_ecology@hotmail.com singhyd@yahoo.com gide@ad1.vsnl.net.in arunmdixit@hotmail.com
5.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Subhash Negi, Tribal Advisory Committee and Commissioner-cum-Secretary Tribal Development, Department of Tribal Development, Govt. of Himachal Pradesh, H.P. Secretariat, Shimla – 171 002, H.P. Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P. Tel.: 0177-221907 Fax: 0177-220657	
6.	Jammu &Kashmir – Ladakh	Sonam Dawa, Ladakh Ecological Development Group, Leh – 194 101, Ladakh Tel.: 01982-53221 Fax: 01982-52284	pnamgial@del1.vsnl.net.in
7.	Karnataka – Uttara Kannada	Subhash Chandran, Dept. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386-23142	mdschandra@yahoo.com
8.	Madhya Pradesh - Bilaspur	N.K. Aswal, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Tel.:07752-49068 (O/R) Fax: 07752-25008	bms_r@yahoo.com

Sidedness: One of the most interesting properties of large scale jets is that they tend to be one-sided in powerful sources, even when the rest of the large scale structure shows reasonable symmetry in size and luminosity on either side of the core. Bridle and Perley (1984) have quantified jet sidedness by introducing a parameter $\mathcal{S}$ which is the ratio of the intensities of the brighter and fainter jets measured at the same distance from the core. Jets are said to be *one-sided* when $\mathcal{S} \gtrsim 4$, and two-sided when $\mathcal{S} < 4$ everywhere. There is no physical significance to the limiting value of S =4; Bridle and Perley chose it as a reasonable point of separation which divided the sample of jets available to them into two more or less equally numerous groups.

We have seen that the jets in weak (FR I) galaxies are generally two-sided. However, they often begin as one-sided close to the core, but after a few kiloparsec become two-sided. The one-sidedness is confined to less than ~ 10 percent of their length. Jets in the more powerful radio galaxies (FR II) are often one-sided, but several examples of two-sided jets in powerful radio galaxies are known, an example being Cygnus A. Such *counterjets* usually have only a few percent of the luminosity of the main jet. Jets in quasars are always one-sided. In their very sensitive and high angular resolution observations of a set of 12 highly luminous FR II quasars, Bridle et al. (1994) failed to detect a single counterjet. Candidate counterjets have however been identified in several cases, on the basis of features found at positions which are thought to be natural for the course of a putative counterjet (see the discussion on Figure 9.9 given above). Even if these candidates are confirmed as jets, it is clear that there is a real asymmetry in jet luminosity in quasars and luminous radio galaxies. We will discuss possible reasons for this asymmetry in Section 9.6.

9.5 Compact Sources and Jets

Compact radio cores are found in a large majority of radio galaxies and in all quasars. In the former the core luminosity ranges from a fraction of 1 percent to ~ 10 percent, while in quasars the core contribution can be almost the whole radio luminosity of the source. While cores are (by definiton) not resolved on the arcsecond scale, they do have discernible structure when observed on the ~ 1 mas scale using VLBI. Dominant cores can be broadly classified into the following types:

		Contact Person: B.M.S. Rathore, State Programme Director, IFAD, Bilaspur	
9.	Maharashtra – Nagpur	Pradyumna Sahasrabhojanee, Vidarbha Nature and Human Science Centre, 509, Bhide Lane, Old Ramdaspeth, Nagpur – 440 010 Tel.: 0712-542653	
10.	Maharashtra – Vidarbha	Satish Gogulwar, Amhi Amachya Arogyasathi, Att. And P.O. Kurkheda, Dist. Gadichiroli – 442 209 Maharashtra Tel.: 07139 – 45471, 45380	cesedu@nagpur.dot.net.in (c\o Vivek Vagh)
11.	Meghalaya - West Garo hills:	P.G. Momin, Society for Environmental Protection and Rural Development (SEPARD), Department of Geography, North East Hill University (NEHU), Mayurbhaj Complex, Nongthymmai, Shillong – 793 014, Meghalaya Tel: 0364 232119(o), 250094 (res)	nehulibr@dte.vsnl.net.in
12.	Nagaland – Chedema	Khrikeitoulie Tracy Medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	kksema@naganet.com ; khekimoshohe@rediffmail.com kmedom@rediffmail.com
13.	Orissa – Simlipal Tiger Reserve and Mayurbhanj region	Deepak Pani, Mayurbhanj Swechhasevi Samukhya, Ward No 10, Baripada 757 001, Mayurbhanj, Orissa. Tel: 06792-57303, 53708	massbpd@hotmail.com
14.	Rajasthan - Arvari	Rajendra Singh, Tarun Bharat Sangh, Bhikampura-Kishori, via Thanagazi, Dist. Alwar 301002, Rajasthan. Tel: 01465-25043 (Bhikampura); 0141-391092 (Jaipur); Fax: 0141-393178; Mobile: 98100 33015	
15.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Sandeep Tambe, DFO Wildlife, South West, Namchi, South Sikkim-737126 Tel: 03595-63811 (o), 03595-63612 (res)	sandeep_tambe@lycos.com
16.	Uttar Pradesh – Munsiari	Emmanuel Theophilus, SHT/NTGCF Munsyari Munsyari-262554, Pithoragarh, Uttar Pradesh Ph: (059612) 2229	jagdeesh@ntgcf.irm.ernet.in
17.	Uttar Pradesh – Nahin-Kalan	Bhopal Singh, c/o Vividhara, Village Nahinkalan, Post Sangaon, Via Bhogpur, Dist	ajjumahajan@hotmail.com ajay_vividhara@hotmail.com

Core-jet sources: These have a strong flat spectrum core, unresolved at the ~ 1 mas scale, and in most cases a one-sided steep spectrum jet on the parsec scale.

Compact steep spectrum (CSS) sources: These have small apparent linear sizes $\lesssim 15 h_{100}^{-1}$ kpc, and yet have steep radio spectra, with spectral index $\alpha > 0.5$, which shows that they are not core-dominated. CSS sources can be found in radio galaxies as well as quasars, and form $15 - 30$ percent of radio sources in catalogues (see Fanti et al. 1990, and Dallacasa et al. 1993 for reviews). Bright jets are common in CSS sources and have properties similar to those in the larger sized radio galaxies and quasars. A majority of the jets are one-sided (Spencer and Akujor 1992) and superluminal motion has been observed in some cases. Observations of nearby CSS sources show good correlation between their complex radio structure and optical emission line gas, suggesting strong interactions between jets feeding the radio source and the gas in the ambient medium. The small size of the CSS sources could be explained if (1) these are young sources (or old sources restarting after a period of quiescence) which will later grow into larger size or (2) the jets are trapped by a dense gas.

Compact double sources: These were first identified as a class by Phillips and Mutel (1982) and are dominated by two separate regions of emission, of comparable flux density, on the parsec scale. These usually have low variability and polarization, and lack lobe emission and superluminal motion. Some of the compact doubles in fact have been found to have a linear triple structure (see Conway et al. 1992).

Pearson and Readhead (1988) have carried out morphological classification of 45 detected parsec scale sources in a sample of 65 objects. They found 25 could be classified as very compact or core-jet type, 7 as CSS sources, 6 as compact doubles and 6 remained unidentified. The cores of lobe-dominated sources are weak and therefore difficult to study on the small scale, but the examples that are known show a core-jet structure (see Pearson 1990 for references).

9.5.1 Parsec Scale Radio Jets

Parsec scale jets were first discovered in the late 1970s when it became possible to make VLBI images with a resolution of ~ 1 mas using closure phase techniques. While the first maps had only limited dynamic range,

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18.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar Islands, South 24 Parganas, West Bengal 743 178 Tel: 03210-47235, 033-5650305®, 033- 5651598(O)	amaleshchoudhury@hotmail.com ; sdmbri@cal2.vsnl.net.in

the best VLBI images available now reach the quality which is obtainable with the VLA.

Parsec scale jets present themselves as a series of knots which extend more or less in the direction of the kiloparsec scale jet (when the latter is detected). Jets which have been observed with high dynamic range show continuous emission with the knots superposed on it. The knots can define a linear or a curved structure. The small and large scale jets are usually aligned, but large curvature is sometimes found. New components are observed to arise close to the unresolved core and the components tend to be more extended away from the core.

The apparent speed at which the knots separate from the core often exceeds the speed of light, and such motion is said to be superluminal. Different components in a given jet can move with different velocities, can accelerate or decelerate as they move out and successive components need not follow the same track. Superluminal sources always expand, i.e., the distance between a knot and the core always increases. The complexity of knot motion implies that we are probably not seeing the physical velocity of individual components, but the phase velocity of brightness peaks in jets.

An excellent example of the core-jet type of compact source is the quasar 3C 345. A VLBI image of this quasar made at 5 GHz with 1 mas resolution (Unwin & Wehrle 1992) is shown in Figure 9.5.1. The core at D is unresolved at the highest frequencies and has been determined to be stationary with reference to the more distant compact quasar NRAO 512 with a fractional uncertainty of 2 parts in 10^8 in the angular coordinates. The component C5 emerged from the core in 1984; the older components lie to the west of it. Components C2-C4 which were distinct in images made at earlier epochs are now difficult to separate, either because the jet has changed over several years, or because the earlier data failed to detect the faint emission between the components. The apparent speed of the components relative to the core is in the range $(1.4-9.5)ch_{100}^{-1}$ ($q_0 = 0.5$). The speed appears to increase continuously with separation from the core, which could be due to acceleration, or because the direction of the motion relative to the line of sight is changing. On the smallest scales, successive components do not appear to follow the same trajectory. No milliarcsecond counterjet has so far been detected in this source.

Another well studied quasar is 3C 273, which has a redshift of 0.158 and was the first object in which superluminal motion was detected (Whitney et al. 1971, Cohen et al. 1971). A composite made by Schillizi (1992) with images at various frequencies is shown in Figure 9.5.1. When

Proposed List of Local (Sub-state) Site Nodal Agencies

~~(NOTE: SOME OF THESE ARE NOT YET CLEAR, AND NEED TO BE PUT ON HOLD...AS MARKED BELOW)~~

S.No.	Local (Substate sites)	Coordinator	Member
1.	Karnataka - Uttara and Dakshina Kannada	Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142	• K.P. Achar Prof. & Head, Deptt of Zoology, Shree Bhuvanendra College, Karkala-574 104, Dakshin Karnataka Tel: 0858 21937 • S.A. Hussain, (Chairman Biodiversity initiative trust, Mangalore), Hussain Manzil, Anekere Road, Karkala – 574 104 • Prabhakar Achar, Head of Department of Zoology, Shri Bhuvanendra College, Karkala – 574 104 • K. Somnath Nayak, Nagarika Seva Trust, Gurvayankere, Dakkshina Kannada • B.K. Parmeshwara Rao, Nagarika Seva Trust, Gurvayankere, Dakkshina Kannada • Harish Bhat, Centre of Ecological Sciences, Indian Insitute of Science, Bangalore – 560 012 • M.R. Hegde, Snehakunja Kasarkod, Honavar Taluk, Uttara Kannada • Anant Hegde Ashisar, Bhairumbe PO, Sirsi, Uttara Kannada • Pandurang Hegde, Hulemalgi Building, Sirsi • Sunita Rao, Preeti Nilaya, Sirsi – 581 402
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	• T. Shivaji Rao, • K. Shankar Reddy, JANACHETNA, Palakonda Dist. Srikakulam, Andhra Pradesh • Phalguni Rao, Kattragedda Village, Bhamini Mandalam, Dist. Srikakulam Andhra Pradesh
	Andhra Pradesh - Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: ddshyd@hd1.vsnl.net.in	-
3.	Tamil Nadu - Gulf of Mannar	P.C. Kesavan, Executive Director, M.S. Swaminathan Research	• Forest Department, Tuticorin Official incharge of National

MR. PADMANABHAN T. 40/M

II. बी. डॉक्टर द्वारा भरा जाए
B. TO BE COMPLETED BY THE DOCTOR

1. क) इतिवृत्त
a) History

NP

ख) बीमारी, शल्यक्रिया, दुर्घटना, जाँच आदि का विगत इतिवृत्त
b) Any past history of disease, operation Accidents, investigations etc.

-Nil-

ग) सामान्य परीक्षण
c) General Examination

O/E afebrile P: 80/m BP 140/90

घ) विधिपूर्वक परीक्षण
d) Systemic Examination

R/S clear P/A soft CNS No deficit

2. इलेक्ट्रोकार्डियोग्रामी
Electrocardiography : * [To be completed and signed by M. D. (Cardiologist) only]

क) क्या आपके वृत्तिक अभिमत से संलग्न किये गये इलेक्ट्रोकार्डियोग्राम में कोई असामान्यताएँ हैं, यदि हों तो विवरण दें ?
a) Does the attached Electrocardiogram in your professional opinion show any abnormalities and if so, please describe ? :

- No -

ख) क्या असामान्यताएँ किसी विद्यमान बीमारी अथवा रुग्णता के परिचायक हैं जिनके प्रति प्रस्तावक के आगामी भ्रमण के दौरान चिकित्सा की आवश्यकता हो सकती है ?
b) Does the abnormality represent a current illness or disease which may possibly be expected to require medical treatment during proposer's forthcoming trip ? :

- No -

ग) इस प्रकार की अनियमितताओं के प्रति प्रस्तावक को चिकित्सा की आवश्यकता हैं ? भूतकाल में कभी चिकित्सा की गयी ?:
c) Does the proposer now or did he/she in the past, require medication for this abnormality ?:

- No -

घ) भूतकाल में अथवा वर्तमान में की गयी/ जारी चिकित्सा के विवरण लिखें । :
d) Please describe any treatment taken by proposer in the past or being taken at persent :

-Nil-

च) क्या आप प्रस्तावक को कहीं भी विदेश भ्रमण के लिए स्वस्थ मानते हैं, वायु यात्रा से उत्पन्न दबाव जिससे बीमारी पर बुरा असर पड़ता हो को ध्यान में रखा जाए । :
e) Do you consider that proposer is fit to travel any where abroad, due account being taken of the stress of air travel adversely affecting his medical condition ?

-Yes
fit for travelling abroad.

3. क्या यूरीनस्ट्रिप परीक्षण में शुगर पायी गयी है :
Does the Urine Strip Test show any sugar ? :

No (BSL F 181 mg%)

डॉक्टर के हस्ताक्षर
Signature of the Doctor

Gandhi

डॉक्टर का नाम
Name of the Doctor

DR. SANJAY GANDHI
M. D. (MEDICINE)
CONSULTANT PHYSICIAN
MEDINOVA DIAGNOSTIC SERVICES LTD. PUNE

अर्हताएँ
Qualifications

पता
Address

टेलीफोन क्र.
Telephone No.

		Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698, Fax: 2351319	Parks)
4.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad ~~or~~ c/o Satish Gogulwar, Amhi Amachya Arogyasathi, Att. And P.O. Kurkheda, Dist. Gadichiroli – 442 209 Maharashtra Tel.: 07139 - 45471 **~~(address not yet clear, keep on hold)~~**	
5.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
6.	West Bengal - Sunderbans	Amalesh Choudhuri, Choudhury Bari, D-44, Amravati Sodpur 24-Parganas (North), West Bengal – 743 178 Tel.: 5650305, 5651598 Email: amleshchoudhuri@hotmail.com	• Field Director, Sunderban Tiger Reserve
7.	Assam - Karbia-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	• Jyotsna Terangpit, KNCA C/O Anjali Daimari, Q1 No.187 A, Jaya Nagar, East Gossala, Mali Gaon, Guwahati & Karbi Nimso Chingthor Asong, c/o ASDC Office, Diphu, Karbi Anglong, Assam
8.	Arunachal Pradesh – Dibang Valley	Budhi Mohan Lingli, & Jatan Pulu, P.O. Roing, Dist. Debang Valley, Arunachal Pradesh Through B.J. Dey, ADC, Roing, Dibang Valley, Tel.: 03803-22223 (O), 22221 ® Jatan Palu, Vill. Yibuk P.O. Roing, Arunachal Pradesh Tel.: 03803 – 22352 (Res.) **~~(not clear; please put on hold)~~**	
9.	Meghalaya - West Garo hills:	P.G. Momin, SEPARD (Society for Environmental Protection and Rural Development), Department of Geography, NEHU, Majurbhaj Complex, Nongthymmai, Shillong – 793 014 Tel.: 0364 – 232119(Off.), 250094(Res.) Email: nehulibr@dte.vsnl.net.in	

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R.O. Sharada Centre, 11/1, Erandawane, Pune - 411 004.

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Subject to realisation of cheque

(प्राधिकृत हस्ताक्षरकर्ता)
(Authorised Signatory)

Collected
VSA7

10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachungpa Sr. Research Officer (WL), Dept. of Forests, Env. & WL, Government of Sikkim, Deorali, Gangtok – 737 102 Tel.: 03592 – 22973, 23174 (off.) 25273 (Res.) Fax: 03592 – 25273/23862/22707Email: ganden@dte.vsnl.net.in and c/o Ganden Lachungpa, Atlas Tours & Services, 9 Supermarket, Gangtok – 737 101 Sikkim Tel./Fax: 03592 – 23682	• Director, Khanchendzonga National Park
11.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197; Email: harmony1@ndb.vsnl.net.in	
12.	Madhya Pradesh - Bilaspur Commissionery:	Chairperson, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Madhya Pradesh Fax : 07752-25008 ~~(put on hold)~~	• Tribal developmental society(BMS to send additional names)
13.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh, Sahjeevan, 104 A Lotus Colony, Bhuj-Kachchh, Gujarat Tel.: 02832-51814	• Justus Joshua, Gujarat Institute of Desert Ecology, Patwadi Naka, Bhuj , Kachchh 370 001. Tel.: 02832 – 54681, Fax 02832 – 52834 Email: ide-bhuj@x400.nicgw.nic.in • Hasmukh Shah, Chairman, Gujarat Ecology Commission, 5 Golden Apartments, Subhanpura, Vadodara – 390 023 Tel.: 383329, Fax: 383341, 0265 – 384664 Email: nilashah@pi.zaverchand.co.in • H.S. Singh, Director, Gujarat Ecological Education and Research Foundation (GEER), Indrora Park, Sector – 9, Gandhinagar – 382 009, Gujarat Tel.: 02712-21385 Fax: 02712-41128
14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur	Subhash Negi, Member Secretary, Tribal Advisory Committee, and Commissioner-cum-Secreatary, H.P. Secretariat, Shimla 171 002, Himachal Pradesh Tel.: 0177-221907 Fax: 0177- 220657	• Gargi Banerjee, Pragya, A – 212A, Sushant Lik, Gurgaon – 112 002 Telefax: 0124-6385932/6386104 • Hansraj Negi, Institute of Himalayan Biological Research Technology, Palampur, Himachal Pradesh
15.	Bihar - Chhota Nagpur Plateau OR Dalma/Jameshedpur Area	(Use Integrated Tribal Development Project, or Rathore to suggest) **(put on hold)**	

Dear Lata,

I was originally under the impression that the total cost of air-tickets will be around US $ 4,500. From what Vasanthi tells me it could be higher which means I have to warn my host regarding that. Can you please tell me

(i) the exact fare (within + or minus Rs.1000/- of the air-ticket cost for myself Vasanthi and Hamsa seperately. I nned this urgently. Please email to me by evening and I will contact my host tonight.

(ii) The cost of Maruti car [no AC or other frills, cheapest] for Pune-Bombay sector .

Please book Maruti car for Pune-Bombay for my departure as usual. You can go ahead and do the ticket by Delta since I find the alternative procedure through Air India much more complicated.

While ticketing please ask for the special seat with longer legspace room for all of us.

regards,

Paddy

(except AI)

(i) all airlines have withdrawn the special 120days fare + hence this increase, the fare for adult is 66,56 per person + for the child 50,240/- (this includes approx 1200/- tax also)

(ii) the cost of the Maruti van will be appx 2000/- for Pune/BOM. I am booking the van for 5 p.m on 25 March (if you want to leave late it can be changed).

(iii) there is a rumour that AI is cancelli for all flights though the system shows as

16.	Rajasthan - Arvari Basin	Rajendra Singh, Tarun Bharat Sangh, Bhikampura-Kishori, via Thanagazi, Dist. Alwar 301002, Rajasthan. Tel: 01465-25043 (Bhikampura); 0141-391092 (Jaipur); Fax: 0141-393178 (Jaipur)	
17.	Nagaland – Chedema	Khrikeitoulie Tracy Medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

तार Telegram : TECHNOLOGY फैक्स Fax : (0512) 590914/590007 फ़ोन 597641
597563

भारतीय प्रौद्योगिकी संस्थान कानपुर
INDIAN INSTITUTE OF TECHNOLOGY KANPUR
भौतिकी विभाग
DEPARTMENT OF PHYSICS

पत्रालय–आई० आई० टी० कानपुर–208 016 (भारत)
P. O. – I. I. T., KANPUR – 208 016 (INDIA)

March 3, 1998

Professor J Narlikar
Director, IUCAA
Post Bag 4, Ganeshkhind
Pune 411 007

Sub : Summer Project for our M.Sc. Students

Dear Professor Narlikar,

I am approaching you through this letter regarding Summer Training Programme for some of our excellent M.Sc. students at your institution. We have Msc (2-year) and Msc (Integrated 5-yr) programmes at our Institute with very motivated students. Such a programme gives them an opportunity to learn to deal with some real research problems. We have observed from our past experience that it has gone a long way in encouraging students towards a research career.

In this programme, a student spends about 6-8 weeks during the summer at a place of Excellence, such as your Institute. The Institute which offers them such an opportunity takes care of his/her travel expenses and stay in a hostel with a stipend to cover the living expenses. In the past you had kindly accepted some of our students for such a summer training programme. These students have enormously benefited by the training they received. This year also we would like to send the following students to your Institute :

1. Abhishek Agarwal (97572) CPI = 9.1
2. Sanjib Sharma (97580) CPI = 8.5
3. Sandipan Mohanty (94253) CPI = 8.0

→ Dear CAP

The applications of these students are also enclosed herewith.

This letter may also please be accepted as a strong letter of Recommendation for the above mentioned students.

With kind regards,

Sincerely yours,

Pankaj Jain
Placement in Charge

R.K. Thareja
Professor and Head

e-mail : pj@iitk.ernet.in
pkjain

LIST OF LOCAL (sub-state) SITE NODAL AGENCIES

S.No.	Local (substate) sites	Coordinator	Email Address
1.	Karnataka - Uttara Kannada	Subhash Chandran, Dept. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142	mdschandra@yahoo.com
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	
3.	Andhra Pradesh - Deccan area	Suresh Reddy Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260	suri_9reddy@rediffmail.com ddshyd@hd1.vsnl.net.in
4.	Maharashtra – Vidarbha	Satish Gogulwar, Amhi Amachya Arogyasathi, Att. And P.O. Kurkheda, Dist. Gadichiroli – 442 209 Maharashtra Tel.: 07139 – 45471;	cesedu@nagpur.dot.net.in (c\o Vivek Vagh)
5.	Uttar Pradesh – Munsiari	Emmanuel Theophilus, SHT/NTGCF Munsyari Munsyari-262554, Pithoragarh, Uttar Pradesh Ph: (059612) 2229	jagdeesh@ntgcf.irm.ernet.in
6.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal 743 178 Tel: 5650305, 5651598	amaleshchoudhury@hotmail.com
7.	Assam - Karbi-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	bibhab@gw1.vsnl.net.in
8.	Orissa – Simlipal Tiger Reserve and Mayurbhanj region	Deepak Pani, Mayurbhanj Swechhasevi Samukhya, Ward No 10, Baripada 757 001, Mayurbhanj, Orissa. Tel : 06792 57303, 53708	massbpd@hotmail.com
9.	Meghalaya - West Garo hills:	P.G. Momin, Society for Environmental Protection and Rural Development (SEPARD), Department of Geography, North East Hill University (NEHU), Mayurbhaj Complex, Nongthymmai, Shillong – 793 014, Meghalaya Tel: 0364 232119(o), 250094 (res)	nehulibr@dte.vsnl.net.in
10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Sandeep Tambe, DFO Wildlife, South West, Namchi, S.Sikkim 737126 Tel: 03595 63811 (o), 63612 (res)	sandeep_tambe@lycos.com
11.	Uttar Pradesh – Nahin-Kalan	Bhopal Singh, c/o Vividhara, Village Nahinkalan, Post Sangaon, Via Bhogpur, Dist Dehradun Tel: 0315 659302	ajjumahajan@hotmail.com
12.	Madhya Pradesh - Bilaspur	M.M. Upadhayay,Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Madhya Pradesh Fax : 07752-25008	bms_r@yahoo.com
13.	Gujarat - Kachchh	Y.D.Singh, Gujarat Institute of Desert Ecology, Patwadi Naka, Bhuj,	desert_ecology@hotmail.com

A NEW THRUST TO THE PROTECTION AND CONSERVATION OF BOTH TIGERS AND WILDLIFE BY LOCAL FOREST DWELLING COMMUNITIIES

Rajendra Singh, Tarun Bharat Sangh, Alwar, Rajathan

(1) To identify people and communities who have genuine interest in conservation
(2) To organise such people and communities
(3) To chalk out a plan of action and programme for this organisation

Conservation Programme for the following Groups:

(1) Awareness Creation Programme

(a) Education of Children:
- Wildlife Education in Schools
- Educate the importance of forests and wildlife
- Educate the children about the issues and methods of conservation

(b) Education of the Society:
- Traditional life style that emphasises the need of conservation
- Create awareness on the necessity of protecting wildlife for its effective impact on agriculture and animal husbandry practices.
- The importance of nature conservation in the life of each individual
- Conduct dialogues/ meetings, workshops etc. with the forest communities.

(c) Educational Tours:
- Organise group visits to those areas where forests are being effectively protected by local communities so as to impart an awareness to the people on the direct benefits reaped by both the community and the wildlife as a result of such community initiatives - especially show the Bhairudevlok Wildlife Sanctuary, Bhavna, Suratgarh forest areas where local communities took the initiative to protect the forest and wildlife in Sariska.

(d) Combined Education/Training:
- Provide training/ education to the forest staff and local communities jointly so that the forest staff get an opportunity to learn about the hardships faced by the forest communities and simultaneously the community get a chance to learn about the difficulties and problems faced by the forest staff. This will help to make both the parties more sensitive to the issues of conservation and thereby help them to work jointly for the conservation of forests and wildlife.

(II) Organisation Building Process:

Following measures are proposed to bring together and organise tiger and wildlife conservationists, forest officials and human rights activists into a common and acceptable platform.

(1) Creation of Specialist/ Expert Groups

(a) Set up a three member Expert Group, comprising Valmik Thapar, Bittu Sahgal and Fatch Singh Rathore.
(b) Set up an Action (Situation) Group from the members of those forest communities who - are traditionally practising conservation as an essential part of their life style for establishing a meaningful and regular interaction with all the different forest communities so as to educate them about conservation. The Coordinator of the group will be Shri Kanhaiyalal Gujar, and the group will be constituted with the people like Nanak Ram, Ruda Ram, Prabhu, Hira, Sundara, Adun, Lakshmi Narayan and the like.

		Kachchh 370 001. Tel.: 02832 – 50234, Fax 02832 – 52834	singhyd@yahoo.com gide@ad1.vsnl.net.in
14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Subhash Negi, Tribal Advisory Committee and Commissioner-cum-Secretary Tribal Development, Department of Tribal Development, Govt. of Himachal Pradesh, H.P. Secretariat, Shimla – 171 002, H.P. Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P. Tel.: 0177-221907 Fax: 0177- 220657	
15.	Rajasthan - Arvari	Rajendra Singh, Tarun Bharat Sangh, Bhikampura-Kishori, via Thanagazi, Dist. Alwar 301002, Rajasthan. Tel: 01465-25043 (Bhikampura); 0141-391092 (Jaipur); Fax: 0141-393178 (Jaipur); Mobile: 98100 33015	
16.	Nagaland – Chedema	Khrikeitoulie Tracy medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

(c) Co-ordination Group - A coordination Group will be set up for ensuring regular coordination among the people who are representing different philosophies and view points like wildlife conservation, human rights, development, forest administration etc. Mr. Rajendra Singh, Vaimik Thapar, Fatch Singh Rathore and Bittu Sahgal will be the members of this group. The success in wildlife conservation can be achieved only by bringing together the government officials, human rights activists and development activists into a common platform and by undertaking a joint action in the field.

(2) WORKING GROUPS

Working groups will be set up all over the country in all the project tiger reserves, national parks, wildlife sanctuaries and other protected areas with a view to strengthen the wildlife protection and conservation initiatives. These groups will constantly work to strengthen the conservation action in their respective areas. Besides, necessary measures will be taken from time to time to strengthen and empower these groups to make them more effective in their interventions for conservation.

(3) LEGAL AID GROUPS:

It is proposed to set up legal aid groups for all the protected areas that are facing serious threats from mining and other industries. The single largest threat faced by the protected areas in our country is from the mining industry. Hence, it is very essential to keep the mining and other industries out ftom the protected area system.

BUILD A COMMON FUTURE'- *Sanjha Bhavishya Banavo Parivar* -

Every effort in the direction of tiger and bio-diversity conservation is ultimately aimed at establishing a better and prosperous shared/ common future. It is vital to protect the forests and wildlife because without this the future of the forest dwellers will remain uncertain. Our **first** priority is therefore the full protection of forests and wildlife. The threats to our common future are increasing day by day. Therefore in order to save the earth from these dangers/ threats and similarly to make our common future brighter and more prosperous, it essential that we not only provide foolproof protection to our forests and wildlife but that we also rejuvenate all our degraded and desertified areas. We need to take up this task as a full-fledged campaign, and start action simultaneously in a number of areas. Such a campaign can be given different names in different places. In addition, it can be adapted in tune with the traditional conservation methods/ practices, wherever it exists. However, remember, this campaign is the need of the hour; and we therefore hereby launch our campaign today itself. It gives us immense pleasure today, on 9th October 1999, in launching our programme for conservation because today the representatives of the government, NG0s and the conservation community have come forward here to join their hands with us and to take the pledge of joint field action for conservation and protection of wildlife.

Please note that we will play an active part wherever necessary to help and facilitate the process of voluntary resettlement of people from wildlife areas when they wish to move out. This is vital because every forest requires an inviolate area for wildlife, where human disturbance is absent or minimal.

All our programmes are primarily aimed at building up a bright and common future for man and wildlife by way of pursuing the strategy and life style of community based bio-diversity conservation mechanism. Therefore we invite all those who believe in this integrated philosophy of prosperity to come and join us ... and initiate direct field action for bio-diversity conservation in their respective areas ... Lets join our hands and take a pledge to work together without any selfish motives for a bright and prosperous common future ...

Proposed list of EMAIL ADDRESSESS OF Local (sub-state) Site Nodal Agencies

S.No.	Local (Substate sites)	Coordinator	Email Address
1.	Karnataka - Uttara and Dakshina Kannada	Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142	
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	
	Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260	Email: DDSHYD@HD1.VSNL.NET.IN
3.	Tamil Nadu - Gulf of Mannar	M.S. Swaminathan's nominee, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698 , Fax: 2351319	
4.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad	
5.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
	Uttar Pradesh - Terai:	(no suggestion)	
6.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal	
7.	Assam - Karbia-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	
8.	Arunachal Pradesh – Dibang Valley	Ruchi Pant/ Ajay Rastogi, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bungalow No. 2, Nr.Airforce Officers Enclave, Bhujiapani, PO Bagdogra, Dist. Darjeeling 734 422 West Bengal Tel: 0353-550093, 551110 ATREE's (Bhattacharjee to provide inputs on suitability)	Email: atree@dte.vsnl.net.in
9.	Meghalaya - West Garo hills:	SEPARD	
10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachangpa,	
11.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197;	Email (c/o Krishnendu Bose) : bose@vsnl.com
12.	Madhya Pradesh - Bilaspur Commissionery:	Chairperson, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur,	

Darshan has informed

Call Mohanbai or Ajay

Send mail to PCB or call

TPCG / check AK's NBSAP Folder / Send mail

on hold

the nonhermiticity of the Hamiltonian (55) has been taken into account. This may be translated into a phase-space evolution equation. Defining

$$a = (\sigma_3 + i\sigma_2) = \begin{pmatrix} 1 & 1 \\ -1 & -1 \end{pmatrix}, \qquad b = \sigma_3 = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix} \tag{62}$$

and using (42) one obtains:

$$\begin{aligned} P_{\hat{H}\hat{\rho}-\hat{\rho}\hat{H}^+}(q,p) &= \frac{1}{4m}\left(a \cdot P_{[\hat{p}^2,\hat{\rho}]}(q,p) + P_{[\hat{p}^2,\hat{\rho}]}(q,p) \cdot a^+\right) \\ &\quad + \frac{1}{4m}\left(a \cdot P_{\{\hat{p}^2,\hat{\rho}\}}(q,p) - P_{\{\hat{p}^2,\hat{\rho}\}}(q,p) \cdot a^+\right) \\ &\quad + m\left(b \cdot P(q,p) - P(q,p) \cdot b^+\right). \end{aligned} \tag{63}$$

Following the general procedure outlined in the previous section we get the phase-space equation of motion:

$$\begin{aligned} iD_t P(q,p) &= -i\frac{\hat{P}}{2m} \cdot \hat{D}\left(a \cdot P(q,p) + P(q,p) \cdot a^+\right) \\ &\quad + \frac{1}{m}\left(\hat{P}^2 - \frac{1}{4}\hat{D}^2\right)\left(a \cdot P(q,p) - P(q,p) \cdot a^+\right) \\ &\quad + m\left(b \cdot P(q,p) - P(q,p) \cdot b\right). \end{aligned} \tag{64}$$

It is convenient to expand $P(q,p)$ (which is a 2×2 matrix) over the Pauli matrices σ_i and the unit matrix, assembling the coefficients into a four-component object $\underline{f}$,

$$P(q,p) = f_3(q,p)\,\mathbb{1} + \sum_{i=1}^{3} f_{3-i}(q,p,t)\sigma_i. \tag{65}$$

The equations of motion take the form

$$\begin{aligned} \hat{D}_t f_0 &= -\frac{\hat{P} \cdot \hat{D}}{m}(f_2 + f_3), \\ \hat{D}_t f_1 &= -\left(\frac{1}{4m}\hat{D}^2 - \frac{1}{m}\hat{P}^2\right)(f_2 + f_3) + 2mf_2, \\ \hat{D}_t f_2 &= \left(\frac{1}{4m}\hat{D}^2 - \frac{\hat{P}^2}{m}\right) f_1 + \frac{\hat{P} \cdot \hat{D}}{m} f_0 - 2mf_1, \\ \hat{D}_t f_3 &= -\left(\frac{1}{4m}\hat{D}^2 - \frac{\hat{P}^2}{m}\right) f_1 - \frac{\hat{P} \cdot \hat{D}}{m} f_0. \end{aligned} \tag{66}$$

		Madhya Pradesh Fax : 07752-25008	
13.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh	
14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P.	
15.	Bihar - Chhota Nagpur Plateau OR Dalma/Jameshedpur Area	(Use Integrated Tribal Development Project, or Rathore to suggest)	
16.	Rajasthan – ~~Thar Desert~~ Or Arvari???	S.M. Mohnot, School of Desert Sciences, 109, Nehru Park, Sardarpura, Jodhpur – 342 001 Rajasthan Tel.: 0291-742595(O) 432003 (R) Fax: 742495 Taneja to revert with contact name	Email: smohnot@jp1.dot.net.in
17.	Nagaland – ~~Khonoma~~ ~~Or~~ Chedema	(~~Bhattacharjee/Satheesh to suggest~~) Khrikeitoulie Tracy Medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

can plummet to uncharted depths of grief from which it is difficult to recover quickly.

Optimism and pessimism are powerful forces. Stock markets and exchange rates lurch unpredictably from one extreme to another. Unlike the seasons, there is no 'calendar' to guide financial affairs, although expert 'chartists' look back on past experience for examples of similar trends and suppose that the outcome on previous occasions might be an indicator to what happens next time. Observers keenly scan each new indicator of monthly trade figures, housing starts, or employment statistics for clues. Depending on its direction, the minutest blip is heralded as an impending spring or the continuation of winter. Financial optimism and pessimism can be so strong that the markets often 'overshoot' in both directions. In the same way that the midwinter solstice usually precedes the coldest part of the winter rather than coinciding with it, so the mass of the stock market continues to 'cool down' under the weight of pessimism even though the worst may have passed. With the atmosphere and earth's surface still benefiting from the sun's warmth, the longest day usually precedes the hottest period of the year. Likewise a bull market can outlive its welcome, perched perilously on a wave of optimism which finally breaks on the shore of reality.

Nonsense stories like Lewis Carroll's are intriguing because they are a mirror of the real world, where sense and logic are turned upside down and events become unpredictable. There are many kinds of opposites, all of which provide their own special mirror. For Alice's looking glass, the mirror inversion turns left into right and right into left. Right and left are closely related to the idea of rotation - a rotation to the right, clockwise, reflects as an anticlockwise one. In fact the image in a looking glass looks 'wrong', because our brain interprets it as a rotation through 180°. If we hold an object in our right hand, the mirror image appears to be holding the object in the left-hand. But if we can walk behind the mirror and turn round to face the way we came, the object is still firmly in the right hand. A clock naturally looks very different when viewed in a mirror, but it still tells the 'correct' time. Any mechanism still looks to operate satisfactorily in the mirror, albeit unconventionally. Compared to a real clock, the mechanism which makes a mirror image clock tick appears to turn in a different way. Many gift shops sell mirror-image clocks which rotate the 'wrong' way but which look correct when viewed in a mirror.

An electric clock will still operate the 'wrong' way when viewed in the mirror. The positive terminal is reflected as a positive terminal and the negative terminal by a negative terminal. The electric current in the mirror image flows in the

kkhlgu@gwl.vsnl.net.in

Proposed List of Local (Sub-state) Site Members

S.No.	Local (Substate sites)	Coordinator	Member
1.	Karnataka - Uttara and Dakshina Kannada	Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142\23426	• K.P. Achar Prof. & Head, Deptt of Zoology, Shree Bhuvanendra College, Karkala-574 104, Dakshin Karnataka Tel: 0858 21937 • S.A. Hussain, (Chairman Biodiversity initiative trust, Mangalore), Hussain Manzil, Anekere Road, Karkala – 574 104 • Prabhakar Achar, Head of Department of Zoology, Shri Bhuvanendra College, Karkala – 574 104 • K. Somnath Nayak, Nagarika Seva Trust, Gurvayankere, Dakkshina Kannada • B.K. Parmeshwara Rao, Nagarika Seva Trust, Gurvayankere, Dakkshina Kannada • Harish Bhat, Centre of Ecological Sciences, Indian Insitute of Science, Bangalore – 560 012 • M.R. Hegde, Snehakunja Kasarkod, Honavar Taluk, Uttara Kannada • Anant Hegde Ashisar, Bhairumbe PO, Sirsi, Uttara Kannada • Pandurang Hegde, Hulemalgi Building, Sirsi • Sunita Rao, Preeti Nilaya, Vidya Nagar, Sirsi – 581 402
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	• T. Shivaji Rao, • K. Shankar Reddy, JANACHETNA, Palakonda Dist. Srikakulam, Andhra Pradesh • Phalguni Rao, Kattragedda Village, Bhamini Mandalam, Dist. Srikakulam Andhra Pradesh
	Andhra Pradesh - Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: ddshyd@hd1.vsnl.net.in	-
3.	Tamil Nadu - Gulf of Mannar	P.C. Kesavan, Executive Director, M.S. Swaminathan Research Foundation, 3rd Cross Road, Taramani Institutional Area,	• Forest Department, Tuticorin Official incharge of National Parks)

the conclusion that the gravity field dynamics is determined completely by the constraints. [?] The last statement should be, in our opinion, handled with extreme caution. Its proper interpretation demands additional assumptions that are frequently made implicitly and, if not analyzed carefully, might lead to numerous paradoxes in both classical and quantum dynamics. A detailed analysis of this situation has been provided by U. Gerlach. [?] When applied to gravity quantization, this line of reasoning leads to the conclusion that, to quantize such a fully constrained field, one needs only to quantize the constraints. Such an approach leads to a wave equation, called the Wheeler–DeWitt equation, which is more akin to the Klein–Gordon equation rather than the Schrödinger equation. An equation of this type, as it is well known, cannot be interpreted in a one–particle (in case of gravity, one–Universe) representation.

The original ADM quantization proposal was different. According to it, one had to solve constraints before quantization and to extract a Schrödinger equation from the Hamilton–Jacobi classical equation. The peculiar feature of this approach was the emergence of the so called square–root Hamiltonian problem. [?,?] This difficulty has, to our knowledge, never been resolved.

Both the ADM and Dirac approaches in any formulation (canonical, path integrals, Euclidean path integrals, etc.) lead to difficulties of about the same nature, which were captured so dramatically by K. Kuchař when he reformulated them as "the problem of time." [?] Roughly speaking, both approaches eliminate a possibility of including in the theory a natural concept of time or an observer (cf. also a discussion of the issue by W. Unruh [?]). We prefer a slightly different formulation. In our opinion, the source of such difficulties arises when one treats the whole 3–geometry of spacelike slices as dynamical and quantizes the entire 3–geometry. Mathematically, it is expressed via imposing the commutation relations [?] on all the components of the 3–metric. One should keep in mind, however, that in general relativity the system described by the 3–metric or even the 3–geometry includes in itself the observer and his clock. In standard quantum mechanics, or even in the quantum field theory, an observer is external with respect to the quantum system. The observer is classical and has an external classical clock. There cannot be an external observer in the description of the gravitational field because the gravitational system is the Universe itself. Both ADM and Dirac's approaches essentially quantize the observer and his clock on equal footing with the rest of the system (J. A. Wheeler would say that many–fingered time is directly quantized). Whether such a quantized observer and his clock can function in a fashion providing an opportunity to describe the system consistently is not clear. A discussion of such a possibility, however exciting, clearly would lead us far beyond the scope of this paper. We only wish to mention here that this difficulty has been noticed by some researchers, most notably by Gell–Mann and Hartle and has led them to propose a generalized form of quantum theory based on the ideas of histories and decoherence functionals. [?]. What we propose here is quite a different in nature than the Gell-Mann–Hartle theory.

II. QUANTUM GEOMETRODYNAMICS: BASIC IDEAS.

We propose an alternative approach to the quantization of gravity. Our approach is based on the post-ADM achievements made in classical geometrodynamics. [?] In particular, we are referring to York's solution of the initial–value problem and his analysis of the gravitational degrees of freedom. [?,?] This development was initially motivated by Wheeler's semi–intuitive remark that the 3–geometry of a spacelike hypersurface has encoded within it the two gravitational degrees of freedom as well as its temporal location within spacetime. It is this notion that the 3–geometry is a carrier of information on time that has been referred to as "Wheeler's *many–fingered time*." [?,?,?] It was J. York who first made this thesis precise. He forwarded what has now become almost the canonical split of the 3–geometry into its underlying conformal equivalence class (its *shape* representing the two dynamical degrees of freedom of the gravitational field coordinate per space point) and the conformal scale factor (its *scale* representing Wheeler's many–fingered time). Only the conformal 3–geometry is dynamical in the sense that it can be specified freely as the initial data. The scale factor is nondynamical and essentially specifies Wheeler's many–fingered time. It is determined by both a slicing condition (the fixation of a field of observers) and the constraints (enforcing general covariance). The results of York have demonstrated that the true dynamical part of the gravitational field is not the 3–geometry but only its conformal part, and that the proper configuration space or "arena for geometrodynamics" should be the underlying conformal superspace rather than Wheeler's superspace. The conformal scale factor, York's representation of Wheeler's many–fingered time, thus becomes an external parameter and should be explicitly treated as such in any viable quantization scheme.

None of the existing attempts of gravity quantization truly adopts York's analysis of the gravitational degrees of freedom. We propose, on the contrary, to design a consistent quantization procedure by taking York's construction as a priori. In the classical theory, we start from the standard Lagrangian and the associated action (with appropriate boundary terms as needed), develop the standard variational-dynamical picture over conformal superspace and treat the scale factor (and, in more general setting, the coordinatization parameters) as an external parameter. It is clear that the Hamiltonian of such a theory will not be the usual super-Hamiltonian. Nevertheless, one can develop an

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4.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad C\o 1.Satish Gogulwar, Amhi Amachya Arogyasathi, Att. And P.O. Kurkheda, Dist. Gadichiroli – 442 209 Maharashtra Tel.: 07139 – 45471; Email: cesedu@nagpur.dot.net.in (c\o Vivek Vagh) 2.Dileep Gode, Vidarbha Nature Conservation Society, Tidke Ashram, Ganeshpeth, Nagpur 440018. Tel: 0712 728942\727363 Fax 722748	
5.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
6.	West Bengal - Sunderbans	Amalesh Choudhuri, Choudhury Bari, D-44, Amravati Sodpur 24-Parganas (North), West Bengal – 743 178 Tel.: 5650305, 5651598 Email: amleshchoudhuri@hotmail.com	• Field Director, Sunderban Tiger Reserve
7.	Assam - Karbi-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	• Jyotsna Terangpit, KNCA C/O Anjali Daimari, Q1 No.187 A, Jaya Nagar, East Gossala, Mali Gaon, Guwahati & Karbi Nimso Chingthor Asong, c/o ASDC Office, Diphu, Karbi Anglong, Assam
8.	Arunachal Pradesh – Dibang Valley	Budhi Mohan Lingli, & Jatan Pulu, Idu Cultural and Literary Society(ICLS), P.O. Roing, Dist. Debang Valley, Arunachal Pradesh Through B.J. Dey, ADC, Roing, Dibang Valley, Tel.: 03803-22223 (O), 22221 ® Jatan Palu, Vill. Yibuk P.O. Roing, Arunachal Pradesh Tel.: 03803 – 22352 (Res.)	
9.	Meghalaya - West	P.G. Momin, SEPARD (Society	

entire dynamical picture based on this Hamiltonian by deriving either the Hamiltonian equations or the Hamilton–Jacobi equation. However, these equations are incomplete. They contain as yet unknown functions related to the scale parameter. One can complete the system of equations by adding to the Hamilton equations, or to the Hamilton–Jacobi equation, the standard constraint equations of general relativity (they cannot be derived from variational principles in such a theory). The resulting equations are equivalent to the standard equations of classical geometrodynamics.

For the purpose of quantization, we start from our Hamilton–Jacobi equation, describing effectively what we refer to as *conformal geometrodynamics* (evolution of the dynamical variables corresponding to the conformal part of the 3–geometry) in a scale parameter dependent external field. We augment this with the four constraint equations so as to recover the relationship between the scale parameter and the dynamical variables. Using the Hamilton–Jacobi equation we write down the Schrödinger equation treating the scale parameter as an external classical field and quantizing only the true dynamical variables. This Schrödinger equation can be solved (cf., for instance the example of the Bianchi 1A cosmological model in Sec.??). The solution will ordinarily depend on the many–fingered time parameter (as yet unspecified) as well as on the coordinatization parameters. To specify these functions we use the constraint equations. The procedure for this follows from our interpretation of the constraint equations. Whereas the approach of ADM attempted to isolate the dynamical degrees of freedom of the gravitational field by imposing the constraints at a classical level prior to quantization, we propose here a weaker condition that the four constraints be imposed only on the expectation values of the conformal dynamics. That is, we impose the constraint equations as expectation–value equations using the wave functional obtained from our Hamiltonian. In so doing we explicitly avoid the interpretational conundrums associated with the problem of time as well as square–root Hamiltonians, a[redacted] we form a "classical" gravitational clock driven by the quantized geometrodynamic system — i.e. *quantum–driven many–fingered time*.

The goal of this paper is to clarify our basic thesis regarding the quantization of gravity — quantum geometrodynamics. As we have emphasized, our idea implies a change in the quantization procedure of constrained dynamical systems. Such a procedure can be applied to other more familiar constrained Hamiltonian systems. In order to illustrate the salient features of our novel approach we cannot think of a more suitable example than the relativistic particle. Therefore, in the next section we apply our quantization procedure to a free relativistic particle. We do not discuss the issue of its usefulness for particle dynamics, as this issue should be a topic of a separate research project. We use this example merely as a simple illustration of our approach and a test of our procedure. The utility of this example lies entirely with its simplicity, clarity in illustrating our procedure, and in demonstrating that this procedure can be used in geometrodynamics.

III. TIME AS AN EXTERNAL FIELD IN THE QUANTUM DYNAMICAL PICTURE OF A FREE RELATIVISTIC PARTICLE.

We start from the standard dynamics of a particle in the super-Hamiltonian [?] formulation and recover its Lagrangian. Then we change the dynamical picture via removing the time coordinate out of the set of the dynamical variables. This results in a new Hamiltonian. The time coordinate and its functions are treated as external fields. This procedure leads to an incomplete system of the equations of motion. The system is completed via impos[redacted] additionally the super-Hamiltonian constraint — a constraint that does not follow from the equations of motion in this new approach. It is considered merely as a relation between the dynamical variables and the external field. The resulting description is equivalent to the standard one within the classical theory, but leads to a considerably different quantum theory.

The super-Hamiltonian for a free particle is given by

$$\mathcal{H} = \frac{1}{2m}\left(m^2 + p^2\right) = \frac{1}{2m}\left(m^2 + p_\mu p^\mu\right), \tag{1}$$

where $\mu = 0, 1, 2, 3$ and p_μ is the momentum conjugate to the coordinate x^μ and x^0 is the time coordinate ($x^0 = t$). The super-Hamiltonian constraint $\mathcal{H} = 0$ implies

$$m^2 + p^2 = m^2 + p_\mu p^\mu = 0. \tag{2}$$

The Hamilton equations

$$\begin{aligned} \dot{x}^\mu &= \tfrac{\partial \mathcal{H}}{\partial p_\mu} = \tfrac{p^\mu}{m}, \quad \text{and} \\ \dot{p}_\mu \quad &= -\tfrac{\partial \mathcal{H}}{\partial x^\mu} = 0, \end{aligned} \tag{3}$$

where the dot means the derivative with respect to the affine parameter λ, provide the expression for the momenta

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10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachungpa Sr. Research Officer (WL), Dept. of Forests, Env. & WL, Government of Sikkim, Deorali, Gangtok – 737 102 Tel.: 03592 – 22973, 23174 (off.) 25273 (Res.) Fax: 03592 – 25273/23862/22707Email: ganden@dte.vsnl.net.in and c/o Ganden Lachungpa, Atlas Tours & Services, 9 Supermarket, Gangtok – 737 101 Sikkim Tel./Fax: 03592 – 23862	• Director, Khanchendzonga National Park
11.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197; Email: harmony1@ndb.vsnl.net.in	
12.	Madhya Pradesh - Bilaspur Commissionery:	Chairperson, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Madhya Pradesh Fax : 07752-25008	• Tribal developmental society
13.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh, Sahjeevan, 104 A Lotus Colony, Bhuj-Kachchh, Gujarat Tel.: 02832-51814	• Justus Joshua, Gujarat Institute of Desert Ecology, Patwadi Naka, Bhuj , Kachchh 370 001. Tel.: 02832 – 54681, Fax 02832 – 52834 Email: ide-bhuj@x400.nicgw.nic.in • Hasmukh Shah, Chairman, Gujarat Ecology Commission, 5 Golden Apartments, Subhanpura, Vadodara – 390 023 Tel.: 383329, Fax: 383341, 0265 – 384664 Email: nilashah@pi.zaverchand.co.in • H.S. Singh, Director, Gujarat Ecological Education and Research Foundation (GEER), Indrora Park, Sector – 9, Gandhinagar – 382 009, Gujarat Tel.: 02712-21385 Fax: 02712-41128
14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur	Subhash Negi, Member Secretary, Tribal Advisory Committee, and Commissioner-cum-Secreatary, H.P.	• Gargi Banerjee, Pragya, A – 212A, Sushant Lik, Gurgaon – 112 002 Telefax: 0124-6385932/6386104 • Hansraj Negi, Institute of

$$p^\mu = m\dot{x}^\mu, \tag{4}$$

and the second order equations of motion

$$\ddot{x}^\mu = 0. \tag{5}$$

The super-Hamiltonian constraint provides a relation between the affine parameter λ and the proper time τ along the world line of the particle.

The Lagrangian is related to the super-Hamiltonian $\mathcal{H}$ via

$$\mathcal{H} = p_\mu \dot{x}^\mu - L, \tag{6}$$

and can be explicitly obtained in the following simple way:

$$L = p_\mu \dot{x}^\mu - \mathcal{H} = m\dot{x}^\mu \dot{x}^\mu - \frac{m}{2}\left(1 + \dot{x}^\mu \dot{x}_\mu\right) = \frac{m}{2}\left(\dot{x}_\mu \dot{x}^\mu - 1\right). \tag{7}$$

After separating the dynamical variables $x^i, i = 1, 2, 3$ from the external parameter $t = x^0$, we obtain an expression for the Lagrangian.

$$L = \frac{m}{2}\left(\dot{x}_i \dot{x}^i - \dot{t}^2 - 1\right). \tag{8}$$

The standard definition of the momenta conjugate to the dynamical degrees of freedom x^i,

$$p_i = \frac{\partial L}{\partial \dot{x}^i} = m\dot{x}_i, \tag{9}$$

reproduces three (not four) Hamilton equations.

$$\dot{x}_i = \frac{p_i}{m}. \tag{10}$$

Using them, we construct the Hamiltonian H of our theory,

$$H = p_i \dot{x}^i - L = \frac{1}{m} p_i p^i - \frac{1}{2m}\left(p_i p^i - m^2 \dot{t}^2 - m^2\right), \tag{11}$$

which, after simplifications, leads to

$$H = \frac{1}{2m}\left(p_i p^i + m^2 + m^2 \dot{t}^2\right). \tag{12}$$

The Hamilton equations are obtained as usual, i.e.

$$\begin{aligned} \dot{x}^i &= \tfrac{\partial H}{\partial p_i} = \tfrac{p_i}{m}, \\ \dot{p}_i &= -\tfrac{\partial H}{\partial x^i} = 0. \end{aligned} \tag{13}$$

The super-Hamiltonian constraint is imposed in addition to the Hamilton equations,

$$p_i p^i - m^2 \dot{t}^2 = -m^2, \tag{14}$$

and completes the system of equation describing the particle motion. It can be written (using Hamilton equations) as

$$dx_i dx^i - dt^2 = -d\lambda^2. \tag{15}$$

The parameter λ again coincides with the proper time on the particle world line.

Although our new Hamiltonian H of a free particle is conserved, i. e. it is an integral of motion

$$\frac{dH}{d\lambda} = m\dot{t}\ddot{t} = 0, \tag{16}$$

it is, nevertheless, time dependent.

$$H = H(x^i, p_i, t(\lambda)). \tag{17}$$

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16.	Nagaland – Chedema	Khrikeitoulie Tracy Medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

The Hamilton–Jacobi equation is obtained from this Hamiltonian.

$$\frac{\partial S}{\partial \lambda} = -H\left(x^i, \frac{\partial S}{\partial x^i}, t(\lambda)\right). \tag{18}$$

For this we use the expression ?? for the Hamiltonian rewritten in the following form:

$$H = \frac{1}{2m} g^{ik} p_i p_k + \frac{m}{2}(1 + \dot{t}^2); \tag{19}$$

which leads to the Hamilton–Jacobi equation.

$$\frac{\partial S}{\partial \lambda} = -\frac{1}{2m} g^{ik} \frac{\partial S}{\partial x^i} \frac{\partial S}{\partial x^k} - \frac{m}{2}(1 + \dot{t}^2). \tag{20}$$

The Hamilton–Jacobi equation ?? does not provide a complete description of the particle dynamics as was the case for the Hamilton equations ??. It too should be augmented by the constraint ?? in order to recover general Lorentz covariance.

The standard prescription of transition from the Hamilton–Jacobi equation to the Schrödinger equation,

$$\frac{\partial S}{\partial \lambda} \longrightarrow i\hbar \frac{\partial}{\partial \lambda}; \qquad \frac{\partial S}{\partial x^i} \longrightarrow \widehat{p}_i = \frac{\hbar}{i} \frac{\partial}{\partial x^i}, \tag{21}$$

leads to the Schrödinger equation of a relativistic free particle,

$$i\hbar \frac{\partial \psi}{\partial \lambda} = \frac{\hbar^2}{2m} \Delta\psi - \frac{m}{2}(1 + \dot{t}^2)\psi. \tag{22}$$

Here $\psi = \psi(x^i, \lambda)$ is the wave function of the free particle and $\Delta = g^{ik} \frac{\partial}{\partial x^i} \frac{\partial}{\partial x^k}$ is the Laplacian. The equation is a linear differential equation with variable coefficients. It supports the superposition principle and can be solved using the standard techniques of quantum mechanics. Moreover, it can be interpreted as the Schrödinger equation for a particle in an external spatially-homogeneous but time-dependent potential field. This time–dependent field is determined by the second term of the right hand side ($\dot{t}$ is assumed to be a function of λ only) of ??.

As usual, the general solution of the equation ?? depends on a constant of integration (it is determined by the condition of normalization of the ψ–function) as well as the initial conditions (those, roughly speaking, specify the initial shape of the wave packet). An unusual feature of the solution is its dependence on a potential term that has not been specified yet. This feature is related to the fact that in our formulation of the classical theory, the Hamilton–Jacobi equation does not provide a complete dynamic picture. To complete the dynamic picture we need to use an analog of the constraint ??. Our proposal is to use literally the same constraint substituting in it instead of the classical values of momenta p_i their expectation values,

$$< p_i(\lambda) >= \langle \psi | \widehat{p}_i | \psi \rangle = \int \psi^* \left(x^i, t(\lambda)\right) \widehat{p}_i \, \psi \left(x^i, t(\lambda)\right) \, d^3x. \tag{23}$$

The Schrödinger equation ?? together with the constraint ?? obviously provide a complete dynamic description of the free relativistic particle.

It is clear that the procedure of quantization described here avoids the square–root Hamiltonian problem on both the quantum and classical levels. This problem on the quantum level disappears due to the elimination of t from the set of dynamical variables. On the classical level the constraint equation ?? is solved for $\dot{t}$ which is a square root of nonnegative expression; therefore, it avoids such square-root operators. The parameter λ in the quantum mechanical picture can be interpreted as the proper time of an averaged quantum–driven distribution "classical" observer. The last sentence should not be interpreted too literally. Ordinarily, the observer is not classical as his motion is not described by the classical equations of motion. [?]

IV. QUANTUM GEOMETRODYNAMICS OF THE BIANCHI 1A COSMOLOGY.

The Bianchi 1A cosmological model is commonly referred to as the axisymmetric Kasner model. Its metric is determined by two parameters, the scale factor Ω and the anisotropy parameter β.

$$ds^2 = -dt^2 + \mathrm{e}^{-2\Omega}\left(\mathrm{e}^{2\beta} dx^2 + \mathrm{e}^{2\beta} dy^2 + \mathrm{e}^{-4\beta} dy^2\right). \tag{24}$$

Proposed List of Local (Sub-state) Site Nodal Agencies

(NOTE: SOME OF THESE ARE NOT YET CLEAR, AND NEED TO BE PUT ON HOLD…AS MARKED BELOW)

S.No.	Local (Substate sites)	Coordinator	Member
1.	Karnataka - Uttara and Dakshina Kannada	Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142	• K.P. Achar Prof. & Head, Deptt of Zoology, Shree Bhuvanendra College, Karkala-574 104, Dakshin Karnataka Tel: 0858 21937
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	• T. Shivaji Rao, • K. Shankar Reddy, JANACHETNA, Palakonda Dist. Srikakulam, Andhra Pradesh • Phalguni Rao, Kattragedda Village, Bhamini Mandalam, Dist. Srikakulam Andhra Pradesh
	Andhra Pradesh - Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: ddshyd@hd1.vsnl.net.in	-
3.	Tamil Nadu - Gulf of Mannar	Prof PC Kesavan, Executive Director, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698, Fax: 2351319	• Forest Department, Tuticorin Official incharge of National Parks)
4.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad Or Satish Gogulwar, Amhi Amachya Arogyasathi, Att. And P.O. Kurkheda, Dist. Gadichiroli – 442 209 Maharashtra Tel.: 07139 - 45471 **(address not yet clear, keep on hold)**	
5.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
	Uttar Pradesh - Terai:	(no suggestion)	
6.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal	• Field Director, Sunderban Tiger Reserve

7.	Assam - Karbia-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	• Jyotsna Terangpit, KNCA C/O Anjali Daimari, Q1 No.187 A, Jaya Nagar, East Gossala, Mali Gaon, Guwahati & Karbi Nimso Chingthor Asong, c/o ASDC Office, Diphu, Karbi Anglong, Assam
8.	Arunachal Pradesh – Dibang Valley	Budhi Mohan Lingli, & Jatan Pulu, P.O. Roing, Dist. Debang Valley, Arunachal Pradesh Through B.J. Dey, ADC, Roing, Dibang Valley, Tel.: 03803-22223 (O), 22221 ® Jatan Palu, Vill. Yibuk P.O. Roing, Arunachal Pradesh Tel.: 03803 – 22352 (Res.) **(not clear; please put on hold)**	
9.	Meghalaya - West Garo hills:	P.G. Momin, SEPARD (Society for Environmental Protection and Rural Development), Department of Geography, NEHU, Shillong – 793 022 Tel.: 0364 - 250094	
10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachungpa Sr. Research Officer (WL), Dept. of Forests, Env. & WL, Government of Sikkim, Deorali, Gangtok – 737 102 Tel.: 03592 – 22973, 23174 (off.) 25273 (Res.) Fax: 03592 – 25273/23862/22707Email: ganden@dte.vsnl.net.in and c/o Ganden Lachungpa, Atlas Tours & Services, 9 Supermarket, Gangtok – 737 101 Sikkim Tel./Fax: 03592 – 23682	• Director, Khanchendzonga National Park
11.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197; Email: harmony1@ndb.vsnl.net.in	
12.	Madhya Pradesh - Bilaspur Commissionery:	Chairperson, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Madhya Pradesh Fax : 07752-25008 **(put on hold)**	• Tribal developmental society(BMS to send additional names)
13.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh, Sahjeevan, 104 A Lotus Colony, Bhuj-Kachchh, Gujarat Tel.: 02832-51814	• GIDE, • Gujarat Ecology Commission, • Geer foundation
14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P.	• Gargi Banerjee, Pragya, A – 212A, Sushant Lik, Gurgaon – 112 002 Telefax: 0124-6385932/6386104

15.	Bihar - Chhota Nagpur Plateau OR Dalma/Jameshedpur Area	(Use Integrated Tribal Development Project, or Rathore to suggest) **(put on hold)**	
16.	Rajasthan - Arvari Basin	Rajendra Singh, Tarun Bharat Sangh, Bhikampura-Kishori, via Thanagazi, Dist. Alwar 301002, Rajasthan. Tel: 01465-25043 (Bhikampura); 0141-391092 (Jaipur); Fax: 0141-393178 (Jaipur)	
17.	Nagaland – Chedema	Khrikeitoulie Tracy medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

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2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	• T. Shivaji Rao, • K. Shankar Reddy, JANACHETNA, Palakonda Dist. Srikakulam, Andhra Pradesh • Phalguni Rao, Kattragedda Village, Bhamini Mandalam, Dist. Srikakulam Andhra Pradesh
3.	Andhra Pradesh - Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: ddshyd@hd1.vsnl.net.in	-
4.	Tamil Nadu - Gulf of Mannar	Prof PC Kesavan, Executive Director, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698, Fax: 2351319	• Forest Department, Tuticorin Official incharge of National Parks) • DCF (CF)
5.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad **(address not yet clear, keep on hold)**	
6.	Uttar Pradesh - Tehri Garhwal Uttar Pradesh - Terai:	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451 (no suggestion)	
7.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal	• Field Director, Sunderban Tiger Reserve
8.	Assam - Karbi-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	• Jyotsna Terangpit, Karbi Nimso Chingthor Asong, c/o ASDC Office, Diphu, Karbi Anglong, Assam
9.	Arunachal Pradesh	Budhi Mohan Lingli, & Jatan	

$\lambda \to 1$ and $h_{ij} \to \delta_{ij}$. So the extremal black hole metrics (2.5) and (2.13) are determined entirely by the function $e^{2\phi}$. Since the solutions with and without a dilaton differ only by a factor of two in the exponent, *one can view the extremal black hole with dilaton as the square root of the extremal Reissner-Nordstrøm solution.* It is not clear what the physical interpretation of this is. On the one hand, the statement is clearly coordinate dependent. It holds in isotropic coordinates where the spatial metric is manifestly conformally flat. On the other hand, the statement applies not just to single black holes but extends to multi-black hole solutions as well. In the Einstein-Maxwell theory, since there is no force between extremal black holes (with the same sign of the charge), there exist static, multi-black hole solutions. These are the Majumdar-Papepetrou solutions [14] and take the form

$$ds^2 = -e^{4\phi} dt^2 + e^{-4\phi} d\vec{x} \cdot d\vec{x} \tag{2.17}$$

with

$$e^{-2\phi} = 1 + \Sigma_i \frac{2M_i}{|\vec{x} - \vec{x}_i|} \tag{2.18}$$

In exact analogy, the extremal black holes with a massless dilaton also have no force between them. The fact that $Q^2 = 2M^2$ rather than $Q^2 = M^2$ in the extremal limit means that there is a stronger electrostatic repulsion which exactly cancels the additional attractive force due to the dilaton. The multi-black hole solution turns out to be simply the "square root" of (2.17):

$$ds^2 = -e^{2\phi} dt^2 + e^{-2\phi} d\vec{x} \cdot d\vec{x} \tag{2.19}$$

with $e^{-2\phi}$ again given by (2.18).

The solution generating transformations (2.3) and (2.11) produce solutions with electric charge. But one can easily obtain solutions with magnetic charge by applying a duality transformation. When the dilaton is present, the duality transformation corresponds to replacing $F_{\mu\nu}$ and ϕ with $\tilde{F}_{\mu\nu} \equiv \frac{1}{2} e^{-2\phi} \epsilon_{\mu\nu}{}^{\lambda\rho} F_{\lambda\rho}$ and $\tilde{\phi} = -\phi$. This leaves the stress energy tensor invariant and hence does not change the Einstein metric. But since the dilaton changes sign, it does change the string metric. For electrically charged black holes, the string metric is obtained by multiplying (2.19) by $e^{2\phi}$. The result is that the spatial metric is completely flat and g_{tt} is identical to the Majumdar-Papepetrou solutions. On the other hand, since ϕ changes sign under duality, the string metric describing several magnetically charged black holes is obtained by multiplying (2.19) by $e^{-2\phi}$ where ϕ is still given by (2.18). The resulting metric has $g_{tt} = -1$ and a spatial metric which is identical to the

	– Dibang Valley	Pulu, P.O. Roing, Dist. Debang Valley, Arunachal Pradesh **(not clear; please put on hold)**	
10.	Meghalaya - West Garo hills:	P.G. Momin, SEPARD (Society for Environmental Protection and Rural Development), Department of Geography, NEHU, Shillong – 793 022 Tel.: 0364 - 250094	
11.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachangpa, **(address sought)**? Email: ganden@nde.vsnl.net.in	• Director, Khanchendzonga National Park
12.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197; Email: harmony1@ndb.vsnl.net.in	
13.	Madhya Pradesh - Bilaspur Commissionery:	Chairperson, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Madhya Pradesh Fax : 07752-25008 **(put on hold)**	• Tribal developmental society(BMS to send additional names)
14.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh, Sahjeevan, 104 A Lotus Colony, Bhuj-Kachchh, Gujarat Tel.: 02832-51814	• GIDE, • Hasmukh Shah, Chairman,Gujarat Ecology Commission, 5 Golden Apts, Subhanpura, Vadodara 390 023 Tl ;383329 Fax :383341 • H.S. Singh, Geer Foundation , Indrora Park, Seector 9, Gandhinagar 382009 Tel :02712 21385 Fax :02712 41128
15.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P.	• Gargi Banerjee, Pragya, A – 212A, Sushant Lok, Gurgaon – 112 002 Telefax: 0124-6385932/6386104
16.	Bihar - Chhota Nagpur Plateau OR Dalma/Jameshedpur Area	(Use Integrated Tribal Development Project, or Rathore to suggest) **(put on hold)**	
17.	Rajasthan - Arvari Basin	Rajendra Singh, Tarun Bharat Sangh, Bhikampura-Kishori, via Thanagazi, Dist. Alwar 301002, Rajasthan. Tel: 01465-25043 (Bhikampura); 0141-391092 (Jaipur); Fax: 0141-393178 (Jaipur)	
18.	Nagaland – Chedema	Khrikeitoulie Tracy medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

inner horizon. The only difference from Schwarzschild is that the area of the spheres is reduced by an amount depending on the charge. This area goes to zero when $r = Q^2/M$ ($\rho = 0$) resulting in a curvature singularity.

Clearly, the solution (2.16) describes a black hole only when the singularity is inside the event horizon i.e. $Q^2 < 2M^2$. Linearized perturbations about this solution have been studied [11] and remain well behaved outside the horizon: the black hole is stable. In the extremal limit, $Q^2 = 2M^2$, the event horizon shrinks down to zero area and becomes singular. The resulting spacetime describes neither a black hole (with a spacelike singularity), nor a conventional naked singularity (which is timelike). Since the causal structure in the $r-t$ plane is independent of Q, the extremal black hole has a null singularity. Its Penrose diagram is identical to the region $r > 2M$ of Schwarzschild, with both the future and past horizons, $r = 2M$, replaced by singularities.

The fact that the area of the event horizon goes to zero in the extremal limit has two important consequences. First, it follows immediately from the area theorem that there is no classical process by which a nearly extremal black hole can become extremal [12]. This is also true for the Reissner-Nordstrøm solution, but the proof is more involved. Second, if one interprets the area as a measure of the entropy of a black hole through the Hawking-Bekenstein formula, $S = A/4$, then the extremal black holes have zero entropy. This is what one might expect for a ground state. The nonzero area of the extremal Reissner-Nordstrøm solution has always been puzzling from this standpoint, since it seems to indicate a highly degenerate ground state. Although this black hole resolves one puzzle, it creates a new one. For a static, spherically symmetric black hole, the Hawking temperature can be found by analytically continuing to imaginary time and computing what periodicity is necessary to avoid a conical singularity. Since this only involves the $r-t$ part of the metric which is identical to Schwarzschild for the solution (2.16), the Hawking temperature is also identical: $T = 1/8\pi M$, independent of Q! In particular, the Hawking temperature does not go to zero as one approaches the extremal limit. This leads one to worry that the black hole might continue to evaporate past the extremal limit to form a true naked singularity. However, the backreaction clearly becomes important as one approaches the extremal limit, and a complete calculation is necessary to understand the evolution[2].

In terms of the original Schwarzschild mass M_0 and transformation parameter α, the extremal limit again corresponds to $M_0 \to 0, \alpha \to \infty$ keeping $M_0 e^{2\alpha}$ fixed. In this limit,

[2] For a review of recent work in this area, see [13].

Proposed List of Local (Sub-state) Site Nodal Agencies

(NOTE: SOME OF THESE ARE NOT YET CLEAR, AND NEED TO BE PUT ON HOLD...AS MARKED BELOW)

S.No.	Local (Substate sites)	Coordinator	Member
1.	Karnataka - Uttara and Dakshina Kannada	Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142	• K.P. Achar Prof. & Head, Deptt of Zoology, Shree Bhuvanendra College, Karkala-574 104, Dakshin Karnataka Tel: 0858 21937
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	• T. Shivaji Rao, • K. Shankar Reddy, JANACHETNA, Palakonda Dist. Srikakulam, Andhra Pradesh • Phalguni Rao, Kattragedda Village, Bhamini Mandalam, Dist. Srikakulam Andhra Pradesh
3.	Andhra Pradesh - Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: ddshyd@hd1.vsnl.net.in	-
4.	Tamil Nadu - Gulf of Mannar	Prof PC Kesavan, Executive Director, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698, Fax: 2351319	• Forest Department, Tuticorin Official incharge of National Parks) • DCF (CF)
5.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad **(address not yet clear, keep on hold)**	
6.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
	Uttar Pradesh - Terai:	(no suggestion)	
7.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal	• Field Director, Sunderban Tiger Reserve
8.	Assam - Karbi-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	• Jyotsna Terangpit, Karbi Nimso Chingthor Asong, c/o ASDC Office, Diphu, Karbi Anglong, Assam
9.	Arunachal Pradesh	Budhi Mohan Lingli, & Jatan	

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(New inserts in italics; gender inserts in red)

Thematic Concept Note:

ACCESS, BENEFIT-SHARING AND INTELLECTUAL PROPERTY RIGHTS

The conservation of biodiversity and sustainable use of biological resources entails complex social and political issues that are as critical to address as the biological/ecological aspects. In particular, the following issues need to be addressed:

1. Access to biological and genetic resources is dependent on a range of factors, including the legal entitlements, ownership, socio-political status and other attributes that different sections of society have. For instance, access to forest resources in India is governed by forest related legislation, and by the administrative structures and programmes of the Forest Department. Such differential access has implications for benefit-sharing. A brief assessment of who has access to biological resources with differences in access for women and men, and for what purpose, would be the starting point for this theme.
2. Similarly, different sections of society have varying levels of access to information and knowledge relevant to the use of biological resources. For instance, knowledge on medicinal plants differs greatly within and between communities and often between women and men within communities and households. This has implications for benefit-sharing and intellectual property rights concerns particularly their gender, often overlooked sensitivity. A brief assessment of this would be necessary.
3. Given the above conditions, benefits from the use of biological and genetic resources, and of related knowledge, are differentially distributed in society. This differential distribution occurs within a households and communities y along socio-cultural and gender axis, amongst different communities, between rural and urban areas, within the country as a whole, and internationally. This situation needs to be assessed, with concrete examples. E.g. what kind of inequities exist in the relationship between the women and men collectors of medicinal plants and a pharmaceutical company that makes use of these plants to make a drug?
4. Are there any kind of explicit benefit-sharing arrangements already existing in India, which attempt to break away from the conventional inequitous relationships (e.g. the TBGRI-Kani arrangement in Kerala)? An assessment of these would be necessary, *with suggestions on how research bodies, corporations, and government agencies need to reorient their own programmes to enable equitable benefit-sharing arrangements with local communities which are gender & equity sensitive.*
5. What are the implications of current intellectual property rights regimes (domestic and international) on indigenous knowledge and its holders? How gender sensitive are these? Can such IPR regimes be used to benefit local communities and individuals women and men holding biodiversity-related knowledge? Are there other existing laws/policies/programmes that help in such benefit-sharing and in protecting gender differentiated indigenous knowledge? *What are the threats that will emanate from unequal trading mechanisms, multinational companies and international patenting regimes?*
6. What modifications in existing laws and policies, including IPR systems, are needed to:
   (i) Ensure that access and benefit-sharing in the use of biological diversity and related knowledge is equitable and gender sensitive?
   (ii) Ensure that indigenous knowledge (community and individual) is respected and protected, in particular in relation to IPR regimes. Are alternative IPR regimes needed, and if so, what would be their features?
7. Are there developments in other countries that India can learn from?
8. What would next steps for local communities, *corporations,* state governments, and the country as a whole be?

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14.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh, Sahjeevan, 104 A Lotus Colony, Bhuj-Kachchh, Gujarat Tel.: 02832-51814	• GIDE, • Hasmukh Shah, Chairman,Gujarat Ecology Commission, 5 Golden Apts, Subhanpura, Vadodara 390 023 Tl ;383329 Fax :383341 • H.S. Singh, Geer Foundation , Indrora Park, Seector 9, Gandhinagar 382009 Tel :02712 21385 Fax :02712 41128
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18.	Nagaland – Chedema	Khrikeitoulie Tracy medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

G. N. Sinha
Secretary
Planning Board

KALPAVRIKSH

कल्पवृक्ष

Environmental Action Group

24/5/2000

Dear

The Ministry of Environment and Forests (MoEF), Government of India, has initiated a project to prepare India's National Biodiversity Strategy and Action Plan (NBSAP). Such a Plan has been a long-felt need in the context of the rapid loss of biological diversity in India, and is also in keeping with India's obligations under the UN Convention on Biological Diversity. In 1999, the MoEF came out with a Macro-Strategy on biodiversity; the NBSAP, which is supported by the Global Environment Facility (GEF) through UNDP, will attempt to flesh out this macro-strategy in the form of very detailed action points and time-bound programmes.

The aim of the project is to evolve a plan relevant to the country as a whole, tackling the range of biodiversity concerns and the different levels at which biodiversity is impacted. To this end, it is envisaged that action plans will be prepared for 14 themes relating to biodiversity at the national level, for the 31 states and union territories, for 9 inter-state ecoregions, and for about 20 sub-state, local sites. All kinds of biodiversity will be focused upon: wild plants and animals, domesticated livestock and crops, micro-organisms, and ecosystems. In all this, the greatest stress will be on maximum participation of women and men from all sectors: local communities, scientific organisations, NGOs, government agencies of all kinds, political leaders, artists, and others. There will be special focus on issues of gender and equity, ethical concerns, livelihoods linked to biodiversity, threatened species and ecosystems, and community-based conservation.

A layered organizational structure has also been instituted for drawing up the NBSAP. The National Project Directorate (NPD) is situated at the MoEF. This NPD along with the Steering Committee provides guidance and assistance for the process. A Technical and Policy Core Group (TPCG), consisting of experts from various fields and different parts of India, from both government and outside, is the main planning and executing body of the NBSAP. An administrative coordinating agency (BCIL, New Delhi), is overseeing the logistic aspects. Themes will be handled by appropriate Working Groups, and state or local level processes by appropriate nodal agencies and steering committees. These groupings will consist of a cross-section of sectors, interests and professions.

I have been asked to coordinate the TPCG, on behalf of Kalpavriksh. I am now writing to informally intimate you that the TPCG has recommended you to be the nodal agency for the state of ARUNACHAL PRADESH, in the context of the NBSAP. As a nodal agency, you will be required to coordinate the preparation of the action plan for your state/U.T. In this, you will be guided by a State Steering Committee (SSC), comprising of people from various sectors. We will suggest to you the composition of the SSC, though of course you will perhaps want to choose some members yourself.

You will hopefully soon receive a formal intimation of this from the Ministry of Environment and Forests, Government of India. Our information is that MoEF has conveyed this recommendation to the Chief Secretary of your state, and is awaiting his/her formal concurrence. **Meanwhile, we would also like you to book the dates of June 23/24, to participate in the Inaugural National Workshop on this project, in New Delhi.** You will be intimated further details of this workshop very soon after being confirmed as the nodal agency, and after receiving your own concurrence.

We look forward to working with you on this exciting process. Thank you, sincerely yours,

(Ashish Kothari)
Coordinator, Technical and Policy Core Group
National Biodiversity Strategy and Action Plan

Apt. 5, Shree Dutta Krupa, 908 Deccan Gymkhana, Pune 411 004, India.
Telefax: ~~(0212) 354239~~ 020-5654239 • Email: ashish@nda.vsnl.net.in
(Delhi Address: c/o B-25, Defence Colony, New Delhi 110 024)
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BCIL to Type in changes indicated: send

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	Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: DDSHYD@HD1.VSNL.NET.IN	-
3.	Tamil Nadu - Gulf of Mannar	~~M.S. Swaminathan's nominee~~, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698 , Fax: 2351319	• Forest Department, Tuticorin Official incharge of National Parks) • DCF (CF)
4.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad	
5.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
	Uttar Pradesh - Terai:	(no suggestion)	
6.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal	• Field Director, Sunderban Tiger Reserve
7.	Assam - Karbia-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	• Jyotsna Terangpit, ~~KNCA C/O Anjali Daimari, Q1 No 187 A, Jaya Nagar, East Gossala, Mali Gaon, Guwahati~~ & Karbi Nimso Chingthor Asong, c/o ASDC Office, Diphu, Karbi Anglong, Assam

P.C. Kesavan Executive Director

BCIL (1) Add Vidharbha's add AK sent

Then, $(\tilde{\Sigma}, \tilde{q}_{ab})$ will be said to be *globally homogeneous.*[3] By singling out a preferred point of $\tilde{\Sigma}$ as the "origin" or identity, one can identify $\tilde{\Sigma}$ with the group manifold. (Thus, $\tilde{\Sigma}$ bears the same relation to the group as an affine space does to a vector space.) The group then acts on $\tilde{\Sigma}$ by right translations

$$p \to \Phi(g, p) = pg, \tag{3.13}$$

where $p \in \tilde{\Sigma}$ is now thought of as a group element. The right action of G on $\tilde{\Sigma}$ is an isometry i.e. the metric $\tilde{q}_{ab}$ on $\tilde{\Sigma}$ is invariant under this action. Consider a curve $g(t)$ through the identity e of G. The family of maps $\Phi(g(t), \cdot)$ give for each $p \in \tilde{\Sigma}$ a curve $\Phi(g(t), p)$ through p. For each tangent vector at the identity, $v \in \mathcal{G}$, the Lie algebra of G, this defines a tangent vector $K(v)|_p$ at each point p of $\tilde{\Sigma}$ and so a vector field $K(v)$ on $\tilde{\Sigma}$. We thus have a linear map from $\mathcal{G}$ to vector fields on $\tilde{\Sigma}$. Further, the Lie algebra of G is represented by vector fields on $\tilde{\Sigma}$:

$$K([\![v_1, v_2]\!]) = [K(v_1), K(v_2)] \tag{3.14}$$

where $[\![\,,\,]\!]$ denotes the bracket in the Lie Algebra and $[\,,\,]$ the commutator of vector fields on $\tilde{\Sigma}$. The $K(v)$ are the infinitesimal generators of the right action of G on $\tilde{\Sigma}$ and consequently Killing vector fields on $(\tilde{\Sigma}, \tilde{q}_{ab})$.

There is also the left action of G on $\tilde{\Sigma}$

$$p \to gp. \tag{3.15}$$

The generators of the left action are denoted $X^a(v)$, where $v \in \mathcal{G}$, and they too reflect the Lie algebra $\mathcal{G}$ in their Lie bracket relations. Since the right and left actions commute, it is evident that

$$\mathcal{L}_{K(v)} X(w) = [K(v), X(w)] = 0 \tag{3.16}$$

for all $v, w \in \mathcal{G}$. So $X(w)$ are right invariant vector fields. In fact, they provide a basis for all right invariant tensor fields. It is also clear that the (Lie algebra valued) Maurer-Cartan 1-form

$$\chi := (dg)\, g^{-1} \tag{3.17}$$

on $\tilde{\Sigma}$ (identified with G) is right invariant and inverse to X. χ takes values in $\mathcal{G}$ while X and K take values in $\mathcal{G}^*$, the dual of $\mathcal{G}$. In detailed calculations, the

3 The assumption that G is 3-dimensional makes our definition somewhat restrictive since it excludes the Kantowski-Sachs metrics. However, it enables one to prove stronger results using rather simple general arguments and has therefore been used in the literature quite often. See, e.g., [4].

8.	Arunachal Pradesh – Dibang Valley	Budhi Mohan Lingli, & Jatan Pulu, P.O. Roing, Dist. Debang Valley, Arunachal Pradesh	
9.	Meghalaya - West Garo hills:	P.G. Momin, SEPARD (Society for Environmental Protection and Rural Development), Department of Geography, NEHU, Shillong – 793 022 Tel.: 0364 - 250094	
10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachangpa, ?	• Director, Khanchendzonga National Park
11.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197; Email (c/o Krishnendu Bose): bose@vsnl.com	
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14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P.	• Gargi Banerjee, Pragya, A – 212A, Sushant Lok, Gurgaon – 112 002 Telefax: 0124-6385932/6386104
15.	Bihar - Chhota Nagpur Plateau OR Dalma/Jameshedpur Area	(Use Integrated Tribal Development Project, or Rathore to suggest) Shramjivi Unnayan, TELCO	
16.	Rajasthan - ~~Thar~~ ~~Desert~~ Or Arvari???	S.M. Mohnot, School of Desert Sciences, 109, Nehru Park, Sardarpura, Jodhpur – 342 001 Rajasthan Tel.: 0291-742595(O) 432003 (R) Fax: 742495 Email: smohnot@jp1.dot.net.in ~~Taneja to revert with contact name~~ T.B.S.	
17.	Nagaland – Khonoma Or Chedema	(Bhattacharjee/Satheesh to suggest) Khrikeitoulie Tracy medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

अंतर-विश्वविद्यालय केंद्र : खगोलविज्ञान और खगोलभौतिकी IUCAA

Inter-University Centre for Astronomy and Astrophysics

An Autonomous Institution of the University Grants Commission

Jayant Narlikar
Director

July 30, 1998.

Ref : JVN/1998/Visitor/7244

Dr Sanjiv Kumar,
Unnithan Farm,
Todi Ramzavipura,
Jagatpura,
Jaipur – 302 017.

Dear Dr Sanjiv Kumar,

I am sorry for this delay in responding to your letter of July 7, 1998. I thank you for your kind letter and for sharing with me your experiences here. Because of the interviews going on at the time, I could not personally meet you while you were leaving But I hope that all is well with you and that you and your wife are satisfied with your visit to India.

I have noted your interest in a position at IUCAA. Because we have limited core positions and we are interested in covering adequately a few thrust areas in astronomy and astrophysics rather than covering a large set in a diffused manner, we are not able to do justice to all the areas in astronomy and astrophysics. In such cases, we try to take advantage of experts visiting us from different parts of the country and the world so that the local academics and visitors from universities can interact with them in the IUCAA surroundings.

Your subject of interest falls in such a group and therefore it is not possible for us to consider you for a core position but we would like to have you visit us as and when possible so that the benefit of your expertise can be shared by many in the above manner.

If you are able to get a position in an Indian university, we could of course make you a Senior Associate of IUCAA and you can then visit us as and when you would like. If you continue to work abroad and would like to visit India, you could write to us and we will be able to arrange an extended visit by you as per mutual convenience.

With kind regards,

Yours sincerely,

Jayant Narlikar

Professor J.V. Narlikar

To : **Dr. Sanjiv Kumar,**
Physics and Astronomy Subject Gp.,
CPES, University of Sussex,
Falmer, Brighton BN1 9QH,
United Kingdom.

Visitors / Desm

→ PROFESSOR T. PADMANABHAN.

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LAC General 6.2.4\lists\Lists of Nodal Agencies\Ver.4\9.5.2000

~~LAC\Lists\Coordinators & Members\Ver.4\09.5.2000~~

Proposed list of Local (sub-state) Site Nodal Agencies

S.No.	Local (Substate sites)	Coordinator	Member
1.	Karnataka - Uttara and Dakshina Kannada	Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142	K.P. Achar Prof. & Head, Deptt of Zoology, Shree Bhuvanendra College, Karkala-574 104, Dakshin Karnataka Tel: 0858 21937
2.	Andhra Pradesh - North coastal belt	K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh	T. Shivaji Rao, K. Shankar Reddy, Jan Chetna Phalguni Rao
	Deccan area	Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: DDSHYD@HD1.VSNL.NET.IN	-
3.	Tamil Nadu - Gulf of Mannar	M.S. Swaminathan's nominee, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698 , Fax: 2351319	- DCF (CF?) F.D. (Gulf of NP)
4.	Maharashtra – Vidarbha	Vidarbha Paryavaran Parishad	Forest Department, Tuticorin Official incharge of National Parks)
5.	Uttar Pradesh - Tehri Garhwal	Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451	
	Uttar Pradesh - Terai:	(no suggestion)	
6.	West Bengal - Sunderbans	Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal	Field Director, Sunderban Tiger Reserve
7.	Assam - Karbia-Anglong	Bibhab Talukdar, Aranyak, Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028	Jyotsna Terangpit, KNCA C/O Anjali Daimari, Q1 No.187 A, Jaya Nagar, East Gossala, Mali Gaon, Guwahati
8.	Arunachal Pradesh – Dibang Valley	Ruchi Pant/ Ajay Rastogi, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bungalow No. 2,	Apa Tanni Rep? • Budh Mohan Dingi, P.O. Roing • Mr. Jatan Pulu, Dist Dibang Valley Arunachal

constitute officials of government departments dealing with development and environment, conservation and social actions NGOs, individual environment experts, academic institutions, ~~Jila~~ Zila Panchayat Chairperson, local govt. representatives and the ~~relevant~~ local MLAs and MPs.

6) This committee would develop an overall land/water use plan which focuses on biodiversity conservation areas and compatible livelihood strategies. This plan would be built up from local level micro plans as described below.

7) Coordination committee should also be set up for special sub units of this eco-region, for example, Joint Management or Advisory Committees for Protected Areas, Conservation areas and areas of agro biodiversity concentration. Micro planning should be done at the village and village cluster level for which the village communities need to be legally and financially empowered. All relevant govt. departments should be made to coordinate their programmes and budgets within this micro planning process.

8) There should be a comprehensive review of national and state laws relating to natural resources (Wildlife, Forests, Mining, Industries, Agriculture, etc.), and appropriate change made to harmonize these laws keeping in focus, conservation of biodiversity, sustainable use of biological resources and basic livelihood security. AIR WATER ENVIRONMENT

9) There has to be a flexibility in natural resource laws to accommodate site specific situations, and customary laws which ensure biodiversity conservation and sustainable use.

10) There is a need for amendments and new provisions in the Forest, Wildlife, Environment Protection and the proposed Biodiversity Acts to facilitate full people's participation in the management of biodiversity conservation areas, and the integration of conservation and sustainable use through appropriate zonation. These provisions should be added to the proposed new draft of the Wildlife Act before submitting it to the Cabinet. ?

11) The ongoing process of settlement of people's right within Protected Areas must be done according to the above provisions, and pending the introduction of these provisions, through detailed guidelines, which ensure adequate biodiversity conservation, minimization of

SEPARD (Society for Protection Environmental & Rural Development
contact add: Dr P. G. Momin
Dept of Geography
NEHU Shillong 793 022
Ph: (0364) 2500 94

		Nr.Airforce Officers Enclave, Bhujiapani, PO Bagdogra, Dist. Darjeeling 734 422 West Bengal Tel: 0353-550093, 551110 Email: atree@dte.vsnl.net.in (Bhattacharjee to provide inputs on ATREE's suitability)	
9.	Meghalaya - West Garo hills:	Kharbuli, NEHU,Shillong	
10.	Sikkim - Rathong Chu/Khangchendzonga Valley:	Usha Lachangpa, ?	Director, Khanchendzonga National Park
11.	Delhi - Ridge forest:	Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/o Pradeep Malhotra) 011-4624197; Email (c/o Krishnendu Bose): bose@vsnl.com	
12.	Madhya Pradesh - Bilaspur Commissionery:	Chairperson, Tribal Development Society, (IFAD Assisted Tribal Development program), Commissioner's Office, Bilaspur, Madhya Pradesh Fax : 07752-25008	Tribal developmental society(BMS to send additional names)
13.	Gujarat - Kachchh	Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh	GIDE, Gujarat Ecology Commission, Geer foundation
14.	Himachal Pradesh - Lahaul-Spiti-Kinnaur:	Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P.	Gargee Banerjee, Pragnya (DS to send more details)
15.	Bihar - Chhota Nagpur Plateau OR Dalma/Jameshedpur Area	(Use Integrated Tribal Development Project, or Rathore to suggest) Sramjivi Unnayan, TELCO	
16.	Rajasthan - Thar Desert Or Arvari???	S.M. Mohnot, School of Desert Sciences, 109, Nehru Park, Sardarpura, Jodhpur – 342 001 Rajasthan Tel.: 0291-742595(O) 432003 (R) Fax: 742495 Email: smohnot@jp1.dot.net.in Taneja to revert with contact name	
17.	Nagaland – Khonoma Or Chedema	(Bhattacharjee/Satheesh to suggest) Khrikeitoulie Tracy medoum, DVEZI Society, 82, East View, D Block Kohima – 797 007 Tel.: 0370-225221	

Group II

Legal and Administrative Imperatives:

Facilitators: Shri Ashish Kothari
Shri S. S. Rizvi

Members:

1) Shri V.B. Saharia
2) Shri Pratap Singh
3) Dr. Gopa Pandey
4) Shri Asad Rahmani
5) Dr. M.K. Ranjitsinh
6) Dr. Ravi Chellam
7) Dr. G.S. Rawat
8) Dr. Devendra Pandey

Rapporteur: Shri Sanjay K. Singh

The following steps are needed in order to make the concept of eco-regional or bioregional planning possible:

1) Identify the boundary of the planning region, depending on the conservation objective.
2) Give a formal legal status to this region possibly through the Environment Protection Act.
3) Provide to states the legal power to declare such regions, along with existing power of the Central Government.
4) Set up a special Nodal Officer for eco-regional planning at the relevant planning agency of the state, and at the planning commission at the centre.
5) Set up a coordination committee for this region headed by a district Collector or Commissioner, or where the region is inter-state, a panel of Commissioners. The Member Secretary of this committee would be a Senior Forest Officer of appropriate rank. The committee would

Local (sub-state) Site Nodal Agencies

Karnataka - Uttara and Dakshina Kannada: Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142

K.T. Achar

Andhra Pradesh - North coastal belt: K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh

Phalguna Rao

Deccan area: , Director, Deccan Development Society, A-6, Meera Apartments, Bashirbagh, Hyderabad – 500 029 tel.: 040-3222867 Fax: 040-3222260 Email: DDSHYD@HD1.VSNL.NET.IN

T. Shiraji Rao, K. Shankar Reddy, Jan Chetna

Tamil Nadu - Gulf of Mannar: M.S. Swaminathan's nominee, M.S. Swaminathan Research Foundation, 3rd Cross St. Institutional Area, Taramani, Chennai 600 113; Tel:044-2351229/2351698, Fax: 2351319

DCF (CF?), F.D. (Gulf NP)

Maharashtra - Vidarbha: Vidarbha Paryavaran Parishad — give add.

Uttar Pradesh - Tehri Garhwal: Vijay Jardhari, Beej Bachao Andolan, P.O. Nagni, Hemvalghati, Dist. Tehri Garhwal 249 175 Uttar Pradesh Tel.: 01376-55451

Uttar Pradesh - Terai: (no suggestion)

West Bengal - Sunderbans: Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal

Field Dir., Sund. TR

Assam - Karbia-Anglong: Bibhab Talukdar, Aryanak Nature Club ,"Ever Green Samanya Path , P.O. Beltola , Basistha Road , Guwahati 781 028

Not local?

Jyotsna Terangpi, KNCA,

Arunachal Pradesh - Dibang Valley: Ruchi Pant / Ajay Rastogi, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bungalow No. 2, Nr.Airforce Officers Enclave, Bhujiapani, PO Bagdogra, Dist. Darjeeling 734 422 West Bengal Tel: 0353-550093, 551110 Email: atree@dte.vsnl.net.in

Not local?

Apa Tani srp?

Meghalaya - West Garo hills: Kharbuli, NEHU, Shillong

Sikkim - Rathong Chu/Khangchendzonga Valley: Usha Lachangpa, ?

Dir., KNP

Delhi - Ridge forest: Kalpavriksh B-25, Defence Colony, New Delhi – 110 024 Tel.: (c/0 Pradeep Malhotra) 011-4624197; Email (c/o Krishnendu Bose): bose@vsnl.com

Madhya Pradesh - Bilaspur Commissionery: (Use Integrated Tribal Development Project, or Rathore to suggest)

Tribal Dent. Soc.

Gujarat - Kachchh: Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh

Gujarat Ecology Commission G. Inst. of Desert Ecology GEER Foundation

Himachal Pradesh - Lahaul-Spiti-Kinnaur: Tribal Advisory Committee, H.P. Secretariat, Shimla 171 002, H.P.

Gagsi Banneji, Pragnya

Bihar - ~~Chhota Nagpur Plateau~~ ~~(Use Integrated Tribal Development Project, or Rathore to suggest)~~

Dalma-Jamshedpur area? Shivanjivi Vinayan, TELCO

Rajasthan - Thar Desert : S.M. Mohnot, School of Desert Sciences, 109, Nehru Park, Sardarpura, Jodhpur – 342 001 Rajasthan Tel.: 0291-742595(o) 432003 (R) Fax: 742495 Email: smohnot@jp1.dot.net.in

- Aravari catchment as alternative since Thar done under BCPP

Nagaland - Khonoma ~~(Bhattacharjee/Satheesh to suggest)~~

Chedema (Bansuri to give)

Local (sub-state) Site Nodal Agencies

Karnataka - Uttara and Dakshina Kannada: ~~Managing Director,~~Subhash Chandran, Deptt. of Botany, Dr. AV Baliga College, Kumta-581 343, Uttara Kannada Tel: 08386 23142

Andhra Pradesh - North coastal belt: K. Sanyasir Raju, Coordinator, Grameen Punnarnirmana Kendram, 5-174, Palace Road Village, Kurupam Distt. Vizianagaram, Andhra Pradesh

- Deccan area: Deccan Development Society (Voluntary)

Tamil Nadu - Gulf of Mannar: M.S. Swaminathan's nominee, MSSRF

Maharashtra - Vidarbha: Dilip Gode, Vidarbha Nature Conservation Society, Tidke Ashram, Ganesh Peth, Nagpur – 440 018 Tel.: 0712-722748/727363 Email: vncs@nagpur.dot.net.in

VPP

PS/NV Update ?

United States Department of the Interior

FISH AND WILDLIFE SERVICE

In Reply Refer To:
FWS/OIC

January 27, 2000

Dear Elephant Conservationists:

The U.S. Fish and Wildlife Service would like to bring to your attention the Asian Elephant Conservation Fund (AsECF) and the enclosed 2000 Request for Proposals. Through this program, the Service is prepared to provide financial assistance to collaborate on projects critical to the conservation of the Asian Elephant and its habitat.

Please feel free to share this information with others who are potentially interested. We would be happy to address any questions or comments, and we look forward to you continued interest in the AsECF.

Sincerely yours,

H. Raffaele

Herbert A. Raffaele
Chief, Office of International Affairs

Enclosure

Uttar Pradesh - Tehri Garhwal: Beej Bachao Andolan

Uttar Pradesh - Terai: (no suggestion)

West Bengal - Sunderbans: Amalesh Choudhry, SD Marine Biological Research Institute, Sagar islands, South 24 Parganas, West Bengal

Assam - Karbia-Anglong: (Bhattacharjee to suggest) Aranyak Nature Club

Arunachal Pradesh - Dibang Valley: (Bhattacharjee to suggest) ? ATREE

Meghalaya - West Garo hills (Bhattacharjee to suggest) → Biodiversity research Unit, NEHU

Sikkim - Rathong Chu/Khangchendzonga Valley: Usha Lachangpa, ?

Delhi - Ridge forest: Kalpavriksh ? (Kothari to explore)?

Madhya Pradesh - Bilaspur Commissionery: (Use Integrated Tribal Development Project, or Rathore to suggest)

Gujarat - Kachchh: Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh

Himachal Pradesh - Lahaul-Spiti-Kinnaur: (~~Sharma to suggest~~)

Bihar - Chhota Nagpur Plateau (Use Integrated Tribal Development Project, or Rathore to suggest)

Rajasthan - Thar Desert : S.M. Mohnot, School of Desert Sciences, 109, Nehru Park, Sardarpura, Jodhpur – 342 001 Rajasthan Tel.: 0291-742595(o) 432003 (R) Fax: 742495 Email: smohnot@jp1.dot.net.in

Nagaland - Khonoma (Bhattacharjee/Satheesh to suggest)
↳ Menc Chandola ?

Tribal Advisory Committee
Secretary, Tribal Advisory Committee
H.P. Secretariat
Shimla 171 002
H.P.

INDIA FOUNDATION FOR THE ARTS

I F A

January 1, 2000

ARTS COLLABORATION PROGRAMME 2000

India Foundation for the Arts (IFA) is an independent, national grant-making institution.

We request your help in disseminating the enclosed 'Request for Proposals' issued under our arts collaboration programme.

We would like to share with you some reflections on IFA's arts collaboration programme. While it is possible to envisage projects in or for the arts that draw on the resources of several individuals, IFA's arts collaboration programme is based on the assumption that a collaboration is more than just a coming together of persons with a prior estimate of what each shall acquire from the other. Collaboration, as we understand it, springs from a desire to question one's position, preferences, and practice. Without this essential willingness to anticipate the upheaval and stimulation that a genuine interaction between two or more persons involves, collaboration is unlikely to contribute to real artistic growth.

Our arts collaboration programme seeks to foster dialogue between artists in a way that sharpens their understanding of their own practice, without obliging them to abandon independent thought. We would like to see artists stretching the boundaries of different disciplines, without necessarily attempting to fuse them together. Our programme therefore facilitates varieties of collaboration in different contexts, even while we sincerely believe that a mutual engagement between partners lies at the heart of all genuine collaboration.

Our experience with the arts collaboration programme so far has revealed that often partners in a proposed collaboration may have a potentially exciting project in mind, but are for various reasons unable to submit a fully developed proposal. In order to enable persons to acquaint themselves with each other, develop and sharpen project ideas, and confront differences, we offer preparatory grants from this round of the arts collaboration programme. Larger grants that support well-developed proposals for collaborative projects would of course continue to be made available. More details about both these kinds of grants are included in the attached Request for Proposals.

Thank you for your co-operation in ensuring that information about our arts collaboration programme reaches a wide group of interested individuals and institutions.

Tharangini, 12th Cross, Raj Mahal Vilas Extension, Bangalore - 560 080
Tel / Fax: + 91 (80) 331 0583/84 e-mail: ifabang@blr.vsnl.net.in

No 1(HH)(ii)

List of Sub-States Sites

1. **Karnataka:** Uttara and Dakshina Kanada
2. **Andhra Pradesh:** North Coastal belt (including Vishakhapatanam, Vijayanagar, and Srikakulam) (optional: Deccan area, Zaheerabad region?)
3. **Tamil Nadu:** Gulf of Mannar and coastal region
4. **Maharashtra:** Vidarbha region
5. **Uttar Pradesh:** Tehri Garhwal
6. **Uttar Pradesh:** Terai
7. **West Bengal:** Sunderbans
8. **Assam:** Karbi-Anglong region
9. **Arunachal Pradesh:** Dibang Valley (alternatively, Apa Tani region)
10. **Meghalaya:** West Garo Hills
11. **Sikkim:** Rathong Chu/Khangchendzonga Valley

12. Delhi: Delhi Ridge Forest

12. Madhya Pradesh: Bilaspur Commissionery (Raigadh, Sarguja, Jashpur)

13. Gujarat: Kacchh

14. Himachal Pradesh: Lahaul- Spiti-Kinnaur

15.Bihar: Chhota Nagpur plateau

16. Rajasthan: Thar Desert (optional: Arvari catchment, Alwar district?)

17. Nagaland: Khonoma region

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List of Sub-States Sites 14-03-20000

1. **Karnataka**
   - Uttara Kanada
   - Dakshina Kannada

   Darshan to get back

2. **Andhra Pradesh**
   (North Coastal belt) — T. Shivaji Rao
   - Vishakhapatanam
   - Vijayanagar
   - Srikakulam

3. **Tamil Nadu**
   - Gulf of Mannar and coastal region — MSSRF

4. **Maharashtra**
   - Vidarbha region — Dilip Gode, VNCS — AK

5. **Uttar Pradesh**
   - Tehri Garhwal — Vijay Jardhari, Beej Bachao Andolan/Chipko — AK
   - Terai — ?

6. **West Bengal**
   - Sunderbans — Seema to get back

7. **Assam**
   - Karbianlong region — PCB

8. **Arunachal Pradesh**
   - Dibang Valley (alternatively, Apa Tani region) — PCB

9. **Meghalaya**
   - West Garo Hills — PCB

10. **Sikkim**
    - Rathong Chu/Khangchendzonga Valley — Usha ~~Langchapa~~ Lachangpa

11. **Delhi Ridge Forest** — KV?

12. **Madhya Pradesh**
    - Raigadh, Sarguja, Jashpur – Bilaspur Commissionery — BMS Rathore

13. **Gujarat**
    - Kacchh — Sandeep Virmani, Forum for the Planned Industrialisation of Kachch

14. Rajasthan
    - Alwar/Arvari basin

14. Himachal Pradesh

- Lahaul- Spiti-Kinnaur

15.Bihar

- Chhota Nagpur plateau

BMS ?

16. Rajasthan

- Thar Desert

~~CAZRI~~ Ravi to get back

Seva Mandir

17. Nagaland

- Khonoma

18. Kerala

19. Orissa

20. J&K

No. 1(HH)(i)

List of Sub-States Sites 14-03-20000

1. **Karnataka**
   - Uttara Kanada
   - Dakshina Kannada

2. **Andhra Pradesh**
   (North Coastal belt)
   - Vishakhapatanam
   - Vijayanagar
   - Srikakulam

3. **Tamil Nadu**
   - Gulf of Mannar and coastal region

4. **Maharashtra**
   - Vidarbha region

5. **Uttar Pradesh**
   - Tehri Garhwal
   - Terai

6. **West Bengal**
   - Sunderbans

7. **Assam**
   - Karbianlong region

8. **Arunachal Pradesh**
   - Dibang Valley (alternatively, Apa Tani region)

9. **Meghalaya**
   - West Garo Hills

10. **Sikkim**
    - Rathong Chu/Khangchendzonga Valley

11. **Delhi Ridge Forest**

12. **Madhya Pradesh**
    - Raigadh, Sarguja, Jashpur – Bilaspur Commissionery

13. **Gujarat**
    - Kacchh

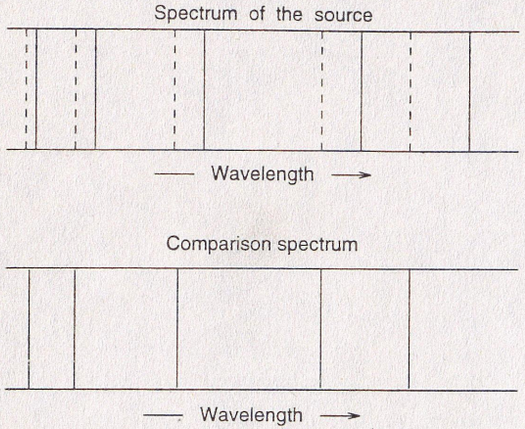

Figure 2.11: The Doppler effect shifts the lines in a spectrum of a source depending on its motion. The top part of the figure shows the actual spectrum of a source. The unbroken black lines correspond to the wavelengths at which radiation was detected. The bottom figure is the comparison spectrum of some element in the laboratory. One notices that each of the lines in the spectrum of the source is shifted systematically to a longer wavelength as compared to the lines in the comparison spectrum. However, the ratio between the wavelengths of any two lines is the same in the two figures. Because of this feature, we can identify the spectrum of the source as due to the element in the bottom figure and attribute the shifts in the wavelengths to the motion of the source.

opposite direction. Consider, for example, an electron in the ground state of hydrogen atom. It cannot jump to a higher energy state on its own since this process would require some energy. But if radiation is shining on the atom, it can absorb a photon of wavelength 1216 Å and make a transition from the ground state to the first excited state; or it can absorb a photon of wavelength 1025 Å and make a transition to the second excited state and so on (see figure 2.12). Other atoms and molecules with different sets of energy levels behave in a similar manner; all of them can absorb photons and make transitions from lower energy levels to higher energy levels.

Just as in the case of emission, an atom (or molecule) can only absorb photons of definite wavelengths when it makes a transition between two energy

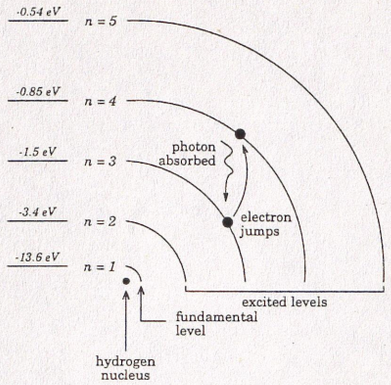

Figure 2.12: This figure shows the absorption of a photon, just as figure 2.10 showed the emission. The electron can absorb a photon and jump from a lower level to a higher level provided the photon has exactly the energy corresponding to the energy difference between the two levels. If the energy of the photon is different, then it will not be absorbed by the hydrogen atom.

levels. Suppose we shine light of all wavelengths on a system made of a large number of hydrogen atoms. Photons of most wavelengths will pass through the gas while photons of specific wavelengths (like 1216 Å and 1025 Å) will be absorbed by the atoms (see figure 2.13). On observing the radiation which has passed through the hydrogen gas, one will clearly see the tell-tale absence of photons at particular wavelengths. Such a spectrum is called absorption spectrum. By studying an absorption spectrum we can determine the composition of elements in regions through which radiation has been passing through.

We described before that the electron in the hydrogen atom is bound to the proton with an energy of -13.6 eV. What happens if we shine photons with higher energy, say with 15 eV, on the hydrogen atom? To answer this question we must remember that a free electron which is not moving has zero energy and a free electron moving with some speed has positive energy. If we shine photons with energy 13.6 eV on a hydrogen atom, then the electron can absorb one such photon and reach zero energy level. This means that the electron has just become free. If we shine the atom with photons of 15 eV energy then the electron which absorbs the photon will end up with a positive energy of

14. Himachal Pradesh

- Lahaul- Spiti-Kinnaur

15.Bihar

- Chhota Nagpur plateau

16. Rajasthan

- Thar Desert

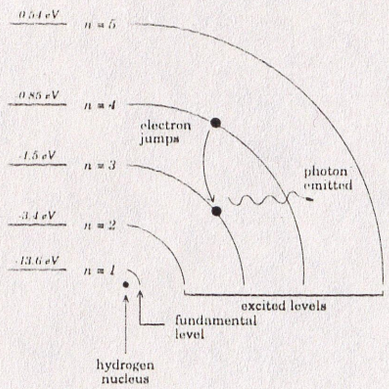

Figure 2.10: An electron orbiting the nucleus can exist only with certain definite values for the energy. The lowest energy level for an electron for a hydrogen atom has an energy of −13.6 eV. [This is the level marked n = 1 in the figure and corresponds to the electron being closest to the nucleus.] The minus sign is an indication of the fact that the electron is 'bound' to the nucleus; in other words, it takes 13.6 eV of energy to free the electron from the nucleus. The next energy level marked n = 2 has an energy of −3.4 eV. This is a higher energy level because it is less negative. The figure shows the first 5 energy levels in the hydrogen atom. When an electron 'jumps' from a higher level to a lower level, it emits the difference in the energy in the form of a photon. This photon will have a wavelength characteristic of the energy difference between the two levels.

electrons in the hydrogen atom are of the order of eV and you may wonder how radiation with wavelength of 21 cm could come out of the hydrogen atom. It turns out that particles like electron, proton etc. not only carry charge but also have another intrinsic property called the "spin". The spin has the effect of making the electron and proton behave like very tiny bar magnets. The force of interaction between the electron and proton is not only due to the electrical attraction but also because of the tiny magnetic force arising from the spins. The magnetic force is very small compared to the electrical force; but this tiny force does contribute to the energy of the electron in the hydrogen atom. The magnetic contribution to the energy depends on whether the spins of the electron and that of the proton are aligned in the same direction or whether they are aligned opposite to each other. These two states differ in energy by

6×10^{-6} eV! The electron can make a transition from one of these states to another emitting the excess energy in the form of a photon. This is how the neutral hydrogen can emit a photon with a wavelength of 21 cm. We shall see, in later chapters, that the 21 cm radiation turns out to be a boon to astronomers.

There is another important piece of information which the spectrum can provide. We mentioned earlier that the wavelength of radiation (as detected by us) could change if the source is moving towards or away from us. Suppose we have a source of gaseous hydrogen emitting radiation at two different wavelengths, say, λ_1 and λ_2. For example, the transition of electrons from the first excited level to the ground state will lead to emission of photons with wavelength $\lambda_1 = 1216$ Å; the transition from the second excited level to the ground state will produce photons of wavelength $\lambda_2 = 1025$ Å. If the source is not moving then we will detect photons with these two wavelengths from the source. But if the source is moving towards us, both λ_1 and λ_2 will get shifted to shorter values λ_1' and λ_2'. The percentage of shift in each case will be v/c where v is the speed of the source and c is the speed of light. Suppose the source is moving towards us with a speed of 300 km s^{-1}, which is one thousandth of the speed of light. Then the wavelengths will change by one part in a thousand. The wavelength $\lambda_1 = 1216$ Å will change to $\lambda_1' = 1215$ Å; similarly $\lambda_2 = 1025$ Å will change to $\lambda_2' = 1024$ Å. But note that such a shift cannot change the *ratio* between the two wavelengths. Originally the ratio between the wavelengths was $\lambda_1/\lambda_2 = 1.186$; though Doppler effect changes the individual wavelengths to λ_1' and λ_2', it does not change this ratio and indeed $\lambda_1'/\lambda_2' = 1.186$. This ratio of the wavelengths is known from theory. An astronomer studying the spectrum of radiation emitted by a distant source will first measure such ratios. Comparing the measured ratios to those known from theory he will be able to conclude that radiation is emitted, say, from a gas cloud of hydrogen. Once we know that the source is hydrogen, we can compare the observed wavelength λ_1' with the theoretically expected wavelength λ_1 and thus find the speed of the source.

In reality astronomers study not just two lines but a whole sequence of lines from a source. One would typically find all the lines emitted by the source are shifted by a constant factor. By comparing such a spectrum to a standard spectrum, one can accurately measure the shift in the wavelength and thus obtain the speed of the source (see figure 2.11).

The absorption of radiation proceeds in a similar manner but in the

Local (sub-state) Site Nodal Agencies

Karnataka - Uttara and Dakshina Kannada: (~~Darshan to suggest~~) Dr. Subhash Chandran — AIC

Andhra Pradesh - North coastal belt: T. Shivaji Rao, Andhra University? K. Sanyasi Raju (group)
- Deccan area (Satheesh to suggest)

Tamil Nadu - Gulf of Mannar: M.S. Swaminathan's nominee, MSSRF

Maharashtra - Vidarbha: Dilip Gode, Vidarbha Nature Conservation Society

Uttar Pradesh - Tehri Garhwal: Beej Bachao Andolan

Uttar Pradesh - Terai: (no suggestion) — ? 6

West Bengal - Sunderbans: (Bhatt to suggest)

Assam - Karbia-Anglong: (Bhattacharjee to suggest)

Arunachal Pradesh - Dibang Valley: (Bhattacharjee to suggest)

Meghalaya - West Garo hills (Bhattacharjee to suggest)

Sikkim - Rathong Chu/Khangchendzonga Valley: Usha Lachangpa, ?

Delhi - Ridge forest: Kalpavriksh ? (Kothari to explore)

Madhya Pradesh - Bilaspur Commissionery: (Use Integrated Tribal Development Project, or Rathore to suggest)

Gujarat - Kachchh: Sandeep Virmani, Forum for the Planned Industrialisation of Kachchh

Himachal Pradesh - Lahaul-Spiti-Kinnaur: (Sharma to suggest) — ?

Bihar - Chhota Nagpur Plateau (Use Integrated Tribal Development Project, or Rathore to suggest)

Rajasthan - Thar Desert (Chellam to suggest)

Nagaland - Khonoma (Bhattacharjee/Satheesh to suggest)

58. "Quantum Gravity - still at large", talk given at the ...., Theoretical astrophyics Centre, Copenhagen, May, 1995.
59. "Structure formation in the universe, lectures (10) given at the Pennsylvania State University, US, May-June, 1995.
60. "Structure formation - models, dynamics and status", talk given at the **IAU symposium 173 on gravitation lensing**, at Melbourne, Australia, July 9-14, 1995.
61. "Gravitational dynamics in an expanding universe", talk given at the **Gravitational Dynamics** conference, Institute of Astronomy, University of Cambridge, Cambridge, UK, August 8-12, 1995.
62. "Non-linear gravitational clustering in an expanding universe", **International Conference on Gravitation and Cosmology**, IUCAA, December, 11-17, 1995.
63. "Understanding nonlinear gravitational clustering", seminar given at the Fermilab, chicago, USA, April 30, 1996.
64. "Power transforms in nonlinear gravitational clustering", seminar given at Caltech, USA, May 24, 1996.

ashish kothari

From: Dr. Ravi Chellam <ravic@wii.gov.in>
To: ashish kothari <ashish@giasdl01.vsnl.net.in>
Cc: Sujatha NBSAP <kvriksh@vsnl.com>; Bansuri Taneja <swansong@giasdl01.vsnl.net.in>; BCIL <bcil@giasdl01.vsnl.net.in>; Gyanesh Chibber <gynesh-ch@usa.net>
Subject: Re: Nodal agency for Thar
Date: Tuesday, April 25, 2000 1:30 PM

Dear Ashish, After a hectic round of telephoning I have eventually managed to get hold of the required information. The NGO is School of Desert Sciences. Prof S.M. Mohnot is the Director and the other major players involved are Dr M.M. Bhandari and Prof Ishwar Prakash.

School of Desert Sciences, 109, Nehru Park, Sardarpura, Jodhpur 342 001, Rajasthan.
Prof S.M. Mohnot Tel (O) 0291 742595 (R) 432003 Fax: 742495 <smohnot@jp1.dot.net.in>

Prof Ishwar Prakash, Zoological Survey of India, 107, K.N. Nagar, Jodhpur 342 009, Rajasthan.

I hope all of this works. Best, Ravi
ps. Gyanesh please note these details for future use.

ashish kothari wrote:

> Dear Ravi,
>
> could you urgently send your proposal for the nodal agency for Thar Desert,
> for the substate Action Plan process? This is needed immediately to be
> cleared by MoEF. Thanks,
>
> Ashish
> Kalpavriksh
> Apartment 5, Shree Dutta Krupa
> 908 Deccan Gymkhana
> Pune 411 004, India
>
> Ph. and fax: ++91-20-565 4239
> Email: ashish@nda.vsnl.net.in

ANNEXURE 3.3
INDIA

Ahmed, M.F. et al. 1996. *Recommendations of the Committee Appointed by the Hon'ble High Court of Delhi on Preservation, Protection, and Laws.* Ministry of Environment and Forests, Government of India, New Delhi.

Dang, H. 1991(b). Parks versus People: The Challenge of Conservation in India. *Parks*. Vol. 2(3).

Development Alternatives, Vikas Publishing House. New Delhi.

INDIA
ANNEXURE 3.3

From: Dr. Ravi Chellam <ravic@wii.gov.in>
To: ashish kothari <ashish@giasdl01.vsnl.net.in>
Cc: Sujatha NBSAP <kvriksh@vsnl.com>; Bansuri Taneja <swansong@giasdl01.vsnl.net.in>; BCIL <bcil@giasdl01.vsnl.net.in>; Gyanesh Chibber <gynesh-ch@usa.net>
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Prof S.M. Mohnot Tel (O) 0291 742595 (R) 432003 Fax: 742495 <smohnot@jp1.dot.net.in>

Prof Ishwar Prakash, Zoological Survey of India, 107, K.N. Nagar, Jodhpur 342 009, Rajasthan.

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ps. Gyanesh please note these details for future use.

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> Kalpavriksh
> Apartment 5, Shree Dutta Krupa
> 908 Deccan Gymkhana
> Pune 411 004, India
>
> Ph. and fax: ++91-20-565 4239
> Email: ashish@mda.vsnl.net.in

ashish kothari

From: Librarian <kkhlgu@gw1.vsnl.net.in>
To: ashish kothari <ashish@giasdl01.vsnl.net.in>; Librarian <kkhlgu@gw1.vsnl.net.in>
Subject: Re: visiting card design
Date: Friday, January 04, 1980 2:12 PM

Dear Asish,
I have traslated Assamese, Bengali, Manipuri and Napali. They are being typed now, I had to pay some money for typing. Regarding the nepali traslation, it wass in the mane of Gam, but I thought it was in my name, hence I have done that. Please convey the massage to gam..The sate level Nodel Agency has been already finalised for North east state. Regarding sub-states: Karbi-Anglong : it would be good if it is given to Aranyak natures club, who are already in the styraring committee of Assam. They have got better intrastructure and will be able to work with district ciounil.
West garo-hills ; I have taled to Dr. Kharbuli , of NEHU, who are the nodel agency of meghalaya. They can work very well ther. Hence the Biodiversity researhc unit, can be the sub-state level nodel agenct for west garo hills.
For Dibang valley of AP- it may the ATREE, as they have already worked there and they have still connections ghere. Otherwise we can talk to SSC members within a day or two.
I have written the review of the document and will send that to all as soon I get a chance to send that through others computer, often people do not allow that, fearing virus.
I will try to attend the next meeting.
Yours sincerely
P.C.Bhattacharjee.

-----Original Message-----
From: ashish kothari <ashish@giasdl01.vsnl.net.in>
To: Librarian <kkhlgu@gw1.vsnl.net.in>
Date: Thursday, April 27, 2000 5:32 PM
Subject: Re: visiting card design

>Thanks, PCB. You are already participating in a big way!
>
>We urgently need the names of the local nodal agencies for the 4 N-E areas
>we listed...
>ashish
>Kalpavriksh
>Apartment 5, Shree Dutta Krupa
>908 Deccan Gymkhana
>Pune 411 004, India
>
>Ph. and fax: ++91-20-565 4239
>Email: ashish@nda.vsnl.net.in
>
>----------
>> From: Librarian <kkhlgu@gw1.vsnl.net.in>
>> To: Ambar Taneja <swansong@giasdl01.vsnl.net.in>; ashish kothari
><ashish@giasdl01.vsnl.net.in>; bcil <bcil@giasdl01.vsnl.net.in>; Virinder
>Sharma <virindersharma@hotmail.com>; V. Shruti Devi
><shrutidevi@hotmail.com>; Sujatha Arora <sujatha_arora@hotmail.com>;

historical relationship with and expertise about their lands and resources. Agenda 21 states that Indigenous Peoples should have an effective voice in the UN Commission on Sustainable Development (CSD) as it monitors, reports on and ensures effective follow-up to the Earth Summit.

Agenda 21, Chapter 26.1, states that Indigenous Peoples "have developed over many generations a holistic traditional scientific knowledge of their lands, natural resources and environment. Indigenous people and their communities shall enjoy the full measure of human rights and fundamental freedom without hindrance or discrimination."

Agenda 21, Chapter 26.3 (ii) recognizes "that the lands of Indigenous People and their communities should be protected from activities that are environmentally unsound or that Indigenous People concerned consider to be socially and culturally inappropriate."

Agenda 21, Chapter 26.5 (ii), recognizes the need to protect Indigenous Peoples traditional knowledge (Convention on Biological Diversity, Article 8(j) and elsewhere, increase the efficiency of Indigenous People's resource management systems.

The United Nations Commission on Human Rights (CHR) Resolution 1996/38 recognizes "the profound spiritual, cultural, social and economic relationship that Indigenous People(s) have to their total environment and the urgent need to respect and recognize the rights of Indigenous People(s) to their lands and resources." It also acknowledges, "many of the human rights problems faced by Indigenous People(s) are linked to the historical and continuing deprivation of ancestral rights over lands and resources."

RIGHT TO SELF DETERMINATION

Since the establishment of the United Nations Working Group on Indigenous Populations in 1982, Indigenous representatives have consistently asserted the critical importance of accurately identifying Indigenous Peoples as peoples in the work of the United Nations. There can be no doubt that Indigenous Peoples are peoples with distinct historical, political and cultural identities and will remain so. Indigenous Peoples are united by their histories as distinct societies, as well as by their languages, laws and traditions. In addition, the profound social, cultural, economic and spiritual relationships of Indigenous Peoples with their lands, territories and resources are unique. Indigenous peoples are unquestionably peoples in every legal, political, social, cultural and ethnological meaning of the term. It would be discriminatory, illogical and unscientific to identify them in the United Nations Draft Declaration on the Rights of Indigenous Peoples as anything less than peoples.

The status as peoples is fundamental to the recognition of Indigenous Peoples right of self-determination in its entire collective political, economic, social, cultural and spiritual dimensions. To deny the right of Indigenous Peoples to define themselves and to be recognized as Indigenous Peoples is to deny a fundamental expression of their right to self-determination.

INTERNATIONAL LEGAL USAGE

The term Indigenous Peoples are well established in international legal practice. It has been consistently employed by the United Nations' own expert human rights treaty bodies, the Inter-American Commission on Human Rights, the institutions of the European Union, the World Bank and the Asian Bank. Examples of such international legal usage can be found in:

ashish kothari

From: Librarian <kkhlgu@gw1.vsnl.net.in>
To: bcil <bcil@giasdl01.vsnl.net.in>; ashish kothari <ashish@giasdl01.vsnl.net.in>
Cc: M.V.M. Wafar <wafar@darya.nio.org>; P. C. Bhattacharjee <kkhlgu@gw1.vsnl.net.in>; Bansuri Taneja <swansong@giasdl01.vsnl.net.in>
Subject: Re: From P.C. Bhattachajee
Date: Friday, January 04, 1980 11:09 AM

Dear Asish,
The Nodel agency for the sub-state site of "West Garo hills" will be SEPARD(Society for Environmental Protection and Rural development) Contact address ; Dr.P.G.Momin, Department of Geography, NEHU, Shillong- 793 022. Ph. (0364)250094.

For Debang Valley, Arunachal, CCF(Wildlife) will inform me about the local nodel agency. hence will have to wait for a day.

Karbi-Anglong, " Aranyak " still seems Ok till date. I am trying for others if possibel. Please wait for a day or two.

For the cradit for Translation : Assamese version - Assam Science Society, Guwahati-1,Assam
(this has been already included in the last part) if not do insert that)

Bengali - Dr. N. Purkait, Gauhati University, Guwahati 781 014,

Nepali- Gopal Bahadur Paudel Nepali,M.A.,Poudyal Niwas,P.O.Devkota Nagar,Guwahati-781 033
(hope this was already given)

P.C.Bhattacharjee

-----Original Message-----
From: bcil <bcil@giasdl01.vsnl.net.in>
To: ashish kothari <ashish@giasdl01.vsnl.net.in>
Cc: M.V.M. Wafar <wafar@darya.nio.org>; P. C. Bhattacharjee <kkhlgu@gw1.vsnl.net.in>; Bansuri Taneja <swansong@giasdl01.vsnl.net.in>
Date: Monday, May 08, 2000 2:29 PM
Subject: Re: From P.C. Bhattachajee

>Dear Ashish,
>
> We have opened the files in Adobe Acrobat Reader. they look fine. We will
>take the print out and keep ready for printing.
>
>Pl. note we have recd. the Konkani translation typed from the printer and
>are sending by courier to Dr. Wafar today.
>
>Regards,
>
>Anil
>----- Original Message -----
>From: ashish kothari <ashish@giasdl01.vsnl.net.in>

Obituary: Avinash B.J.

Avinash B.J., of the Koyna Jivan Hakka Samrakshan Sanghatan, who was a well-known social activist in Western Maharashtra, passed away in a road accident, along with his colleague Chhaya, on January 7, 2000.

He founded Satyashodh, a school for the blind, in the late 80's. He was deeply involved with issues related to the Koyna dam oustees and was the Western Maharashtra co-ordinator of the National Alliance of Peoples Movements (NAPM). In recent years he had focussed on issues related to the Koyna Sanctuary, especially in exploring joint management strategies. His group has been involved in developing livelihood opportunities for people living in and around the sanctuary.

Kalpavriksh members would like to express their shock and sadness at the departure of Avinash and Chhaya, and their heartfelt condolences to his family and colleagues.

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>To: Dr. Rathin Barman <rathinbarman@satyam.net.in>
>Cc: Bansuri Taneja <swansong@giasdl01.vsnl.net.in>; BCIL
><bcil@giasdl01.vsnl.net.in>
>Sent: Sunday, May 07, 2000 8:24 PM
>Subject: Re: From P.C. Bhattachajee
>
>
>> Dear PCB,
>> I was able to open the files, they look fine, ready to print. Please send
>> the names of the respective translators, they should be credited in the
>> brochure.
>>
>> BCIL, any luck? The files open in Adobe Acrobat Reader quite easily. I
had
>> earlier downloaded Reader from the net, comes down quite fast.
>> Ashish
>> Kalpavriksh
>> Apartment 5, Shree Dutta Krupa
>> 908 Deccan Gymkhana
>> Pune 411 004, India
>>
>> Ph. and fax: ++91-20-565 4239
>> Email: ashish@nda.vsnl.net.in
>>
>> ---------
>> > From: Dr. Rathin Barman <rathinbarman@satyam.net.in>
>> > To: ashish kothari <ashish@giasdl01.vsnl.net.in>
>> > Cc: swansong@giasl01.vsnl.net.in
>> > Subject: Re: From P.C. Bhattachajee
>> > Date: Sunday, May 07, 2000 5:37 PM
>> >
>> >
>> > Dear Ashish,
>> >
>> > Please find herewith the Assamese, Bengaliand Nepali translations in a
>> PDF
>> > file format attachment. Please do response at this address <
>> > rathinbarman@satyam.net.in > whether it can be opened or not. (you have
>> to
>> > have Acrobat Reader for opening of this file).
>> > Did you received the floopy disket which I have sent two days before.
>> >
>> > P.C. Bhattacharjee
>> > Guwahati
>> >
>> >
>> >
>>
>
>

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