

Urban Forestry in Bhopal ***Innovative Initiatives***

Dr A K Bhattacharya
Chief Conservator of Forests



तुम बहुत वर्षों से मेरी पृथ्वी हो ,
तुमने मुझे मृत्तिका आसन पर बैठाकर
आश्रन्त चरण असंख्य रात्रि दिवस अनंत गगन में
सौरमंडल की प्रदक्षिणा की है युग—युगान्त तक
मुझ पर तुम्हारे तृण उगे हैं
राशि राशि फूल खिले हैं —

.....
मैं तुम्हें घेर कर विचरूँगा
तुम्हारे आत्मीयों के बीच निवास करूँगा ।
कीट पशु—पक्षी तक, गुल्म लता बनकर
बार —बार तुम्हें पुकारूँगा ,
वसुन्धरा,
मुझे अपने से दूर मत करो ।

— रविन्द्र नाथ टेगौर

PRESENTATION FOCUS

- **Historical perspective**
- **Agencies involved**
- **Urban Forests inherited**
- **Plantation efforts**
- **Major species of Urban Forestry**
- **Innovative Initiatives**

History of Urban Forestry in Bhopal - *changing perception*

- 1905 - Separate Forest Department established in Bhopal
- 1914 - Nawab Nasrulla Khan as the forest portfolio member (or Chief Conservator)
- 1935 to 1957 – Mohd. Raza Khan served as DFO Bhopal. In his tenure few exotic plants were introduced in urban and suburb areas of Bhopal, i.e. Ahmadabad palace, Benazir ground, Islam Nagar etc.

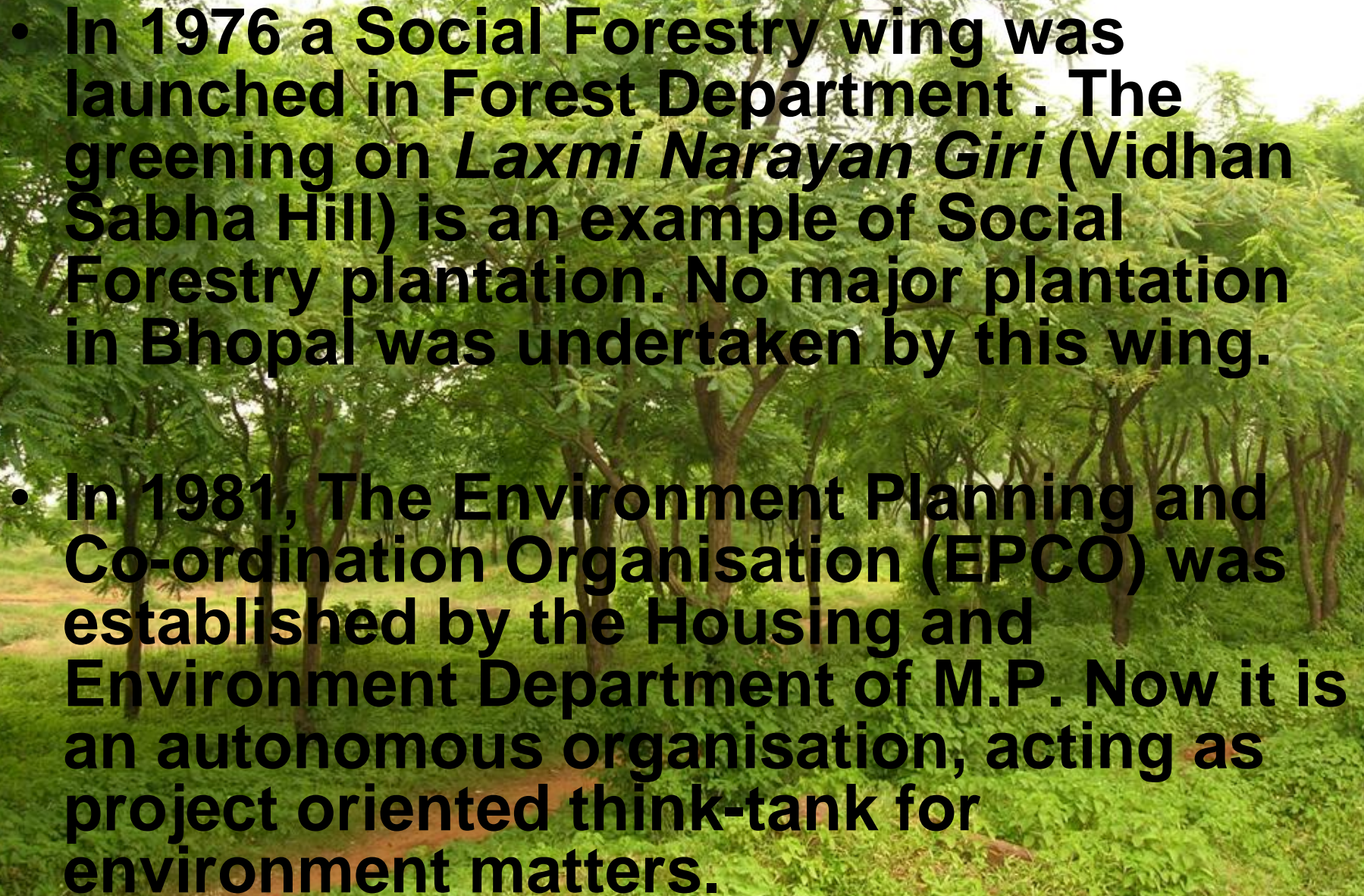
1. *Polyalthea longifolia* (False Ashoka)
2. *Casurina equisitifolia* (Beef wood)
3. *Couroupita guianensis* (Shiv-lingi)
4. *Millingtonia hortensis* (Akash Nim)
5. *Peltophorum insignee* (Copper pod tree)
6. *Colvillea racemosa* (Kilbili)

- **1.10.1960 - Capital Project Administration was set with the approval of planning commission with the objectives of –**

Development
Beautification
Conservation } *of environment*

- **The responsibility of comprehensive development of a city rests with the Housing and Environment Department of the State Government .**
- **A separate Forest Division was established in 1986 Under Capital Project Administration specifically for urban forestry work.**

(SOURCE - GAZETTIER OF RAISEN AND SEHORE DISTRICTS, 1972)

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- In 1976 a **Social Forestry** wing was launched in Forest Department . The greening on *Laxmi Narayan Giri* (Vidhan Sabha Hill) is an example of Social Forestry plantation. No major plantation in Bhopal was undertaken by this wing.
 - In 1981, The Environment Planning and Co-ordination Organisation (EPCO) was established by the Housing and Environment Department of M.P. Now it is an autonomous organisation, acting as project oriented think-tank for environment matters.

Agencies involved

Bhopal Forest Division

Capital project administration

BHEL

Bhopal municipal corporation

Other Government Agencies*

Private Sector**

भोपाल नगरपालिका
आवास एवं पर्यावरण विभाग, न.प्र. शासन

भोपाल नगरपालिका
नगरपालिका अध्यक्ष संगठन भोपाल

क्रियाकलाप संख्या- राजधानी परियोजना वन मंडल, भोपाल

क्षेत्र का नाम- वोरवन लेक साईड (प्रस्तावित नगर)

क्षेत्र संख्या	व.सं.	व.सं.	व.सं.	व.सं.	व.सं.	व.सं.	क्षेत्र	क्षेत्रफल- 12-40 KM.
A-11	103	104	105	106	107	108	अन्तर्गत क्षेत्र- 3680 KM.	
B-12	109	110	111	112	113	114	क्षेत्र- 3710 KM.	
C-13	115	116	117	118	119	120		

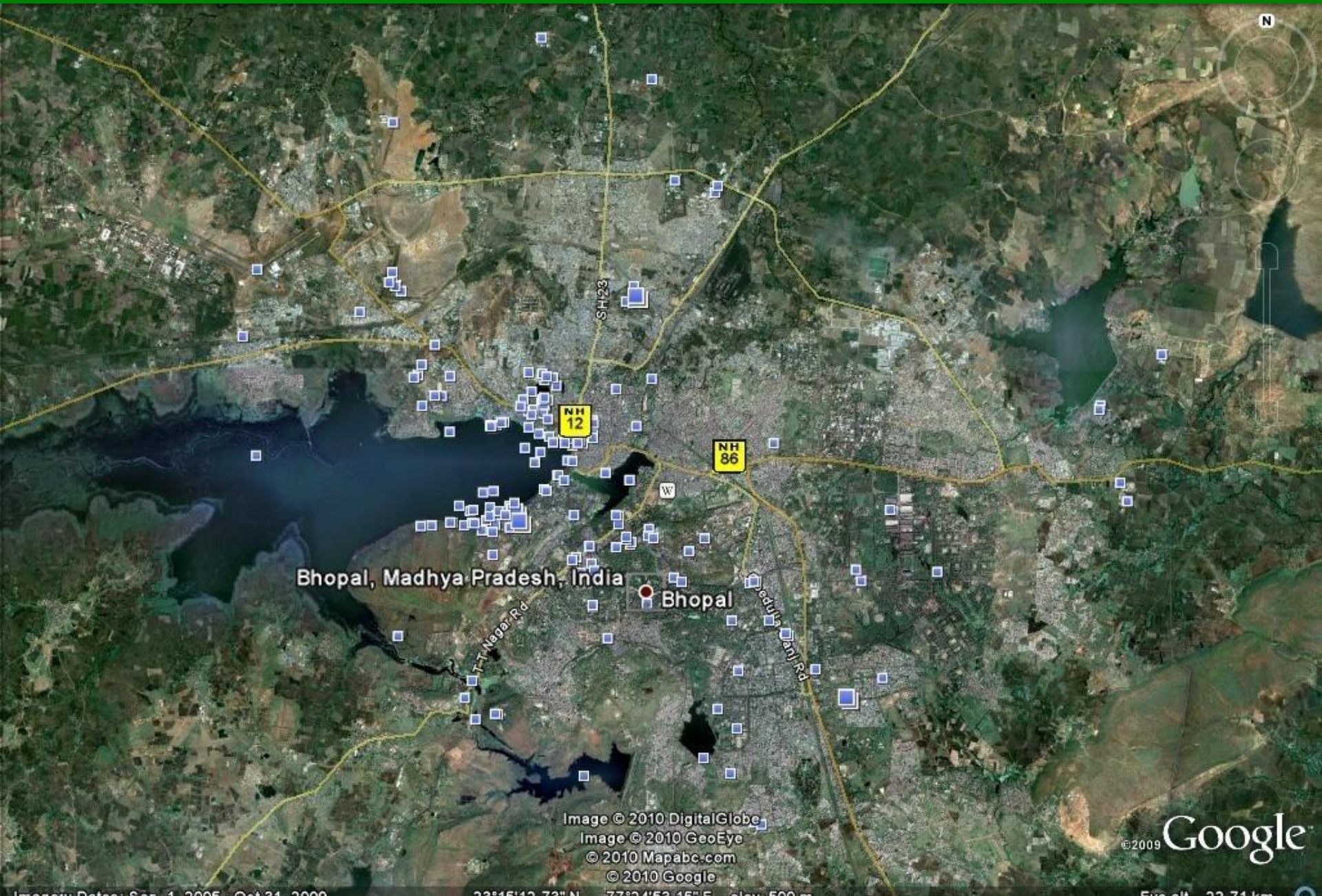
*** Other Government agencies include Municipal Corporation, Horticulture Department, Public Works Department and Agriculture Department.**

**** Private sectors include mostly the campus of different offices like Coal India ltd. different private colonies like Sahara and Raj Homes and Eco-city etc.**

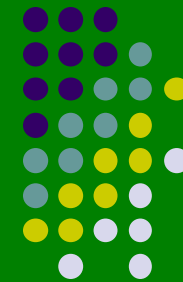
Urban Forestry Status

- Total urban revenue forests of the District - 10903 ha
- Urban forests + plantations under Forest Department - 2471 ha
- Urban Forests + plantations under the CPA - ~ 2000 ha
- Plantations by BHEL – 313 ha
- Plantations by other govt agencies - ~ 100 ha
- Plantations by Private sector - ~ 60 ha

Satellite Imagery of Bhopal Urban Landscape



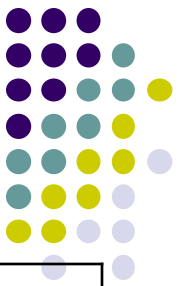
Plantation efforts by different agencies in Urban Forestry at Bhopal



Year	Bhopal Division	CPA		Total By CPA	BHEL	Other Govt. Agencies	Private Sector	Grand total
		Urban	Rural					
83	82378							
84	87045							
85	52112							
86	04314	13257						
87	57130	67986						
88	55983	89740						
89	80272	37591						
90	16268	74376	18499					
91	60192	32832	84364					

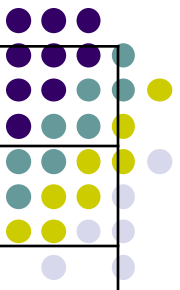
92	29665	31927	45843						
93	19800	71022	100028						
94	2184	141065	153116						
95	9590	203603	162150						
96	8350	12396	358768						
97	4625	5038	174874						
98	-	-	235912						
99	-	2850	281648						
2000	10505	1000	11073						
2001	15000	14895	-						
2002	-	11198	8017						
2003	37100	12811	76598						
2004	26640	26402	16364						
2005	-	27750							
2006	500	57027							
2007	112675	81017							
2008	47370	61169							
2009	99600	57558							
Total	10,19,669	1,34,510	17,27,564	18,62,074	8,50,000	1,50,000	1,50,000	40,31,743	

Indigenous Species Planted by CAPITAL PROJECT FOREST DIVISION, BHOPAL

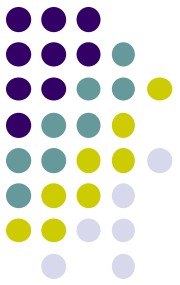


S. no.	Hindi Name	Botanical Name	Family
1	Amaltas	<i>Cassia fistula</i>	Caesalpiaceae
2	Achar	<i>Buchnanian lanzan</i>	Anacardiaceae
3	Asta	<i>Bauhinia racemosa</i>	Caesalpiaceae
4	Amla	<i>Emblica officinalis</i>	Euphorbiaceae
5	Bargad	<i>Ficus religiosa</i>	Moraceae
6	Baheda	<i>Terminalia bellerica</i>	Combretaceae
7	Bel	<i>Aegle marmelos</i>	Rutaceae
8	Baranga	<i>Kydia calycina</i>	Malvaceae
9	Dhaora	<i>Anogeissus latifolia</i>	Combretaceae
10	Gadhela	<i>Erythrina subrosa</i>	Fabaceae
11	Gular	<i>Ficus glomerata</i>	Moraceae

12	Gurar	<i>Albizia procera</i>	Mimosaceae
13	Harra	<i>Terminalia chebula</i>	Combretaceae
14	Karanj	<i>Pongamia glabra</i>	Fabaceae
15	Kullu	<i>Sterculia urens</i>	Combretaceae
16	Kusum	<i>Schliechera oleosa</i>	Fabaceae
17	Kaim	<i>Mitragyna Parviflora</i>	Sterculiaceae
18	Koha	<i>Terminalia arjuna</i>	Sapindaceae
19	Kumbhi	<i>Careya arborea</i>	Rubiaceae
20	Lasora	<i>Cordia dichotoma</i>	Combretaceae
21	Neem	<i>Azadirachta indica</i>	Lythraceae
22	Semal	<i>Bombyx ceiba</i>	Boraginaceae
23	Saja	<i>Terminalia elata</i>	Meliaceae
24	Saptaparni	<i>Alastonia scholaris</i>	Bombacaceae

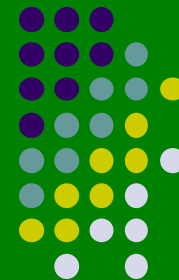


Exotic Species Planted by CPA



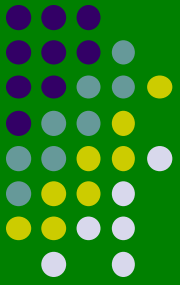
Local Name	Botanical Name
Akash Neem	<i>Millingtonia hortensis</i>
Ashok (false)	<i>Polyalthea longifolia</i>
Benamina	<i>Ficus benamina</i>
Cassia	<i>Cassia siamia</i>
Giripusp	<i>Gliricidia acuminata</i>
Gulmohar	<i>Delonix regia</i>
Jhad-phanoos	<i>Kigelia pinnata</i>
Majnoo	<i>Salix tetrasperma</i>
Nilgiri	<i>Eucalyptus spp</i>
Pink Cassia	<i>Cassia renigera</i>
Rain tree	<i>Samania saman</i>
Silver Oak	<i>Grevillea robusta</i>
Tabubia	<i>Tabubia argentia</i>
Tamra Phali	<i>Peltophorum pterocarpum</i>
(not known)	<i>Milletia ovalifolia</i>

DOMINANT SPECIES OF URBAN FORESTRY IN BHOPAL



BHOTJ WET LAND	URBAN
<i>Acacia nilotica</i>	<i>Cassia siamia</i>
<i>Leucaena leucocephala</i>	<i>Alstonis scholaris</i>
<i>Syzygium cumini</i>	<i>Pongamia pinnata</i>
<i>Syzygium fruticosum</i>	<i>Delonix regia</i>
<i>Pongamia pinnata</i>	<i>Thevetia peruviana</i>
<i>Bauhinia species</i>	<i>Bauhinia species</i>
<i>Terminalia arjuna</i>	<i>Dalbergia sisso</i>
<i>Thevetia peruviana</i>	<i>Leucaena leucocephala</i>
<i>Lagerstroemia speciosa</i>	<i>Eucalyptus spp.</i>
<i>Salix tetrasperma</i>	<i>Lagerstroemia speciosa</i>

Innovative Initiatives



- **Ecological garden**
- **Memorial forest**
- **My city Green city**
- **Eco-Parks**
- **Vidya Van**
- **Friends of Forest**
- **Greening of slum areas**
- **PPP with Industries**
- **Van-Mahotsava**
- **Involving Army in greening**
- **Celebrating green days**
- **Green Awards**

ECOLOGICAL GARDEN

- A world class Ecological Garden is being developed in 1750 ha urban forest area, just 11 kms from Bhopal centre
- The EG is based on the ecological concept and landscape design
- The area has been divided into natural eco-zones, viz arboretum, herbal, exotic, conservation, floral, aviary, waterscape etc
- 36670 saplings have been planted during 2008 and 2009
- The area will also be developed as an ecotourism destination



Memorial forest

- In the heartland of the capital the Smriti Van (Memorial Forest) has been established on revenue forest of nine ha.
- The citizens plant saplings on special occasions and in memories of their beloved at a cost of Rs 300/- per sapling.
- 377 citizens have planted saplings in 2009.
- Plantations by VIPs are carried out by FD.
- 3207 saplings have been planted by FD.



MY CITY GREEN CITY

- This is an outreach programme to involve the citizens in the plantation programme in a big way
- FD provides material and technical support at the door steps.
- About two lakh saplings have been planted by citizens through the programme.



Link Road – 3 - Ekant Park



Chinar Park

Glimpses of Roadside plantation in Bhopal



Karbala – VIP Road



VIP Road – Nur-e-sabah



Overview from Manua-Bhan ki Tekri



Palash Hotel Road

Glimpses of urban plantations in Bhopal



Bhadbhada Road



Law Academy Hillock

Eco-Parks

- There are 97 parks in the capital under the control of CPA - Forests (05), CPA - PWD (30), BHEL (12), Bhopal Municipal Corporation (50)
- Four Parks have selected to be developed as Eco-Parks in an area of 200 ha, based on ecosystem principles, and to be developed as ecotourism destinations.

Chunabhatti Swarn Jayanti Park	Kolar Road (56 ha)
Ekani Park	Link Road 3 (22 ha)
Patranagar Park	Link Road 3 (64 Acre)
Singarcholi Botanical Garden	Airport Road (50 ha)



Eco-Parks



Vidya-Van

- **Educational Institutions including Schools, colleges, technical and professional ones, and individual students are encouraged and supported to plant saplings in a big way.**
- **During 2008 and 2009, 24000 saplings have been planted under the programme.**
- **An MOU is signed between FD and the Institution for Technical support of FD and maintenance of saplings by the Institution.**

FRIENDS OF FOREST

- An informal platform has been facilitated by FD for the individual and institutional volunteers, who are concerned for the conservation.
- So far around 200 volunteers have joined and are meeting every month for the cause.
- FOF has taken activities like plantation, awareness generation, no plastic parks, substituting synthetic flags by paper ones, certification of Parks, Birding, conservation education, advocacy.. etc.

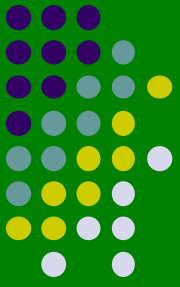
Greening of slum areas

- An initiative has been taken to involve Selected Slums in greening of the slum areas with the help of other line Departments, like housing and Environment, Urban Development, Municipal Corporation.**
- Species of Slum dwellers' choice have been planted through sub-committees.**
- Success has been limited but constant efforts will certainly make a breakthrough.**

Greening Partnership with Industries

- Under tripartite agreement (MPFD, AKVN and Industries), The Govindpura and Mandieep industrial Associations have made 2000 acres area available for greening through AKVN
- Roles -
 - MPFD – supply of quality planting stock and technical support
 - Industries - protection and maintenance
 - AKVN - Facilitator
- Plantation in 2009 - 1325 saplings

Private Sector



Some of the Private colonisers have developed excellent plantations in the colonies



Hariyali Mahotsav and VanMahotsav

- Every year the plantation season is celebrated as Hariyali Mahotsav to involve all the organisations and individuals.
- Van Mahotsav is the official celebration, mostly chaired by the HCM
- In 2009, about two lakh ten thousand saplings were planted under Hariyali Mahotsav

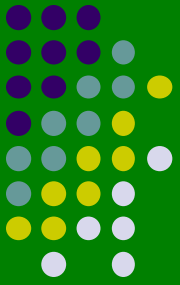


Greening through Army

- Army and paramilitary forces have been involved in greening in a big way and they have come forward on war footing.
- Around 11000 saplings have been planted by them during 2008 and 2009, and protection and maintenance are full proof.
- They are also a part of the FOF.



Green Calendar



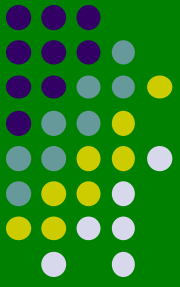
On all the environmental days celebrations, plantation has been made an essential activity

Green Calendar

Date	Day
January 5	National Birds Day
February -2	World Wetland Day
Feb 28	National Science Day
March 21	National Energy Day
March 21	World Forestry Day
March 22	World Water Day
March 23	World Meteorological Day
April 7	World Health Day
April 10	Arbor Day
April 18	World Heritage Day
April 22	Earth Day
May 12-13	World Migratory Birds Day

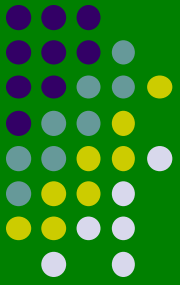
May 18	Plant conservation Day	
May 22	International Biodiversity Day	
May 31	Anti-tobacco Day	
June 5	World Environment Day	
July 11	World population Day	
September 16	World Ozone Day	
September 27	World Tree Day	
September 28	Green consumer Day	
October 1-7	World Wildlife Week	
October 3	World Habitat Day	
October 4	World Animal Welfare Day	
October 13	International day for natural disaster reduction	
November 14	Children's day	
December 2	Bhopal Gas tragedy day	
December 3	World Conservation Day	

Green Awards



- In order to encourage the individuals and institutions doing exceptional works in greening and urban forestry, awards are being given to individuals, educational institutions (schools and colleges), and other organisations.
- The corporate are being involved to sponsor cash awards.
- Frontline staff doing good work are also being awarded.

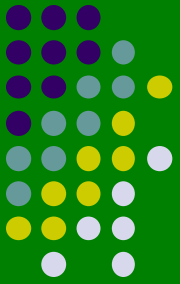
Urban Forests in Bhopal Master Plan 2010



The initiatives of FD for the development of urban forests have been acknowledged by the Bhopal Master Plan – 2021, which envisages that –

“Kerwa area would be developed on the basis of ecotourism according to the recommendations of Forest Department and forest areas of the city would be protected accordingly”.

Future Strategy



- PPP model for the development of Memorial Forest and Ecological Garden initiated.
- Development of exclusive management plan for the Urban Forests (by CPA in consultation with FD).
- Inclusion of management of urban forests in Bhopal Master Plan.
- Transfer of revenue forests title to FD for sustainable management.
- Development of potential urban forests (like Kerwa, Memorial Forest, Ecological Garden) as ecotourism destinations (by MPEDB through FD).

गुह्यं ब्रह्म तदिदं ब्रवीमि
न मानुषात्श्रेष्ठतरं हि किञ्चित्

—वेद व्यास

मैं यह परम रहस्य बताता हूँ, इस लोक में मनुष्य से
बढ़कर श्रेष्ठ कुछ नहीं है।

Rays of hope.....

Greening for Global Warming Mitigation

Thank You
THANK YOU