



GREENING CHANDIGARH ACTION PLAN 2011-2012
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.



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Greening Action Plan of various Departments and Government Agencies during 2011-12

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 eight Nurseries located at different sites in Chandigarh. Seedlings from six 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 2011-12, the Department will be distributing 25,000 saplings of trees, shrubs & medicinal herbs free of costs. The Department will be planting 1,00,000 tree 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.**

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



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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.
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 spp. 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.



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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. The work of construction of the Polycarbonate house is almost over and various exotic grafted species have been planted. The process will continue this year too.
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. A water body has already been developed.
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.



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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,
- 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. Large no. of migratory birds have arrived in this new lake during this winter.



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Nursery, Botanical Garden, Sarangpur



Foot Bridge, Botanical Garden, Sarangpur



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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 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 2011-12, more herbal gardens will be added in the city



Herbal Garden at Botanical Garden, Sarangpur village

C) 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



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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 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 2011-12, 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 five 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 5000 cubic meter will be removed. To further improve the quality and biodiversity of the forests, enrichment plantation will be carried out, 68,000 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.



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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 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 2011-12. 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. 2000 saplings will be planted in the southern sectors during 2011-12.

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. Following works at Butterfly Park have already been carried out by the department :-

- Host plant Nursery for selected species
- Plantation of selected host plants
- Interpretive boards have been placed
- Signage depicting the details of host plant & related butterfly has been placed.



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- Cleaning and maintenance of the existing paths is in progress

Following remaining works are to be carried out :

- Landscaping & Beautification of the garden in association with Panjab Agricultural University (PAU).
 - Plantation of Annuals, Climbers , shrubs etc
 - Plantation of support foliage plant of butterflies
- Butterfly Rearing House in association with PAU, Ludhiana
 - Green Shade Net House (30'-18')
 - Host Plant, Nectar Plants

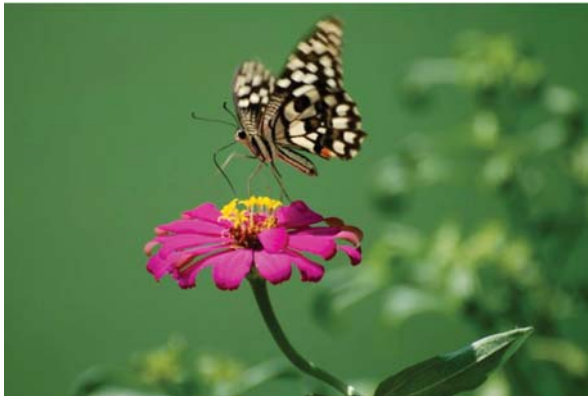
This site will also house Museum/ Interpretation Centre on Butterfly, Visitors shed etc.



Butterfly Park, Sector -26, Chandigarh



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Photographs by: Kulbhushan Kanwar

Butterflies at Butterfly Park

G) Free distribution of saplings

The Department will be distributing 25,000 saplings free of cost of the following species from its six nurseries :-

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.



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

The list of all the six 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 & Resident Welfare Association's to participate in afforestation activities. The list of nurseries and mobile no. of contact persons have also been put on Chandigarh Administration website at http://chandigarh.gov.in/dept_forest.htm 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 2011-12. 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.



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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 2350 small and big Parks in the city. 2000 parks have already been developed and the rest are in the process of development. The Corporation will be planting 12,006 tree saplings and 30,826 shrubs & 3910 climbers/creepers during 2011-12 along roads, parks, green belts, Rehabilitation Colonies, City Centre Sector 17, Manimajra Complex, Dadu Majra Dumping Ground, Shivalik 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, Hibiscus Garden Sector 36, Shanti Kunj Sector-16, Mini Rose Garden in Sector-24, Moonlit Park Sector-22, Nehru Park Sector-22, Shivalik Garden, Manimajra, Pinkcassia Garden Sector-29, Garden of Annuals Sector-44, Jawahar Park Sector-9, Dream Park Sector-23, Sensory Park Sector 26, Floral Garden Sector 15, Topiary Park Sector 35 Phase I and II, Dahlia Garden Sector 36, Garden of Shrubs Sector-46, Poinsettia and Ixora Garden Sector-11, Jasmine Garden Sector-28, Gulmohar Garden Sector-28, Gulmohar Garden Sector-27, Cycus Palm Garden Sector-15 and Mango grove along Purav Marg. Special emphasis is laid on the cleanliness and beautification



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of these gardens. Some green belts are also developed & maintained by the Municipal Corporation such as green belt of Sectors; 2, 7, 15, 18, 19, 20, 21, 23, 24, 27, 28, 30, 32, 33, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 61 and a small Cactus Park at Ram Darbar area. Development of some other green belt/ garden is under pipeline such as sector 51, 52, 56, Maulijagan and Valley of Animals Sector-49.

Municipal Corporation is also maintaining a Plant Nursery in Sector 29-B in which shade giving and ornamental trees 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.



Rose Garden, Sector 16, Chandigarh



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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 and more 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.



Varieties of flowers at Annual Chrysanthemum Show
at Terraced Garden, Sec.33 on 10.12.2010

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.



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During 2011-12, Horticulture Division of Engineering Department will be planting 8925 no. of trees, 8730 nos. of shrubs/ creepers & 21500 no. of other kinds, along different roads, parks and Leisure valley etc. Hardy, shade giving and pollution abating species like Arjun, Harar, Bahera, Ficus retusa, Moulisari 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**.



Rose Garden, Sector 16, Chandigarh



Rose Garden, Sector 16, Chandigarh



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Rose Garden, Sector 16, Chandigarh



Bougainvillea Garden, Sector 3, Chandigarh



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

- a) **Rose Garden:** The star attraction of Chandigarh, the Zakir Rose Garden is situated in Sector-16, Chandigarh. The foundation stone of the garden was laid by Dr. M.S. Randhawa, the 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. The Rose Garden which was designed 40 years back had 593 varieties with plants in declining condition. They had also outdated and were not giving desired number of flowers, therefore, rejuvenation of existing Rose garden has been taken up with a unique concept and design given by Dr.S.K.Narula, Sr.Horticulturist of Punjab Agricultural University and the process will continue in next two years. This has been redesigned by making sections named after Great World Personalities, on funny/unusual names, varieties named after countries/cities, named after fruits, etc. and Rose Hybrid Tea floribunda bushes, Rose miniature, climbers, ramblers etc has been added 32,500 roses against 825 varieties, 50 nos. bowers, 2100 no. shrubs, one new tubewell, new fountains and play activities for children. For gap filling varieties suitable for each section will be procured for nursery, exclusively for the roses, will be developed in the Rose garden. Also 8 acre area of Rose Garden has been re- grassed.



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- 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 3165 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 718 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 varieties in the garden. There are 700 nos. of shrubs and 160 nos. of different kind of trees in the garden.
- 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. Gap filling of Mango varieties will also be done.



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Theme based Gardens:

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 in Sector-31
- 🌳 Garden of Palm in Sector-42
- 🌳 Garden of Silence at Regulator End of Sukhna Lake
- 🌳 Sculpture garden
- 🌳 Garden of Conifers in Sector -52
- 🌳 Valley of Spring in Southern Sector -53
- 🌳 Valley of Animal in Sector-49

4) Educational Institutions and other organisations

During 2011-12, 9000 numbers of trees and 16,000 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 2011-12. 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.