



## 1. Introduction

1.1 Urban trees are valuable resources providing environmental and socio-economic benefits to society. Yet the health and structural conditions of trees change continuously in the course of their lifecycles and under the impact of external environment. Collapse of trees weakened by diseases, or suffering from other flaws, poses a threat to public safety. Therefore, an effective tree management strategy is important for tree preservation and public safety.

1.2 In Hong Kong, many trees are growing in compact and dense urban environment. Responsibilities for tree management on government land are currently shared by various government departments, and the regulation of trees on private land by land lease conditions has been considered inadequate. The lack of specific legislation has added to the challenges of growing trees in urban environment.

1.3 In comparison, many overseas places have enacted their specific tree legislation. In the **United States** and **Canada**, some local authorities have established their respective tree legislation<sup>1</sup> to provide the framework for managing the community forests and set out the legal basis for defining municipal responsibilities for public and private trees. Likewise, local authorities in the **United Kingdom** have put in place the Tree Preservation Orders to protect specific trees from wilful damage or destruction.

1.4 In **China**, there is comprehensive legislative framework at both national and local levels offering statutory protection for roadside and heritage trees. For example, the national Urban Greening Ordinance (城市綠化

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<sup>1</sup> For example, Georgia, Iowa, Massachusetts, New York, North Carolina, Texas and Virginia of the United States have their own tree legislation. In Canada, the Toronto Municipal Code provides for the requirements of roadside tree management and private tree protection.

條例) classifies trees aged 100 or above as ancient and famous trees (古樹名木) including the stone wall trees in Beijing<sup>2</sup> and Guangzhou<sup>3</sup>, which are subject to statutory protection. Major cities such as Beijing, Shanghai and Guangzhou have established their own tree legislation requiring local authorities to manage ancient and famous trees in compliance with the relevant legal provisions.<sup>4</sup>

1.5 Like many bustling metropolises, **Singapore** and the **Australian Capital Territory** ("ACT") prioritize urban greenery development with specific legislation and have established dedicated authorities for tree management on government and private land. This apart, Singapore has set up its own institution to offer a wide range of training programmes in arboriculture and horticulture catering for government staff and the industry practitioners. ACT has set up the Tree Advisory Panel which consists of tree experts providing advice to the government on matters about tree management, particularly with regard to registration or cancellation of trees on the Tree Register and approvals sought to undertake tree damaging activities.

1.6 At the request of Hon Tanya CHAN, the Research Office has prepared this information note on tree management in Singapore and ACT. The information note will first provide an overview of the tree management strategy in Hong Kong and the concerns raised by various quarters over the strategy. It will then study the relevant regulatory framework, institutional arrangement and salient features of tree management in both places.

## 2. Hong Kong

2.1 Hong Kong is a densely populated city where green environment helps contribute to the quality of living in various ways such as lower temperature, better air quality and improved visual appeal. There is growing public concern on tree management and protection especially after a number

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<sup>2</sup> The stonewall trees are located in the Ming Tombs of Beijing (北京明十三陵).

<sup>3</sup> The stonewall trees are located on the Ancient Circumvallation of the Ming Dynasty in Yuexiu Park of Guangzhou (廣州越秀公園古城牆).

<sup>4</sup> While Beijing has enacted its specific legislation, namely 《北京市古樹名木保護管理條例》 to protect the heritage trees, Guangzhou has incorporated the relevant tree protection provisions into 《廣東省城市綠化條例(2014年修正)》. See 北京市園林綠化局 (1998) and 廣州·南沙人大 (2014).

of tree collapse accidents which had caused deaths and/or injuries to people (**Appendix I**). These incidents have drawn criticisms of the Government for its actions on tree maintenance and preservation.

2.2 The issue of tree management has been widely discussed in the Council in the past decade.<sup>5</sup> Besides the Council, the Audit Commission conducted in 2014 a review of the efforts made by the Government in enhancing tree safety<sup>6</sup> and The Ombudsman also conducted in 2014 an investigation to examine the tree management regime in Hong Kong<sup>7</sup>. All in all, the concerns over tree management in Hong Kong focus on the aspects of (a) institutional framework; (b) regulatory framework; (c) tree management on private land; and (d) manpower development.

### Institutional framework of tree management

2.3 All along, the day-to-day tree management duties including planting, inspection, risk assessment, pruning and felling of trees on government land have been scattered among more than 30 government departments. At present, there are nine major tree management departments (known as "core departments") maintaining more than 1.7 million trees, and 27 non-core departments maintaining another 182 000 trees in the territory (**Appendix II**).

2.4 In 2010, the Tree Management Office ("TMO") was set up within the Greening, Landscape and Tree Management Section under the Development Bureau. TMO is responsible for formulating and steering tree management policies and coordinating the work of the government departments in tree management.<sup>8</sup> Yet there have been concerns that TMO merely had the role in "coordination" instead of being empowered to regulate tree management.<sup>9</sup> As such, the current approach of **delineation of maintenance responsibilities** still has its shortcomings and **disagreements among departments** over the responsibilities for managing the trees cause an issue of concern.

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<sup>5</sup> In the past decade, the subject of tree management was discussed almost annually in the meetings of the Panel on Development. Meanwhile, Members have raised more than 20 oral and written questions in the Council meetings. Furthermore, the Council passed a motion on perfecting tree management system at its meeting of 15 June 2011.

<sup>6</sup> See Audit Commission (2014).

<sup>7</sup> See Office of The Ombudsman (2016b).

<sup>8</sup> See GovHK (2015b).

<sup>9</sup> See, for example, 香港 01 (2018), 香港商報 (2018) and 經濟日報 (2018).

### *Delineation of maintenance responsibilities*

2.5 When a tree is located on "allocated government land"<sup>10</sup>, the maintenance responsibilities fall on the allocatee government department. Yet many trees are located on government land where multiple departments may have their management duties.<sup>11</sup> The Audit Commission has commented that it was not cost-effective for a number of departments to take up tree maintenance work in the same locality or nearby areas.<sup>12</sup> Furthermore, as the trees might not be easily differentiated from each other in the absence of clear tree labels, these trees might not be taken care of and thus posing a safety risk.<sup>13</sup>

### *Disagreement among government departments*

2.6 Indeed, there have all along been disagreements among government departments over the delineation of maintenance responsibilities for trees located on government land, particularly regarding whether a tree is within a "landscaped area"<sup>14</sup>. When there are such diverse views, the departments involved would sort out themselves on a case-by-case basis to identify the responsible party. In 2013, it was agreed among the Development Bureau, the Leisure and Cultural Services Department and the Lands Department that TMO would review the case and adjudicate as to which department was responsible for tree management if an agreement could not be reached among departments. Nevertheless, such a process to ascertain the responsible party of tree management is time-consuming and may aggravate potential hazards by problematic trees and thus pose a threat to public safety.

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<sup>10</sup> Allocated government land refers to the government land allocated by the Lands Department to another government bureau/department.

<sup>11</sup> For example, if a roadside man-made slope is involved, the Highways Department will be responsible for the trees on the slope. Yet other government departments such as the Architectural Services Department and the Leisure and Cultural Services Department may also be involved if the roadside area nearby is allocated government land.

<sup>12</sup> See Audit Commission (2014).

<sup>13</sup> Ibid.

<sup>14</sup> The Leisure and Cultural Services Department is responsible for the tree maintenance duties in landscaped areas. The Leisure and Cultural Services Department considers that a "landscaped area" be an area with landscape design elements such as roadside planters or tree pits. However, some government departments considers that a "landscaped area" be an area with intentional plantings irrespective of whether the plantings have been located in planters or tree pits.

## Regulatory framework

2.7 At present, there is no specific legislation governing tree protection in Hong Kong. In 2009, the Task Force on Tree Management ("Task Force")<sup>15</sup> examined the relevant ordinances with provisions relating to tree protection. As set out in the Task Force report, four ordinances touch upon tree protection, three ordinances provide for enforcement against illegal activities such as stealing, and one ordinance is related to environmental protection (see **Appendix III** for details).<sup>16</sup> The Task Force considered that the legislation had already accorded protection to trees and thus no need to make legislative changes. Yet there may still be gaps in the ordinances in addressing tree protection needs, as summarized below:

- (a) **No legal backing for protection of important trees:** Although TMO has set up the Tree Register, there is no specific legislation providing for the regulations of protecting the important trees including the old and valuable trees and stone wall trees;
- (b) **Narrow scope of destructive activities:** The Country Parks Ordinance (Cap. 208) and the Forests and Countryside Ordinance (Cap. 96) provide that felling, cutting, burning or destroying the trees in country parks, and forest and countryside are unlawful. However, the legislation does not restrict other destructive activities such as interfering with the tree roots and polluting the soil and tree planting areas. As such, the legislation may not be sufficiently comprehensive;

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<sup>15</sup> In 2008, a fatal tree collapse accident happened in Stanley. The Coroner's Court inquiry revealed weaknesses in the tree inspection system of the Leisure and Cultural Services Department. To address the concerns expressed by the Coroner's Court, the then Chief Secretary for Administration led an inter-departmental task force to review tree management issues in 2009. See Task Force on Tree Management (2009) and Audit Commission (2014).

<sup>16</sup> See Task Force on Tree Management (2009).

- (c) **Limited protection for urban trees:** Under the four ordinances touching upon tree protection, the geographical coverage is merely confined to country parks, forests and countryside, pleasure grounds, public cemeteries and gardens of remembrance, and monuments.<sup>17</sup> There is no legislation setting out the tree protection requirements and regulations for other urban trees;
- (d) **Lacking regulations on private land:** The existing legislation provide for protection of trees on government land and monuments. There is no legal backing for the Government to regulate the tree management on other private land; and
- (e) **Weak law enforcement power:** The current ordinances do not empower the law enforcement officers to take certain necessary actions to protect the trees, especially for those located in private premises.

2.8 In 2011, the then Secretary for Development made clear that the Government would "seriously consider commencing studies on enacting legislation" on trees as the Government had examined the latest situation and found it a "right timing" to respond proactively.<sup>18</sup> In 2015, the Government agreed that the regulatory framework on tree management, which involved a number of ordinances implemented by different government departments "did not contribute to effective regulation and management of trees"<sup>19</sup>. As at to date, the Government has yet to put forward any legislative proposal.

#### Tree management on private land

2.9 In 2014, there was a fatal tree collapse accident occurred on the private land at Mid-levels. The accident has aroused great public concerns about safety risks posed by trees on private land. According to the Government, trees on private land are protected under specific preservation

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<sup>17</sup> The corresponding ordinances are the Country Parks Ordinance (Cap. 208), the Forests and Countryside Ordinance (Cap. 96), the Public Health and Municipal Services Ordinance (Cap. 132) and the Antiquities and Monuments Ordinance (Cap. 53).

<sup>18</sup> See Official Record of Proceedings of the Legislative Council (2011).

<sup>19</sup> See Legislative Council Secretariat (2015).

clauses incorporated into land leases and such mechanism has been in operation since the early 1970s.<sup>20</sup> Yet, according to the reports released respectively by the Audit Commission and The Ombudsman during 2014-2015, only a small percentage of land leases contained such clauses.<sup>21</sup>

2.10 The 2015 Ombudsman report also commented that "even for those private leases that contain a tree preservation clause, it is outside the regulatory scope of the clause as to whether and how the owners have maintained their trees. There is also no law at present to require owners of private land to inspect and maintain the trees within their property. In other words, currently, the Government has no power to intervene even if the land owners have not properly maintained their trees to mitigate the risk of tree collapse"<sup>22</sup>. The Ombudsman thus concluded, "compared with trees on Government Land, the regulation of trees on private land appears to be even more inadequate"<sup>23</sup>.

### Manpower development

2.11 The Government requires tree management departments, except the Lands Department<sup>24</sup>, to conduct annual Tree Risk Assessment and Management as part of the precautionary measures before the wet season. To conduct the tree risk assessments, the tree management departments must follow the qualification, training and work experience requirements in engaging qualified personnel as stipulated in the Guidelines for Tree Risk Assessment and Management Arrangement.<sup>25</sup> For example, an inspection officer must be a certified arborist with at least two years of work experience

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<sup>20</sup> As a land lease condition, the special tree preservation clauses provide that the land owner is required to apply to the Lands Department for consent before felling of and interfering with any trees on his or her land. See Tree Management Office (2016).

<sup>21</sup> See GovHK (2015b), Office of The Ombudsman (2016b) and Audit Commission (2014).

<sup>22</sup> See Office of The Ombudsman (2016b).

<sup>23</sup> Ibid.

<sup>24</sup> Under the approach of delineation of maintenance responsibilities, the Lands Department takes up trees not claimed by any other government departments on unallocated government land. Given the large but unknown number of such "unclaimed" trees and the resultant strain on the Lands Department, and on the understanding that such trees were unlikely to be along roadside, it had been accepted within the Government that trees put under the Lands Department would only be subject to ad hoc rather than regular maintenance. See Development Bureau (2004a).

<sup>25</sup> TMO promulgated the Guidelines for Tree Risk Assessment and Management Arrangement with an aim, among other things, to provide guidance to tree management departments to implement risk assessments which help identify problematic trees and take timely remedial measures to protect public safety. See Tree Management Office (2018).



in tree care and is familiar with tree risk assessment and management. This tree risk assessment and management initiative triggered and highlighted the issue of shortage in manpower resources within the Government<sup>26</sup> as well as in the local greening industry.

### *Manpower shortage*

2.12 In 2018, there were 9 830 workers engaged in the greening industry.<sup>27</sup> According to a study commissioned by the Development Bureau<sup>28</sup>, it was estimated that there would be a shortage of 2 530 workers in 2018, yet only some 300 graduates with local qualifications in tree management would join the workforce annually during 2018-2020.<sup>29</sup>

### *Lack of recognition*

2.13 At present, the horticulture industry has not been regarded as a separate trade in the construction industry, and there is no registration system for practitioners in the industry, rendering such practitioners being regarded as general workers only. Therefore, it is difficult to attract new blood to join the industry for the low remuneration of general workers.<sup>30</sup>

2.14 As such, the Arboriculture and Horticulture Industry Training Advisory Committee was established in 2016 under the Qualifications Framework. The Committee is tasked with, among other things, drawing up the Specification of Competency Standards<sup>31</sup> for the arboriculture and horticulture industry. As of to date, the Standards for the industry have yet to be developed.

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<sup>26</sup> As at 2018, TMO had a staffing establishment of 17 who were responsible for the coordination of tree management work among government departments, and training for staff with tree management duties in the Government.

<sup>27</sup> See GovHK (2018b).

<sup>28</sup> Completed in 2017, the study aimed to assess the workforce supply for arboriculture, horticulture and landscape maintenance and management industry (i.e. greening industry) in Hong Kong. See Development Bureau (2018).

<sup>29</sup> See Legislative Council Secretariat (2018).

<sup>30</sup> See GovHK (2018b).

<sup>31</sup> The Specification of Competency Standards set out the knowledge, skills and outcome standards required of employees in different functional areas of the industry and provide a basis for education and training providers to design programmes that best suit the needs of the industry. Employers can adopt the Standards to develop in-house training, competency-based job specifications, appraisal of staff performance and criteria for recruitment.



### 3. Singapore

3.1 Over the past decades, Singapore has devoted much effort on greening of the city in a move to provide Singaporeans with quality living environment amid rapid urbanization. In 1967, Singapore implemented the Garden City vision in the form of an intensive tree-planting programme under which parks, gardens and open spaces were linked up by a network of tree-lined roads. In the mid-1970s, Singapore established an independent government department to undertake the task of greening the city, and introduced the Parks and Trees Act as the legal backing for tree management. The 1980s and the ensuing years have witnessed the continued improvement of existing parks and the development of new parks. According to the Singaporean government, Singapore has moved from a "Garden City" to a "City in a Garden", a bustling metropolis which is "not simply a place of gardens, it is a garden, in which all current and future building is nestled"<sup>32</sup>.

#### Tree management authority

3.2 The inception of the Garden City Programme in 1967 resulted in the creation of the Parks and Trees Unit within the Public Works Department in 1968, which was tasked with tree planting and greening in Singapore. To promote the greening of Singapore further, the Unit hived off the Public Works Department to become an independent department, namely the Parks and Recreation Department, under the Ministry of National Development in 1976. In 1996, National Parks Board Act was enacted and provided for the reconstitution of the Parks and Recreation Department to the incumbent National Parks Board ("NParks"), with the Singapore Botanic Gardens and Singapore's nature reserves coming under its custody in addition to spearheading the maintenance of the Garden City and its roadside greenery.

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<sup>32</sup> See Beatley (2012).

3.3 Headed by the Commissioner of Parks and Recreation ("the Commissioner"), NParks is the **lead agency** for tree management and nature conservation in Singapore. It is responsible for day-to-day tree management duties such as tree planting and pruning, inspection and assessment, felling or removal of dangerous trees on government land.<sup>33</sup> With legal backing by the Parks and Trees Act, NParks is vested with the power to control, administer and manage the trees on government land, and take actions to ensure that the occupiers of private properties maintain the greenery in their premises in order to safeguard the public safety against dangerous trees on private land.

### Tree legislation

3.4 Enacted in 1975, the Parks and Trees Act<sup>34</sup> provides for the legal backing for protection of important trees, expressly defines certain destructive activities, sets out the protection requirement for urban trees on government and private land with power granted to the law enforcement agencies.

### *Protection of important trees*

3.5 The Parks and Trees Act provides for the designation of Tree Conservation Areas ("TCAs") to control indiscriminate felling of mature trees. Felling mature trees with a girth of more than one metre in TCAs is required to seek written approval from the Commissioner. Today, an estimated area of 4 900 hectares<sup>35</sup>, covering both government and private land and accounting for 6.8% of Singapore's total land area, has been designated as TCAs.

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<sup>33</sup> For example, NParks inspects the trees along expressways and major roads once every six to 12 months. It also conducts (a) annual detailed inspection of trees with more than four metres in girth, and (b) tree pruning before periods of heavy wind and rain such as squalls and during the northeast monsoon period. See Straits Times (2017).

<sup>34</sup> The Parks and Trees Act is aimed to provide for the planting, maintenance and conservation of trees and plants within national parks, nature reserves, tree conservation areas, heritage road green buffers and other specified areas (on government and private land), and for matters connected therewith. See Singapore Statutes Online (2019).

<sup>35</sup> See National Parks Board (2017) and National Parks Board (2019).

3.6 In addition to TCAs, mature trees on vacant land are also protected by the Parks and Trees Act from indiscriminately felling.<sup>36</sup> Cutting mature trees with a girth of more than one metre on vacant land is subject to the Commissioner's written approval.

3.7 Since 2001, Singapore has put further effort to promote conservation of mature trees with the launch of Heritage Road Scheme and Heritage Tree Scheme. The former seeks to conserve the tree-lined roads of Singapore, while the latter advocates the conservation of mature trees in other areas. The salient features of both schemes are summarized below:

- (a) **Heritage Road Scheme** aims to conserve the significant tree-lined roads amid the country's rapid development. For each Heritage Road as designated by NParks, there are 10-metre-wide "Green Buffers" on both sides of road. Removal of trees in the Green Buffers is prohibited. Similarly, erecting or placing any structure or objects in Green Buffers is not allowed<sup>37</sup>; and
- (b) **Heritage Tree Scheme** is open to the public and anyone can nominate a tree to be designated as a Heritage Tree via the online form on the NParks website. Nominated trees will be inspected by NParks arborists and the list will be submitted to the Heritage Tree Panel<sup>38</sup> for consideration. Heritage Trees are endorsed by the Panel based on certain criteria such as trees' species, historical significance, size and health status.<sup>39</sup> As at March 2016, a total of 257 trees had been designated as Heritage Trees, some of which were more than 150 years old.

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<sup>36</sup> According to section 2 of the Parks and Trees Act, vacant land is referred to any land (a) upon which no building or other structure exists; (b) which the Commissioner of Parks and Recreation has reasonable grounds to believe is not occupied by anyone; or (c) upon which exists building or other structure which is constructed or used contrary to any written law.

<sup>37</sup> According to the Parks and Trees Act, erecting, constructing or laying within any Heritage Road Green Buffer any fence, retaining wall, foundation, manhole, pipe, cable, mains or any obstruction or structure regardless of temporary or permanent nature is not allowed.

<sup>38</sup> The Heritage Trees Panel comprises 12 members, with five members (including the chairman) from NParks and three representatives from other government agencies (including Housing and Development Board, People's Association and Urban Redevelopment Authority). The other members are arborist, academics and consultants of plant science, forest plantation and landscaping. See National Parks Board (2016b).

<sup>39</sup> To consider the designation of a Heritage Tree, the Heritage Tree Panel considers such criteria as (a) the tree species and its rarity; (b) the social, cultural and/or historical significance of the tree; (c) the size of the tree (e.g. trees with a girth of more than five metres); and (d) the health status of the tree. See National Parks Board (2016c).

### *Specified destructive activities*

3.8 The legislation provides for planting, maintenance and conservation of trees in Singapore and expressly sets out certain restricted or prohibited activities that are injurious to trees. The provision of clear definitions of what are permitted and restricted facilitates law compliance and enforcement. The detailed definitions set out in the Act are given in **Appendix IV**.

### *Planting and protection of urban trees*

3.9 The Parks and Trees Act mandates government agencies such as the Housing and Development Board and private developers to set aside spaces for trees and greenery in projects such as the development of housing estates, public streets, and construction of roads, carparks and other premises.<sup>40</sup>

3.10 The Minister for National Development may prescribe the location and site specifications of planting areas in both government and private land.<sup>41</sup> Alteration or removal of the planting areas, erecting or constructing structures<sup>42</sup> in the planting areas without permission from the Commissioner is prohibited. Furthermore, destructive activities on trees in the planting areas, TCAs and Green Buffers along the roads are restricted or prohibited.

### Tree management on private land

3.11 The Parks and Trees Act regulates tree management on private land, including empowering the Commissioner to serve a notice to the occupiers of private premises to plant trees within the green margin<sup>43</sup> of the private land and provide for tree maintenance and protection.<sup>44</sup> It also empowers NParks officers to require the private land owners and/or occupiers to take necessary

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<sup>40</sup> See National Library Board (2015a).

<sup>41</sup> The details are set out in section 23(3) of the Parks and Trees Act.

<sup>42</sup> According to section 26 of the Parks and Trees Act, such restricted structures include any fence, retaining wall, foundation, manhole, pipe, cable, mains or any obstruction or structure.

<sup>43</sup> According to section 27(5) of the Parks and Trees Act, the "green margin" of premises is referred to the part of the premises that is fronting, adjoining or abutting the public street. The width of the green margin is not more than five metres.

<sup>44</sup> As provided by section 27(1) of the Parks and Trees Act, it aims to (a) enhance greenery and promote the use of trees and plants as important elements of streetscapes and landscapes; or (b) enhance the amenity of the area located along or on any premises fronting, adjoining or abutting any public street.

measures, such as pruning or cutting the tree, to minimize the safety risks. Any person who fails to comply is liable on conviction to a fine.

3.12 The Act also empowers NParks officers to enter the premises to inspect any tree to ascertain if the condition of the tree constitutes a danger to person or property, and recover all expenses incurred from the occupier of the premises.

### Manpower development

3.13 The administration of the Parks and Trees Act generates substantial workload in the greenery industry. In response to the manpower demand, NParks has embarked on providing skills training in arboriculture, horticulture and landscaping to help the industry develop a competent workforce it needs to meet the regulatory requirements.

3.14 In 2007, NParks and SkillsFuture Singapore<sup>45</sup> jointly established the Centre for Urban Greenery and Ecology ("CUGE") as a one-stop training and knowledge hub in urban greenery and ecology. CUGE advances expertise on urban greenery and ecology and provides skills training programmes for all levels of professionals in arboriculture, horticulture and landscaping industries.

3.15 With four training venues, CUGE offers training programmes and facilitates career development in arboriculture, horticulture and landscaping. At present, CUGE provides Workforce Skills Qualifications ("WSQ")<sup>46</sup> courses leading to WSQ certificate to diploma levels and other professional programmes such as Certified Practising Horticulturists Programmes. In addition to the training services, CUGE collaborates with the industry to provide job placement services to facilitate employment of local workforce. In 2017-2018, CUGE offered some 6 700 training places, comprising some 4 300 places of WSQ courses and 2 400 places of other professional courses.

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<sup>45</sup> SkillsFuture Singapore is a statutory board under the Ministry of Education. It is tasked with promoting lifelong learning, helping Singaporeans make well-informed choices in training and careers, and developing quality training systems responding to the industry needs.

<sup>46</sup> The Singapore Workforce Skills Qualifications ("WSQ") is a national credential system that facilitates training, assessing and certifying skills and competencies for the workforce. Training programmes developed under the WSQ system are based on skills and competencies validated by employers, unions and professional bodies. See SkillsFuture Singapore (2019).

## 4. Australian Capital Territory

4.1 In Australia, ACT is made up of the city of Canberra, farmland and a large area of national park. Canberra, the only city in ACT, is also the capital of Australia with its city planning designed to complement the natural landscape with open spaces, parks and native vegetation.<sup>47</sup> In 2018, the government of Canberra managed over 768 000 urban trees in residential streets, major road verges, urban parks and other open spaces, making the city one of the largest urban forests managed by a single jurisdiction in the world.<sup>48</sup>

4.2 ACT's urban forestry focuses on efficient tree management and maintenance, especially for (a) those trees with high heritage, landscape or scientific value; and (b) large trees of typically 12 metre or more in height. Like Singapore, ACT relies on both its institutional and regulatory frameworks to manage trees in the territory.

### Tree management authority

4.3 The responsibility of tree management in ACT is shared between two government authorities, namely (a) the Conservator of Flora and Fauna of the Environment, Planning and Sustainable Development Directorate ("the Conservator")<sup>49</sup>; and (b) the Transport Canberra and City Services Directorate ("TCCS")<sup>50</sup>. The Conservator and TCCS perform distinct but complementary roles in tree management in the territory. The Conservator is mainly responsible for administering the Tree Register for important trees and **making crucial decisions** in relation to preservation of important trees (e.g. granting an approval for felling a protected tree).<sup>51</sup> TCCS acts as an executive arm which undertakes the **day-to-day tree maintenance duties** including planting,

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<sup>47</sup> See Environmental Defenders' Office (2015).

<sup>48</sup> See ACT Government (2018) and Transport Canberra and City Services (2018a).

<sup>49</sup> Under the government of ACT, there are seven administrative units, known as "directorates", according to their functions. The Environment, Planning and Sustainable Development Directorate is responsible for developing and implementing a wide range of policies and programmes across city planning and development, climate change and the environment.

<sup>50</sup> The Transport Canberra and City Services is a diverse directorate tasked with managing roads, footpaths, street lights, cycle paths, the public transport network and urban trees.

<sup>51</sup> The Executive Director of Policy at the Environment, Planning and Sustainable Development Directorate holds the office of the Conservator of Flora and Fauna, who is responsible for administering the Nature Conservation Act 2014 for the protection of native plants and animals, with additional responsibilities in administering the tree legislation in ACT.

pruning and inspecting urban trees, as well as removing and replacing dead, damaged, hazardous trees in public land such as residential streets, major road verges, urban parks and other open space areas throughout the city.

### Tree legislation

4.4 In 1998, the Standing Committee on Planning and Urban Services of the Legislative Assembly of ACT conducted an inquiry into "an appropriate tree management and protection policy for the ACT". The Committee considered that at that time the legislation "gave only piecemeal protection" to trees<sup>52</sup>. Consequently, the Tree Protection Act 2005 came into force in 2006 as the tree legislation to address tree protection issues in the built-up urban area.<sup>53</sup> In particular, the legislation protects individual trees of exceptional value or over a certain size, and set out the regulations for tree management.

### *Protection of important trees*

4.5 The Tree Protection Act 2005 has defined two types of "protected trees", namely **registered trees** and **regulated trees**. Registered trees are those trees on the statutory Tree Register in view of their exceptional value. Trees can be nominated for the Tree Register by anyone, and the Conservator **must seek and consider** the advice of the Tree Advisory Panel<sup>54</sup> before making the decision on tree registration (**Figure 1**).<sup>55</sup> In addition to the advisory role, the Tree Advisory Panel also plays a monitoring role as it may reconsider the decisions made by the Conservator.<sup>56</sup>

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<sup>52</sup> See Standing Committee on Planning and Urban Services (2000).

<sup>53</sup> The Tree Protection Act is aimed to protect individual trees of exceptional value and to ensure that the urban forest cover of the city is protected. See ACT Legislation Register (2018b).

<sup>54</sup> The Tree Advisory Panel is established under the Tree Protection Act 2005 to provide expert advice to the Conservator on tree protection. Panel members are appointed by the Minister for Transport and City Services after considering their expertise in arboriculture, forestry, horticulture, landscape architecture, or natural and cultural heritage.

<sup>55</sup> See Environmental Defenders' Office (2015).

<sup>56</sup> See Tree Advisory Panel (2018).



**Figure 1 — Characteristics of registered trees and regulated trees**

Registered tree	Regulated tree
<b>Criteria:</b>	
<p>A tree in a built-up urban area, which has been identified as being exceptional for its:</p> <ul style="list-style-type: none"> <li>(a) natural or cultural heritage value;</li> <li>(b) landscape and aesthetic value; or</li> <li>(c) scientific value.</li> </ul>	<p>A tree, other than a registered tree or palm tree, on private land and is:</p> <ul style="list-style-type: none"> <li>(a) 12 m or more in height;</li> <li>(b) having a trunk with a circumference of 1.5 m or more*;</li> <li>(c) having two or more trunks and the total circumference of all trunks is 1.5 m or more*; or</li> <li>(d) 12 m or more in crown width.</li> </ul>
<b>Nomination and registration:</b>	
<ul style="list-style-type: none"> <li>• Public nominates a tree for registration.</li> <li style="text-align: center;">↓</li> <li>• The Conservator may decide to provisionally register the tree nominated.</li> <li style="text-align: center;">↓</li> <li>• The Conservator is required to seek advice from the Tree Advisory Panel on the proposed registration of the tree.</li> <li style="text-align: center;">↓</li> <li>• The Conservator decides to register the tree and gives a public notice of the decision.</li> </ul>	<ul style="list-style-type: none"> <li>• A tree will be classified as a "regulated tree" by virtue of its size (i.e. height, trunk circumference, or crown width). So, no nomination or registration is required.</li> </ul>

Note: (\*) It is measured at one metre above natural ground level.

Source: Access Canberra (2019).

4.6 Regulated trees are those trees which meet certain criteria in respect of their size and located in a declared Tree Management Precinct, which is an area of private land declared by the Minister for Territory and Municipal Services if he or she is satisfied that a significant threat to the urban forest values exists or is likely to exist in the near future (e.g. due to existing or future development activities).

4.7 Under the Tree Protection Act 2005, any activity that is likely to cause damage to a protected tree is prohibited, except with the approval of the Conservator granted. The Conservator may ask the Tree Advisory Panel for advice on the application for conducting tree damaging or groundwork activities to protected trees.<sup>57</sup>

#### *Specified destructive activities*

4.8 Similar to Singapore's Parks and Trees Act, the Tree Protection Act 2005 sets out the prohibited activities that damage protected trees as well as prohibited groundwork in the protection zones for protected trees, except with the approval of the Conservator granted. The detailed definitions set out in the Act are given in **Appendix V**.

#### *Protection of urban trees*

4.9 The Tree Protection Act 2005 prohibited the activities damaging the protected trees. Felling, cutting or pruning of protected trees is subject to the approval of the Conservator, who may seek the advice of the Tree Advisory Panel under TCCS. TCCS undertakes the routine tree maintenance duties in order to ensure the health of trees.<sup>58</sup>

#### Tree management on private land

4.10 When private land owners decide to develop their land, they are required to draw up a "Tree Management Plan" to take into account measures to preserve the protected trees on the land. The Plan should describe the status of the protected trees on the land and their protection requirements. The Plan requires the approval from the Conservator who may seek advice from the Tree Advisory Panel. To ensure the protected trees are well preserved, the Conservator may even issue a tree protection direction to the land owner or occupier if necessary.

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<sup>57</sup> A person may get a quick approval from the Conservator if he or she applies for urgent circumstances authorization to conduct tree damaging activities urgently to protect the health or safety of people, animals, or public or private properties.

<sup>58</sup> In addition to TCCS, as set out in the Public Unleased Land Act 2013, the director-general of the Territory and Municipal Services Directorate may direct the pruning of a tree if he or she believes on reasonable grounds that the tree is likely to obstruct or cause inconvenience to the public or overhangs the public land. If the director-general believes on reasonable grounds that the tree endangers the public safety, he or she may direct the removal of the tree.

4.11 In addition, the Tree Protection Act 2005 empowers the director-general of TCCS to appoint an authorized person to enter private non-residential premises<sup>59</sup> to (a) inspect or examine the tree and the adjacent areas; (b) take measurements or conduct tests; (c) take samples; and (d) take records in the form of photos, films, audio and/or video.

### Manpower development

4.12 In Australia, arboriculture is one of recognized disciplines under the Australian Qualifications Framework ("AQF"). At present, most arboricultural courses are offered by the Technical and Further Education institutions, pitching at Levels 1 to 6, equivalent to the levels from certificate to advanced diploma. According to the Arboriculture Australia<sup>60</sup>, an arborist with an AQF Level 5 qualification is qualified to provide advice on tree-related matters while tree owners should engage arborists who have a minimum of AQF Level 3 qualification in arboriculture to handle tree maintenance or pruning works.

4.13 Meanwhile, Arboriculture Australia maintains the Arboriculture Australia Professional Members Register, which provides an online service where government agencies, private companies, or property owners can access a list of qualified arborists who have appropriate qualifications to undertake the required tasks. To ensure that the arborists are keeping up to date with the latest best practices and plant health knowledge, the arborists on the Register are required to obtaining annual Continuing Education Units<sup>61</sup> by attending the certain annual conferences, associated workshops and training courses.

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<sup>59</sup> Section 93 of the Tree Protection Act provides that an authorized person may apply to a magistrate for a warrant to enter residential premises if there are reasonable grounds for suspecting that there is a particular thing or activity relating to an offence against the Tree Protection Act locating at the premises. See ACT Legislation Register (2018b).

<sup>60</sup> Arboriculture Australia is the peak industry body for tree workers, arborists, professional tree managers across Australia. It is tasked with (a) administering the Australian Arborist Industry License; (b) promoting, developing and improving arboricultural best management practices and standards; and (c) facilitating and disseminating arboricultural research.

<sup>61</sup> The function of Continuing Education Units is to demonstrate that the registered members are continuing to be exposed to developments in arboriculture; and to upgrade their qualifications. This helps ensure that registered members are raising the standards and quality of their work by way of direct training and indirectly by way of meeting with fellow professionals.

## 5. Observations

5.1 In Hong Kong, there has been discussion about management and preservation of trees on government and private land, as well as ensuring public safety. The Government has all along shared the tree management responsibilities among government departments. Currently, there is a lack of specific tree legislation in the territory. These have been regarded as the unfavourable factors that hindered the efficiency and effectiveness in tree management, particularly after the occurrence of tree collapse accidents in recent years.

5.2 In Singapore and ACT, there is dedicated legislation for planting, maintenance and conservation of trees on government and private land. In Singapore, the Parks and Trees Act provides for controlling indiscriminate felling of trees and other actions that may damage the important trees. It also sets out the measures to minimize safety risks and handle imminently dangerous trees. In both places, the authorized officers are vested with power to ensure the compliance with the tree legislation. They may serve enforcement notices (in Singapore) or tree protection direction (in ACT) to set out the requirements for tree protection. Added to this, the authorized officers may enter the private land to take necessary actions as the last resort in the case of non-compliance.

5.3 While Singapore has established a dedicated authority, NParks, for tree management, the Conservator and TCCS in ACT perform complementary roles in this regard. The Conservator focuses more on administrative duties such as maintaining the statutory Tree Register, approving applications for tree pruning and removal activities, and issuing tree protection directions in relation to protected trees. It is also required to seek and have regard to the advice of the Tree Advisory Panel, under TCCS, before making certain decisions such as tree registration while the latter may reconsider the decisions made by the Conservator. TCCS, on the other hand, is the government agency tasked with day-to-day managing and maintaining trees on public land. Its duties include regular inspection of trees, routine pruning to enhance public safety, and removal of dead, damaged or hazardous trees.

5.4 In Singapore, NParks is not only responsible for tree management duties, but is also tasked with providing training for the government staff and for the industry through its own training institution. In Australia, the training courses are mostly offered by the Technical and Further Education institutions.

Meanwhile, in both places, arboriculture has been one of the recognized disciplines under the respective qualifications frameworks, which ensure the quality of the practitioners and develop a competent workforce to meet the regulatory requirements.

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## Examples of fatal and serious accidents of tree collapse during 2008-2018

Time	Locations	Accidents
March 2008	Wong Tai Sin Temple	<ul style="list-style-type: none"> <li>A branch of tree snapped, fell and caused injuries to a tourist.</li> </ul>
May 2008	Boham Road, Mid-levels	<ul style="list-style-type: none"> <li>A tree collapsed. The branch hit two people passing by and a passing prisoner van.</li> </ul>
August 2008	Stanley	<ul style="list-style-type: none"> <li>An old tree collapsed and hit a teenage girl, causing her death.</li> </ul>
June 2010	Yuen Chau Kok, Shatin	<ul style="list-style-type: none"> <li>A tree located on a cycling track in Shatin collapsed on a cyclist and caused his death.</li> </ul>
July 2012	Tsim Sha Tsui	<ul style="list-style-type: none"> <li>A tall old tree located on Park Lane Shoppers' Boulevard collapsed and caused injuries to five persons.</li> </ul>
October 2012	Lam Tsuen, Tai Po	<ul style="list-style-type: none"> <li>A branch of a Chinese Banyan tree snapped, fell and hit a passing lorry, causing injuries to the lorry driver and the death of its passenger.</li> </ul>
August 2014	Robinson Road, Mid-levels	<ul style="list-style-type: none"> <li>A tree located on a private slope at Mid-levels collapsed on a pregnant pedestrian and caused her death.</li> </ul>
July 2015	Bonham Road, Mid-levels	<ul style="list-style-type: none"> <li>On a masonry retaining wall (commonly known as "stonewall") between Bonham Road and St. Stephen's Lane, a Chinese banyan tree collapsed and caused injuries to two people.</li> </ul>
July 2017	St. Stephen's Beach, Stanley	<ul style="list-style-type: none"> <li>A 12-meter-tall Chinese tallow tree on a hillside near a stairway leading to a beach collapsed and injured a 47-year-old hiker in the tourist spot of Stanley.</li> </ul>
August 2018	Shun Lee Estate, Kwun Tong	<ul style="list-style-type: none"> <li>A branch failure incident happened. The branch snapped and hit a foreign domestic helper and caused her death.</li> </ul>

**Core government departments with tree management duties  
and estimated number of trees maintained in 2018**

<b>Core tree management departments<sup>(1)</sup></b>	<b>Duties</b>	<b>Estimated no. of trees maintained</b>
(a) Leisure and Cultural Services Department	<ul style="list-style-type: none"> <li>To manage trees in the department's venues and landscaped areas along public roads, except expressways.</li> </ul>	598 000
(b) Highways Department	<ul style="list-style-type: none"> <li>To manage trees on roadside man-made slopes, retaining walls and expressways.</li> </ul>	590 000
(c) Architectural Services Department	<ul style="list-style-type: none"> <li>To manage trees on man-made slopes maintained by the department.</li> </ul>	193 000
(d) Water Supplies Department	<ul style="list-style-type: none"> <li>To manage trees within waterworks facilities.</li> </ul>	153 300
(e) Housing Department	<ul style="list-style-type: none"> <li>To manage trees in public housing estates.</li> </ul>	92 900
(f) Agriculture, Fisheries and Conservation Department	<ul style="list-style-type: none"> <li>To manage trees in country parks.</li> </ul>	36 000
(g) Drainage Services Department	<ul style="list-style-type: none"> <li>To manage trees within drainage facilities.</li> </ul>	22 100
(h) Civil Engineering and Development Department	<ul style="list-style-type: none"> <li>To manage trees in works areas during construction.</li> </ul>	9 100
(i) Lands Department	<ul style="list-style-type: none"> <li>To manage trees on unallocated government land not managed by any other departments.</li> </ul>	Not available <sup>(2)</sup>
<b>Total:</b>		<b>&gt; 1 694 400</b>

Notes : (1) According to the Audit Commission (2014), some 182 000 trees were managed by the 27 non-core departments in 2013.

(2) There are large number of trees on unallocated government land which are under the purview of the Lands Department. However, the department does not keep an inventory of such trees.

Data sources: Audit Commission (2014) and Legislative Council Secretariat (2019).



## Existing legislation on tree-related matters

Legislation	Tree-related matters
<b>Ordinances with provision(s) touching upon protection of vegetation</b>	
(a) Forests and Countryside Ordinance (Cap. 96)	<ul style="list-style-type: none"> <li>The Ordinance protects trees in any forest or plantation on unleased Government land and is applicable to both urban and rural areas. It targets cases of damage to trees (e.g. illegal felling) on unleased Government land.</li> </ul>
(b) Country Parks Ordinance (Cap. 208)	<ul style="list-style-type: none"> <li>The Ordinance protects, among other things, trees in country parks. It targets cases of wilful damage of trees (e.g. illegal felling) within country parks.</li> </ul>
(c) Public Health and Municipal Services Ordinance (Cap. 132)	<ul style="list-style-type: none"> <li>The Ordinance contains provisions that may be applicable to trees on pleasure grounds, public cemeteries and gardens of remembrance, etc. It is used to prosecute cases of tree vandalism at these locations.</li> </ul>
(d) Antiquities and Monuments Ordinance (Cap. 53)	<ul style="list-style-type: none"> <li>The Ordinance protects trees in proposed monuments and monuments. It targets cases of wilful damage to a proposed monument or monument, including excavate, carry on building or other works, plant or fell trees or deposit earth or refuse on or in a proposed monument or monument.</li> </ul>
<b>Ordinances with provision(s) for enforcement against illegal activities</b>	
(e) Crimes Ordinance (Cap. 200)	<ul style="list-style-type: none"> <li>More serious cases involving wilful damage of trees (e.g. illegal felling, arson) are prosecuted under section 60 of the Ordinance.</li> </ul>
(f) Theft Ordinance (Cap. 210)	<ul style="list-style-type: none"> <li>Serious cases involving stealing of trees, especially valuable trees such as Incense Tree and Buddhist Pine are prosecuted under section 2(1) of the Ordinance.</li> </ul>
(g) Summary Offences Ordinance (Cap. 228)	<ul style="list-style-type: none"> <li>Cases involving minor damage of trees (e.g. drawing, scratching on trees) in a public place are prosecuted under section 4(28) of the Ordinance.</li> </ul>
<b>Ordinance relating to environmental protection</b>	
(h) Environmental Impact Assessment Ordinance (Cap. 499)	<ul style="list-style-type: none"> <li>The environmental impact assessment process requires any impact on trees as part of the ecosystem be assessed. Depending on need, mitigation or compensatory measures including transplanting of the valuable trees and planting of new trees and other vegetation may be required.</li> </ul>

Source: Task Force on Tree Management (2009).

## Destructive activities defined in the Parks and Trees Act of Singapore

Section	Activity	Definition
2	Cut, in relation to trees.	<ul style="list-style-type: none"> <li>Felling or lopping a tree.</li> </ul>
	Damage, in relation to trees.	<ul style="list-style-type: none"> <li>Poisoning the tree or plant through:               <ol style="list-style-type: none"> <li>applying any herbicide or other plant toxic chemical to it; or</li> <li>spilling (including washing off or directing water contaminated by) any oil, petroleum, paint, cement, mortar or the like onto the root zone of the tree or plant;</li> </ol> </li> <li>ringbarking the tree or plant or scarring its bark when operating any machinery, or by affixing any object (such as a sign) to it using nails, staples, wires or other means;</li> <li>using tree climbing spikes on a healthy tree (except for the purpose of gaining access to an injured person on it) or fastening materials that significantly restrict the normal vascular function of the trunk or branches of the tree; or</li> <li>causing damage to the tree's root zone by compaction, excavation or asphyxiation (including filling or stockpiling it with materials).</li> </ul>
8	Restricted activities, in respect of trees.	<ul style="list-style-type: none"> <li>Cutting, collecting or displacing any tree or any part of the tree;</li> <li>affixing, setting up or erecting any sign, shrine, altar, religious object, shelter, structure or building, in the national park or nature reserve;</li> <li>clearing, breaking up, digging or cultivating any land in the national park or nature reserve; or</li> <li>wilfully dropping or depositing any dirt, sand, earth, gravel, clay, loam, manure, refuse, sawdust, shavings, stone, straw, or any other matter or thing from outside the national park or nature reserve.</li> </ul>

Source: Singapore Statutes Online (2019).

**Restricted and prohibited activities stipulated  
in the Tree Protection Act 2005 of the Australian Capital Territory**

Section	Activity	Definition
12	<b>Damage</b> a protected tree.	<ul style="list-style-type: none"> <li>• Killing or destroying the tree;</li> <li>• poisoning the tree;</li> <li>• ringbarking the tree (whether partially or completely);</li> <li>• felling or removing the tree;</li> <li>• cutting branches or stems of the tree between branch unions (i.e. lopping);</li> <li>• removing branches of the tree to a previously pruned or lopped point (i.e. pollarding);</li> <li>• major pruning of the tree; or</li> <li>• anything else done to or in relation to the tree that:               <ul style="list-style-type: none"> <li>(a) causes it to die;</li> <li>(b) significantly reduces its expected life; or</li> <li>(c) significantly and adversely affects its health, stability or general appearance.</li> </ul> </li> </ul>
14	<b>Prohibited groundwork</b> in the protection zone for a protected tree.	<ul style="list-style-type: none"> <li>• Contaminating the soil in the protection zone with something that is poisonous to trees;</li> <li>• cutting any of the tree's roots in the protection zone that have a diameter greater than 50 mm; or</li> <li>• doing either of the following in the protection zone, other than in cultivating the soil for horticultural purposes:               <ul style="list-style-type: none"> <li>(a) excavating to a depth greater than 10 cm over an area 4 m<sup>2</sup> or larger; or</li> <li>(b) raising the soil level by more than 10 cm above the natural soil level over an area 4 m<sup>2</sup> or larger.</li> </ul> </li> </ul>

Source: ACT Legislation Register (2018b).

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