

Extensive tree planting in Kuala Lumpur helps to make Malaysia a "Garden Nation"



A historical perspective of urban tree planting in Malaysia

M. Sreetheran, E. Philip, M. Adnan and M. Siti Zakiah

Tree planting has played an important part in the greening of Malaysia's cities, from the eighteenth century to the recent campaign for a "Garden Nation".

Trees and vegetation provide beauty and benefits to city residents. Trees along streets and in parks, around homes and businesses and in natural areas throughout the city provide improved air and water quality, savings from decreased heating and cooling costs and increased property resale values. Urban greenery provides opportunities for recreation and makes neighbourhoods more pleasing.

The greening of urban Malaysia has focused primarily on beautification and has mainly been the province of horticulturists, landscapers, nursery workers, town planners and architects, with negligible inputs from foresters. Perhaps for that reason, the term "landscaping" has been used more widely than "urban forestry" by government and private institutions, politicians, stakeholders, academicians and the public. However, this does not mean that tree planting has not been given a priority in

Malaysia's cities. This article highlights the development of urban tree planting in Malaysia from a historical perspective and outlines some challenges and prospects for its continued development.

The development falls loosely into three phases: the initiation of greening prior to independence; a more extensive greening programme in the 1970s, 1980s and 1990s; and the campaign for a Garden Nation of the past ten years (Figure 1). Over the course of this development, Malaysian cities have seen great changes in species selection, tree planting and tree maintenance – in other words a transition towards improved arboricultural practices.

GREENING PRIOR TO INDEPENDENCE

The earliest urban tree planting in Malaysia was recorded more than a century ago. *Pterocarpus indicus* (angsana¹) was reported to have been planted in 1778 in

M. Sreetheran, E. Philip and M. Adnan are Research Officers at the Forest Research Institute Malaysia (FRIM), Kuala Lumpur, Malaysia. M. Siti Zakiah is the Deputy Director of the Landscape and Urban Cleansing Control Department of the Kuala Lumpur City Hall, Malaysia.

Greening before independence	Planting of Angsana trees by the British colonial in Penang, 1802 Kuala Lumpur Lake Gardens, 1888 Taman Tasik Titivangsa Greening before independence Penang Botanical Garden Taiping Lake Garden Widespread urban tree planting by the Departments of Forestry, Agriculture and Public Works, 1920s and 1930s
Dawn of greening programmes	Greening programme by the City Hall of Kuala Lumpur, 1973 Dawn of greening programmes City Hall Beautification Unit upgraded into a department, 1979 Establishment of a Landscape Unit within the Department of Town and Country Planning, 1981 Federal Territory (Planning) Act 1982 (Act 267) stipulated rules and regulations for planting, cutting and conservation of trees Greater emphasis on the concept and direction of urban tree planting in the Structural Plan of Kuala Lumpur, 1984 Public Parks Monitoring and Adjustment Division created within the Department of Town and Country Planning, 1990
Towards a Garden Nation	Tree Preservation Order from the Town and Country Planning Act, 1995 Landscaping the Nation, 24 May 1995 National Landscape Guidelines, July 1995 Establishment of National Landscape Department, 1996 Towards a Garden Nation Nationwide Tree Planting Campaign, 3 March 1997 Landscape Master Plan for every city or town council Landscape Management Plan Enhanced professionalism in the landscape industry National Landscape Competition by the Ministry of Housing and Local Government
Options ahead	Kuala Lumpur Structure Plan 2020 Kuala Lumpur Landscape Master Plan

1

Timeline of Malaysia's urban greening

Malacca (Koenig, 1894) and in 1802 in Penang (Burkill, 1966). Owing to the beauty of its spreading crown and ease of propagation, *P. indicus* fast became a popular tree for urban planting and remained so until the 1990s in Malaysia and Singapore (Philip, 1999). However, in 1935 these trees were reported to be dying rapidly in Malacca, Penang and Singapore because of an unknown disease (Furtado, 1935). Infected trees were removed immediately in an attempt to contain the spread of the disease, and there were no further reports until the

same symptoms were observed again in 1985 in Singapore and in 1992 on the eastern coast of Peninsular Malaysia (Sanderson, 1992; Philip, 1999). This time the causal agent was determined to be *Fusarium oxysporum*. As a result of this disease, the popularity of ang-sana dropped. Many argued that the high population density of the species contributed to the epidemic. Angsana is currently being replaced in urban plantings by many other indigenous or exotic species in Malaysia.

More urban tree planting activities were undertaken with the establishment of the Federated Malay States Forestry Department in 1901. Through collaboration with the Department of Agriculture and the Public Works Department

on roadside tree planting programmes, local tree species such as *Syzygium grande* (kelat jambu), *Millettia atropurpurea* (tulang daing), *Peltophorum pterocarpum* (yellow flame), *Mesuaferrea* (penaga lilin) and *Lagerstroemia speciosa* (bungor) were widely planted in urban areas in the 1920s and 1930s (Adnan and Abdul Latiff, 1993). Other species that were introduced during those years included *Arfeuillea arborescens* (hop tree), *Ceiba pentandra* (kapok tree), *Andira inermis* (brown heart), *Spathodea campanulata* (African tulip), *Jacaranda filicifolia* (jacaranda) and *Stereospermum fimbriatum* (snake tree) (Wee and Corlett, 1986).

During the colonial era little was known about the properties and needs of indigenous species, and well-known non-native species (e.g. *Cassia fistula*, *Swietenia* spp.) were introduced to speed up the process of revegetation in the harsh urban areas (Chee and Ridwan, 1984). Subsequently, public parks and botanical gardens such as the Taiping Lake Gardens, the Kuala Lumpur Lake Garden and the Penang Botanical Garden became popular, and additional spe-

The greening of urban Malaysia has focused primarily on beautification: planting a Kuala Lumpur street with coconut palms (*Cocos nucifera*) fosters a tropical image



M. SREETHARAN

¹ Common names given for species in this article are those used in Malaysia; some species may be more widely known under other names in other countries.



City parks are major attractions for recreation and tourism – pictured, a landscape with indigenous species at Kuala Lumpur City Centre (KLCC) Park

cies from different parts of the world were introduced, were planted widely and soon became naturalized (MARDI, 1993).

The Kuala Lumpur Lake Garden was initiated in 1888 based on the idea of A.R. Venning, the Chairman of the Sanitary Board of Kuala Lumpur, to create a place for healthy activity, recreation and relaxation for the public. With a modest allocation approved by the governor from public funds, the area was rehabilitated and planted with ornamental palms and shrubs. The scheme also had the support of Cheow Ah Yeok, a wealthy benefactor who was an enthusiastic gardener and contributed a hundred *chempaka* (*Michelia* spp.) and orange trees (*Citrus* spp.) to the first year's planting (Gullick, 2000). Today, these mature parks are highlights of the urban green spaces in Malaysia and major tourist attractions for recreation (Adnan and Abdul Latiff,

1993). Many additional parks such as Titiwangsa Park, Permaisuri Park, Bukit Jalil Park, Lembah Kiara Recreational Park, Menjalara Park, Datuk Keramat Park and Rimba Kiara Park have been established in Kuala Lumpur to cater to recreational and amenity demand from the public.

DAWN OF GREENING PROGRAMMES

The first well-planned greening programme in Malaysia began in the Federal Territory of Kuala Lumpur in 1973 with the establishment of the Beautification Unit under the Beautification Programmes of Kuala Lumpur (Ayoub, 1989). In 1979, the unit was upgraded into a department. Today it is known as the Landscape and Urban Cleansing Control Department. The initial programme of "No Roads Without Trees" set into motion a highly successful and

sustained effort to maintain the green environment of the city wherever possible and to bring greenery into the concrete jungle via extensive tree planting and landscaping. Among the popular tree species used were:

- *Pterocarpus indicus* (angsana);
- *Peltophorum pterocarpum* (yellow flame);
- *Samanea saman* (rain tree);
- *Cinnamomum iners* (wild cinammon, Indian cassia, kayu manis);
- *Lagerstroemia speciosa* (bungor);
- *Ficus benjamina* (fig);
- *Swietenia macrophylla* (mahogany);
- *Delonix regia* (red flame);
- *Mimusops elengi* (bunga tanjung);
- *Millettia atropurpurea* (tulang daing).

The Kuala Lumpur City Hall started a serious urban tree planting programme in 1973 (see Table) with its famous "instant tree planting" concept: large stem cuttings were used for planting, creating a green city almost overnight (Ayoub, 1989). The City Hall classified five areas of interest in the tree planting programme:

- roadside planting;
- planting in public parks and open spaces;
- planting along highways or expressways;
- planting within industrial areas and housing estates;
- planting or landscaping within major developments in the city centre.

Number of trees planted in Kuala Lumpur, 1972–1988

Year	No. of trees planted
1972–1982	~130 000
1983	~13 000
1984	14 753
1985	20 137
1986	18 898
1987	13 858
1988	12 593
Total	~231 000

Source: Ayoub, 1989.

The city greening programme of Kuala Lumpur was properly instituted in the planning process with the Federal Territory Planning Act of 1982 (Act 267), which stipulated the rules and regulations for planting, cutting and conservation of urban trees.

Apart from the tree planting programme, an emphasis on urban tree planting has also been stated in the Kuala Lumpur Structure Plan (Kuala Lumpur City Hall, 1984). This includes:

- planting of shade trees;
- establishment of theme gardens;
- beautification and ornamental plantings;
- slope planting;
- roadside planting and beautification;
- ground cover.

TOWARDS A GARDEN NATION

The past decade saw many local authorities and even property developers in Malaysia involved in greening and beautification programmes. Property developers incorporated green elements and even created nature-based themes to reflect public interest in environment-friendly development.

This development was in line with government initiatives for creating and preserving beautiful landscapes in the country. The Landscaping the Nation programme was initiated in May 1995. It paid particular attention to tree planting along roads and rivers, together with the establishment of nurseries by state and local governments to ensure ample plant supply.

In July 1995 the Department of Town and Country Planning published National Landscape Guidelines (Jabatan Perancang Bandar dan Desa, 1995), which serve as a reference for developing and maintaining landscaped areas, providing standards for tree and shrub planting, tree conservation in urban development, etc. The guidelines include details on site preparation and planting techniques for trees, palms, shrubs, ground cover,

climbers, grass, and plants in planter boxes. Appropriate management procedures such as fertilizer application, mulching, watering, pest and disease control and pruning are also covered (Ismail, 1997).

To coordinate the greening programmes in a more systematic manner, the National Landscape Department was established under the purview of the Ministry of Housing and Local Government in 1996. The emphasis on landscaping the nation was inspired by the Prime Minister's desire to balance economic, social and environmental development in the country.

In March 1997 the Prime Minister launched a nationwide tree planting campaign, with the aim of making Malaysia a "Garden Nation" by 2005. With this campaign the Kuala Lumpur City Hall was given a mandate to plant 220 000 trees by 2000 (Nordin, 1997). To date, more than 400 000 trees and 6 million shrubs

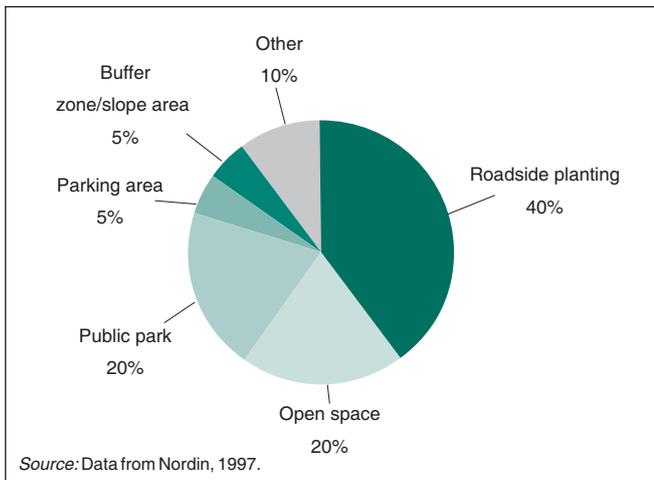
have been planted. Approximately 40 percent of these have been planted along roads (Figure 2), where they have the greatest visibility and impact (Salleh, Wong and Ng, 1990). Roadside trees serve as screens, providing motorists with pleasant scenery and selectively blocking off unsightly features. They are also planted for the benefit of people living next to motorways; they screen off traffic dust and noise and provide a view of trees rather than of traffic (Salleh, Wong and Ng, 1990). Indeed, the expansion of highways and city link roads in Malaysia invites more roadside tree plantings.

Tree-planting has been carried out with the support of the private sector, city dwellers and other government agencies. However, achieving the quantitative target is only one aspect of the campaign. Trees planted should not be neglected or left unattended, but should be nursed and maintained to reach maturity and to

*The non-native species **Khaya senegalensis** is considered an ideal tree for "instant" roadside planting in Malaysia*



H. MOHD. AHENI



2
Location of urban plantings in Kuala Lumpur under the Garden Nation campaign

Nation has been positive on all sides. It is a great challenge, but achieving this vision will improve the quality of life of urban dwellers. Malaysians today are more aware of the value of the green elements in their environment and are putting in effort and money to beautify it.

CHALLENGES

While the planting programmes have progressed as planned, the subsequent management of the trees and plants has not been adequate. Maintenance is still frequently lacking, and public safety is often overlooked. Hence, some of the urban planting has failed because problems that have arisen have not been rectified in time. Regular tree inspection and correct pruning techniques have often been overlooked, and as a result trees sometimes topple down in heavy storms.

Damage through building and road construction is one of the most common causes of tree death and decline in urban areas (Lilly, 2001). Even when the trees have been earmarked to remain in place, construction equipment such as bulldozers and cranes often operate near them

avoid potential hazards and nuisances such as obstructing motorists' vision and damaging public property. Ideally the planting effort should be accompanied by guidelines and standards for management and maintenance of the trees. The National Landscape Department has already made a proposal to the central government for the establishment of an arboriculture unit to provide technical support and monitoring for tree management and maintenance in the country. In reality, however, the country lacks qualified and competent arborists at various levels (Esa, 2003).

Getting public support is vital in achieving the vision of a Garden Nation. A notable effort to create public awareness and involvement was the attempt to set a world record in October 2000, when 110 461 trees were planted in one minute (*New Straits Times*, 2000). This event was about more than just setting a record – it was designed to demonstrate that

public participation and commitment are crucial and need to be sustained.

Public awareness has been further enhanced through the Ministry of Housing and Local Government's Cleanliness and Beautification Programme and National Landscape Competition. The competition has 15 categories to cover a wide range of contexts, ranging from landscaping around residences, schools and religious buildings to city parks, neighbourhood parks and agricultural parks or recreational forests.

Overall the move towards the Garden



Roads are choice sites for tree planting, providing motorists with pleasant scenery and screening out traffic dust and noise: rain trees (Samanea saman) line a protocol road leading to the parliament house of Malaysia

H.MOHID AHENI

and may damage the roots or the trees. Damaged trees may not die right away but may decline over time. Preservation of trees on construction sites is possible only if the right protective measures are taken from the start of the building project. Although there is a provision on tree preservation under the Town and Country Planning Act 1976, the law has not been fully enforced.

Malaysian cities have many planted ornamental trees that are not native to the country. Many of these species establish easily, but they do not grant a local identity (Tho *et al.*, 1983). However, the National Landscape Department has been working with local town councils to encourage the planting of successfully tested indigenous tree species found suitable for urban planting.

There is still an urgent need to increase the number of professional landscape architects, arborists, landscape designers and town planners. This would foster a greater appreciation of greening and promote research, technology and the professional practice of tree planting and landscaping (Sreetheran, 2004).

PROSPECTS

As green awareness and interest in healthy living increase, the public today demands environmentally friendly development, especially in cities. In the ninth Malaysian Plan, sustainable development and conservation of biological resources are emphasized. Development plans are directed towards creating a healthy and balanced quality of life. In line with these objectives, big cities like Kuala Lumpur are establishing more urban parks for their dwellers, geared primarily towards recreational activities, education and mobilizing the local community to participate as guardians of the environment. ♦



Bibliography

- Adnan, M. & Abdul Latiff, M.** 1993. Perhutanan Bandar di Malaysia. In S. Sham, H. Abdul Samad & M.J. Jamaluddin, eds. *Alam Sekitar dan Pengurusannya di Malaysia*, pp. 265–283. Kuala Lumpur, Malaysia, Working Group on Urban Ecosystems, Malaysian National MAB Committee and Man and the Biosphere Programme (MAB), United Nations Educational, Scientific and Cultural Organization (UNESCO).
- Ayoub, H.** 1989. *The role of city hall in improving the quality of urban green in Kuala Lumpur*. Paper presented at the Seminar on Urban Green, Kuala Lumpur, Malaysia, 7–9 August.
- Burkill, I.H.** 1966. *A dictionary of the economic products of the Malay Peninsula*. 2 vols. Kuala Lumpur, Malaysia, Ministry of Agriculture and Cooperation.
- Chee, T.Y. & Ridwan, S.** 1994. Fast growing species of trees suitable for urban roadsides and shade planting. *Malaysian Forester*, 47(3): 263–284.
- Esa, A.** 2003. *Prospects and challenges in attaining sustainable garden city: a Malaysian mission in 2020*. Paper presented at the Urban Forestry Workshop: Assessing the Need for Sustainable Landscape in a Changing Society, Kuala Lumpur, Malaysia, 14–15 October.
- Furtado, C.X.** 1935. A disease of angšana tree. *Journal of Malaysian Branch of the Royal Asiatic Society*, 13(2): 163–192.
- Gullick, J.M.** 2000. *A history of Kuala Lumpur 1856–1936*. MBRAS Monograph No. 29. Kuala Lumpur, Malaysia, Malaysian Branch of the Royal Asiatic Society.
- Ismail, N.** 1997. Landskap Negara Ke Arah Merealisisikan Negara Taman. In M.T. Osman, M.S. Mustafa Kamal, M. Noorizan, Nordin, A.R. & Abdul Aziz, O., eds. *Ke Arah Negara Taman: Wawasan dan Cabaran*, pp. 1–18. Shah Alam, Malaysia, Institut Arkitek Landskap Malaysia (ILAM).
- Jabatan Perancang Bandar dan Desa [Department of Town and Country Planning]**. 1995. *Garis Panduan Landskap Negara [National Landscape Guidelines]*. Kuala Lumpur, Malaysia.
- Koening, J.G.** 1894. Journal of a voyage from India to Siam and Malacca in 1779. *Journal of the Straits Branch of the Royal Asiatic Society*, 26: 58–201.
- Kuala Lumpur City Hall.** 1984. *Kuala Lumpur Structure Plan*. Kuala Lumpur, Malaysia.
- Lilly, S.J.** 2001. *Arborists' certification study guide*. Champaign, Illinois, USA, International Society of Arboriculture.
- Malaysian Agricultural Research and Development Institute (MARDI)**. 1993. *Beautiful gardens of Malaysia: landscaping to better living*. Serdang, Malaysia.
- New Straits Times.** 2000. PM leads thousands in tree planting. 16 October 2000.
- Nordin, A.R.** 1997. Managing the garden city. In M.T. Osman, M.S. Mustafa Kamal, M. Noorizan, Nordin, A.R. & Abdul Aziz, O., eds. *Ke Arah Negara Taman: Wawasan dan Cabaran*, pp. 73–84. Shah Alam, Malaysia, Institut Arkitek Landskap Malaysia (ILAM).
- Philip, E.** 1999. Wilt disease of angšana (*Pterocarpus indicus*) in Peninsular Malaysia and its possible control. *Journal of Tropical Forest Science*, 11(3): 519–527.
- Salleh, M.N., Wong, Y.K. & Ng, F.S.P.** 1990. *The tropical garden city—its creation and maintenance*. Malayan Forest Record No. 33. Kuala Lumpur, Malaysia, Forest Research Institute Malaysia (FRIM).
- Sanderson, F.R.** 1992. Angšana wilt disease. *Garden Wise*, 4: 9.
- Sreetheran, M.** 2004. Malaysia – greening the nation. *Green Places*, 4: 9.
- Tho, Y.P., Wong, K.M., Yap, S.K. & Kochummen, K.M.** 1983. Towards an uniquely Malaysian urban landscape through an emphasis on the planting of indigenous trees. In W.M. Wan Sabri, M. Rusli, A. Kamis, H. Mohd. Basri & J. Mohd. Zin, eds. *Outdoor recreation in Malaysia*, pp. 281–289. Serdang, Malaysia, Universiti Pertanian Malaysia.
- Wee, Y.C & Corlett, R.** 1986. *The city and the forest: plant life in urban Singapore*. Singapore, Singapore University Press. ♦