



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

GREENING CHANDIGARH

ACTION PLAN OF GOVERNMENT
DEPARTMENTS/ AGENCIES:

Though Chandigarh, the City beautiful, is a green city yet there is need to make it greener, clean and serene. The task is to be carried out at two levels, simultaneously, by the citizens of Chandigarh as well as by the Government agencies. Each level has its unique contribution. The citizens, while planting only a few trees each at best, will learn to care and nurture a tree, and be sensitised to the need for trees. Tree will then become more than a catchword and will be a symbol of a healthy and green city, in the making of which, the citizens would be proud to be a part.

However, these citizen's efforts must be supplemented by Government agencies by carrying out systematic tree plantations. The Departments like Forest Department, Municipal Corporation and Horticulture Wing of Engineering Deptt., have to play a significant role in such large scale plantations. In order to ensure better and higher survival rate of the saplings planted by various Govt. agencies, frequent watering, particularly in dry months should be ensured.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

Greening Action Plan of various Departments and Government Agencies during 2010-11

1) **Forest Department, Chandigarh Administration**

The Department of Forests and Wildlife has taken up multifarious activities to increase and improve the forest cover through massive plantation and seed sowing especially in the Reserve Forest areas, Sukhna Wildlife Sanctuary, Botanical Garden and southern sectors of Chandigarh.

Seedlings of various species are being raised in seven Nurseries located at different sites in Chandigarh. Seedlings from five Forest Department nurseries are distributed free of cost to educational institutions, religious institutions, non-Government organisations, Resident Welfare Associations, Market Associations and the public for planting on public and private lands. During the year 2010-11, the Department will be distributing 20,000 saplings of trees, shrubs & medicinal herbs free of costs. The Department will be planting 89,500 trees and 500 shrubs saplings besides seed sowing in 3,00,000 patches of indigenous species and 1,00,000 stem cuttings of soil & moisture conserving species in Sukhna Wildlife Sanctuary. The details are given at Annexure-I.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

Detailed highlights of the plantation activities of Forest Department are as follows:

A) Development of Botanical Garden

Chandigarh, the 'City Beautiful' is blessed with a climate that is suitable for accommodating large varieties of flora. It is worthwhile setting up a Botanical Garden with a purpose to conserve the flora of the region as well as exotic and of near extinct kind of flora. With this background, Chandigarh Administration has established a Botanical Garden near village Sarangpur. The Botanical Garden is spread over 176 acres of land.

The garden consists of 15 Botanical sections:-

- 1. Medicinal Plants Section:** Medicinal Plants Garden has been developed over 30 acres of land. In the Medicinal Plants Garden, medicinal trees of more than 80 species like *Harar, Bahera, Amla, Neem, Arjun, Maulsari, Bael, Kathal, Kachnar, Camphor, Lasura, Gular, Rudraksha, Jamun, Sita Ashok, Khirhi, Putrinjeeva* etc. have been planted alongwith more than 70 varieties of medicinal herbs like *Giloe, Akarkara, Gokhru, Ghritkumari, Aswagandha, Sarpagandha, Tulsi, Mehndi, Kalmegh Bhrigraj, Mandukparni, Brahmi, Bansa, Vacha* etc.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

2. **Bambusetum:** 20 varieties of bamboo have been planted along two seasonal nallahs passing through the Botanical Garden.
3. **Ficus grove:** 21 varieties of ficus sp. have been planted in the Ficus grove section. Few more species will also be added.
4. **Arboretum:** About 80 varieties of different kinds of trees have been planted. More than 50 species of trees will be added to this section in future.
5. **Ornamental section:** 40 species of ornamental trees have been planted in this section.
6. **Pinetum:** 12 coniferous species including pines have been planted. 5 more will be added to this section.
7. **Palmatum:** 19 species of Palms have already been planted.
8. **Sacred groves:** Sacred trees like Rudrakashya, Bael, Sal, Pipal, Bar, Ber, Christmas tree, Khejri, Teak, etc. have been planted in this section. This section has been developed in the form of a 'cosmic tree'. Each branch of this tree represents a sacred vatika.
9. **Cactus & Succulent section:** In this section three mixed and four individual rockeries have been established. More than 100 varieties of cactus and succulent plants have been planted in the rockeries.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

One polycarbonate house is also under construction in which exotic varieties will be planted.

10. **Aquatic Plants section:** The section is having more than 30 species of aquatic plants.
11. **Japanese garden:** A Japanese garden is under the process of development over 4 acres of land.
12. **Rare Plants section:** This section will cover 5 acres of land. Plants of rare and endangered species will be planted in this section.
13. **Tropical rain forests section:** This section will cover 4 acres of land to accommodate trees of tropical rain forests region. More than 12 species have been planted in this section.
14. **Bulbous garden:** This section consists of bulbous plants of different varieties like Galidolus, Dafodil, Nargis, Lilluim, Tulip, Iris etc.
15. **Nutrition garden:** This section is having more than 15 species of fruit trees.

The other salient features of Botanical Garden are

- i) Three Waterbodies along seasonal rivulets;
- ii) A small lake which spreads over 6 acres of land;
- iii) Meditation huts and watch towers,
- iv) A water feature and channel in cactus garden.
- v) 5 km. long cycle track,
- vi) 6 km. long cement concrete pathways,



GREENING CHANDIGARH ACTION PLAN 2010-2011 Chandigarh Administration

- vii) A Nursery with green shade net house and poly house,
- viii) Office-cum-Nature Interpretation Centre.

Tourism Department and Forest Department of Chandigarh Administration are establishing Reception-cum-Nature Interpretation Centre, Meditation Huts, Tree top & Public conveniences in the Botanical Garden under Eco-Tourism scheme of Ministry of Tourism, Govt. of India.

The Botanical Garden has been given continuity to natural forests (Patiali-ki-Rao forests) spreading over 350 acres of land with the help of a causeway built on Patiali-ki-Rao. This natural forest will act as 'Nature Park'.

This natural forest is a thick forest with trees of *Shisham*, *Khair*, *Jamun*, *Kikar*, *Arjun* etc. A Nature track about 3 km. Long has already been developed in this forest which will also be upgraded and maintained. A small Nursery and Orchidarium have also been developed in this forest. Two beautiful lakes spreading over 15 acres and 3 acres of land have been created in these forests during 2006-07 & 2007-08. About 600 migratory birds have arrived in this new lake during this winter.

B) Establishment of Herbal Gardens

To promote awareness & education about Ayurveda & Indian System of Medicines, Department is assisting & advising AYUSH Department, schools, colleges & University to establish small



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

Herbal gardens. With the active involvement of Schools and Colleges, Herbal Gardens in 41 schools, 5 Colleges & one in Panjab University, have been established. Three Herbal gardens have been developed in Ayurveda Dispensaries. During 2010-11, more herbal gardens will be added in the city.

B) Soil Conservation and Habitat improvement in Sukhna Wildlife Sanctuary (Sukhna Lake Catchment)

Sukhna Wildlife Sanctuary spreading over an area of 25.42 sq.km. is the part of Sukhna Lake catchment area. To control inflow of silt to Sukhna Lake and for the improvement of natural habitat for the wildlife, the Department has carried out soil conservation measures like construction of silt retention dams and development of water bodies, check dams, gully plugging, choe training works, spurs and grade stabilizers. Kana and arundo-donax have been planted along the choe banks to stabilize the soil. Silt retention dams and check dams have been successful in retaining water, which is available throughout the year for the wildlife. Massive plantations and seed sowing of indigenous species in the sanctuary is responsible for the development and improvement of natural habitat for the wildlife in the sanctuary. Due to tremendous improvement in the natural habitat for the wildlife, there is a proliferation of wildlife in the sanctuary. Wild animals like Sambhar, Spotted deer, Wild boar, Porcupine, Jackals, Civet, Rabbit and a wide variety of birds including Red Jungle fowl and



GREENING CHANDIGARH ACTION PLAN 2010-2011 **Chandigarh Administration**

Peacocks are found in abundance in the Sanctuary. Massive afforestation supplemented with soil conservation measures in the Sukhna catchment area have resulted in sharp decrease in the inflow of silt to Sukhna Lake.

During 2010-11, two no. of existing silt up earthen dams will be remodeled & twelve numbers of silted up dams will be desilted to further arrest the silt coming from the upper catchment areas and steep slopes. Ten check dams and two watch towers will be constructed and the height of the four numbers of existing water holes will be increased. For smooth and hindrance free flow of the water in the choes, the silt to the tune of 1000 cubic meter will be removed. To further improve the quality and biodiversity of the forests, enrichment plantation will be carried out, 55,000 saplings of the species like Neem, Khejri, Phalahi, Peepal, *Bamboo*, *Jungle Jalebi*, Shisham, Mango, Jamun, Guava *and flowering species* will be planted. On the steep slopes, sowing of the seeds, in 3, 00,000 patches, of *Jungle Jalebi*, Khejri, Phalahi, Neem, Kikar and Shisham will be carried out. To conserve the soil along choe banks, 1, 00,000 stem cuttings of *Arundo-donax* & *ipomea* will be planted along choe banks.

D) Enrichment planting in the Reserve Forest areas

The Department is regenerating, protecting and conserving 700 hectares of Reserve Forests in the form of Sukhna choe



GREENING CHANDIGARH ACTION PLAN 2010-2011 **Chandigarh Administration**

Reserve Forests, Lake Reserve Forests and Patiala-ki-Rao forests. To improve the quality and density of vegetation in these forest areas. 29,000 saplings of the fruit species like *Neem*, *Mango*, *Guava*, *Jamun*, *Peepal* etc. and flowering trees like *Kachnar*, *Amaltas*, *Tecoma*, *Gulmohar*, *Semul*, *Jacranda* etc. will be planted during 2010-11. These forests provide a dense green belt which act as an effective wind break.

E) Plantations in the Southern Sectors of the City

In southern sectors, department has raised mixed plantations over 110 hectares of land from Sector 39 to Sector 55 on both sides of outer Dakshin Marg. These plantations have been maintained regularly. Apart from providing good shade and green cover, these plantations act as carbon sink and windbreak and thus help in soothing the microclimate of the highly populated southern sectors. 5000 saplings will be planted in the southern sectors during 2010-11.

F) Establishment of Butterfly Park in Sector-26

The Department is under the process of establishment of Butterfly Park spread over 7.0 acres of land in Sector-26. This site will also house Museum on Butterfly, Cafeteria, Visitors shed etc.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

G) Establishment of World class Aquarium

Chandigarh Administration is under the process of establishing a world class Aquarium which will be the part of Aquatic Park near regulator end of the Sukhna Lake. This Aquarium will have fresh and salt water fish and other aquatic flora and fauna. It will spread over three Acres of land. Establishment of Aquarium is a unique project which requires high level of technical expertise on the matter. A consultant has been appointed by the administration for Bid Process management.

H) Free distribution of saplings

The Department will be distributing 20,000 saplings free of cost of the following species from its five nurseries mentioned at page no.22 (G-2):-

Neem, Arjun, Amla, Amaltas, Bahera, Peepal, Shisham, Bakain, Kathal, Kachnar, Jamun, Maulsari, Milletia, Papri, Makhan tree, Putrinjeeva, Bhindi tree, Kusum, Lagerstroemia, Cassia glauca, Gulmohar, Bottle brush, Silver Oak, Guava, Siris, Alstonia etc. and wide varieties of medicinal shrubs, herbs & climbers.

I) Linkages between department and NGO's, Resident Welfare Associations and Educational Institutions

The list of all the five Forest Nurseries will be circulated to all NGO's, Resident Welfare Associations and educational institutions from where saplings free of cost may be obtained and a massive campaign will be undertaken to sensitise students, NGO's &



GREENING CHANDIGARH ACTION PLAN 2010-2011 **Chandigarh Administration**

Resident Welfare Association's to participate in afforestation activities. Students may act as conduits to help increase awareness about the need to improve green cover through greening of Colleges and Schools. This has a potential to lead into a massive green movement. To impart environmental education and create awareness among students, Environment Department has formed Environmental Societies & Eco-Clubs in more than 140 educational institutions of Chandigarh. The project of the formation of Eco-Clubs in all remaining Government Schools, Government aided Schools and all recognised schools in U.T. Chandigarh will be continued during 2010-11. Under this Scheme, Government will provide financial assistance and other publicity materials to the Eco-Clubs for plantation activities, raising of Nursery, organising nature camps, debates, seminars, quiz and essay competitions etc. on environmental issues.

2) Municipal Corporation of Chandigarh

The Municipal Corporation of Chandigarh will undertake a massive tree plantation drive in all Sectors. Municipal Corporation is managing about 2150 small and big Parks in the city. 1800 parks have already been developed and the rest are in the process of development. The Corporation will be planting 9936 tree saplings and 26,696 shrubs & 530 climbers during 2010-11 along roads, parks, green belts, Rehabilitation Colonies, City Centre Sector 17, Manimajra Complex, Dadu Majra Dumping Ground, Shivalik



GREENING CHANDIGARH ACTION PLAN 2010-2011 Chandigarh Administration

garden, Manimajra etc. The details of the plantations are at **Annexure-II.**

On the road side plantations, the emphasis will be on pollution abating and shade giving trees like Pilkhan, Arjun, Kusum, Mohagony, Bahera, Alstonia etc. In Parks, gardens and green belts, ornamental & flowering trees will be planted in group to give mass effect. This will beautify these areas as different trees will be in bloom in different timings throughout the year. Municipal Corporation is maintaining various Gardens like Terraced Garden Sector-33, Fragrance Garden Sector 36, Shanti Kunj Sector-16, Mini Rose Garden in Sector-24, Moonlit Park Sector-22, Shivalik Garden, Manimajra, Pinkcassia Garden, Sector-29, Garden of Annuals Sector-44, Hibiscus Garden Sector 36, Jawahar Park Sector-9, Dream Park Sector-23, Sensory park sector 26 Floral Garden Sector 15, Topiary Park Sector 35 ,phase I and II, Leisure Valley Sector 36, Garden of Shrubs Sector-46, Poinsettia and Ixora Garden Sector-11, Jasmine Garden Sector-28, Gulmohar Garden Sector-27 and Mango grove along Purav Marg. Special emphasis is laid on the cleanliness and beautification of these gardens. Some green belts are also developed & maintained by the Municipal Corporation such as green belt of Sector; 15, 18, 19, 20, 21, 23, 24, 27, 28, 30, 32, 33, 34, 35, 37, 38, 39, 40, 42, 43, 44, 45, 46, 47 and a small Cactus Park at Ram Darbar area. Development of some other green belt is under pipeline such as sector 7, 51, 52, 56 and Maulijagan.



GREENING CHANDIGARH ACTION PLAN 2010-2011 **Chandigarh Administration**

Municipal Corporation is also maintaining a Plant Nursery in Sector 29-B in which shade giving and ornamental trees and shrubs are propagated which cater the needs of the plantation in the city as well as these are sold to the public. A small Rose Plant Nursery is being maintained in which varieties of Roses are propagated and sold to the public.

Municipal Corporation will ensure treatment of each and every diseased and infected tree within their jurisdiction. Special campaign will be undertaken by Municipal Corporation against Mango mealy bug and white ant attack in the city. Considerable number of dead and dry trees have also been removed by the Municipal Corporation. Dead & dry trees will be removed.

Chrysanthemum Show is being held every year in the Terraced Garden in the month of December in which Government, semi Government, private institutions and individual growers take part. This show is appreciated by one and all.

3) Horticulture Division of Engineering Department

The Horticulture Division maintains plantations on different roads. Further, this Division looks after rose garden, leisure Valley and other gardens in the city to provide a healthy environment to the residents.

During 2010-11, Horticulture Division of Engineering Department will be planting 6760 nos. of trees and 16150 nos. of shrubs, creepers etc. along different roads, parks and Leisure



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

valley etc. Hardy, shade giving and pollution abating species like Arjun, Harar, Bahera, Ficus retusa, Mousari will be planted along road sides and gardens. At all the entry points of the roads to Chandigarh and at various vintage points in gardens, green belts & parks, the Department will plant flowering trees in group to give mass effect to the flowers in bloom. Different group of trees will be in flowering during different season. This will add to the aesthetics of the area. Details are available at **Annexure-III**.

In addition to road side plantations, the Department is looking after the following Gardens:-

- a) **Rose Garden:** The beautiful Zakir Rose Garden is situated in Sector-16, Chandigarh. The foundation stone of the garden was laid by Dr. M.S. Randhawa, then Chief Commissioner of Union Territory, Chandigarh. The total area of the Rose Garden is 42.07 acres with an area of fine grass 28.96 acres, Rose Beds 6.61 acres, Foot path 2.00 acres. 1200 nos. of different ornamental trees, 4700 nos. Presently rose garden has 593 different rose varieties which were planted more than 25 years back and now these have become outdated and outlived and are not giving desired number of flowers therefore rejuvenation of existing rose garden will be taken up in next two years. In which many other varieties like Rose Hybrid Tea



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

bushes, Rose Hybrid Tea Standard, floribunda bushes
Rose miniature, climbers, ramblers etc will be added.

For gap filling of each variety of rose a nursery,
exclusively for the rose garden, will be developed in the
rose garden.

- b) **Leisure Valley:** The Leisure Valley was developed along the bank of a choe (Nallah), Sector-10, Chandigarh. The total area of the valley is approximate 70 acres. There are 3065 plants of various kinds. Along with choe (nallah) big bamboo plants are planted which give good look and greenery. There are 200 flowerbeds of different colour and varieties in the valley.
- c) **Bougainvillea Garden:** The Bougainvillea garden is situated in Sector-3, Chandigarh. The total area of the Bougainvillea garden is approximate 20 acres. There are 668 nos. of different varieties of bougainvillea plants in the garden and 525 nos. of ornamental plants of different kinds are also planted.
- d) **Bulbous Garden:** Bulbous garden was developed on the bank of a choe (Nallah) in Sector-23, Chandigarh. The total area of the garden is approximately 3.6 acres. There are 59 nos. of bulbous beds of different colors, different varieties in the garden. There are 560 nos. of shrubs and 135 nos. of different kind of trees in the garden.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

- e) **Rajindra Garden:** The beautiful Rajindra Park is Situated in Sector-1, Chandigarh. The total area of the garden is approximately 98 acres. Mango varieties of different kinds like Safeda, Chausa, Dusheri, Langra, Kalmi etc. Chiku, Amla & Ber tress are in this garden.

Apart from the above mentioned gardens department is planning to add different types of garden/themes, within the existing one or at various new places in the city, like

- Japanese garden
- Sunken garden
- Hanging garden
- Cactus garden
- Sculpture garden
- Garden of Coniferous
- Indoor Botanical garden
- Cottage garden
- Transit garden
- Formal garden
- Valley of Spring in Southern Sector.



GREENING CHANDIGARH ACTION PLAN 2010-2011
Chandigarh Administration

4) **Educational Institutions and other organisations**

During 2010-11, 7000 numbers of trees and 13,000 nos. of shrubs/herbs are proposed to be planted by school & college students in and around school & college premises/ complexes. These saplings will be nurtured and maintained by the students.

Other institutions and organisations like Central Public Works Department [Horticulture], Chandigarh Housing Board, Hospitals, Dispensaries, Rotary Clubs, Lion's Club, N.G.O.'s, Resident Welfare Associations, village Panchayats, farmers, Market associations, religious institutions and individuals etc. will also be planting 8,000 trees and 12,000 shrubs/herbs altogether during 2010-11. The details of the proposed plantations are shown at Annexure-IV.

Saplings will be distributed free of cost to all these institutions/organizations by Forest Deptt. of U.T. Administration. The Horticulture Wings of Municipal Corporation as well as Engineering Department will also be distributing/selling plants at subsidized rates.



Students visiting Botanical Garden, Chandigarh



Avenue plantation in city



A herd of Sambhar at rest in Lake Resrved Forests behind Sukhna Lake