

**List of mines in the State of Goa vis-à-vis Western Ghats Ecology Expert Panel Report & High Level Working Group on Western Ghats**

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt of India	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wise ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturbingen Report) Vol-II (Appendex 3)	Mining Lease Renewed 2007-27
1	31/55, 51/58 & 26/57	M/s Chowgule & Co. Ltd.	EC issued vide order no. J-11015/230/2005-1A-11(M) dated 17/05/07	No		31/55, 26/57 in ESZ-1 & 51/58 in ESZ 1 & 2	31/55 Yes (Bawane) 26/57 Yes (Xelipo-Curdo) 51/58 (Ambel)	No
			EC issued vide order no. J-11015/44/2005-1A-11(M) dated 17/08/06	No	17/08/2011			No
2	92/53	M/s Lima Leitao & Co.Ltd.	No Knowledge if EC given	No		Partly in ESZ-1 & 2	No	No
3	50/53, 13/55 & 97/53 (47/54)	M/s V M Salgaocar	EC issued vide order no. J-11015/384/2005-1A-11(M) dated 28/03/06	No	28/03/2011	I	Yes (97/53 Not in List)	Only 50/53 & 13/55
4	82/53	M/s. Basse Goa Ltd.	EC issued vide order no. J-11015/2/2007-1A-11(M) dated 7/6/07	No		I	Yes	No
5	60/52	M/s. S.Kantilal & Co.Pvt. Ltd.	EC issued vide order no. J-11015/846/2007-1A-11(M) dated 30/12/08	No		I	Yes	No
6	15/53	M/s. Orient Goa Pvt Ltd.	No Knowledge if EC given			I	Yes	No
7	20/51	Shri Ravindra Texete Deulkar	EC issued vide order no. J-11015/269/2005-1A-11(M) dated 17/09/07	No		I	Yes	No
8	2/51	M/s M.S.Talaulkar & Sons Pvt Ltd	EC issued vide order no. J-11015/105/2005-1A-11(M) dated 25/11/05 validity extended vide letter dated 18/10/07	No	25/11/2010	I	Yes	No
9	03/57, 33/57 & 19/54	Smt Kunda R.S.Bharse	EC issued vide order no. J-11015/149/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 06/07/07	No	30/09/2010	I	Yes	No
10	42/56	Smt Kunda R.S.Bharse	EC issued vide order no. J-11015/341/2007-1A-11(M) dated 21/08/08	No		I	Yes	Till Dec 2014
11	43/53	M/s. Jimble Pvt. Ltd (Noor Md. Abdul Karim)	EC issued vide order no. J-11015/38/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 21/08/07	No	17/08/2011	I	Yes	No
12	05/53	Shri. Alexio Manuel D Costa	EC issued vide order no. J-11015/29/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 31/07/07	No	30/09/2010	I	Yes	No

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wise ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturirangan Report) Vol-II (Appendex 3)	Mining Lease Renewed 2007-27
13	61/53	M/s. Sociedade Timblo Irmaos Ltda.(M/s.PT)	EC issued vide order no. J-11015/161/2005-1A-11(M) dated 20/10/05 validity extended vide letter dated 18/10/07	No	20/10/2010	I	Yes	No
14	143/53	M/s. Sociedade Timblo Irmaos Ltda.(M/s.PT)	EC issued vide order no. J-11015/345/2005-1A-11(M) dated 18/05/06	No	18/05/2011	I	Yes	No
15	87/53	M/s. Sociedade Timblo Irmaos Ltda.(M/s.PT)	EC issued vide order no. J-11015/343/2005-1A-11(M) dated 13/07/06 validity extended vide letter dated 17/09/07	No	13/07/2011	I	Yes	No
16	88/52	M/s.Sociedade Timblo Irmaos Ltda.(M/s.Fomento)	EC issued vide order no. J-11015/104/2005-1A-11(M) dated 03/09/07	No		I	Yes	No
17	7/41	M/s EMCJO Goa Pvt Ltd	EC issued vide order no. J-11015/34/2005-1A-11(M) dated 16/02/06 validity extended vide letter dated 23/10/07	No	16/02/2011	I	Yes	No
18	23/53	M/s EMCJO Goa Pvt Ltd	EC issued vide order no. J-11015/34/2005-1A-11(M) dated 16/02/06 validity extended vide letter dated 23/10/07	No	16/02/2011	I	Yes	No
19	08/41	M/s. G.N.Agrawal	EC issued vide order no. J-11015/100/2005-1A-11(M) dated 26/10/05	No	26/10/2010	I	Yes	No
20	14/52	M/s. Badruddin H. Mavani	EC issued vide order no. J-11015/42/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 14/08/07	No	30/09/2010	I	Yes	No
21	45/54	M/s SDVA	EC issued vide order no. J-11015/58/2005-1A-11(M) dated 28/10/05 validity extended vide letter dated 23/10/07	No	28/10/2010	I	Yes	No
22	40/50 & 16/51	Shri. V.D.Chowgule	EC issued vide order no. J-11015/64/2005-1A-11(M) dated 24/11/06	No	24/11/2011	I	16/51 Yes (Dudai) & 40/50 No (Santone)	No
23	08/50	Shri. R.R.Poinguincar	EC issued vide order no. J-11015/148/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 20/08/07	No	30/09/2010	I	Yes	No
24	39/56, 27/53, 44/56 & 19/52	M/s. V.M.Salgancar & Bro.Pvt.Ltd.	EC issued vide order no. J-11015/43/2005-1A-11(M) dated 17/11/05	Yes ( 39/56, 44/56 & 19/52) No (27/53)	17/11/2010	I	Yes	No
25	07/50	M/s. V.S.Dempo & Co Ltd	EC issued vide order no. J-11015/103/2005-1A-11(M) dated 17/11/05	No	17/11/2010	I	Yes	No

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wise ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturirangan Report) Vol-II (Appendex 3)	Mining Lease Renewed 2007-27
26	35/52	M/s. V.S. Dempo & Co Ltd	EC issued vide order no. J-11015/156/2005-1A-11(M) dated 17/11/05 validity extended vide letter dated 02/01/08	No	17/11/2010	Partly ESZ 1 & 2	Yes	No
27	04/55	M/s Marzook & Cadar Pvt Ltd.	EC issued vide order no. J-11015/34/2005-1A-11(M) dated 30/04/07	No		I	Yes	No
28	68/53	Ana Berta de Rego e Fernandes (Vincente Fernandes)	EC issued vide order no. J-11015/150/2005-1A-11(M) dated 26/12/05 validity extended vide letter dated 17/09/07	No	26/12/2010	I	Yes	No
29	50/58	Smt.Shakuntala M.Regte	EC issued vide order no. J-11015/170/2005-1A-11(M) dated 25/08/06	No	25/08/2011	I	Yes	No
30	24/57	Shri. R.V.S.Vellingkar	EC issued vide order no. J-11015/344/2005-1A-11(M) dated 09/02/07	No		I	Yes	No
31	07/58	M/s.Ralph D'Souza	EC issued vide order no. J-11015/37/2005-1A-11(M) dated 30/04/07	No		I	Yes	No
32	55/53	M/s.Roy Antao & Sane Antao	EC issued vide order no. J-11015/33/2005-1A-11(M) dated 01/12/06	No		I	Yes	No
33	65/51	Smt.Amalia Rodrigues G.Figueiredo	EC issued vide order no. J-11015/278/2007-1A-11(M) dated 18/07/07	No		I	No	No
34	06/49	M/s.Hiralal Knodidas	EC issued vide order no. J-11015/180/2005-1A-11(M) dated 12/03/07	No		I	Yes	No
35	17/49	Shri.A.X. Poi Palondicar	EC issued vide order no. J-11015/929/2007-1A-11(M) dated 19/03/08	Rejected		I	Yes	No
36	46/51	Shri.Deepak V. Metha L/H of Y.G.Metha	EC issued vide order no. J-11015/1132/2007-1A-11(M) dated 07/08/09	No		I	Yes	No
37	126/53, 69/51 & 70/52	M/s Sesa Goa Ltd.	EC issued vide order no. J-11015/1133/2007-1A-11(M) dated 29/12/08	No		I	No	No
38	62/51	M/s Minería Nacional Ltda	EC issued vide order no. J-11015/102/2005-1A-11(M) dated 04/05/07	No		I	No	No

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wise ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturirangan Report) Vol-I (Appendex 3)	Mining Lease Renewed 2007-27
39	4/54	Shri; Prabhakar Sardesai (Administrator for	EC issued vide order no. J-10/15/60/2005-1A-11(M) dated 11/11/05	No	11/11/2010	1	No	No
40	63/51	Shri; Rajesh Timblo (Shri; Chandrakant F.Naik)	EC issued vide order no. J-10/15/40/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 23/07/07	No	30/09/2010	1	No	Yes
41	40/51 & 12/52	Shri; S.G.Desai (Court Receiver of Late N. S. Narvekar)	EC issued vide order no. J-10/15/101/2005-1A-11(M) dated 14/05/07	No		1	No	No
42	34/55	M/s Zarpakar & Parkar	EC issued vide order no. J-10/15/59/2005-1A-11(M) dated 28/10/05	No	28/10/2010	1	No	No
43	12/57, 38/51 & 22/50	M/s Chowgule & Co. Ltd.	EC issued vide order no. J-10/15/65/2006-1A-11(M) dated 01/12/05	No	01/12/2011	1	No	No
44	14/58	M/s Timblo Private Ltd	EC issued vide order no. J-10/15/60/2006-1A-11(M) dated 05/07/07	No		1	No	No
45	3/51 & 40/54	M/s V.S. Dempo & Co Ltd	EC issued vide order no. J-10/15/155/2005-1A-11(M) dated 17/11/05 validity extended vide letter dated 02/01/08	No	17/11/2010	1	No	No
46	10/51	M/s. Hyder Kassim Khan	EC issued vide order no. J-10/15/365/2005-1A-11(M) dated 15/02/06	No	15/02/2011	1	No	No
47	38/52	Shri; Hiru Bompu Bauns	EC issued vide order no. J-10/15/169/2005-1A-11(M) dated 17/11/05	No	17/11/2010	1	No	No
48	53/51	Shri; Shaikh Abdul Gofur	EC issued vide order no. J-10/15/226/2006-1A-11(M) dated 17/10/07	No		1	No	No
49	01/FeMo/78	Shri; G.S.Padiyar	EC issued vide order no. J-10/15/363/2005-1A-11(M) dated 27/06/07	No		1	No	Till Jan 2018
50	75/52	Shri; Varicunth Kadnaker	EC issued vide order no. J-10/15/160/2007-1A-11(M) dated 17/06/07	No		ESZ 2	Yes	No
51	28/52	M/s. Shantilal Khushaldas & Bros. Pvt. Ltd.	EC issued vide order no. J-10/15/16/2008-1A-11(M) dated 24/09/08	No		ESZ 2	Yes	No

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wise ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturjangan Report) Vol-I (Appendex 3)	Mining Lease Renewed 2007-27
52	51/52	Smt Kunda R.S.Dhanse	EC issued vide order no. J-11015/386/2005-1A-11(M) dated 23/03/06	No	23/03/2011	ESZ-2	No	No
53	70/51	M/s R.S.Sheyye & Bros.	EC issued vide order no. J-11015/56/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 21/08/07	Yes	30/09/2010	ESZ-2	No	No
54	110/53	M/s. Cosme Costa & Sons	EC issued vide order no. J-11015/26/2008-1A-11(M) dated 26/03/09	No		ESZ-2	No	No
55	62A/52	M/s D.B.Bandodkar & Sons Pvt Ltd	EC issued vide order no. J-11015/36/2006-1A-11(M) dated 04/10/06	No	04/10/2011	ESZ-2	No	No
56	41/56 & 31/53	M/s Chowgule & Co Ltd	EC issued vide order no. J-11015/20/2006-1A-11(M) dated 24/11/06	No	24/11/2011	ESZ-2	No	No
57	86/53	M/s Salinho Dres Pvt Ltd	EC issued vide order no. J-11015/45/2005-1A-11(M) dated 30/04/07	No		ESZ-2	No	No
58	20/54, 21/54 & 5/54	M/s.V.S.Dempo & Co Ltd	EC issued vide order no. J-11015/44/2004-1A-11(M) dated 17/11/05 validity extended vide letter dated 1/1/08	No	17/11/2010	ESZ-2	No	No
59	62B/52, 19/58, 29/54 & 83/52	M/s. V.M.Salgaoacar & Bro.Pvt.ltd.	EC issued vide order no. J-11015/386/2005-1A-11(M) dated 28/03/06	No	28/03/2011	83/52 & 29/54 partly in ESZ-2 & 3 19/58 & 62B/52 in ESZ-2	No	Only 29/54 & 83/52
60	115/53	M/s. Goa Minerals Pvt. Ltd.	No Knowledge if EC given			ESZ-2	No	No
61	08/61	M/s. Madachem Bat Mines Pvt.ltd.	EC issued vide order no. J-11015/479/2006-1A-11(M) dated 21/01/08	No		ESZ-2	No	No
62	84/52	M/s Bandekar Bros Pvt Ltd	EC issued vide order no. J-11015/351/2005-1A-11(M) dated 18/04/07	No		ESZ-2	No	No
63	39/53	Smt Kunda L Melvan (LH of HL Nathurnal)	EC issued vide order no. J-11015/63/2006-1A-11(M) dated 16/04/07	No		ESZ-2	No	No
64	92/52	M/s Societade Timblo Irmãos Ltd.(Timblo Pvt. Ltd)	EC issued vide order no. J-11015/36/2005-1A-11(M) dated 30/09/05 validity extended vide letter dated 19/07/07	No	30/09/2010	ESZ-2	No	No

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wise ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturirangan Report) Vol-II (Appendex 3)	Mining Lease Renewed 2007-27
65	55/51	Smt.G.M.N.Parulekar	EC issued vide order no. J-11015/401/2005-1A-II(M) dated 17/01/07	No		ESZ-2	No	No
66	2/Fe/71	M/s Damodar Mangaji & Co. Ltd.	EC issued vide order no. J-11015/577/2005-1A-II(M) dated 30/09/05 validity extended vide letter dated 23/10/07	No	30/09/2010	ESZ-2	No	No
67	33/56	M/s Damodar Mangaji & Co. Ltd.	No Knowledge if EC given			ESZ-2	No	No
68	01/55	M/s Damodar Mangaji & Co. Ltd.	EC issued vide order no. J-11015/609/2007-1A-II(M) dated 07/11/07	No		ESZ-2	No	No
69	16/55	Shri V G Quenim	EC issued vide order no. J-11015/310/2005-1A-II(M) dated 18/05/06 validity extended vide letter dated 27/06/07	No	18/05/2011	ESZ-2	No	No
70	98/52	M/s Chowgule & Co.ltd.	EC issued vide order no. J-11015/399/2005-1A-II(M) dated 17/08/06 validity extended vide letter dated 05/11/07	No	17/08/2011	ESZ-2	No	Yes
71	6/55	M/s. Sesa Goa Ltd.	EC issued vide order no. J-11015/437/2005-1A-II(M) dated 05/12/06	No		ESZ-2	No	No
72	4/51	Smt. Shakuntala R. Paigunkar	No Knowledge if EC given	No		ESZ-2	No	No
73	28/51	M/s Sesa Goa Ltd.	EC issued vide order no. J-11015/1239/2007-1A-II(M) dated 24/12/09	No		ESZ-2	No	No
74	18/53	M/s. Damodar Mangaji & Co.ltd.	EC issued vide order no. J-11015/884/2007-1A-II(M) date 14/05/09	No		ESZ-2	No	No
75	45/52	M/s Sociedade Timblo Irmãos Ltda. (SFI)	EC issued vide order no. J-11015/260/2007-1A-II(M) dated 22/08/07	No		ESZ-2	No	No
76	95/52	Damodar Mangaji & Co. Ltd.	EC issued vide order no. J-11015/302/2005-1A-II(M) dated 09/04/05	No	09/04/2011	ESZ-2	No	No
77	44/51	M/s. Shantlal Khushaldas & Bros. Pvt. Ltd.	EC issued vide order no. J-11015/550/2007-1A-II(M) dated 02/03/09	Beyond 10 Km		ESZ-2	No	No
78	06/61	M/s.G.N.Agrawal	EC issued vide order no. J-11015/402/2006-1A-II(M) dated 22/12/06	No		ESZ-2	No	No

Sl.No.	T.C.No.	Leaseholder	Environment Clearances granted by MoEF, Govt	NDC issued by Standing Committee NBW as per Supreme Court Order	Date of Expiry of EC issued under EIA 1994 Notification	Whether in Taluka Wase ESZ grids for Goa as per Western Ghats Ecology Expert Panel Report Part-I (Madhav Gadgil Report) on pg 22 Fig 3	Whether in list of villages mentioned in Report of The High Level Working Group on Western Ghats (Kasturirangan Report) Vol-I (Appendex 3)	Mining Lease Renewed 2007-27
79	12/53	Shri. Ajit V.M.Kadnekar	EC issued vide order no. J-11015/2007/2007-1A-II(M) dated 27/06/07	No		ESZ-2	No	No
80	01/51	Shri. Shaik Salim L.H. of Xec Mohammad Issac	EC issued vide order no. J-11015/9553/2007-1A-II(M) dated 08/09/08	No		ESZ-2	No	No
81	9/49, 10/49 & 3/54	M/s.Sesa Goa Ltd.	EC issued vide order no. J-11015/28/2006-1A-II(M) dated 06/07/07	No		9/49 & 10/49 partly in ESZ-2 & 3/54 in ESZ-2	No	No
82	93/53	Shri. V.D.Chowgule	EC issued vide order no. J-11015/31/2005-1A-II(M) dated 05/01/06	No	05/01/2011	Partly in ESZ-2 & 3	No	No
83	33/53	M/s Damodar Mangalji & Co. Ltd.	EC issued vide order no. J-11015/608/2007-1A-II(M) dated 23/10/07	No		33/53 mostly in ESZ-2 & part in ESZ-3	No	No
84	59/51	Shri. Jairam B.Neugi	EC issued vide order no. J-11015/521/2007-1A-II(M) dated 18/10/07	Rejected		Partly ESZ 2 & 3	No	No
85	11/41, 12/41, 13/41, 14/41 & 15/41	M/s Dempo Mining Corporation Pvt.Ltd	EC issued vide order no. J-11015/45/2005-1A-II(M) dated 17/11/05 validity extended vide letter dated 17/09/07	No	17/05/2010	Only 12/41 partly in ESZ-3 rest out	No	No
86	05/49 & 13/49	M/s Chowgule & Co Ltd	EC issued vide order no. J-11015/32/2005-1A-II(M) dated 27/12/05 validity extended vide letter dated 05/11/07	No	27/12/2010	Out	No	Only 5/49
87	04/49	M/s. Rajaram Bandekar(Sirigao)Mines Pvt.Ltd.	EC issued vide order no. J-11015/40/2006-1A-II(M) dated 17/01/07	No		Out	No	Yes
88	76/52	M/s Sesa Goa Ltd.	EC issued vide order no. J-11015/70/2006-1A-II(M) dated 18/04/07	No		Out	No	No
89	89/52	M/s Lithoferro	EC issued vide order no. J-11015/305/2006-1A-II(M) dated 04/05/07	No		Out	No	No
90	41/55	M/s. Saigaoar Mining Ind.Pvt. Ltd.	EC issued vide order no. J-11015/274/2006-1A-II(M) dated 27/06/07	No		Out	No	No

**Number of  
mines falling in  
the category**

**Colour Code**

	In ESZ 1 as per Western Ghats Ecology Expert Panel Report B ESA as per Report of The High Level Working Group on Western Ghats	36
	In ESZ 1 as per Western Ghats Ecology Expert Panel Report B not in ESA as per Report of The High Level Working Group on Western Ghats	13
	Not in ESZ 1 as per Western Ghats Ecology Expert Panel Report B in ESA as per Report of The High Level Working Group on Western Ghats	2
	In ESZ 2 as per Western Ghats Ecology Expert Panel Report B Not in ESA as per Report of The High Level Working Group on Western Ghats	29
	In ESZ 2 B 3 as per Western Ghats Ecology Expert Panel Report B Not in ESA as per Report of The High Level Working Group on Western Ghats	4
	Not in ESZ 1, 2 or 3 as per Western Ghats Ecology Expert Panel Report B not in ESA as per Report of The High Level Working Group on Western Ghats	6





**Ministry of Environment and Forests**  
GOVERNMENT OF INDIA

**PRESS STATEMENT**

**MoEF announces Establishment of Expert Panel on Western Ghats**

New Delhi, 4<sup>th</sup> February 2010: The Ministry of Environment and Forests today announced the constitution of the Western Ghats Ecology Expert Panel. This Panel has been established to recommend measures and to assist the Government in the preservation, conservation and rejuvenation of this environmentally sensitive and ecologically significant region.

The first task of the Panel will be to assess the current status of the ecology of the Western Ghats region and to demarcate areas within the region which should be earmarked for notification as ecologically sensitive zones under the Environment (Protection) Act, 1986.

It has been estimated that the Western Ghats neutralise 4 million tons of carbon, equivalent to 14 million tons of CO<sub>2</sub> annually. This is about 10% of the total greenhouse gas emissions neutralised by India's forests. Also given the complex interstate nature of its geography, as well as the rich biodiversity value of the region, it was felt that the establishment of an Expert Panel composed of professional members and dedicated specifically to the task of reviewing, implementing and recommending measures for their protection was essential to ensuring the long term survival of the Western Ghats region.

The 14 member panel shall be chaired by Prof. Madhav Gadgil and shall furnish its report to the Ministry of Environment and Forests within six months from the date of its constitution, following a comprehensive consultation process involving people and Governments of all the concerned States.

The Minister for Environment and Forests, Mr. Jairam Ramesh has also called a meeting today of 43 Members of Parliament representing the 51 districts through which the Western Ghats run in the six states (Kerala, Tamil Nadu, Karnataka, Goa, Maharashtra and Gujarat). This parliamentary group of Western Ghats MPs shall meet regularly to take stock of issues concerning the ecology and the sustainable development of the region.

A link has also been provided on the Ministry's home page ([www.moef.nic.in](http://www.moef.nic.in)) to the Keystone Foundation website where a 'fly through' overview (utilizing google earth technologies) of the region is available.

**No.1/1/2010- RE (ESZ)**  
**Government of India**  
**Ministry of Environment & Forests**  
**(RE Division)**

\*\*\*\*\*

Paryavaran Bhavan,  
CGO Complex, Lodi Road,  
New Delhi – 110 003

Dated: March 4, 2010

**OFFICE ORDER**

**Sub: Constitution of Western Ghats Ecology Expert Panel**

1. The Western Ghats region runs to a length of 1600 kilometers starting from the mouth of the river Tapti near the border of Gujarat and Maharashtra to Kanyakumari, the southern-most tip of India in Tamil-Nadu covering six states namely; Tamil Nadu, Karnataka, Kerala, Goa, Maharashtra and Gujarat (portions of Dang Forests). The region covers an area of about 1.60 lac square kilometers.
2. The Western Ghats Region generally receives 500 mm to 7000 mm of rainfall. Most of the rivers in peninsular India have their origin in Western Ghats of which Godavari, Krishna, Kaveri, Kali Nadi and Periyar are of inter – state importance. These water resources have been harnessed for irrigation and power. About 30% of the area of the Western Ghats Region is under forests. The region is also a treasure house of plant and animal life. The Western Ghats is one of the four Biodiversity hotspots of the country. The region harbors 1,741 species of flowering plants and 403 species of birds. Notable wildlife includes the tiger, elephant, the Indian bison, lion-tailed macaque, wynaad laughing thrush, Travancore tortoise, uropeltid snakes, several species of legless amphibians and dipterocarp trees.
3. The traditional horticultural crops in the region are arecanut, pepper and cardamom in the hills and coconuts in the coast along with mango and jack fruit. Tea, coffee, rubber, cashew and tapioca are the other important plantation crops of the region. This region has one of the world's highest concentrations of wild relatives of cultivated plants. Some of the National parks situated in this region are the Borivali National Park, Nagarhole National Park, Bandipur National Park, Annamalai Wildlife Sanctuary, Periyar National Park, etc.
4. The ecological and environmental problems of the area include increasing pressure of population and industry including tourism on land and vegetation; submergence of forest areas under river valley projects, encroachment on forest lands; mining operations, clear felling of natural forests for raising tea, coffee, rubber, eucalyptus, wattle and other monoculture plantations; infrastructural

projects such as railway lines and roads, soil erosion, land slides; habitat fragmentation and rapidly declining biodiversity.

5. Given the environmental sensitivity and ecological significance of the region and the complex interstate nature of its geography, as well as the possible impacts of climate change on this region, it is proposed to constitute a Western Ghats Ecology Expert Panel.

6. The Western Ghats Ecology Expert Panel is hereby constituted with the following members for a period of one year from the date of issue of this order, namely:-

- |  |                        |
|--|------------------------|
| 1. Prof. Madhav Gadgil<br>Ex-Chairman, Centre for Ecological Sciences,<br>Indian Institute of Science,<br>A-18, Spring Flowers, Panchavati<br>Pashan Road<br>Pune – 411 008,<br>Maharashtra. | Chairman               |
| 2. Shri B.J. Krishnan<br>Senior Advocate,<br>Nilgiris Centre, Hospital Road,<br>Ootacamund - 643001<br>Tamil Nadu.   | Member                 |
| 3. Dr. Nandkumar Mukund Kamat,<br>Assistant Professor,<br>Department of Botany,<br>Goa University,<br>Goa.   | Member                 |
| 4. Dr. K.N. Ganeshaiah<br>Ashok Trust for Research in Ecology & Environment<br>(ATREE),<br>659 5 <sup>th</sup> A Main, Hebbal<br>Bengaluru - 560 024, Karnataka.                             | Member                 |
| 5. Dr. V.S. Vijayan<br>Chairman,<br>Kerala Biodiversity Board,<br>Pallimukku, Pettah P. O.<br>Thiruvananthapuram - 695 024<br>Kerala.  | Member<br>(ex-officio) |

- |     |   |                        |
|-----|---|------------------------|
| 6.  | Prof. (Ms.) Renee Borges<br>Centre for Ecological Sciences,<br>Indian Institute of Science (IISc),<br>Bengaluru – 560 012, Karnataka.   | Member                 |
| 7.  | Prof. R. Sukumar,<br>Chairman, Centre for Ecological Sciences,<br>Indian Institute of Science (IISc),<br>Bengaluru – 560 012, Karnataka.  | Member                 |
| 8.  | Dr. Ligia Noronha<br>Director (Resources & Global Security Division),<br>The Energy and Resources Institute (TERI),<br>Darbari Block, India Habitat Centre,<br>Lodhi Road, New Delhi – 110 003.   | Member                 |
| 9.  | Ms Vidya S. Nayak<br>Nagarika Seva Trust,<br>Gurvayankere - 574 217,<br>Belthangadi Taluk,<br>Dakshina Kannada District, Karnataka.   | Member                 |
| 10. | Dr. D. K. Subramaniam<br>Professor of Computer Science and Automation,<br>and Ecological Sciences, IISc, Bengaluru (Retd)<br>Foundation for Advancement of Education and Research<br>G5, Swiss Complex, 33, Race Course Road<br>Bengaluru – 560 001, Karnataka. | Member                 |
| 11. | Dr. P.L. Gautam<br>Chairman, National Biodiversity Authority (NBA)<br>5th Floor, TICEL Bio Park,<br>Taramani Road, Taramani,<br>Chennai - 600 113, Tamil Nadu.  | Member<br>(ex-officio) |
| 12. | Prof. S.P. Gautam<br>Chairman, Central Pollution Control Board (CPCB)<br>Parivesh Bhavan, CBD-Cum-Office Complex,<br>East Arjun Nagar, Delhi – 110 032.   | Member<br>(ex-officio) |
| 13. | Dr. R.R. Navalgund<br>Director, Space Application Centre (SAC),<br>Ahmedabad – 380 015 Gujarat.   | Member<br>(ex-officio) |

14. Dr. G.V. Subrahmanyam  
Advisor (RE), Ministry of Environment &  
Forests, Government of India, New Delhi.

Member-Secretary  
(ex-officio)

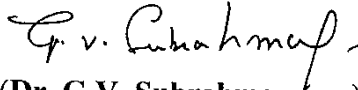
7. The Panel shall perform, the following functions, namely:-
- (i) to assess the current status of ecology of the Western Ghats region.
  - (ii) to demarcate areas within the Western Ghats Region which need to be notified as ecologically sensitive and to recommend for notification of such areas as ecologically sensitive zones under the Environment (Protection) Act, 1986. In doing so, the Panel shall review the existing reports such as the Pronab Sen Committee report and Dr. T. S. Vijayraghvan Committee Report, Hon'ble Supreme Court's directions, Recommendations of the National Board for Wildlife and consult all concerned State Governments.
  - (iii) to make recommendations for the conservation, protection and rejuvenation of the Western Ghats Region following a comprehensive consultation process involving people and Governments of all the concerned States.
  - (iv) to suggest measures for effective implementation of the notifications issued by the Government of India in the Ministry of Environment and Forests declaring specific areas in the Western Ghats Region as Eco-sensitive zones under the Environment (Protection) Act, 1986.
  - (v) to recommend the modalities for the establishment of Western Ghats Ecology Authority under the Environment (Protection) Act, 1986 which will be a professional body to manage the ecology of the region and to ensure its sustainable development with the support of all concerned states.
  - (vi) to deal with any other relevant environment and ecological issues pertaining to Western Ghats Region, including those which may be referred to it by the Central Government in the Ministry of Environment and Forests.
8. The Panel may co-opt any other expert(s) /official (s), if necessary, for taking requisite inputs, with the permission of the Chair.
9. The Panel shall furnish its report to the Central Government through the Ministry of Environment and Forests within six months from the date of its constitution. Additional submissions, if any, may be submitted after this period.

10. The Panel shall have its meetings at Delhi or at any other place within India as decided by the Chair.

11. The TA/DA of non-official members, including co-opted members, if any, for attending the meetings of the Panel and for undertaking site visits, if any, will be met by the Ministry of Environment & Forests as per rules.

12. The non-official members, including co-opted members, if any, are entitled for a sitting fee of Rs. 1000/- per day during the meetings of the Panel.

13. This issues with the approval of the Competent Authority and with the concurrence of the Integrated Finance Division of this Ministry, vide their U.O. Note Dy. No. 407/AS & FA / F/10 dated 04-03-2010.

  
(Dr. G.V. Subrahmanyam)  
Adviser (RE)

To

All Members

Copy to:

1. Pay & Accounts Officer, Principal Pay & Accounts Office, Ministry of Environment & Forests, New Delhi.
2. IFD/B& A Section, Ministry of Environment & Forests.
3. PS to MOS (I/C), E&F. New Delhi
4. PPS to Secretary (E&F)
5. PPS to Addl. Secretary (MFF).
6. Guard File.
7. Spare Copies (10).

## WGEEP Report: Executive Summary

---

Western Ghats constitute a practically unbroken hill chain (with the exception of the Palakkad Gap) or escarpment running roughly in a north-south direction, for about 1500 km parallel to the Arabian sea coast, from the river Tapi (about 21° 16' N) down to just short of Kanyakumari (about 8°19' N) at the tip of the Indian peninsula; a hill chain that is extremely rich in biodiversity and crucial for the security of water resources of Peninsular India.

### ***Mandate***

In view of the environmental sensitivity and ecological significance of the Western Ghats region and the complex interstate nature of its geography, as well as possible impacts of climate change on this region, the Ministry of Environment & Forests Government of India has constituted, by an order dated # March 2010, a Western Ghats Ecology Expert Panel (WGEEP).

The Panel has been asked to perform the following functions:

- (i) To assess the current status of ecology of the Western Ghats region.
- (ii) To demarcate areas within the Western Ghats Region which need to be notified as ecologically sensitive and to recommend for notification of such areas as ecologically sensitive zones under the Environment (Protection) Act, 1986. In doing so, the Panel shall review the existing reports such as the Mohan Ram Committee Report, Hon'ble Supreme Court's decisions, recommendations of the National Board for Wildlife and consult all concerned State Governments.
- (iii) To make recommendations for the conservation, protection and rejuvenation of the Western Ghats Region following a comprehensive consultation process involving people and Governments of all the concerned States.
- (iv) To suggest measures for effective implementation of the notifications issued by the Government of India in the Ministry of Environment and Forests declaring specific areas in the Western Ghats Region as eco-sensitive zones under the Environment (Protection) Act, 1986.

(v) To recommend the modalities for the establishment of Western Ghats Ecology Authority under the Environment (Protection) Act, 1986 which will be a professional body to manage the ecology of the region and to ensure its sustainable development with the support of all concerned states.

(vi) To deal with any other relevant environment and ecological issues pertaining to Western Ghats Region, including those which may be referred to it by the Central Government in the Ministry of Environment and Forests.

The Ministry has subsequently asked the Panel to include in its mandate the entire stretch of Ratnagiri and Sindhudurg districts, including the coastal region, and to specifically examine the Gundia and Athirappilly Hydroelectric projects.

### ***Boundaries***

For the purpose of defining the boundary of the Western Ghats, WGEEP has used altitude and forest area or vegetation as drivers defining the boundaries. Our operational definition for the 'Ghats' therefore is forest area above a certain altitude. Accordingly we demarcated the eastern edge by identifying the forested areas that are above 500 m; the rationale for this cutoff followed from the digital data which showed that, in general, 500m constitutes the elevation at which the Western Ghats rise discretely from the plains of the Deccan plateau. For the western edge, we used a cutoff of forested areas at 150 m and above as the ghats fall more steeply down to the coastline as compared to the eastern side of the ghats. We also found that whenever the forested areas at elevations of more than 150m drop directly into the ocean or within a distance of 1km of the coastline, it was difficult to define the coast. Hence, in such situations (as in parts of Maharashtra), the coastline itself was considered as the western edge of the ghats. One further issue that has to be resolved is the eastern boundary of the Western Ghats at the region of its geographical connection with the Eastern Ghats. It is generally agreed upon in the scientific literature that the southern-most and western-most extent of the Eastern Ghats is the hill range in Karnataka and Tamilnadu known as the Biligirirangans. The region between the Nilgiris and the Biligirirangans thus constitutes important habitat contiguity for several floral and faunal elements and, hence, it would be prudent to



include the latter hill range within the ambit of the proposed Western Ghats Authority that aims to conserve the ecology of the ghats.

As per the new boundaries, the WG stretches to a length of 1490 km from Tapi Valley in the north to Kanyakumari in south. With an area of 174,700 km<sup>2</sup>, it stretches to a width of 210 km in Tamilnadu and narrows to as low as 48 km in Maharashtra (leaving the Palghat gap). Thus defined, Western Ghats do not correspond exactly to particular administrative units such as districts and talukas. The district boundaries do not, by and large, coincide with limits of Western Ghats, except in a few cases such as Kodagu, Nilgiris, Wynaad and Idikki. The majority of districts include either West Coast or Western Peninsular tract regions along with Western Ghats areas. Western Ghats as an administrative entity was therefore first visualized only in the context of Regional Planning exercises, beginning with a report prepared by the Town and Country Planning Organization, Delhi in 1960's (Ref). This report delineated Western Ghats at Taluka level, and became the basis of the Planning Commission's Western Ghats Development Programme initiated in 1961. This serves as the basis of disbursement of Central Government assistance, but has no implications in terms of environmental regulation. Since talukas do constitute a reasonable administrative unit for defining the Western Ghats, WGEEP proposes that the talukas will be the focus of our recommendations.

### ***Strengths***

Western Ghats are a treasure trove of biodiversity, surpassed only by the Eastern Himalayas. However, they score over the latter region in harbouring a larger number of species confined within Indian limits. The Western Ghats also constitute the water tower of Peninsular India. The region has some of the highest levels of literacy in the country, and a high level of environmental awareness. The democratic institutions are well entrenched, and Kerala leads the country in capacity building and empowering of Panchayat Raj Institutions. Goa has recently concluded a very interesting exercise, Regional Plan 2021, of taking inputs from Gram Sabhas in deciding on the land use policies. Evidently, Western Ghats are an appropriate region of the country to attempt to make the transition towards an inclusive, caring and environment friendly mode of development.

### ***Develop thoughtfully - conserve thoughtfully***

Many stakeholders have suggested that, apart from the context of provision of Central financial assistance for plan schemes, definition of Western Ghats should have a regulatory content of a go- no go nature; that certain activities would be banned within limits of Western Ghats, but fully permitted outside these limits. WGEEP would like to submit that we should move away from such formulas that impart inflexibility to development processes. WGEEP would like to stress that development plans should not be cast in a rigid framework, but ought to be tailored to prevalent locality and time specific conditions with full participation of local communities; a process that has been termed *adaptive co-management*. What should be 'go' and what should be 'no go' ought then to be decided on a case by case basis, in tune with the specific environmental and socio-economic context, and aspirations of the local communities. Such a system of adaptive co-management would marry conservation to development, and not treat them as separate, incompatible objectives.

Yet we are today stuck in a system that forcibly divorces conservation from development. It ends up creating a dichotomy so that our policies at once promote reckless development in certain areas, and thoughtless conservation in other areas. In the process we constitute islands of biodiversity (and social exclusion) - the so-called Protected Areas- in an ocean of ecological devastation outside of these PA's. WGEEP believes that the insistence on "not a blade of grass shall be removed from PA's" is as inappropriate as the on-going comprehensive violation of pollution control laws outside of PA's. This has led to a situation such that the majority of people are excluded from fruits of, and decisions relating to, both development and conservation. Indeed, both development and conservation programmes are being imposed on them against their wishes. WGEEP would like to propose that we should instead attempt to develop a model of conservation and development compatible with each other encompassing the whole of the Western Ghats region, to replace the prevailing "Develop recklessly – conserve thoughtlessly" pattern with one of "Develop thoughtfully - conserve thoughtfully". The fine-tuning of development- conservation practices to local context that this calls for would require full involvement of local communities. To sum up, WGEEP advocates a layered, nuanced, participatory approach, so that boundaries will not be discontinuities and

therefore will not be of undue significance. Hence, while we will, of course, talk of the boundaries of Western Ghats, we plead that the pattern of adaptive co-management that we propose may also be applied to regions beyond these boundaries.

### ***Ecologically Sensitive Zones***

Section 3 of the Environment (Protection) Act 1986 (EPA) gives power to the Union Ministry of Environment and Forests to take all measures that it feels are necessary for protecting and improving the quality of the environment and to prevent and control environmental pollution. To meet this objective the Central Government can restrict areas in which any industries, operations or processes or class of industries, operations or processes shall not be carried out or shall be carried out subject to certain safeguards. [Sec. 3(2) (v)]

Section 5(I) of the Environment (Protection) Rules 1986 (EPR) states that the Central Government can prohibit or restrict the location of industries and carrying on certain operations or processes on the basis of considerations like the biological diversity of an area (clause v), maximum allowable limits of concentration of pollutants for an area (clause ii), environmentally compatible land use (clause vi), or proximity to Protected Areas (clause viii).

These provisions were invoked in 1989 in the context of Murud-Janjira, a coastal village of Maharashtra. Subsequently, the term 'Ecologically Fragile Area' was used for the first time in 1991 in the context of Dahanu Taluka in coastal Maharashtra. This has been followed by declaration of a number of other areas such as the Mahabaleshwar- Panchgani and Matheran hills in Maharashtra Western Ghats as Ecologically Sensitive Zones / Areas. So far, these Ecologically Sensitive Zones / Areas have been established either as a result of initiatives of some civil society organizations wishing to protect a particularly vulnerable and significant area, or as a consequence of a resolution of Indian Board for Wildlife in 2002 to protect areas up to ten kilometers from the boundaries of Protected Areas, namely, Wildlife Sanctuaries and National Parks.

Over the years, a variety of terms such as Ecologically Sensitive/ Ecologically fragile/ Ecosensitive/ Ecofragile Zones/ Areas have been used in the context of programmes relating to Ecologically Sensitive Zones and Areas. It is obviously useful to introduce some standard

terminology and definitions. WGEEP will therefore use the term 'Ecologically Sensitive Area' while referring to extensive tracts and 'Ecologically Sensitive Zone' while referring to specific zones within the extended 'Ecologically Sensitive Area' for which a particular set of regulatory/promotional activities have been proposed. Following the Pranob Sen committee's criteria, WGEEP proposes that the entire Western Ghats region be declared as an Ecologically Sensitive Area (ESA). Within this Western Ghats ESA, WGEEP proposes to assign different regions, other than those covered by Wildlife Sanctuaries or National Parks to one of the following three zones; Ecologically Sensitive Zone 1 (ESZ1), Ecologically Sensitive Zone 2 (ESZ2), and Ecologically Sensitive Zone 3 (ESZ3). Thus, WGEEP has come up with four colour maps spanning the entire Western Ghats depicting PAs, and ESZ1, ESZ2 and ESZ3.

The Ministry of Environment & Forests had set up a committee under the chairmanship of Shri Pranab Sen in 2000 to identify parameters for designating ecologically sensitive areas in India. This committee proposed a series of species, ecosystem and geo-morphology based parameters. Sen Committee's foremost criterion for identification of ESA is endemism, and the Committee proposes that the area of occurrence of every endemic species needs to be protected in its entirety. Western Ghats harbours well over a thousand endemic species of flowering plants, fish, frogs, birds and mammals amongst the better known groups of organisms, and no doubt thousands more amongst less studied groups including insects. Amongst themselves these would cover the entire geographical extent of the Western Ghats and all conceivable habitats, including many disturbed ones such as roadsides. The Western Ghats region also qualifies as an ESA under several other, primary as also auxiliary, criteria proposed by the Pranob Sen committee. WGEEP fully endorses the conclusion that follows that the entire Western Ghats tract should be considered as an Ecologically Sensitive Area.

However, a uniform set of regulations cannot, obviously, be promulgated under EPA for this entire region. Hence, WGEEP recommends the adoption of a graded or layered approach, and suggests that entire Western Ghats be characterized as comprising (1) Regions of highest sensitivity or Ecologically Sensitive Zone 1 (ESZ1), (2) Regions of high sensitivity or ESZ2, and the remaining (3) Regions of moderate sensitivity or ESZ3. Such a characterization can be done

on two bases; namely (1) Existing Protected Area network and (2) systematic mapping and recording of base-line data as recommended by Sen Committee.

### ***WGEEP Western Ghats Database***

WGEEP has made considerable progress in the exercise of development of a spatial database, for over 2200 #[exact number needed] grids of 5'x5' or roughly 9 km x 9 km through compilation of all readily available information on topography, land cover and occurrence of biodiversity elements. The rationale and methodology followed has been widely exposed to scientific scrutiny through publication of a detailed exposition in Current Science, India's leading scientific journal, in January 2011(Gadgil, M. et al 2011). The WGEEP database is complemented by development of similar, more detailed, information bases by BVIEER, Pune and DEVRAAI, Kolhapur (# specific references needed).

Admittedly there still are serious lacunae. In particular, our database is yet to incorporate considerations of habitat continuity. It is also weak in terms of information on streams, rivers and other wetlands, as well as ground water and further careful work is needed to identify, protect and sustainably manage aquatic habitats and water resources. Since our focus is on hill areas, this database also leaves out of consideration issues of significance for the West Coast and coastal plains, such as mangrove forests and khajan lands. Nevertheless, we now have, for the first time in the country, a comprehensive, spatially referenced database on a series of important ecological parameters, transparently available in the public domain that can serve as the basis of a systematic delineation of different levels of ecological significance/ sensitivity for a sizeable region.

WGEEP, of course, realizes that ecological sensitivity is not merely a scientific, but very much a human concern. In particular, a great deal of locality specific understanding of what has been happening and what is desirable, is simply not part of any scientific databases and resides with local communities. WGEEP therefore invited all concerned people and institutions to share their own perceptions as to what specific areas on the Western Ghats should be identified as being 'Ecologically Sensitive Areas', why they feel so, and what set of regulations tailored to the needs of the locality should be put in place if the area were to be formally declared as being

ecologically sensitive. In response, we have received a number of specific proposals from individual Gram Panchayats as well as NGOs from different parts of the Western Ghats. Two of these are particularly noteworthy, (a) Gramsabha resolutions from a single cluster of 25 villages from Savantwadi and Dodamarg talukas of Sindhudurg district that they wish their areas to be constituted as ESAs, and (b) careful proposal for a “Maharashtra Sahyadri Ecologically Sensitive Area” by DEVRAAI, an NGO from Kolhapur drawing on extensive research conducted at Shivaji University.

### ***ESZ assignment***

WGEEP proposes that the 2200 odd grids spanning the entire Western Ghats be assigned to (1) Protected Areas, namely, Wild Life Sanctuaries and National Parks, and (2) ESZ1 (3) ESZ2 and (4) ESZ3 on the basis of composite scores of ecological significance derived from the database generated by WGEEP. Since a long standing effort has gone into identification of Protected Areas and they represent both social and ecological values, we propose that grids with scores at the level of Protected Areas and above within the same state be assigned to ESZ1 category, with the proviso that the total area under PAs and ESZ1 will be limited to ~60%. We propose that ~25% of grids with scores at the lower end be assigned to ESZ3 category, and the balance to ESZ2. This implies a decision to treat ~75% of the grids as belonging to PAs, ESZ1 or ESZ2. Our national goal is to maintain 66% of area under forest cover in all hill tracts. Given that Western Ghats are a hill region of special significance, we decided that it was appropriate to aim at 75% being treated as areas of high or highest significance. In view of the strong north- south ecological gradient over Western Ghats, one cannot really treat Gujarath Dangs and Kerala Ashambu hills on the same footing. Hence, this exercise has been undertaken separately for each state. In states where the boundary of the Western Ghats coincides or is very close to coastal areas, the Panel has left out a width of 1.5 km from the coast from the delimitation exercise to acknowledge the fact that the scoring exercise did not reflect coastal ecological values and sensitivities.

To sum up:

1. We will treat Western Ghats regions of each state separately

2. Existing Protected Areas will be treated as a fourth separate category
3. We will be assigning ESZ1, ESZ2 and ESZ3 status only to grids outside existing Protected Areas
4. ESZ1 status will be assigned only to such grids as have a score at least equaling, or higher than the lowest scoring grids falling within existing Protected Areas
5. In addition, other detailed information such as localities of origin of rivers, laterite plateaus, localities critical for maintenance of habitat continuity, and localities where local communities have expressed a strong interest in conservation will be used to decide on demarcation of ESZ1 and ESZ2.
6. The extent of existing Protected Areas plus ESZ1 will not normally exceed 60% of the total area
7. Extent of area covered by existing Protected Areas plus ESZ1 and ESZ2 together will be around 75%.
8. The extent of ESZ3 will normally be around 25% of the total area

The database employs square grids of ~9km x 9 km that do not correspond either to natural features such as watersheds, or administrative units such as village or taluka boundaries. It will clearly be desirable to put in place a system of zonation that jointly considers micro-watersheds and village boundaries to decide on specific limits of ESZ1, ESZ2 and ESZ3, as well as to arrive at locality specific management plans. This would be a task that will have to be initiated by the Western Ghats Ecology Authority when it is put in place. However, as a first step, we suggest that the Ministry of Environment and Forests provisionally notify the initial limits of ESZ1, ESZ2 and ESZ3 based on WGEEP analysis. This may be most appropriately done at Taluka/ Block level. With this in view, we have gone ahead and assigned ESZ1, ESZ2 and ESZ3 levels to all the ## talukas of Western Ghats.

Table : Proposed assignment of various Western Ghats districts to ESZ1, ESZ2 and ESZ3				
State	District	Talukas assigned to ESZ1	Talukas assigned to ESZ2	Talukas assigned to ESZ3
Maharashtra	Pune	Wadaon, Paud, Bhore		Sasvad
	Satara	Patan, Mahabaleshwar, Medha	Koregaon	Vaduj

Dr S N Prasad is requested to provide the complete table along these lines
--

### ***ESZ management***

The Pronab Sen Committee did not evolve any methodology for regulating the nature and extent of human activity that can be permitted in designated Ecologically Sensitive Zones/ Areas, a task that was addressed later by the Ministry of Environment & Forests itself. For this purpose, the MoEF has put in place a centralized system grounded in regulating land use employing the provisions of Section 5 of the Environment Protection Act 1986. The MoEF prepares the notification and calls for responses from the public and the concerned state Government. Since land is a state subject, the state government is then asked to prepare a Regional Development Plan that will provide for appropriate use of land as visualized in the Ecologically Sensitive Zone/ Area notification. The state governments, in turn, finalize the Regional Development Plan after calling for public inputs. To oversee the implementation, MoEF constitutes a High Level Monitoring Committee, in most cases without any local representation.

While the constitution of such ESZ /ESAs has had many positive consequences, there are also serious flaws in the system. The most serious problem is that the system depends heavily on bureaucratic regulation. With no meaningful participation by local community, and given the absence of bureaucratic transparency and lack of accountability, this breeds corruption. The result is that the weaker sections suffer harassment and extortion, while the wealthy and the powerful successfully flout the regulations, leading to tremendous local resentment. People at Mahabaleshwar have complained in writing of very old roads to their villages being disrupted by trenches dug by Forest Department, and Madhav Gadgil has personally inspected some of these. They allege that the trenches are then filled on payment of bribes, to be dug again some time later. They also allege that farmers have pay revenue officials a bribe of Rs 20,000 if they are to be permitted to dig a bore well on their farmland. Large scale illegal tree cutting seems to be taking place in some hotels such as Brightland, and in a number of construction sites under cover of very tall metal sheets erected all along the



compound walls. Furthermore, no effective mechanisms have been developed to promote good natural resource management, such as protection of streams or conservation of habitats rich in biodiversity, for instance, the laterite plateaus of northern Western Ghats.

### **ESZs surrounding Protected Areas**

A 2002 resolution of Indian Board for Wildlife has called for constitution of Ecologically Sensitive Zones up to a distance of 10 km surrounding all National Parks and Wildlife Sanctuaries. The implementation by state Forest Departments has been very tardy, with some action being taken only when prodded by two court decisions, one in 2005 and the second in 2010. WGEEP could obtain no clear information on follow up in any state other than Maharashtra; while some fragmentary information was obtained in Maharashtra only after much effort. Notably, most of the information obtained for Maharashtra, too, derives from documents obtained under RTI by activists opposing a wind energy project close to Bhimashankar Wildlife Sanctuary. In contrast, Bharati Vidyapeeth Institute of Environmental Research and Education promptly sponsored a Master's thesis on possible problems that might arise in implementation in case of PAs in Maharashtra, a thesis that was completed in 2004 (Kurne, ###). Although the Maharashtra PCCF referred to this thesis in a letter dated ## to his subordinate officers, the thesis has been completely ignored in the unsatisfactory follow up that has taken place on Maharashtra Western Ghats. As an example, minutes of meetings relating to potential ESZs surrounding Radhanagari, ### WLS record that some Forest Officials expressed the view that the steep escarpments of Western Ghats should not be considered ecologically sensitive, in stark contradiction to Pranob Sen Committee recommendations. As of now no maps or complete records have been made available pertaining to these PAs.

The hill range of Bhimashankar is the origin of Krishna's major tributary, Bhima, and just like Mahabaleshwar- Panchgani ESZ region, site of origin of Krishna river to the south, is an area of high rainfall and biodiversity-rich evergreen forest. However, no steps have been taken to constitute this Bhimashankar Ecologically Sensitive Zone, despite repeated requests both from Centre and by head of Forest Department in Maharashtra. During visits to areas adjoining

Bhimashankar Wildlife Sanctuary, WGEEP came across several instances of grave misgovernance:

[1] A major wind mill project has been cleared close to Bhimashankar WLS and a large number of wind mills have come up within the stipulated ten km zone on the periphery. This project should not have been cleared at all without completing the constitution of the Ecologically Sensitive Zone.

[2] This region has large populations of Scheduled Tribes and traditional forest dwellers. Hence, it was imperative that Forest Rights Act should have been implemented in this area in its true spirit five years ago. Nothing is done, and local people claim that this results in continued harassment of and extortion from local people.

[3] WGEEP Chairman Madhav Gadgil and member Prof Renee Borges visited this area around Bhimashankar. In fact, Prof Renee Borges has been engaged in scientific studies in this area for over two decades. It is clear that the hills where wind mills have come up are tracts of high rainfall and biodiversity-rich evergreen forest, contiguous with that in the Bhimashankar WLS, and home to Maharashtra's state animal, Giant Squirrel. The local Range Forest Officer had also clearly recorded these facts and recommended that the wind mill project should not be sanctioned. He was overruled by his superior officers who have cleared the project by patently misrepresenting the facts on ground.

[4] Apart from substantive forest destruction, including by large roads cutting huge swathes through Reserve Forest, the wind mill project has triggered large scale erosion and landslides through poor construction of roads with steep gradients, and all this rubble is ending up on fertile farmland and in reservoirs of tributaries of Krishna.

[5] The Forest Department is colluding with wind mill project operators in illegally denying citizens access to these hills. Boards and check-post have been put up by the company, falsely claiming to be authorized by Forest Department. There are many traditional forest dwellers on these hills. Not only are their rights under FRA not being recognized, they are being illegally restrained in their movements on hills they have inhabited for centuries.

### **Grass-roots involvement**

WGEEP therefore believes that it is inappropriate to depend exclusively on Government machinery for constitution and management of ESZs. Instead, WGEEP suggests that the final demarcation of the Zones (including those surrounding PAs, as also in context of the UNESCO Heritage Site proposal), and fine tuning of regulatory, as well as promotional regime, must be based on extensive inputs from local communities and local bodies, namely, Gram Panchayats, Taluk Panchayats, Zill Parishats, and Nagar Palikas, under the overall supervision of the Western Ghats Ecology Authority (WGEA), State level Ecology Authorities and the District Ecology Committees. An interesting precedent for this process has been established during the preparation of Goa Regional Plan 2021. The first step in this GRP21 planning was compilation of a comprehensive, spatially referenced, database on land, water and other natural resources of Goa state; although, regrettably, unlike our Western Ghats database, this has not been, as yet, made available in the public domain. However, this information was selectively shared with all Gram Sabhas and their suggestions as to desired pattern of land use obtained, consolidated and used as one important basis for preparation of the final plan. Again, regrettably, the Government of Goa has not continued with the dialogue, failing to go back to the Gram Sabhas when it felt it appropriate to diverge from the Gram Sabha suggestions. Nevertheless, this is an excellent model that should be implemented in its true spirit, and WGEEP proposes that WGEA should follow it.

Another excellent model for WGEA is the formulation of 'Conservation of biodiversity rich areas of Udumbanchola taluk' project by Kerala State Biodiversity Board. The procedure followed has been grounded in the powers and functioning of Biodiversity Management Committees(BMC) in all local bodies, namely Gram Panchayats, Taluk Panchayats and Zilla Panchayats, as also Nagarpalikas and Mahanagarpalikas, linked to state level Biodiversity Boards and National Biodiversity Authority. This institutional structure of BMCs , mandated by India's Biological Diversity Act 2002 for the country as a whole, is available throughout the Western Ghats region and provides a sound basis for designing a transparent, participatory system for arriving at final decisions regarding (1) delineation of ESZ1, ESZ2 and ESZ3, and (2) the management regime to be followed in ESZ1, ESZ2 and ESZ3, fine-tuned to local ecological and social context wherever necessary. This highly desirable participatory process

will obviously take some time. Nevertheless, WGEEP strongly commends its adoption. However, the Ministry of Environment and Forests, GoI must also take some immediate steps, to safeguard the precious natural heritage of the Western Ghats. Hence WGEEP strongly recommends that Min of En & F immediately notifies under EPA the limits of ESZ1, ESZ2 and ESZ3 as proposed by WGEEP at taluka level, along with an appropriate regulatory regime as suggested in Table 2.

### ***Sectoral guidelines***

Table 2: Proposed sector-wise guidelines			
Sector	ESZ1	ESZ2	ESZ3
Land use	No Special Economic Zones; no new hill stations		
	No new non-agricultural land use to be permitted, except extension of existing village settlement areas to accommodate increase in population of local residents, FSA ratio of ***		
Water use	<p><b><i>Decentralized water resources management plans</i></b> at Local Self Government level are to be developed at least for the next 20 years</p> <p><b><i>Reschedule reservoir operations</i></b> in such a way as to improve downstream flows and also act as conflict resolution strategy</p> <p><b><i>Revive traditional water harvesting systems</i></b> such as recharging wells and <i>surangams</i></p> <p><b><i>Protect high altitude valley swamps</i></b></p> <p><b><i>Participatory sand auditing</i></b> and strict regulations to be put in place to control sand mining</p> <p><b><i>Declare "sand holidays"</i></b> based on assessments and sand audit for mined river stretches.</p> <p><b><i>Rehabilitation of mined areas</i></b> to be taken up by the companies / agencies with special focus on reviving the water resources</p> <p><b><i>Eco – restoration of the forest fragments</i></b> between the tea/coffee/cardamom estates and reviving the hill streams should be taken up as a major well coordinated initiatives among Planters, Local Self Governments and Forest Departments in high altitude areas</p>		

	<p><b>Catchment area treatment plans</b> of hydroelectric and major irrigation projects should be taken up to improve their life span.</p> <p><b>Improve river flows and water quality</b> by scientific riparian management programmes involving community participation</p> <p><b>Water conservation measures</b> should be adopted through suitable technology up-gradation and public awareness programmes</p> <p><b>Inter-basin diversions of rivers</b> in the Western Ghats should not be allowed any more</p> <p><b>River Basin Planning</b> should be supported by suitable legal institutions that are capable of integrating different departments which are presently dealing with or impacting the rivers in a compartmentalized manner.</p> <p><b>Decommissioning of dams</b> that have outlived their utility being underperforming, silted up beyond acceptable standards is to be considered.</p>		
Agriculture	Promote organic agricultural practices, introduce incentive payments for sequestration of carbon in soils, introduce incentive payments for maintenance of select traditional cultivars, encourage participatory breeding programmes to improve productivity of traditional cultivars, encourage precision agricultural practices, No GMOs		
	Phase out all use of chemical pesticides/ weedicides and chemical fertilizers within five years	Phase out all use of chemical pesticides/ weedicides and chemical fertilizers within eight years	Phase out all use of chemical pesticides/ weedicides and chemical fertilizers within ten years
Animal Husbandry	Introduce incentive payments as “conservation service charges” for maintenance of land races of livestock, Redeploy subsidies for chemical fertilizers towards maintenance of livestock and production of biogas and generation of organic manure		
Fishery	Strictly control use of dynamite and other explosives to kill fish, Provide fish ladders at all reservoirs, Introduce incentive payments as “conservation service charges” for maintenance of indigenous fish species in tanks under control of Biodiversity Management Committees or Fishermen’s co-operatives, monitor and control trade in aquarium fishes with the help of Biodiversity Management Committees		
Forestry: Government lands	Forest Rights Act to be implemented in its true spirit by reaching out to people to facilitate their claims, Community Forest Resource provisions under FRA to replace all current Joint Forest Management		

	programmes		
	No monoculture plantation of exotics like eucalyptus; No quarrying; No pesticide/weedicide application; Extraction of medicinal plants with strict regulations	No monoculture plantation of exotics like eucalyptus; Encourage planting of endemic species; Quarrying with strict regulations; Phase out pesticide/weedicide application; Extraction of medicinal plants with strict regulations	No monoculture plantation of exotics like eucalyptus; Encourage planting of endemic species; Quarrying with strict regulations; Phase out pesticide/weedicide application; Extraction of medicinal plants with strict regulations
Forestry: private lands	Recognize rights of all small-scale, traditional private land holders under FRA, Introduce incentive payments as “conservation service charges” for maintenance of natural vegetation for small land holders; Introduce incentives such as tax breaks or renewal of leases as “conservation service charges” for maintenance of natural vegetation for large land holders/ plantation owners;		
Forestry: private lands	No monoculture plantation of exotics like eucalyptus; No quarrying; No pesticide/weedicide application; Extraction of medicinal plants with strict regulations ; Encourage planting of endemic species	No monoculture plantation of exotics like eucalyptus; Encourage planting of endemic species; Quarrying with strict regulations; Phase out pesticide/weedicide application;	No monoculture plantation of exotics like eucalyptus; Encourage planting of endemic species in private forests; Quarrying with strict regulations; Phase out pesticide/weedicide application;

Biodiversity	Introduce incentive payments as “conservation service charges” for maintenance of sacred groves; Introduce incentive payments as “conservation service charges” for maintenance of biodiversity elements on private lands, lands under control of Biodiversity Management Committees, JFM lands, lands assigned as Community Forest Resources; Make special funds available to Biodiversity Management Committees for disbursal in relation to wildlife related damage		
Mining	No mining in areas demarcated as ESZ1 Where mining exists, it should be phased out in 5 years, by 2016; Illegal mining to be stopped immediately	No new mining; Existing mining under strict regulation and social audit	New mining may be taken up under strict regulation and social audit
Industry (Red /Orange)	No new red and orange category industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit	No new red and orange category industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit	New industries may be set up under strict regulation and social audit
(Green/ Blue)	With strict regulation and social audit. Local bioresource based industry should be promoted. All should be strictly regulated and be subject to social audit.	Promote Green/ Blue industries. Local bioresource based industry should be promoted. All should be strictly regulated and be subject to social audit.	Promote Green/ Blue industries. Local bioresource based industry should be promoted. All should be strictly regulated and be subject to social audit.
Power/Energy	No large storage dams, small bandharas are permissible; No new large wind projects or thermal	No large storage dams, small bandharas are permissible; Promote run of the river hydropower	Power plants are allowed subject to strict environmental regulations and monitoring and after cumulative

	<p>power plants; Promote biomass based and solar sources for decentralized energy needs; Promote small scale, micro and pico hydropower systems, that are people owned &amp; managed and are off grid; Strict regulation of existing thermal power plants; the existing thermal plants should be obliged to actively promote alternate uses of fly ash - such as in road making in addition to the existing practices of manufacture of fly ash bricks Promote run of the river schemes. Promote biomass based /solar sources for decentralized energy needs. All should be strictly regulated and be subject to social audit.</p>	<p>projects but after cumulative impact study of the river basin is done; Regulated wind power projects but after cumulative impact study; Zero pollution to be required of existing Thermal Power Plants; Promote biomass based /solar sources for decentralized energy needs. All should be strictly regulated and be subject to social audit.</p>	<p>impact assessments are undertaken; Dams subject to strict regulation and social audit.</p>
Transport	<p>No new railway line. No national highway/state highway/expressways.</p>	<p>Upgradation possible/permitted subject to strict regulation and social audit; New roads subject to strict regulation and social audit.</p>	<p>Essential new roads may be allowed subject to strict regulation and social audit.</p>



Tourism	No ecotourism zones; Follow Ecotourism policy of MoEF; Strict regulation	Strict regulation on basis of a Tourism master plan and social audit	Strict regulation and social audit
Sewage disposal	Organize effective treatment of sewage under strict regulation and social audit		
Solid waste management	Ban all use of plastics; Enforce proper separation of degradable and non-degradable solid waste; Manage careful disposal of solid wastes subject to strict regulation and social audit; Introduce incentive payments for agreeing to host solid waste disposal sites within jurisdiction of any Panchayat		
Hazardous waste management	Strictly ban all activities producing hazardous wastes	Strictly ban all activities producing hazardous wastes	Manage careful disposal of hazardous wastes subject to strict regulation and social audit
Education	<p><b>Reconnect children and youth to local environment</b> through education programmes focusing on local environmental issues. To achieve this, students' "River Clubs" should be encouraged in schools situated along the course of the respective river</p> <p><b>Tailor Environmental Education</b> projects to serve as an instrument of participatory environmental monitoring involving local community members; connect such exercises to preparation of "People's Biodiversity Registers" by the local Biodiversity Management Committees</p>		
Science and Technology	<p><b>Cumulative impact assessment</b> for all new projects such as dams, mines, tourism, and housing should be conducted and permission given only if they fall within the carrying capacity</p> <p><b>Environment river flow assessments / indicators</b> should be worked out by Research institutions, NGOs along with local communities</p>		
Information management	<p><b>Build on the Western Ghats database of WGEEP</b> to create an open, transparent, participatory system of environmental monitoring involving all citizens, in particular the student community</p> <p><b>Update and upgrade hydrological data base</b> of rivers and consolidate the ecological data base and information at river basin level</p> <p><b>Assess downstream impacts of dams</b> on river ecology, flood plains, fishing habitats, livelihoods, biodiversity and related aspects</p> <p><b>Map salinity intrusion</b> so as to suggest improved flows in future</p> <p><b>Monitor reservoir operations</b> involving downstream local self</p>		

	governments and departments
--	-----------------------------

### ***Western Ghats Ecology Authority***

The Western Ghats Ecology Authority (WGEA) should be a statutory authority appointed by the Ministry of Environment and Forest, Government of India enjoying powers under Section 3 of the Environment (Protection) Act 1986. Of course, the Western Ghats is an extensive region spanning over six states and 40 odd ## districts, and WGEA would need to function in a networked fashion with six constituent State Western Ghats Ecology Authorities, appointed jointly by the State Governments and the Central Ministry of Environment and Forest. The State Western Ghats Ecology Authorities should interact closely with the State Biodiversity Boards and Pollution Control Boards, as well as State Planning Departments administering the Western Ghats Development Programmes funded through Five Year Plans by the Planning Commission. It would be appropriate that all the Western Ghats Development Plan schemes are worked out by the State Governments with the help of the State Western Ghats Ecology Authorities and used to support sustainable development oriented schemes developed under guidance of Western Ghats Ecology Authority.

Currently, the Ecologically Sensitive Areas are administered with the help of High Level Monitoring Committees appointed by the Central Ministry of Environment and Forest. These are hampered by lack of regulatory powers, except in the case of Dahanu Taluka Ecology Authority established through a judgment of the Supreme Court. They are also hampered by lack of financial and human resources. In some cases no HLMC has been in place for several years at a stretch. WGEEP proposes that they should be replaced by District Ecology Committees in all Western Ghats districts. These District Ecology Committees should work in collaboration with the district level Zilla Parishad/ Zilla Panchayat Biodiversity Management Committees, as well as District Planning Committees. Indeed, it may be appropriate that the district level Biodiversity Management Committees, which are statutory bodies established under Biological Diversity Act, and not ad-hoc committees which may cease to function for years at a stretch as has happened with HLMCs, may be asked to discharge the functions of WGEA District Ecology Committees by

augmenting their membership by some experts appointed by Central Ministry of Environment and Forest and State Western Ghats Ecology Authorities.

WGEA should focus on promoting transparency, openness and participation in every way. An excellent tool for this could be the revival of the scheme of Paryavaran Vahinis, or committees of concerned citizens to serve as environmental watchdogs and undertake selective first hand monitoring of the environmental situation in the district. These Paryavaran Vahini volunteers could play a significant role in building capacity of people at the grass-roots for conservation, sustainable development and ecorestoration. WGEA could also undertake to appoint Environmental Ombudsmen in all districts. It should vigorously promote institution of a social audit process for all environmental issues on the model of that for Mahatma Gandhi National Rural Employment Guarantee Act in Andhra Pradesh.

WGEEP has made excellent progress in the development of a spatial database, for over 2200 grids of 5'x5' or roughly 9 km x 9 km through compilation of all readily available information on topography, land cover and occurrence of biodiversity elements for the Western Ghats. WGEA should pursue vigorously further development of this database by bringing on board many available databases such as that prepared in connection with Zonal Atlases for Siting of Industries, by sponsoring further scientific inputs, as also by linking Environmental Education activities at school and college level and the People's Biodiversity Register exercises to augment the database. WGEA should encourage citizen involvement in continual development of the Western Ghats database on the pattern of Australian River Watch schemes. In this context, WGEA should help overcome the entirely unjustifiable difficulties that researchers encounter today in working in forest areas. WGEA should pursue concerned Government agencies to make available all pertinent information pro-actively as provided in the Right to Information Act, and not wait for applications by citizens. For example the Ministry of Environment and Forests should immediately make public all district level Zonal Atlases for Siting of Industries in a searchable form on the Ministry's website, which may then be linked to the Western Ghats database.

WGEA should lead a radical reform of Environmental Impact Analysis and Clearance process. It should revisit the list of projects that require Environmental Impact Analysis and

Clearance and include certain items such as Wind Mills and small scale hydroelectric projects that are excluded today. It should ask all project proponents to deposit an appropriate fee with the Authority and then select competent agencies to carry out the EIAs in a transparent fashion. Furthermore, it should link the Environmental Education activities at school and college level and the People's Biodiversity Register exercises to the EIA process. Equally urgent is the need to promote a more holistic perspective and organize a process of Cumulative Impact Analysis in place of the current project-by-project clearances.

WGEA should strive to promote a participatory, bottom-up approach to conservation, sustainable development and ecorestoration of the Western Ghats. With this in view, it should encourage devolution of democratic processes as visualized in 73<sup>rd</sup> and 74<sup>th</sup> Amendments to the Indian Constitution. Kerala, one of the Western Ghats states has made substantial progress in this direction, and WGEA should promote the emulation of Kerala example in all the Western Ghats districts. Kerala has also taken the lead in meaningful implementation of Biological Diversity Act through Biodiversity Management Committees, and WGEA should take immediate steps to ensure establishment of Biodiversity Management Committees at all levels, namely, Gram Panchayats, Taluka Panchayats, Zilla Panchayats, as also Nagarpalikas and Mahanagarपालikas in all the Western Ghats districts. Furthermore, WGEA should ensure that BMCs are motivated through empowerment to levy 'collection charges' as provided in the Biological Diversity Act. These institutions may be involved in developing programmes on the model of 'Conservation of biodiversity rich areas of Udumbanchola taluk' in Kerala. These Biodiversity Management Committees are expected to take care of agro-biodiversity as well, and in this context the provisions of Protection of Plant Varieties and Farmers' Rights Act 2001 are highly relevant. A National Gene Fund has been established under PPVFRA and has substantial amounts available. These funds can be utilized to build capacity at Panchayat level for *in situ* conservation of genetic diversity of indigenous crop varieties.

The Mahatma Gandhi National Rural Employment Guarantee Act has much potential for the task of ecorestoration. It also has the advantage that Gram Sabhas are expected to be involved in planning of the works to be undertaken. Other opportunities exist for capacity building and empowerment of Gram Sabhas through Extension of Panchayat Raj to Scheduled

Areas Act (PESA) and Forest Rights Act, and WGEA should promote pro-active and sympathetic implementation of PESA and of the provision of Community Forest Resources under the Forest Rights Act.

Finally, WGEA should strive to make a transition from regulations and negative incentives to promote nature conservation oriented activities to a system of use of positive incentives to encourage continued conservation-oriented action in the context of traditional practices such as sacred groves and to initiate other action in modern contexts. An example of the latter is the payment of conservation service charges by Kerala Biodiversity Board to a farmer who has maintained mangrove growth on his private land. WGEA should undertake a critical assessment of the efficacy of funds being deployed towards conservation efforts today in the form of salaries and perks of bureaucrats and technocrats, including their jeeps and guns and buildings to house them. It would undoubtedly be found to be exceedingly low. These funds should then be redeployed over a period of time to provide positive incentives to local communities to maintain biodiversity elements of high value to conservation.

Technical inputs would be required to decide on a common system of assigning conservation value to specific elements of biodiversity and to organize a reliable, transparent system of monitoring biodiversity levels within the territories assigned to various local communities, in form of either Community Forest Resources assigned under FRA, or Panchayat areas assigned to Biodiversity Management Committees. Educational institutions at all levels, from village primary schools to universities, could play an important role in this effort. Indeed, these exercises could become very valuable components of environmental education curricula. In the long run, only a very lean bureaucratic apparatus should be retained to play a coordinating, facilitative role and to ensure that local communities can effectively enforce a desired system of protection and management of the natural resource base. Such a system would create a very efficient market for conservation performance so that funds earmarked to promote biodiversity would flow to localities and local communities endowed with capabilities of conserving high levels of biodiversity. This system would also channel rewards for conservation action to relatively poorer communities living close to the earth, thereby serving ends of social justice, and creating in the long range a situation far more favorable to the maintenance of biodiversity on the earth.

### ***Ratnagiri and Sindhudurg***

The Panel has been asked to suggest an appropriate course of further development of mining, power production and polluting industries in Ratnagiri and Sindhudurg districts of Maharashtra. This entire region has been seriously impacted, both environmentally and socially by a number of mining and power projects, and polluting industries. The impacts are manifold; depletion and pollution of ground water, siltation of water bodies, increased flood frequencies, loss of fertile agricultural land, depletion of fisheries, deforestation, loss of unique biodiversity elements such as herbaceous plants of lateritic plateaus, air pollution, noise pollution, traffic congestion and accidents, increase in respiratory ailments, and so on. The situation clearly warrants a careful assessment and mid-course correction.

The problem is not just legal, but substantial levels of illegal activities. For instance, many farmers complain of miners muscling their way onto private land and digging pits. Pollution from many industries is also well above legally permissible limits. Consequently, there is much social discord, especially because people firmly believe that law and order machinery is being misused to protect illegal activities.

The Panel has been asked to suggest an appropriate course of further development of mining, power production and polluting industries in Ratnagiri and Sindhudurg districts of Maharashtra. Given the many problems facing these ecologically rich yet fragile districts, it is clear that we must proceed with great care. Only eastern portions of these districts are covered by the Western Ghats for which WGEEP has completed assignment of Ecologically Sensitive Zones and guidelines for further development projects. For these Western Ghats regions of the district, the Panel recommends:

- (a) An indefinite moratorium on new environmental clearances for mining in Ecologically Sensitive Zones 1 and 2,
- (b) A phasing out of mining from ESZ1 by 2015
- (c) Continuation of existing mining in Ecologically Sensitive Zone 2 under strict regulation with an effective system of social audit.

- (d) No new red and orange category industries, which would include coal based power plants, should be permitted to be established in Ecologically Sensitive Zones 1 and 2;
- (e) The existing red and orange category industries should be asked to switch to zero pollution in Ecologically Sensitive Zones 1 and 2 by 2015, and operated only under an effective system of social audit.

### **Cumulative impact analysis**

WGEEP has not undertaken any extensive compilation of pertinent information and assignment of levels of ecological sensitivity to plains and coastal portions of the Ratnagiri and Sindhudurg districts falling outside the Western Ghats. Nevertheless, the limited investigations of the Panel in these plains and coastal tracts suggest that these are under severe environmental and social stress, and it is essential that a careful Cumulative Impact Analysis of various development activities in these tracts, ideally in conjunction with Raigad district of Maharashtra and the state of Goa, must be immediately undertaken, preferably under the leadership of National Institute of Oceanography, Goa.

This should not be a techno-centric study alone, but ensure that people's deep locality specific knowledge of environmental issues and their development aspirations are taken on board. To this end the Ministry of Environment and Forests should ask the state Forest Departments to proactively assist the Tribal Welfare Departments in implementation of the Scheduled Tribes and Other Traditional Forest Dwellers (Rights over Forests) Act. The implementation of the Community Forest Resources provisions of this act would greatly help create broad based stake for people in safeguarding the environment of the region. Furthermore, Ministry of Environment and Forests should ensure the establishment of Biological Diversity Management Committees in all local bodies in this region, motivate them through empowerment to levy 'collection charges' as provided in the Biological Diversity Act and fund the BMCs to document the local ecological setting and biodiversity resources in collaboration with local educational institutions. This would not only further encourage local community

members to engage in taking good care of their own environment, but generate much detailed information of key relevance for the proposed cumulative environmental impact analysis.

Of course a strong scientific institution needs to take overall responsibility of such an exercise and ensure sound scientific and technical inputs. Therefore, WGEEP recommends that NIO, Goa be asked to play such a role. The Panel recommends that the current moratorium on new environmental clearances for mining, and red and orange category polluting industries and power plants in plains and coastal tracts of Ratnagiri and Sindhudurg districts should be extended till satisfactory completion of such an analysis of Carrying Capacity of these districts. The moratorium may then be reviewed in light of the findings of the study.

### ***Gundia Hydroelectric project***

The Gundia river basin is a 'hot hotspot' of biodiversity with a repository of biological wealth of rare kinds, both in its aquatic and terrestrial ecosystems. The premium should be on conservation of the remaining evergreen and semi-evergreen forests, which are vital for the water security (perenniality of streams) and food security (sustenance of biodiversity).

### **Recommendations**

The proposed project (GHEP) is ecologically unsound and economically unviable because of the following reasons<sup>1</sup>:

1. The construction of this project will cause large scale land cover changes in Gundia
2. The proposed project would have negative impacts on the biodiversity of the region
3. The proposed region is a part of an Elephant Reserve and forms a vital link between two Elephant Corridors.
4. The proposed project would cause habitat fragmentation and shrinkage resulting in enhanced human-wildlife conflicts.
5. The forests are ecologically and economically beneficial to humans.
6. The project would alter the hydrological regime. Kumaradhara River, a perennial source of water to the important Subramanya temple, will lose water due to its diversion to the Bettakumri dam. This will affect the temple and revenue from ecotourism. Also, due to large scale land



cover changes, the catchment yield will dwindle and current perennial streams will become seasonal (as in the Sharavathi river basin). This would affect local people.

Considering the above, the proposed hydro-electric project at Gundia river basin would be ecologically and economically unviable as it would weaken the food and water security of the region apart from enhancing human–wildlife conflicts. This project should not be granted Environmental Clearance.

### ***Athirappilly Hydroelectric project***

Considering the: (1) biodiversity richness, the high conservation value, highly significant fish fauna with type locality of five new species and as many as 22 endemic and 9 critically endangered species, the bird fauna with 75% of the endemics of the Western Ghats, and the unique riverine ecosystem not seen in other areas in the State, (2) the impact of the project on the biodiversity and the ecosystem, some of which may be irreparable, (3) the impact on downstream irrigation and drinking water, (4) the questionable technical feasibility of the project, (5) the meager amount of power that could be generated from the project, (6) impact on the habitats of the primitive tribes of the area, (7) the high cost of construction even without considering the ecosystem services and environmental cost, and (8) the judgment of the honourable High Court of Kerala made on 17 October 2001 directing the KSEB to “***take all necessary steps to repair and restore to full capacity , all the existing Hydro Electric Projects to ensure that the generation of power as envisaged is obtained and also to take steps to ensure that transmission losses are minimized and that theft of energy is prevented and to the extent possible eliminated altogether***”, the WGEEP recommends to the MoEF that the Athirappilly - Vazhachal area should be protected as such and the permission for the proposed hydro-electric project at Athirappilly should not be given. The WGEEP further recommends that the Chalakudy River should be declared as a fish diversity rich area, to be managed on the pattern of ‘Conservation of biodiversity rich areas of Udumbanchola taluk’ in Kerala.

---

**No.1/1/2010- RE (ESZ) Pt.  
Government of India  
Ministry of Environment & Forests  
(RE Division)**

\*\*\*\*

Paryavaran Bhavan,  
CGO Complex, Lodi Road,  
New Delhi – 110 003

Dated: March 28, 2013

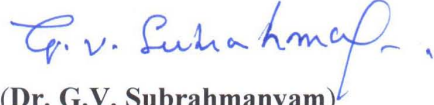
**OFFICE ORDER**

**Sub: Constitution of High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity – Extension of tenure. reg**

The High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity had been constituted by the Ministry vide order of even no. dated 17<sup>th</sup> August 2012. The tenure of the Working Group has now been extended till 15<sup>th</sup> April 2013.

The membership of the High Level Working Group, Terms of Reference and other terms and conditions remain the same as given in the said original order.

This issues with the approval of the Competent Authority and with the concurrence of the Integrated Finance Division of this Ministry, vide their Dy. No. ~~596/IFD/~~ *AS+FA* dated 28.3.2013.

  
(Dr. G.V. Subrahmanyam)  
Adviser (RE)

To  
All Members

**Copy to:**

1. Pay & Accounts Officer, Principal Pay & Accounts Office, Ministry of Environment & Forests, New Delhi.
2. IFD/B& A Section, Ministry of Environment & Forests.
3. PS to MOS (I/C), E&F. New Delhi
4. PPS to Secretary (E&F)
5. Guard File.
6. Spare Copies (10).

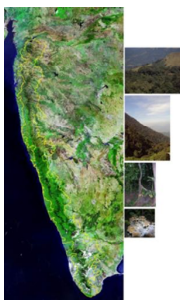
S.No.	Name of Expert	Status
1	Dr. K. Kasturirangan Member (Science), Planning Commission, New Delhi	Chairman
2	Professor C.R. Babu Professor Emeritus, University of Delhi & Ex Pro-Vice Chancellor, University of Delhi, Delhi	Member
3	Shri J.M. Mauskar Ex-Special Secretary Ministry of Environment and Forests Government of India, New Delhi	Member
4	Professor Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
5	Dr. Jagdish Kishwan Ex-Additional Director General of Forests (Wildlife) Ministry of Environment and Forests Government of India, New Delhi	Member
6	Shri Darshan Shankar Chairman, Institute of Ayurveda and Integrative Medicine, Bengaluru	Member
7	Ms. Sunita Narain Director General Centre for Science and Environment, New Delhi	Member
8	Dr. P.S. Roy Ex-Director Indian Institute of Remote Sensing, Dehradun	Member
9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India, New Delhi	Member Convenor
10	Dr. Indrani Chandrasekhar, Ex-Advisor (E&F), Planning Commission, New Delhi	<i>Special Invitee</i>

# **REPORT OF THE HIGH LEVEL WORKING GROUP ON WESTERN GHATS**

**Volume I**



**Ministry of Environment and Forests  
Government of India  
15 April 2013**



Cover: Portion of peninsular India showing Western Ghats region depicted using multi spectral image of advanced wide field sensor (AWifs) on board RESOURCESAT-1 as natural color composite

# Contents

## Volume I

<b>Submission Certificate of the Report of HLWG</b>	<b>i</b>
<b>Preface</b>	<b>ii - iv</b>
<b>Acknowledgement</b>	<b>v - viii</b>
<b>List of Tables</b>	<b>ix</b>
<b>List of Figures</b>	<b>x - xi</b>
<b>Summary of Recommendations and Action Plan</b>	<b>xii - xxiii</b>

<b>1. Introduction</b>	<b>1</b>
<b>2. Evaluation of comments of the Stakeholders, State Governments and Central Ministries</b>	<b>9</b>
<b>3. Impact of Climate Change on the Ecology of Western Ghats</b>	<b>18</b>
<b>4. Definition and Delimitation of the Western Ghats Region</b>	<b>27</b>
<b>5. Identification of Ecologically Sensitive Areas in Western Ghats Region</b>	<b>43</b>
<b>6. The Paradigm for Sustainable and Inclusive Development and the Framework for Governance</b>	<b>98</b>
<b>7. Decision Support and Monitoring Centre for Western Ghats</b>	<b>126</b>
<b>8. Review of specific cases</b>	<b>133</b>
a. Athirappilly Hydropower Project	
b. Gundya Hydropower Project	
c. Moratorium on development projects in Ratnagiri and Sindhudurg Districts	
d. Mining in Goa	

### **References**

### **Appendix 1: Peer-review report**

### **Appendix 2: Approach for biodiversity characterization at landscape level**

## Volume II

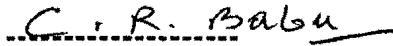
<b>Appendix 3</b>	<i>List of Villages in ESA of the Western Ghats</i>
<b>Annexure 1</b>	<i>Composition and constitution of the High Level Working Group (HLWG)</i>
<b>Annexure 2</b>	<i>Minutes of the HLWG and Visit Reports</i>
<b>Annexure 3</b>	<i>Summary of the Comments received on the WGEEP report from Stakeholders before constitution of the HLWG</i>
<b>Annexure 4</b>	<i>Summary of Comments received on the WGEEP report from Stakeholders before constitution of HLWG classified under various heads</i>
<b>Annexure 5</b>	<i>Analysis of the Responses received by the HLWG on the WGEEP report</i>
<b>Annexure 6</b>	<i>Statement of Major comments of the six State Governments on the Sectoral recommendations made in the WGEEP report</i>
<b>Annexure 7</b>	<i>Statement of the comments received from the Central Ministries</i>
<b>Annexure 8</b>	<i>Responses from the State Governments and Central Ministries</i>

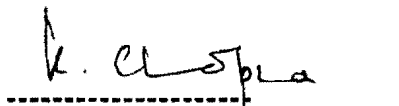
## REPORT OF THE HIGH LEVEL WORKING GROUP ON WESTERN GHATS

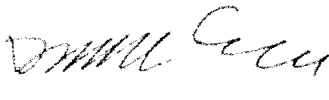
We, the Members of the High Level Working Group constituted to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity after due deliberation have adopted the Report for submission.

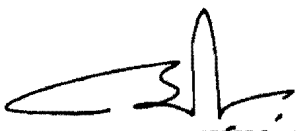
  
1. DR K. KASTURIRANGAN.  
CHAIRMAN

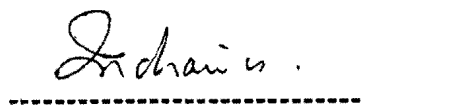
### MEMBERS


  
2. (Professor C. R. Babu)

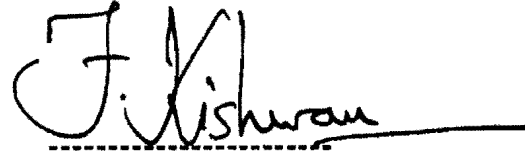
  
4. (Professor Kanchan Chopra)

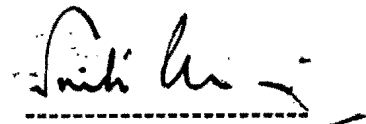
  
6. (Darshan Shankar)

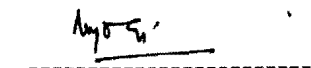
  
8. (Dr. P. S. Roy)

  
10. (Dr. Indrani Chandrasekharan)  
Special Invitee

  
3. (J. M. Mauskar)

  
5. (Dr. Jagdish Kishwan)

  
7. (Sunita Narain)

  
9. (Ajay Tyagi)  
Member Convenor



## **SUMMARY OF RECOMMENDATIONS AND ACTION PLAN**

The observations and discussions presented in different chapters of this Report clearly indicate unambiguously that the eco-system of Western-Ghats is in need of urgent attention and action. Out of the estimated 1,64,280 km<sup>2</sup> of the Western-Ghats area, the natural landscape constitutes only 41 per cent. The area identified as ecologically sensitive is about 37 per cent i.e., about 90 % of the natural landscape. It is against this backdrop of a fast dwindling unique ecosystem, that we make these recommendations. Needless to emphasize, there is a great sense of urgency, in the implementation of the tasks arising out of these recommendations, even though, we fully recognize the sincere commitment that each of the Six States has displayed in the context of protecting the rich Bio-diversity of this mountain range. In making some of the general and sectoral recommendations, we are also aware that many of these are already inbuilt into the present strategies of the respective States. In repeating such recommendations, we are only underscoring the imperatives of implementing such recommendations in letter and spirit. The summary of recommendations are given below:

### **A. Delineation and demarcation of ecologically sensitive area in Western Ghats region**

1. In the absence of accepted definition and delimitation of Western Ghats in terms of geology and geomorphological features, the talukas under Western Ghats Development Programme of Planning Commission and under Hill Development Programme and talukas located at the traditionally accepted northernmost boundary of Western Ghats (south of Tapti river) in Gujarat have been included in defining and delimitation of Western Ghats Region by HLWG. The delimited area of 188 talukas in 6 States of Western Ghats has been designated as Western Ghats Region which spreads over an area of 1,64,280 km<sup>2</sup> between 8°0'– 22°26' N and 72°55'– 78°11' E and extends over a distance of 1500km from Tapti River at the north to Kanyakumari at the south, with altitudinal range (ellipsoid) from 0 to 2674 m above sea level and



width ranging from 10km (at narrowest point) to 200km (at widest point). HLWG recommends the adoption of the boundaries as demarcated in the Report.

2. About 60,000 km<sup>2</sup> of natural landscape (approximately 37% of the total geographical area of Western Ghats Region) has been identified as Ecologically Sensitive Area (ESA) by HLWG, which represents more or less a contiguous band of vegetation extending over a distance of 1500 km across 6 States of Western Ghats region and includes Protected Areas and World Heritage Sites. The demarcation unit of ESA is the village. IRS LISS III derived spatial layers on vegetation type and landscape level indices (with a fine spatial resolution of 24 m) were used as the basis for identification of ecologically sensitive areas (ESAs).

To facilitate sustainable development in the WG region, which is inhabited by about 50 million people, the non ESA comprising mostly cultural landscape is also demarcated. HLWG recommends that the Central government should immediately notify the ESA area, demarcated by HLWG in public interest. The need for urgent action is evident. In this notified area, development restrictions as recommended in this report will apply.

3. MoEF should put the ESA map in the public domain, which will enable scrutiny and transparency in decisions.

***B. Development Restrictions in proposed Ecologically sensitive areas***

4. HLWG is recommending a prohibitory and regulatory regime in ESA for those activities with maximum interventionist and destructive impact on the ecosystem. All other infrastructure development activities, necessary for the region, will be carefully scrutinized and assessed for cumulative impact and development needs, before clearance.

5. There should be a complete ban on mining, quarrying and sand mining in ESA. All current mining areas should be phased out within the next 5 years, or at the time of expiry of mining lease, whichever is earlier.
6. No thermal power projects should be allowed in ESA. Hydropower projects may be allowed but subject to following conditions:
  - (a) Uninterrupted ecological flow at atleast 30 per cent level of the rivers flow in lean season till a comprehensive study establishes individual baselines.
  - (b) After a cumulative study which assesses the impact of each project on the flow pattern of the rivers and forest and biodiversity loss.
  - (c) Ensuring that the minimum distance between projects is maintained at 3 km and that not more than 50 per cent of the river basin is affected at any time.
7. HLWG recommends that wind energy should be included in EIA notification and brought under purview of assessment and clearance.
8. All 'Red' category industries should be strictly banned. As the list of industries categorized as 'orange' includes many activities like food and fruit processing, there will not be a complete prohibition on this category. But all efforts should be made to promote industries with low environmental impacts.
9. Building and construction projects of 20,000 m<sup>2</sup> and above should not be allowed. Townships and area development projects should be prohibited.

10. All other infrastructure and development projects/schemes should be subject to environment clearance under Category 'A' projects under EIA Notification 2006.
11. Additional safeguard for forest diversion in ESA should be introduced. In cases of forest clearance required in ESA, all information of the project, from application stage to approval should be placed in the public domain on the website of MoEF and of the forest department of the respective States.
12. All development projects, located within 10 km of the Western Ghats ESA and requiring Environment Clearance (EC), shall be regulated as per the provisions of the EIA Notification 2006.
13. HLWG recommends a framework for governance and regulation of ESA, which draws on current regulatory institutions for decision-making, but simultaneously, strengthens the data monitoring systems and the participation and involvement of local communities in decision-making.
14. Existing regulatory institutions and processes for environment and forest clearances and project monitoring would need to be greatly strengthened for the governance framework to be enforced and monitored effectively.
15. The villages falling under ESA will be involved in decision making on the future projects. All projects will require prior-informed consent and no-objection from the Gram Sabha of the village. The provision for prior informed consent under the Forest Rights Act will also be strictly enforced.
16. The State Governments should also ensure consultation with local communities while planning for protection of wildlife corridors.
17. State Governments should immediately put in place structures for effective enforcement of development restrictions and ensuring sustainable development in ESA.

**C. Financial arrangements and Incentivising Green Growth in Western Ghats region**

18. HLWG recognizes that the Western Ghats even in those areas categorized as natural landscapes, is inhabited. It is not wilderness area, but the habitat of its people, who share the landscape with biological diversity. Conversely, the cultural landscape is also biologically rich and the economic growth of the entire region comes from its natural endowment of water, forests and biodiversity. For this reason, HLWG has recommended policies to incentivize environmentally sound growth across the Western Ghats.
19. HLWG recommends that the Western Ghats States should come together to negotiate for a grant-in aid from the Centre. The financial arrangement should be of the nature of a debt for nature swap. This is a mechanism whereby part of the outstanding debt of a State is swapped for new constructive initiatives by it to protect its natural resources. A part of these payments be retained by the State Governments and a part be used to finance local conservation trust funds (as in several countries), which disburse grants to community projects for improving forest productivity and ensuring sustainable forest based livelihoods in ESAs. In addition, the 14<sup>th</sup> Finance Commission should consider substantially increasing the fund allotted to States by the 13<sup>th</sup> Finance Commission for forest and environmental conservation.
20. HLWG recommends that there should be arrangements for Payments for Ecosystem Services accruing from ESA and non-ESA regions within the Western Ghats. HLWG also recommends that individual State Governments pursue such initiatives which may create possibilities for a dialogue on this issue between municipalities and relevant Panchayats within their States.

21. HLWG recommends considering extending Entry 20 (Economic Planning) in the Concurrent List, and introduce an appropriate new entry, say 20A, suitably titled, to ensure that developmental projects and activities are undertaken within an overarching environmental and ecological framework.
22. The Planning Commission should create a special Western Ghats Sustainable Development Fund, as proposed in this Report. This fund will be used to promote programmes specifically designed to implement an effective ESA regime and incentivize green growth in the region.
23. The 14<sup>th</sup> Finance Commission should consider options for ecosystem and other service payments in the Western Ghats as well as allocation of funds to ESA areas. It should also consider how these funds for environmental management would be made available directly to local communities who live in and around Western Ghats ESA.
24. The Planning Commission is currently working on a ranking of States based on Environmental Performance Index (EPI) developed by it. The EPI could be used to devolve funds to the States. ESA should get 'plus payments' which should be paid directly to the village community.
25. The strategy evolved for the continuation of the Western Ghats Development Programme, in the 12<sup>th</sup> Plan centres around, besides watershed based development, fragility of the habitat, and development needs of the people i.e. a Watershed + approach – an approach which emphasizes conservation, minimal ecological disturbance, involvement of locals along with sustainable model of economic development and livelihood generation with enhanced allocation. After a careful consideration of the strategy proposed, the HLWG recommends the following:
  - (a) Continuation of the WGD program with an enhanced allocation of Rs. 1000 crores,

- (b) Continuation of the special category status to the program i.e. cost sharing of 90:10 between Centre and State,
  - (c) Revival and reconstitution of the High Level Committee consisting of CMs of the six States, for monitoring the implementation of the recommendations /suggestions of the HLWG and existing legislations and periodical review the status report of the Decision Support and Monitoring Centre for Western Ghats Region,
  - (d) Setting up / strengthening of the State WG cell with a mandate to liaise with SPCB, State Department of Forests, SEAC and SBA, and Regional office of the MoEF and service the information and decision support needs of the State Government.
26. Forest management for inclusive development should require policies to integrate forest accounts, including measurement of the tangible and intangible benefits into State and National economic assessments and policies to improve productivity of forests for economic benefits for local communities.
  27. The current rules of timber transit, which do not incentivize forest production on private lands and community forestlands, should be reviewed and revised. The Forest Rights Act's categorization of minor forest produce, including bamboo should be promoted to build forest-based local economies.
  28. To promote sustainable agriculture, HLWG recommends a focused programme to incentivize growers in the Western Ghats to move towards organic cultivation and to build a unique 'brand' for such premium products in the world market.
  29. In order to promote sustainable tourism, HLWG recommends the following:

- (a) Existing regulatory provisions to assess environmental impact of tourism projects must be strengthened.
- (b) The tourism policy for Ecologically Sensitive Area of the Western Ghats must provide local community ownership and benefits.
- (c) All tourism hotspots in the Ecologically Sensitive Area should be monitored for compliance with environmental conditions and development restrictions and assessed in terms of impact.

***D. Decision Support and Monitoring Centre for Western Ghats***

30. The management of Western Ghats ecology involves conservation, protection and rejuvenation as well as sustainable development in Western Ghats through periodic assessments of environment and ecology on a long term basis across the Six States of Western Ghats region using state-of-art geospatial technologies. The information generated will be used for wide range of purposes including planning and policy formulation from time to time, keeping in view of changes monitored both in time and space. A Centre with the mandate to: (i) use the existing and new knowledge to build a vibrant political dialogue in the region as a whole on the need to make shifts in development paradigm, given its particular vulnerability, (ii) assess and report on the state of ecology of the entire region, and (iii) provide a decision support function in the implementation of ESAs is essential. With this objective in view, HLWG recommends for setting up the "Decision Support and Monitoring Centre for Western Ghats" by MoEF and it will be hosted by one State and will have joint management of all Six States of the Western Ghats region for conservation of the ecology and sustainable and equitable development in Western Ghats Region.
31. For the first time in conservation ecology and sustainable development, HLWG with the help of NRSC developed a scientific, objective and practical way of identifying Ecologically Sensitive Areas (ESAs) at a fine resolution of

24 m with village as a unit, using IRS LISS III derived spatial layers of vegetation type and landscape indices (based on ground truthing involving 100's of sampling sites under DBT-ISRO project on Biodiversity Conservation). The maps generated on GIS platform having different layers have a wide range of applications. Consequently, the HLWG recommends that the approach followed for identification of ESAs serves as a model for replication elsewhere in the region and country.

***E. Climate change and Western Ghats***

32. The predictions on climate change have been made using Global Climate Models (GCMs) and Regional Climate Models (RCMs) with resolutions at 100km and 25km, respectively, which are very coarse for Western Ghats, the width of which varies from 10 to 200km. There is a need for downscaling of the data for ecosystem change models such as Dynamic Vegetation Growth Models (DVGM) and Ecological Niche Models. HLWG recommends that the proposed Centre may undertake these studies. In any case, the likely increase in temperature regime, rainfall and extreme events, besides decrease in the duration of precipitation which alone has serious concern for Western Ghats ecosystem - increased water stress to the forests, in fire incidences, evapo-transpiration and surface runoff. As a adaptive measure to these changes, a number of adaptive strategies such as (i) species-mix plantations, (ii) planting of hardy species that are resilient to increased temperature and drought risk, and (iii) launching of a few adaptive projects such as anticipatory plantation along altitudinal and latitudinal gradient and linking of PAs and forests fragments and implementing advance fire warning strategy, which have been outlined in Chapter 3, should be taken into account while formulating policies across Western Ghats region



**F. Specific cases referred to HLWG**

33. HLWG is of the view that while the importance of the proposed Athirappilly hydropower project for meeting the peaking power requirements of the State cannot be disputed, there is still uncertainty about ecological flow available in the riverine stretch, which has a dam at a short distance upstream of the proposed project. It recommends that given the increased variability due to unpredictable monsoon, the project must be revaluated in terms of the generation of energy and whether the plant load factor expected in the project makes it viable against the loss of local populations of some species. Based on this revaluation and collection of data on ecological flow, the Government of Kerala, could take forward the proposal, if it so desires with the Ministry of Environment and Forests.
34. As the proposed Gundya hydropower project is located in the ESA, it must be proceeded upon with extreme caution. HLWG recommends that the Government of Karnataka should reassess the ecological flow in the downstream areas, based on a thorough evaluation of hydrological regimes in the area. The project should not be given the go-ahead, till such a review and reassessment is made. The Government's review must also assess local damage to all forests, which will emanate from the construction work and if at all, this can be mitigated. The HWLG has not proposed a complete ban on the construction of hydropower projects in the ESA, but its recommended conditions that balance the needs of energy with environment, must be followed.
35. HLWG has recommended that there should be a complete ban on mining activity in ESA and that current mining activities in ESA would be phased out within five years, or at the time of expiry of the mining lease, whichever is earlier. In view of the fact that the matter of iron ore mining in Goa is

pending before the Hon'ble Supreme Court, HLWG does not find it appropriate to make any other recommendation in the matter.

36. Sindhudurg and Ratnagiri districts have three categories of areas: (i) area under ESA, (ii) area under non ESA within Western Ghats and (iii) area outside Western Ghats region. HLWG recommends that the moratorium imposed should be lifted with the following conditions. As per the recommendations of this report, in the area of these two districts, which has been categorized as ESA, the sectoral restrictions and regulations will apply. In addition, all development projects located within 10 km of the Western Ghats ESA and requiring Environment Clearance (EC) shall be regulated as per the provisions of the EIA Notification, 2006. In the remaining area, including the area outside ESA but within Western Ghats, environment and forest processes and regulations will continue to apply. However, in order to ensure that such development projects do not adversely impact the environmental balance of the two districts, MoEF should monitor on regular basis the cumulative impact of projects, which may come up in these districts and take policy decisions at appropriate time based on such findings.

### **Action Plan**

- I Considering the urgency in protecting and safeguarding the remaining biodiversity rich areas in Western Ghats, MoEF needs to notify ESA recommended by HLWG and also issue other notifications, regulations etc., as may be required to implement the aforesaid recommendations as soon as possible in public interest.
- II The aforesaid recommendations clearly bring out the requirements for their implementation. MoEF should be the overall nodal Ministry to ensure timely implementation of these recommendations. Each of the Six State

Governments may identify the nodal department to co-ordinate the implementation of these recommendations in the State.

- III On recommendations relating to financial arrangements and incentivising green growth in Western Ghats region, co-ordinated action needs to be taken by MoEF, Planning Commission and Ministry of Finance. In particular, the 14<sup>th</sup> Finance Commission should be persuaded to provide sufficient allocation of funds to the States in the Western Ghats for forest and environment conservation. Further, as recommended above, the Planning Commission should strengthen the implementation of Western Ghats Development Programme.

Department of Mines  
Directorate of Mines & Geology  
Order  
No. DMG/SHAH-COMM/2012/2181

The Government is pleased to constitute a committee under the Chairmanship of Shri R. M. S. Khandeparkar Retired Judge of Hon'ble High Court of Bombay, to independently investigate, inquire and submit a Report to the State Government on the various issues raised in the Justice Shah Commission Report.

The other members of the committee shall be

1. Shri K.P. Nayati - Environment Expert
2. Shri Tapan Chakraborti- Former Director, NEERI
3. Dr. Pramod Pathak - M. Tech (Chem Engg) IIT Mumbai
4. Shri V.B. Prabhu Verlekar - Senior Chartered Accountant
5. Principal Secretary (Mines) - Member Secretary

The terms of reference/Functions of the Committee shall be

- a. Effective control, supervision and regulation of mining operations in the State of Goa by implementing the Provisions of Law;
- b. To report on the loss/pilferage to the Public Exchequer, on matters of Royalty, Land Cess, Forest Wealth, Mineral Resources, Encroachments on Government land and to identify the wrongdoers in this regard;
- c. Offences and illegalities committed in the illegal mining activities in the State of Goa, other than the cases of forty two mines where illegal Orders were passed to dole out favours to dead Leases by reviving them illegally by condoning the delay from the year 1995 onwards, as the State Government has already issued Show Cause Notices to take appropriate action as per law, and by identifying the public servants and others in aiding and abetting the offences and illegalities in the mining

operations, transportation and causing loss to the Public Exchequer and gains for themselves;

- d. To suggest remedial measures including for coordination between various Government Bodies, Statutory Authorities, etc., any suggestions and measures for regulated mining in the State of Goa under some independent Authority.
- e. The Committee shall take appropriate decisions and recommend and carry out registration of offences/prosecution of those found guilty.

The terms of the Committee shall be for 1 year from the date of Notification in the Official Gazette.

The remuneration of the committee members and other expenditure incidental to and incurred for carrying out the work of the committee shall be notified separately.

Prasanna A. Acharya, Director & ex officio Joint Secretary (Mines)  
Panaji, 19<sup>th</sup> November, 2012

**IN THE HIGH COURT OF BOMBAY AT GOA**

**CRIMINAL WRIT PETITION NO. 107 OF 2012**

MR. KASHINATH JAIRAM SHETYE ... Petitioner  
Versus  
THE STATE OF GOA THROUGH THE CHIEF  
SECRETARY AND 6 ORS., ... Respondents

Petitioner in person.  
Mr. A. N. S. Nadkarni, Advocate General with Mr. D. Lawande,  
Government Advocate for respondents No.1, 2, 3, 5 and 6.

Coram:- MOHIT S. SHAH, C.J. &  
SMT. R. P. SONDURBALDOTA, J.

Date:- 22nd March, 2013

P.C.:-

The petitioner herein has relied upon the report of the Commission of Inquiry, consisting of Hon'ble Mr. Justice M.B. Shah, Retired Judge of Supreme Court of India. The Commission was appointed for the purpose of making inquiry of illegal mining of iron ore and manganese ore in contravention of various statutory provisions. Relying on the aforesaid report, the petitioner has filed a complaint dated 15th September, 2012 to the Police Inspector, Crime Branch, Donapaula, Goa, the Police Inspector, Panjim Police Station, Panjim, Goa and the Police Inspector, CBI, Bambolim, Goa. After referring to the report, the petitioner has contended that based on the above complaint, criminal prosecution is required to be launched against the 151 persons named in the complaint and all other persons for abetment of the crime, in addition to the persons responsible for carrying out illegal mining, as mentioned in the report of Justice Shah Commission. The petitioner has submitted that many of the lessees have crossed the lease boundaries and illegally extracted minerals from outside the leased areas. The petitioner has referred to various

decisions of the Supreme Court and of the High Courts in the above complaint and contended that the Police Inspectors are bound to exercise the jurisdiction vested in them by Section 154(1) of the Criminal Procedure Code to register an FIR with regard to the petitioner's complaint. Finally, the petitioner has mentioned in his complaint as under :

" You are therefore called upon to refer crimes in respect of all the matters pointed out hereinabove, forthwith and immediately, and to prosecute those responsible for the same, as also for any other offence that your investigation may reveal have been committed. Specifically you are called upon to invoke Sections 7,8,9,10,11,12,13 of the Prevention of Corruption Act, and Section 217, 218, 405,409,420, 468, 471, 120(b) and 34 of the Indian Penal Code, sections 17A and 17B of the Town and Country Planning Act 1974, Mining and Minerals Act 1957, penalty clause 7 of the Goa (Prevention of Illegal Mining, Transportation and Storage of Minerals) Rules, 2004, relevant sections of the Forest Act, Goa Air and Water Pollution Act and other environmental acts and Wild Life (Protection) Act and Biological Diversity Act, 2002. And the Irrigation Act 2003, against all above named and unnamed and the contractor who is in connivance with all these and the owners of land and others and bureaucrats/officials of the Government of Goa for who are acting in conspiracy/connivance with the contractor and the owner of the land for illegal benefits/gratification received by them directly or indirectly and for not taking penal action after it was brought to their notice

personally by the Complainants and informants herein.

Indeed, the offences in the present case being clearly made out, which leave no doubt whatsoever, it is not a fit case for preliminary inquiry, and therefore forthwith and immediate registration of a crime/F.I.R. as per the mandate of Section 154(1) of the Code of Criminal Procedure is mandatory."

2. In response to the above complaint, the Police Inspector, Panaji Police Station, replied that the petitioner's complaint dated 15th September, 2012 was referred to the superiors for deciding further course of action on the following points :

- "1. It is observed that the complaint is addressed to the  
1) Police Inspector, Crime Branch Donapaula, 2) Police Inspector, Panaji Police Station and 3) Police Inspector, CBI, Bambolim, Goa.
2. The places of occurrence of offences are all over Goa having jurisdictions of various local Police Stations.
3. The complaint is a single combined complaint in respect to all the alleged offences and no specific offence is cited in the complaint by you and it is necessary to decide whether separate FIR's to be registered in each alleged violation or otherwise.
4. The investigation is extensive investigation and has to cover 151 accused persons including elected representatives, state and central Government officials, officials of statutory bodies and firms involved in mining an allied activities.

The complaint is under consideration and will be disposed of on merit as soon as directions from the superiors



on the above points are received."

3. On the same day, Police Inspector, CID, CB, Donapaula, sent the copy of the said complaint to the Director, Directorate of Mines & Geology, Panaji, Goa, specifically inviting attention of the Director to Section 22 of the Mines and Minerals (Development and Regulation) Act, 1957 in the following terms :

" Section 22 of the Mines and Minerals (Development and Regulation) Act, 1957 deals with the cognizance of offences which reads as "No Court shall take cognizance of any offence punishable under this Act or any rules made there under except upon complaint in writing made by a person authorized in this behalf by the Central Government or the State Government.

In view of the above, it is kindly requested to take necessary action at your end into the application of Shri Kashinath Shetye."

4. In the present petition, the petitioner's main grievance is that inspite of the complaint dated 15th September, 2012, the respondents Police Officers have not registered the FIR under Section 154(1) of the Code of Criminal Procedure. Therefore, the petitioner submits that appropriate directions are required to be issued to the respondents authorities to register an FIR and carry out a fair, proper and wholesome investigation into the offences complained of and thereafter to file a report under Section 173 of the Code of Criminal Procedure and to take appropriate action as law mandates in that regard.

5. Mr. Nadkarni, learned Advocate General appearing for the State/respondents No.1, 2, 3, 5 and 7 submits that the respondents

State Authorities are ready to file an FIR after taking necessary care that all the relevant materials are given in the FIR, including the report of Justice Shah Commission. Learned Advocate General submitted that the report of Justice Shah Commission is under challenge before the Supreme Court and, therefore, the respondents authorities want to ensure that in case the challenge to the report succeeds, the FIR would not fall only on that ground. It is next submitted by the learned Advocate General that the complaint dated 15th September, 2012 of the petitioner does not contain relevant particulars, such as areas where the alleged offences have been committed, etc and, therefore, the respondents would file FIR after gathering all relevant material.

6. In view of the above stand of the respondents as indicated by the learned Advocate General of the State of Goa, we dispose of this petition with direction to respondents No.1, 2 and 3 to file FIR in respect of the offences alleged to have been committed by the persons responsible for illegal mining in the State of Goa, including the lessees of the mines and all those who permitted such illegal mining of iron ore and manganese ore, in contravention of the relevant statutory provisions. The FIR to be filed within a period of six weeks from today.

7. The writ petition is, accordingly, disposed of.

MOHIT S. SHAH, C.J.

SMT. R. P. SONDURBALDOTA, J.

ssm.

ITEM NO.MM-1-B

COURT NO.1

SECTION II

S U P R E M E C O U R T O F I N D I A  
R E C O R D O F P R O C E E D I N G S

Petition(s) for Special Leave to Appeal (Crl)... 2013  
CRLMP.NO(s). 9761

(From the judgement and order dated 22/03/2013 in CRLWP  
No.107/2012, of The HIGH COURT OF BOMBAY AT PANAJI)

DR.PRAFULLA R. HEDE

Petitioner(s)

VERSUS

KASHINATH JAIRAM SHETYE AND ORS  
( for permission to file SLP )

Respondent(s)

Date: 30/04/2013 This Petition was called on for hearing today.

CORAM :

HON'BLE THE CHIEF JUSTICE  
HON'BLE MR. JUSTICE ANIL R. DAVE  
HON'BLE MR. JUSTICE VIKRAMAJIT SEN

For Petitioner(s) Mr. M.N. Krishnamani, Sr. Adv.  
Mr. Bhavanishankar V.Gadnis, Adv.  
Mr. A.Venayagam Balan, AOR

For Respondent(s)

UPON hearing counsel the Court made the following  
O R D E R

Taken on Board.

Permission to file Special Leave Petition is  
granted.

Issue notice, returnable eight weeks hence.

In the meantime, the impugned judgement and  
order dated 22<sup>nd</sup> March, 2013, passed by the  
Bombay High Court in CRL.W.P No.107 of 2012,  
shall remain stayed.

**(Sheetal Dhingra)**  
**AR-cum-PS**

**(Juginder Kaur)**  
**Assistant Registrar**

SECTION IIA

...2/-

UPON hearing counsel the Court made the following  
O R D E R

Permission to file special leave petitions  
is granted.

Issue notice.

Since Mr. Colin Gonsalves, learned  
senior advocate, represents the Respondent No.1, service  
of notice on the said respondent is dispensed with. The  
respondent will be entitled to file its counter affidavit  
to the special leave petitions within two weeks.  
Rejoinder affidavit, if any, may be filed within a week  
thereafter.

It appears that S.L.P. (Crl.) No.4033 of  
2013 against the same judgement is pending in this Court.  
In addition, a writ petition, being W.P. (C) No.435 of  
2012, is said to be pending before the Forest Bench,  
which also is to some extent concerned with the M.B. Shah  
Commission Report.

Having regard to the above, let this  
matter be heard along with S.L.P. (Crl.) No.4033 of 2013 at  
an early date. Liberty is given to the parties to mention  
the matter for early hearing once the pleadings are  
complete. The parties will also be at liberty to  
mention the matter before the Forest Bench for similar  
directions.

In the meantime, the impugned directions  
of the High Court shall remain stayed.

[ T.I. Rajput ]  
Deputy Registrar

[ Juginder Kaur ]  
Assistant Registrar

O HERALDO/GOA

Justice Shah: Goa failed to give adequate info on time

July 13, 2013

***Says third report won't be ready in three months***

SHWETA KAMAT  
shweta@herald-go.com

PANJIM: Justice MB Shah of the Commission of Enquiry on illegal mining in Goa, who blamed State government for its failure and even reluctance, to provide adequate information on time, said that the Commission's report would not be ready within three months, as the time taken to receive inaccurate and correct figures would further delay the third report.

The third report of the Commission would concentrate on export of ore, the discrepancies in figures, permissions and actual, which experts feel is a bid to follow the money trail of mine leases owners and exporters in a bid to pinpoint the exact amounts. It will also try to find out a more accurate estimate of the loss to the State exchequer from illegal export of iron ore in the past five years ~ from 2006 to 2011. The earlier report had approximated the figures at around Rs 35,000 crore.

"Three months won't be enough to submit the report. Government is not ready to provide details. Several reminders have been sent. What we have received so far are not accurate and correct figures," he claimed.

Justice Shah said that the third report will also focus on illegal export of iron ore and transfer of leases. "The export and production figures would be matched. We will also look into the loss to State exchequer through illegal export," he said.

The third report will include the findings of investigation of bank accounts of those reportedly found to be involved in the scam. Names of politicians including former Chief Minister Digambar Kamat, mines officials and mine owners have already figured in the Shah Commission report, submitted last year.

With this it looks like that the inquiry would be similar to that held in Karnataka, where the Shah Commission had screened four lakh bank accounts.

The Commission, in its first report had recommended ban on export of iron and manganese ore to conserve minerals for posterity. It had also said that till government puts up a system in place, the ban on export should continue, which will help in controlling illegal mining.

## Goa salvo at Centre over ban on mining backfires



[Express news service](#) : New Delhi, Tue Jul 16 2013, 09:18 hrs

GOA government's request to Prime Minister Manmohan Singh to take a "pragmatic view" on mining in the state appears to have backfired.

The Prime Minister's Office has responded that several mining projects have not been cleared, or otherwise, because the state has not submitted required documents to the environment ministry.

In a memorandum to the prime minister last month, Chief Minister Manohar Parrikar had said the ban on mining is damaging the economy of his state, which earns 20 per cent of its GSDP from mining, and endangering livelihood of lakhs of people engaged in the sector.

Parrikar had claimed that the ban, which he estimated to dent the state's revenue by Rs 6,400 crore, has created an "unprecedented social crisis" due to loss of livelihood and saddled cooperative banks that had lent to the miners with huge credit and non-performing assets, and sought Rs 3,000 crore for rehabilitation of the affected and a special package for the banks.

The memorandum had also asked the Prime Minister to "direct the ministry of mines and the ministry of environment and forests to take a pragmatic view in the matter, including urging the apex court to vacate the blanket ban on mining and permit legal mining in the state at the earliest".

The PMO responded to the request last week. It pointed out that the environment ministry had set up an Expert Appraisal Committee in March 2013 to examine documents submitted by proponents of mining projects whose environmental clearance have been kept in abeyance. The committee requires proposals from states for notification of Ecologically Sensitive Zones around national parks and wildlife sanctuaries and distances of the periphery of iron ore mines from them.

Though the Goa had submitted the proposals, it hadn't provided details of distances so far. That apart, the state had not provided coordinates for points indicated on the boundary of the proposed ecological zones as asked for by the expert panel, the PMO said, and advised the Parrikar government to sent such details at the earliest.