

Guiding Principles on Use of Native Plant Species in Public Works Projects

Background

With growing awareness of nature conservation and biodiversity, there is rising demand for achieving ecological functions through the use of native plant species in landscape or rehabilitation works. This guideline aims to promote the use of native plant species¹ in public works projects, by recapitulating major factors to be considered in their application with regard to the basic principles and constraints in using native plant species. The standing lists of recommended native plant species that have been promulgated for different applications are also consolidated and updated for ease of reference in this guideline.

2. This guideline is the result of collaborative effort among Agriculture, Fisheries and Conservation Department (AFCD), Architectural Services Department, Civil Engineering and Development Department (CEDD), Highways Department, and Leisure and Cultural Services Department. In addition, advice has been sought from the academia and experts in this field.

Policy

3. Departments involved in the design of landscape or rehabilitation works in public works projects are encouraged to specify native plant species wherever practicable, taking into consideration all the relevant factors set out in this document. In view of the constraints in using native plant species under certain circumstances, it is not advisable to specify native plant species in every situation without due regard to the suitability of their applications. Professional judgement is always required in achieving a balanced design that responds to the specific requirements of the project.

Basic principles and constraints in using native plant species

4. Plants offer a variety of environmental and aesthetic benefits such as absorbing carbon dioxide from the air, stabilizing soil surface, providing shade and greenery, enhancing visual interest, etc. Many introduced plant species (also called exotic plant species) are used in landscape or rehabilitation works due to their ornamental value, fast growing or easy-to-maintain qualities, or ability to establish in

¹ Native plant species are those plant species that have originated in the region without human involvement or that have arrived there without human intervention from an area in which they are native. For the purpose of this document, the latest version of the Check List of Hong Kong Plants published by AFCD is to be followed in classifying whether a plant species is a native species.

harsh conditions. On the other hand, native plant species generally have higher ecological value.

5. In selecting plant species for use in landscape or rehabilitation works, the principle of “right species at the right place”, which means planting suitable species (or species mix) in sites with suitable condition is always the prerequisite for the planting design. Planting right species at the right place will minimize stress to the plants and potential hazard and nuisance to the public. The approach will most likely enable the plants to survive and thrive successfully in the long run with minimum management and maintenance input, thus contributing to sustainable landscape and cost effectiveness.

6. Native plant species provide local fauna, including birds, mammals and insects with appropriate food sources and habitats. As natural habitats have been replaced by human development and become fragmentary, the use of native plant species in landscape or rehabilitation works can enhance the ecological functions of the plantation and help restore local biodiversity. Using native plant species in the green spaces connecting existing woodlands or afforested areas also provides movement corridors for urban wildlife.

7. Certain local fauna attracted by native plants might act as seed dispersers which further enrich the plant biodiversity and serve as a catalyst for ecological rehabilitation. Such diverse ecological communities comprising native species are generally more ecologically sustainable as compared with monoculture plantation of exotic species.

8. The use of native plant species would also minimize the risk of introducing accidentally invasive exotic species to the ecosystem. In addition, use of native species in landscape works can bring local plants closer to people for demonstration of the value of biodiversity.

9. However, compared with the natural environment where the native plant species evolve and flourish, urban planting sites, heavily eroded sites or other disturbed areas (e.g. borrow areas, degraded slopes, quarries, etc) present very different and harsh site conditions for growth of native plant due to intense human disturbance, unsatisfactory soil and unsuitable microclimates. It is often impractical to plant native species for regeneration in these sites. Certain exotic plant species (e.g. *Acacia* spp. and *Eucalyptus* spp.), however, are proven to be able to establish in the harsh site conditions. The exotic plant cover, when established, would form a

protective cover to the soil surface, nurse the plants in the lower storey, shade out grasses and weeds, and gradually improve the soil condition and the microclimate. Based on past experience, planting of exotic species would not hinder the process of natural colonization of native species but once exotic species have established at the hillside, the colonization process of native species will become longer for the native species to gradually take over the site. To speed up the colonization process of native plants, selective thinning of exotic plant species² followed by enrichment planting of native plant species by phases could be considered. Alternatively, mixed planting of suitable combination of native and exotic species according to specific site conditions can also be considered at the initial stage.

10. Native plant species often have a relatively slow growth rate and competition from weed growth always constrains their establishment. Therefore, subsequent site management and post-planting care such as weeding, fertilization, etc would be essential to improve their survival rate. Sometimes, replacement planting (i.e. supplement planting to replace the dead ones) may also be required if the survival rate of native plants is too low. As supply of native plant species in the commercial market is relatively unstable, early planning for sourcing the required plant stock is essential.

Factors to be considered in using native plant species

11. Based on the principle of “right species at the right place” and given the constraints on the use of native plant species, the following factors should be considered before specifying native plant species in the works projects:

- (i) the objectives of planting (e.g. ornamental, erosion control, ecological rehabilitation, etc) as different objective may require different plant species composition;
- (ii) the adaptability of plant species and site condition for planting (e.g. microclimate, soil, drainage, space constraint, etc) as different species have different demand for light, water, etc;
- (iii) the maintenance need of plant and the management/maintenance and financial resources as the level of management and maintenance may vary with different plant species;

² The operation of selective thinning of exotic species should be carefully administered to avoid misunderstanding by the general public as the operation might involve tree removal by way of felling.

- (iv) the characteristics of the plant species morphology such as form, growth rate, mature size, root system, texture, colour, etc to meet the design requirement;
- (v) the resistance of the plant species to pests and diseases, and ability to recover from damage;
- (vi) the commercial availability of the plant species; and
- (vii) the possible impact to human-being e.g. allergy resulted from abundant pollens, generation of volatile organic compounds, etc.

Existing lists of recommended native plant species for different applications

12. Different lists of recommended native plant species for use in different applications including roadsides, man-made slopes, and natural hill slopes are already in place. These existing lists with modifications to incorporate updated information are given in **Appendices A to C**. Departments involved in the design of works projects can make reference to the lists or their future updates as appropriate.

13. The recommended native plant species lists facilitate selection of plant for different applications, with focuses on native species which are commercially available. Most plant species on the lists are common species. Rare species are intentionally excluded as they are usually not commercially available and also for discouraging potential over-exploitation of rare plant seeds from wild populations.

14. To keep track with the dynamic commercial market of supply of native plant species, the recommended native plant species lists will be regularly updated to reflect the availability of plant species..

Enquiries

15. Any enquiries on this guideline should be directed to the Greening, Landscape and Tree Management Section of DEVB.

**Greening, Landscape and Tree management Section
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