The Global Biodiversity Standard

TGBS Site Certification Registry

Kadoorie Farm and Botanic Garden – Hong Kong

Project title:

Kadoorie Farm and Botanic Garden Forest Restoration Program

Site name:

Kadoorie Farm and Botanic Garden

Final score:

9.30

Criterion	Score
Criterion 1: Select appropriate sites to enhance native biodiversity	8.87
Criterion 2: Enhance protection of existing habitats and biodiversity	10.00
Criterion 3: Protect, restore and manage biodiversity in consultation and partnership with local communities and other stakeholders	9.50
Criterion 4: Aim to maximise biodiversity recovery through ecosystem restoration	10.00
Criterion 5: Avoid and reduce invasive or potentially invasive species	8.00
Criterion 6: Prioritise the use of native, threatened and rare species	10.00
Criterion 7: Promote biodiversity and adaptive capacity	8.00
Criterion 8: Implement robust monitoring, evaluation and adaptive management of biodiversity	10.00

Project details:

Name of applicant organization/s, agency/es or institution/s: Kadoorie Farm and Botanic Garden (KFBG)

Name of project: KFBG Forest Restoration Program

Site location: Kadoorie Farm and Botanic Garden

Area: 35 hectares

Number of zones of different restoration types: 1

Restoration type: Protected areas under restoration

Restoration approach: Assisted natural recovery with planting, seeding, or faunal introductions

Biome: Tropical-subtropical forests biome

Ecosystem type: Tropical-subtropical montane rainforests

Assessor details:

Names of assessors: Kiran Baldwin (#A0001), Paul Blanchflower (#A0006)

Affiliated institution: Auroville Botanical Gardens

Dates of visit: 03/12/24 to 07/12/24

Project Objectives:

- Biodiversity: Connectivity
- Biodiversity: Protection
- Biodiversity: Quality
- Climate: Mitigation
- Climate: Resilience
- Community: Health
- Community: Practices
- Culture: Values
- Ecosystem: Functionality
- Ecosystem: Integrity
- Soil: Quality
- Soil: Stability
- Water: Management

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Restoration Activities:

- Soil erosion control and reversal (through Planting)
- Addition of growth medium (e.g. topsoil, mulch, compost, microbial content, mining byproduct)
- Rainwater and runoff harvesting (e.g. terracing, stone cords, zaï, half-moons)
- Enforcement of restrictions or prohibitions on ecosystem conversion or destruction
- Elimination of sources of degradation (e.g., protection from overhunting, overharvesting, overfishing, or poaching; reestablishment of characteristic hydrology including dam removal and streambank repair; protection from uncharacteristic fire)
- Fire management, including site preparation (e.g. thinning, hardwood reduction, establishment of fire breaks)
- Grazing management (e.g. control of native grazer populations; reductions, removal, or exclusion of non-native grazers)
- Weeding or pruning
- Tree planting
- Shrub planting
- Herbaceous species and subshrub planting (e.g. grasses, forbs, ferns, terrestrial mosses and lichens)
- Other vegetation introduction (e.g. epiphytes, hemiepiphytes, vines, parasites, hemiparasites)
- Other restoration of vegetation cover and ecosystem structure
- Species control measures, physical or mechanical (e.g. cutting, pulling, burning, covering, digging up, ploughing, scalping, mowing, capturing, hunting)
- Re-invasion monitoring and prevention measures

Project description:

This forest restoration project has the following objectives:

- Re-establish upland, woody, native plant communities that are analogous to those suspected to have occurred historically in Hong Kong and which can still be found at the selected reference sites.
- Re-invigorate the natural processes necessary to sustain the ecological functionality of the resulting forest ecosystem, including pollination, fruit set, seed dispersal, gene flow, species turn-over and trophic cycling.
- Reintroduce and establish self-sustaining populations of native plants and associated taxa, including rare and threatened species, contributing to their circa situm and in situ conservation.
- As far as is practicable, recover the complete native diversity not only of trees, but also other plant growth forms, such as lianas, epiphytes and understorey herbs.
- Encourage the recolonisation of native animal species by restoring their natural habitats.
- Control or eradicate invasive animal and plant species at the restoration site.
- Monitor and quantify the increase in aboveground biomass associated with the recovery of a healthy, biodiverse forest ecosystem to help assess the carbon sequestration potential of this approach of ecological restoration.

Ecosystem Integrity:

Key attribute	Sub-attribute	Baseline		Current Conditions		Trajectory	Score
		Description	Star Rating	Description	Star Rating		
Absence of Threats	Contamination	Protective measures of the site were in place since the land was acquired. At baseline conditions, a 4-star rating was chosen as both on site and adjacent, there was a low level of threat but no management or mitigation measures in place.	4 stars	At current conditions, the rating is 4-stars, as while management and mitigation is in place, a new potential source of contamination was observed. The oldest batches of plastic tree guards from initial plantation drives were observed breaking down into micro-plastics. This new source is a low-level threat that is being monitored by the team, however, could potentially cause a contamination of the substrate and hydrology if not managed effectively.	4 stars	Declining	-2
	Invasive species	At baseline conditions, as confirmed through the 1993 historic aerial imagery map, the project site was a degraded a mix of open-barren-grassy area and sporadic clusters	0 stars	At current conditions, while forest cover has increased to an estimated 97% (see 2025 Map), a native invasive species - *Machilus chekiangensis* dominates vast areas of the site due to its highly competitive ability, dense	2 stars	Improving	10

		of trees and shrubs primarily present along the streams and gullies. The open-barren-grassy areas, covering an estimated 45.6% of the site (see map) were dominated by *Miscanthus floridulus* (native) and *Imperata cylindrica* – non-native and reported as invasive. The sporadic tree and shrubs areas, covering an estimated 54.4% of the site contained primarily native species with low diversity such as *Rhodomyrtus tomentosa* and *Baeckea frutescens*. The native invasive species *Machilus chekiangensis* covered an estimated half of the forested area considering its strong over dominance tendencies. A 0-star condition has been allocated as direct drivers of invasive species were		evergreen crown and rapid regeneration capacity. While active management in the form of removal, thinning and pruning has been conducted since 2012, it is still significantly present – hence the current rating of 2 stars. Active management is also rigorously undertaken for invasive species such as *Mikania micrantha, Bidens alba, Ageratum conyzoides*, *Lantana camara*, and *Acacia confusa*, which are increasingly being brought under control.			

	present both on-site and adjacent with a relative cover higher than 50% of the site (45% open-area + 27% half of forested area = 72%).					
Over-utilisation	At baseline conditions, while the site was clearly delineated and protected legally, there was no management/mitigation efforts to combat illegal hunting/poaching, over-extraction of rare medicinal/high value plant species. While these threats were low, they were still present and an occasional occurrence. Over-grazing and browsing from livestock, feral animals, and native species such as deer and boar were a higher threat and pressure to the land, restricting the possibilities for natural regeneration to	2 stars	Currently, the site is well protected with teams actively monitoring and mitigating risks through the use of camera traps, at entry/exit points of the site, patrolling, rapid response, as well as awareness campaigns e.g. for the over-exploited species such as pangolin and incense tree (*Aquilaria sinensis*). As these species are already over-exploited and endangered regionally, as some instances of poaching/logging occur on-site they must be considered as over-extraction. Additionally, the sustained use of tree guards to protect planted seedlings is due to the threat of native-grazers which is a continued pressure on natural regeneration. Therefore, a current rating of 3-	3 stars	Improving	6

		occur. Considering this, a baseline rating of 2-stars was allocated as while some drivers are of low threat, the over-grazing and extraction of rare species remained intermediate in degree of threat.		stars has been allocated as the number of threats is low but the degree is intermediate for over-grazing.			
	Other degradation drivers	The primary degradation driver on site was regular uncharacteristic wildfires as extensively explained in the KFBG Restoration Management Plan. At baseline, this driver regularly swept across the site, burning any woody material and essentially maintaining the grassland and favourable conditions of grass species, limiting the chance of natural succession/recovery. The site had effectively absent management and	0 stars	Currently, the site is well protected from degradation drivers with mitigation measures such as firebreaks, water tanks and extensive fire hoses in place against fires. There has been a significant increase in vegetation cover across the site, coupled with a reduction in the more flammable grass cover, further reducing the threat of fire. Active monitoring, management and mitigation is being done which drastically reduce the threat, although it is still present in the area.	4 stars	Improving	10

		mitigation, hence the rating of 0-stars.					
Physical conditions	Substrate physical conditions (both abiotic and biotic components)	At Baseline, manually constructed stone terrace walls (from late 1800s) could still be observed as striations across the slopes of the site – a physical characteristic dissimilar to the reference. Studies in 2012 revealed the severely eroded nature of the site and its damaged soil highlighting the complete absence of topsoil, with severely eroded O and A horizons. The site was, however, able to support the growth of some characteristic species such as pioneer shrubs, *Rhodomyrtus tomentosa* and *Baeckea frutescens*, as well as early successional species able to establish in the protected niche areas.	1 star	At current conditions, the physical structure of the soil has increased moderately with the building-up of top layers through organic material and limiting erosion and runoff, however some areas e.g. along pathways, firebreaks and steep zones, still have moderate dissimilarity to the reference. The ability to support growth and development of characteristic species has increased significantly as is confirmed by the success of the planting campaigns and number of species established (>400). These observations have led to the current rating of 3-stars.	3 stars	Improving	10

		While 2012 studies were not the true baseline (1995), the main initiatives that occurred between these dates were sporadic planting experiments – which would not have drastically changed the physical properties of the soil, therefore these studies are used to inform the baseline rating of 1-star.					
	Substrate chemical conditions	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
	Water chemo-physical conditions	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
Species composition	Desirable plants, fungi and lichens	As confirmed through the 1993 historic aerial imagery map, the project site's baseline condition was a degraded mix of open-barren-grassy area (non-characteristic) and	1 star	At current conditions, restoration plantation has occurred across over 13Ha (37%) of the site, now holding more than 400 species of native tree and shrub species – an over-richness when compared to the reference. The rest of the site	3 stars	Improving	10

		sporadic clusters of trees and shrubs primarily present along streams and gullies. The open-barren-grassy areas, covering an estimated 45.6% of the site (see map), were dominated by *Miscanthus floridulus* (native) and *Imperata cylindrica* (non-native and reported as invasive). The sporadic tree and shrubs areas, covering an estimated 54.4% of the site contained native species with low diversity (fewer than 30 species) such as pioneer shrubs *Rhodomyrtus tomentosa* and *Baeckea frutescens* and early successional species such as *Machilus chekiangensis*, *Mallotus paniculatus*, *Syzygium hancei*, *Gordonia axillaris*, *Itea chinensis*, *Castanopsis fissa* and *Acronychia pendunculata*. Considering		(63%) has naturally regenerating forest cover, confirmed through the 2025 Vegetation Area Map, with a much lower diversity (~40 species from field survey) and skewed evenness due to dominant species *Machilus chekiangensis*. Considering the evidence of a mixed system, a rating of 3-stars (>50% similarity to reference) has been allocated for current conditions.			

	the low richness and far lower evenness of characteristic vegetation, a rating of 1-star has been allocated for Baseline.					
Desirable animals	At Baseline conditions, the site was a mix of non-characteristic open-barren-grassy area (~45.6% area) and low-diversity sporadic tree and shrubs areas (~54.4% area), mostly along seasonal streams and gullies. As the site was protected with clear land tenure, some characteristic faunal species would seek refuge and habitat – especially in the steep gullies and remote areas with tree and shrub cover. Uncharacteristic wildfires would have been a regular disturbance, preventing recovery and succession and limiting the level of	2 stars	For current conditions, a comparative analysis of species was conducted with lists of Tai Po Kau Nature Reserve, an estimated 4-star reference site for fauna. Lists of five faunal groups (birds, amphibians, butterflies, mammals, odonata, and reptiles) were compared which demonstrated an 81% similarity between the project site and the reference site, while areas were 35Ha and 460Ha respectively. The faunal species types missing from both sites include large species, locally extinct species, and rare or niche species that have been unable to return after their extirpation, which occurred by the 19th century. Given the site's conditions and its exceptionally high faunal species diversity relative to its area, a 4-	4 stars	Improving	10

	residency of faunal species. The KFBG bird checklist data from 1995-2000, encompasses a total of 106 species, which represents less than half of the reference species list (254), indicating a 2-star condition.		star rating has been assigned for current conditions.			
Rare and threatened species	At baseline conditions, considering the level of degradation and the lack of characteristic habitat provision and species diversity, rare and threatened species were effectively absent from the site. Regular wildfire disturbance further limited the chances for natural recovery and succession of flora, as well as residency possibilities for faunal species. This is confirmed through the baseline bird checklist (1995-2000) which had only one IUCN	0 stars	For current conditions, a secondary forest reference site for fauna of KFBG (35Ha), Tai Po Kau Nature Reserve (460Ha), was identified and a comparison of IUCN Threat Status was completed for five faunal groups. The results showed a very similar level of threatened species (IUCN) with birds at [3.25% for KFBG and 4.33% for TPK] and reptiles at [14% for KFBG and 9.67% for TPK], overall figures across all five groups were [3.51% for KFBG and 3.46% for TPK]. For flora, a direct project objective of conservation of rare and threatened species is evident from the planting list provided,	4 stars	Improving	10

	Endangered species, the Yellow-breasted Bunting, a migratory bird (out of 106 in total).		with 121 characteristic rare species. Considering the evidence, the site holds a significantly high level of rare and threatened species relative to its area, with a similar proportion of rare and threatened species as the chosen reference site, a 4-star rating was allocated.			
No undesirable species	In addition to the invasive grass species present at baseline, a large number of fruit and fast-growing non-native species such as Taiwan acacia (*Acacia confusa*), slash pine (Pinus elliottii), Gympie nut (*Macadamia ternifolia*), longan (Dimocarpus longan), lychee (*Litchi chinensis*) and jackfruit (*Artocarpus heterophyllus*) were planted before the 1980s – prior to the baseline (1995). The open-barren-grassy areas (with invasive species) covered	1 star	Currently, the invasive grass open areas have negligeable cover and the planted non-native species have undergone thorough management in the form of removal and pruning resulting in the non-native and invasive species cover being drastically reduced. However, a native invasive, *Machilus chekiangensis* still dominates significant areas of the site, more than 25% but less than 50% coverage across the site and strata, while undergoing significant management activities such as pruning and removal, therefore a rating of 2-stars has been allocated.	2 stars	Improving	6

		an estimated 45.6% of the site (see 1993 map) and the other undesirable species as well as invasive native species such as *Machilus chekiangensis* accounted for an estimated half of the 54.4% sporadic tree and shrub vegetation area. A rating of 1-star was allocated as the sum of invasive species in the open areas plus undesirable species in the forested areas is 45% + 27% = 72%. This falls within the threshold of 50%-75% coverage of undesirable species across the site.					
	Provenance, genetic diversity and genetic resilience	As can be seen from the 1993 vegetation map, the site had a mixed coverage of open-barren-grassy areas maintained by regular uncharacteristic fire disturbance and	1 star	At current conditions, genetic diversity and resilience have increased significantly thanks to the efforts and direct objectives of the project. Robust and scientific propagule provenance is carried out for all planted species on site,	3 stars	Improving	10

		sporadic tree and shrub clusters primarily along the stream and gully areas. As was the case in areas adjacent to the site, the site had low diversity of native species (reported as fewer than 30 native woody species) and some generalist faunal species. Additional causes of low genetic diversity and resilience on site and within the surrounding regions include genetic erosion, inbreeding, and reproductive failure associated with extinction debt, as well as the local extirpation of natural seed dispersal agents such as giant flying squirrels (*Petaurista* spp.), Edwards's long-tailed giant rat (*Leopoldamys edwardsi*), and the large Indian civet (*Viverra zibetha*). Considering this,		including geo-tagged locations of propagule origin, parent information, and serial codes tracked in a dedicated database for all seedlings (see photo of tag). The nursery, along with the conservation genetics laboratory, follows strict protocols for seed collection, propagation, and genetic testing of populations from forest fragments, with a focus on the robust re-integration of rare and endangered species. The provenance of the material is appropriate, with sourcing from nearby forest fragments, country parks and isolated trees, such as those on the unpopulated islands of Hong Kong. For faunal species, increased habitat, food provision and protection has increased diversity and populations considerably as well as through efforts of the fauna conservation department such as the Wild Animal Rescue Centre. Considering this, the vast majority of all flora species currently on site			

		1-star has been allocated for baseline as while some native species with genetic diversity were present such as generalist species, this represented far less than 25% of species of the reference.		have sufficient genetic diversity and resilience, so a 3-star rating would be appropriate (as the rating is based on all species of the reference). For faunal species, the conditions onsite have enabled increased populations and recruitment of most species, in turn augmenting the number with adequate genetic diversity and resilience. While the number of Desirable animals on site falls within the 4-star rating, a final rating for this sub-attribute has been allocated as 3-stars as it considers provenance, genetic diversity, and genetic resilience of all species, averaging 'Desirable plants, fungi and lichens' and 'Desirable animals'. Considering this, a 3-star rating has been allocated, as while genetic diversity and resilience have increased substantially, the surrounding areas of the site would require comparative			

				rejuvenation for a higher rating to be achieved.			
Structural Diversity	All vegetation strata	At baseline conditions the site was a mixture of open-barren-grassy areas (~45.6%) – an uncharacteristic stratum maintained by regular wildfire disturbances, and sporadic tree and shrub clusters (~54.4%) primarily along the stream and gully areas. These areas would have some similarity to the reference strata with a shrub layer and occasional early successional species. As this does not represent a functional stratum of the reference throughout the site, a baseline rating of 0-stars has been allocated. This is also confirmed by the Remote Sensing Report (page 10) where the canopy height model of 2010 still has a	0 stars	Currently all characteristic species for diverse reference strata have been planted in the active restoration plots (13Ha -37% of the site), while the remaining area, undergoing natural recovery has a lower species diversity but with key strata characteristics. A 3-star rating for current conditions has been allocated as the site has significantly increased similarity of strata to the reference, with the ability to support biota such as fauna through habitat and food provision, however, additional time is needed for the upper stratum to develop as well as increased coverage throughout the site. The Remote Sensing Report, page 12 – canopy height histogram confirms the limited presence of trees above 20m.	3 stars	Improving	10

		predominant 3m vegetation surface with a 3-9m layer along the gullies and streams. Additionally, photos taken during studies in 2012 showing the site had low similarity to the reference model 'Strata Profile' from the Restoration Management Plan. The Strata Profile includes 5 layers characterised by key species (See Restoration Management Plan, page 17).					
	All trophic level	At baseline conditions, considering the habitat provision and layout of the site, mostly common generalist faunal species would be present on site with a low level of residency. While the vegetation would provide some provision of the producer level and small	1 star	At current conditions, the producer trophic level is present due to the planting efforts and natural recovery as well as the age since baseline, allowing for mature plants that are fruiting and seeding. From the species lists of 5 faunal groups at KFBG, it is clear that trophic diversity is present with multiple levels of consumers. A bird guild list (Column G of	3 stars	Improving	10

		fauna would get consumed by birds, these would not constitute functional trophic levels of the reference condition, therefore a rating of 1-star has been allocated.		KFBG_TPK Fauna) was generated using the EltonTraits database, resulting in the identification of bird species from all guilds, feeding on seeds/plants, fruit/nectar, insects/invertebrates, as omnivores, or as scavengers. During the field survey, it was observed that the decomposer trophic level indicators was minimal, likely due to the removal of woody material from the site (which is returned as mulch/biochar), also various types of scats were observed (see photos). The large apex predator trophic level is missing with the local extinction of the tiger, leopard, and clouded leopard. Considering the levels present and absent, a current rating of 3-stars has been allocated.			
	Spatial mosaic	At baseline conditions, the spatial distribution of the site can be confirmed through the 1993 historic aerial imagery map,	1 star	At current conditions, the 2025 vegetation area map confirms a canopy coverage across ~97% of the area. The Remote Sensing Report, NDFI values (5.4, page 14)	3 stars	Improving	10

		showing a cover of predominantly open-barren-grassy areas (~45.6%) and sporadic clusters of trees and shrubs primarily present along the streams and gullies (~54.4%). This is further confirmed through Remote Sensing Report, figure 2b (page 10) showing canopy height in 2010, prior to the active restoration interventions. NDFI values (5.4, page 14) show a baseline condition of just above half the value of the reference site. Considering this, a baseline rating of 1-star has been allocated as while some spatial patterning features show similarity to the reference, these are not present throughout the site.		shows that current conditions have merged to the same level as the reference site, indicating very high similarity of canopy cover. Considering the level of spatial pattern feature age, complexity, niches, and heterogeneity, increased similarity to the reference will occur with more time, active restoration, and management of the over-dominant native species *Machilus chekiangensis*. A rating of 3-stars has been allocated.			

	Productivity/ cycling	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
Ecosystem Function	Habitat & interactions	At baseline conditions, the diversity of flora and fauna was limited, corresponding to a 1-star rating (5–25% similarity to the reference site). Habitat provision was minimal, as many faunal species, e.g. birds, were likely residing in adjacent, more intact or remote areas. Although this level was low, it was not entirely absent, as birds would use the pockets of vegetation to perch and small animals would shelter in the brush, justifying the allocation of a 1-star rating. While the physical habitat structure in wooded areas (covering approximately half of the site) may have had the potential to support a greater presence of native	1 star	At current conditions, the level of habitat provision has increased significantly with the restoration efforts planting large quantities of characteristic plant species. While the areas not undergoing active planting (~63% area) have lower diversity of species, they have undergone natural recruitment and hold different habitat niches such as clearings, high- and low-density shrubbery, as well as the stream areas creating an appropriate microclimate. During the field visit, evidence of burrows, digging, scat and habitat types were photographed (see photos). All fauna that are now present on site have found their suitable niches and are able to interact, increasing populations. While the age of the project has enabled a level of mature trees, fruiting and seeding, further complexity and maturity would take significantly longer.	3 stars	Improving	10

		fauna, the actual faunal use of the site remained low due to regular fire disturbance, limited food resources, and the absence of key species in the surrounding region.		One aspect that is missing is the presence of decomposing woody debris (which is currently removed) which would support a different niche especially for insects. Therefore, a rating of 3-stars has been allocated for current conditions.			
	Resilience & recruitment	At baseline conditions, the site experienced uncharacteristic disturbances such as wildfires which maintained the large proportion of grassland-open area of the site. This restricted the possibility of natural recruitment, which was only possible along the streams, gullies and steeper remote parts of the site which experienced over-grazing and browsing by animals such as deer, boar and feral goats and cattle. Considering only characteristic disturbances,	1 star	At current conditions, resilience to characteristic disturbances such as typhoons has increased with improved canopy structure and reduced fragmentation and edge length (confirmed through Remote Sensing Report pages 15–16). The increased vegetation cover and stabilisation of soils have also increased resilience to landslides. However, grazing and browsing is still a disturbance that restricts recruitment, therefore tree guards are used for all planting initiatives to protect the investment gone in for the development of seedlings. Because of this action, and the increased presence of new mature species on site, significant	3 stars	Improving	10

		the site had a very foundational capacity for resilience and recruitment, hence the rating of 1-star.		regeneration is able to establish within the site. Recruitment of fauna has increased because of habitat and food provision; however, the lack of certain key seed dispersal agents, due to historic local extirpation, such as giant flying squirrels, Edwards's long-tailed giant rat, and large Indian civet, along with a lack of nearby diverse intact reference sites, means that the possibility of recruitment from further away towards the site is limited. This is evidenced through the arrested succession exhibited in the natural recovery areas of the site. Considering the evidence above, a rating of 3-stars has been allocated.			
External Exchanges	Landscape flows	Unable to assess	N/A	Unable to assess	N/A	N/A	N/A
	Intraspecific gene flows	At baseline conditions, the proportion of species for both flora and fauna on site has been established as within the 1-star range (5 to 25% of the	1 star	At current conditions, while the site has increased diversity of both flora and fauna significantly, the surrounding areas have not recovered proportionally. Some natural recovery has occurred in	2 stars	Improving	6

		reference), as identified in sub-attributes (h) and (i). As these are resilient, commonly occurring species that were able to survive under degraded conditions, it is expected that they could all breed and cross-pollinate with off-site populations. Many of these characteristic species occur frequently in adjacent areas of the site, such as along the slopes of Tai Mo Shan. While the percentage of species with active genetic flow may be slightly lower than the total present on site due to the absence of certain key seed dispersers and historic genetic erosion in the broader landscape, it is still estimated to fall within the 1-star range (>10%) when compared to the reference.		the secondary forests, and new genetic flows established, such as for avifauna between the site and Tai Po Kau Nature Reserve (~6 km away). However, for flora species, the surrounding areas do not appear to support significantly increased diversity or genetic variation adjacent to the site. However, as the site has high genetic diversity, because of effective provenance strategies, new genetic flows are taking place outwards and genetic recombination can take place with populations outside the site. This will increase with time as more species on-site reach maturity. One additional source of increased flows are the activities of hand pollination conducted by the team, especially for rare/threatened species. Considering this, a rating of 2-stars has been allocated as more than 25% of species of the reference have established flows.			

	Habitat links	At baseline conditions, the proportion of faunal species on site was established as within the 1-star range (5 to 25% of the reference), as identified in sub-attribute (i). As these were primarily generalist, adaptable species that managed to survive in degraded conditions, it is expected that they moved in and out of the site in search of food and suitable habitat, particularly along the slopes of the adjacent Tai Mo Shan. Therefore, a baseline rating of 1-star has been allocated.	1 star	At current conditions, faunal species diversity and richness have increased significantly, as reflected in the 4-star rating of sub-attribute (i). However, increased protection measures such as strong fencing in areas with high risk of human intrusion, may now limit terrestrial connectivity for medium to large animals. Surrounding areas have experienced increased shrub and canopy cover, as shown in the 2025 Vegetation Area Map, providing shelter and structural support for enhanced habitat connectivity. In addition, improved stream and gully health offers new movement corridors for various fauna. Habitat links are likely stronger along the more remote southern and eastern boundaries, and lower along the northern and western edges, where fencing and human activity are more present. Considering these factors, a rating of 3-stars has been allocated, reflecting a significant	3 stars	Improving	10

				improvement in faunal habitat connectivity.			

Level of Protection:

Baseline: Paper park (1 star)

Management activity	Sufficient level	Insufficient level
Soil erosion control		X
Watershed management		
Management of wetland hydrology		
Enforcement of restrictions or prohibitions on ecosystem conversion or destruction		X
Implementation of sustainable ecosystem management practices in productive landscapes (e.g., organic farming; agroforestry; Farmer Managed Regeneration)		
Protection from overhunting, overharvesting, overfishing, or poaching		X
Protection from uncharacteristic fire		X
Maintenance of natural or semi-natural disturbance regimes (e.g., fire; flooding; grazing; haymaking)		
Fire management, including site preparation (e.g., thinning, hardwood reduction, establishment of fire breaks)		X
Prescribed burning		
Grazing management (e.g., control of native grazer populations; reductions, removal, or exclusion of non-native grazers)		X
Species control measures, physical or mechanical (e.g., cutting, pulling, burning, covering, digging up, ploughing, scalping, mowing, capturing, hunting)		X

Species control measures, biological (release of biological control agents, grazing, predation)		X
Species control measures, organic or non-synthetic chemical (e.g., organic herbicides)		
Species control measures, synthetic chemical		
Post-control measures		X
Re-invasion monitoring and prevention measures		X
Management of secondary invasives		X
Other control of invasive species		

Current: Habitat/species management area (5 stars)

Management activity	**Sufficient level**	**Insufficient level**
Soil erosion control	X	
Watershed management		
Management of wetland hydrology		
Enforcement of restrictions or prohibitions on ecosystem conversion or destruction	X	
Implementation of sustainable ecosystem management practices in productive landscapes (e.g., organic farming; agroforestry; Farmer Managed Regeneration)		
Protection from overhunting, overharvesting, overfishing, or poaching	X	
Protection from uncharacteristic fire	X	

Maintenance of natural or semi-natural disturbance regimes (e.g., fire; flooding; grazing; haymaking)		
Fire management, including site preparation (e.g., thinning, hardwood reduction, establishment of fire breaks)	X	
Prescribed burning		
Grazing management (e.g., control of native grazer populations; reductions, removal, or exclusion of non-native grazers)	X	
Species control measures, physical or mechanical (e.g., cutting, pulling, burning, covering, digging up, ploughing, scalping, mowing, capturing, hunting)	X	
Species control measures, biological (release of biological control agents, grazing, predation)	X	
Species control measures, organic or non-synthetic chemical (e.g., organic herbicides)		
Species control measures, synthetic chemical		
Post-control measures	X	
Re-invasion monitoring and prevention measures	X	
Management of secondary invasives	X	
Other control of invasive species		

Stakeholder Engagement and Social Benefits:

Attribute		Score	Description
Stakeholder engagement	Stakeholders identified	1	Management Plan has a list of primary and secondary stakeholders and how they are involved in the project. Stakeholders are being made aware of the project through regular, extensive social media and awareness campaigns as well as free public access to all reports, publications, blog posts, and information through the website..
	Grievance mechanism	1	There is a yearly anonymous staff engagement survey carried out in (multiple languages) for feedback and grievance raising, there is evidence for effective resolution such as salaries increased and increased holidays to match with all employees of KFBG. The teams have yearly meetings and feedback mechanisms for reflection and next steps, to raise queries or issues and move forward effectively. The office has an anonymous complaint/feedback box where whistleblowing or grievances can be submitted. KFBG works closely with government agencies, and any problems or queries are taken directly to the Kadoorie family or board. This serves as an informal grievance mechanism, allowing issues to be resolved quickly through direct engagement with management or trustees.
	Primary stakeholders involved	1	Primary stakeholders such as staff from other departments have annual planting and weeding days to participate in the restoration work.

			Community planting days involve interested people from surrounding areas. Many types of visitors are welcomed including school visits, NGOs, corporates, etc. with growing total number over last five years. KFBG organises a programme with free entry for domestic helpers of Hong Kong. System in place for volunteers to sign up online and work with free lunch and transport provided. Also, KFBG flora and fauna representatives invited to participate in government KM-GBF BSAP, leading to increased support and a strengthened relationship with the government.
	Secondary stakeholders involved	1	Researchers and students from Hong Kong University conduct multiple scientific studies in the restoration area. Seedlings are supplied freely to local NGOs. KFBG recently appointed a Development and Strategy advisor to plan increased collaboration and expansion of restoration work with political and corporate engagement plans.
Benefits distribution	Capacity increased/building	1	Members of flora department that work on restoration, get sent on specialised courses for increased knowledge uptake, paid by KFBG. KFBG's People & Culture Department strengthened capacity building through enhanced staff engagement, learning opportunities, cultural initiatives, and a range of trainings—including fire safety, workplace safety, and first aid.

	Benefits/opportunities equitably distributed	1	Equal opportunity policy for employment clearly described in documents. Education of younger generations – Fernanda Cardoso conducted talks to secondary school children about career paths, emphasis with young women. Most employees are local. Employment of people with disabilities. Employment of minority groups.
	Improved community wellbeing	1	Recreation value through regular visitors and hikers to the restoration site. Health and wellness programmes and tours hosted by KFBG. Spiritual site at peak in KFBG where people visit regularly for cultural activities. Restoration site on hillside of Tai Mo Shan mountain crucial for rejuvenation and conservation of springs and streams.
Knowledge Enrichment	Inclusion of local or Indigenous knowledge in project development	0.5	The majority of staff are local, with many holding senior positions within the team. They are able to apply their local best-practice knowledge to project initiatives and lead teams to ensure that activities are carried out in ways best suited to local conditions. It is worth noting that Hong Kong does not have officially recognised “Indigenous Peoples” in the same sense as defined under the UN Declaration on the Rights of Indigenous Peoples.
	Inclusion of scientific / conservation best practice in project development	0.5	Rigorous scientific procedures are evident throughout the work done in the restoration site, from detailed management plan documents, monitoring techniques, scientific studies and implementation, choice of reference species, conservation of rare and threatened species,

			elimination of invasive species and studies on arrested succession conditions of Hong Kong's secondary forests.
	Project contributes to the scientific community / wider knowledge	0.5	KFBG has discovered numerous new species and published extensive scientific studies.
Sustainable Economies	Increased employment	0.5	KFBG's Forest Management Section (currently with ca. 16 staff) is responsible for all arboriculture, silvicultural and general land and soil management activities. The Lower Hillside Section (incorporating ca. 12 staff) oversees the nurseries. Ecological Restoration Section and Ecological and Environmental Section are science teams (currently employing ca. 6 staff).
	Improvement to local supply chains/local economy	0.5	Local businesses are contracted for work services such as pruning, planting, and aftercare, as well as rental of machinery.
	Inclusion of sustainable business and employment models		No evidence of sustainable business model in the sense of being self-sufficient. The organisation operates with funding primarily from The Kadoorie Foundation as well as other sources.

Monitoring, Evaluation and Adaptive Management:

Ongoing Management Planning:

- The plan builds as far as possible on effective practices, including traditional and indigenous peoples' management practices.
- The plan incorporates relevant management agreements and includes a detailed description of all required activities specifying their duration of time and frequency.
- The management plan involves subject matter experts, including local restoration practitioners and other stakeholders and rights and knowledge holders, who can help develop innovative management methods based on lessons learned from other projects.
- The management plan is available to all those involved in the ongoing management of the project.
- The management plan identifies the ongoing management team, and clearly communicates roles and responsibilities of members of the team.
- The ongoing management plan is modified based on the results of periodic monitoring, and of changes in trade-offs or stakeholder or rights and knowledge holder interests or needs.

Long-term Resourcing:

- If not fully secured, appropriate long-term sources of funding for ongoing management are determined. There is coordination with other restoration projects to reduce costs and duplication of effort. These synergies can include, for example, alignment of schedules to facilitate sourcing of plant materials, sharing equipment and monitoring.
- The project conducts periodic monitoring of the site to check for recurrence of degradation and to protect the investment in restoration, involving local stakeholders and rights and knowledge holders, including indigenous peoples and key groups living in and adjacent to the project sites as much as possible.
- The project conducts site protection measures needed to prevent deleterious external or internal impacts (e.g., protection from unsustainable grazing, prevention of inappropriate fire, prevention of unsustainable harvesting, control

of infestations by invasive species, management of weeds and other vegetative competitors).

- The project ensures essential ecosystem functions and processes are operating as appropriate and required to maintain ecosystem integrity and provide ecosystem resilience to degradation stressors (e.g., management of hydrological regimes, ensuring natural disturbance regimes such as periodic fire in fire-adapted ecosystems or flooding of riparian zones).
- The project facilitates beneficial external exchanges with the broader landscape, including the exchange of genetic material in fragmented landscapes (e.g., through hand pollination or movement of propagules), or for depleted populations suffering from inbreeding depression or other genetic deficiencies.
- The project provides a governance structure to oversee ongoing management and stewardship of the site, and ensure legal protections for the investments made in restoration.

Adaptive Management:

- The project invests in knowledge sharing, acquisition and training to incorporate updated best practices when designing and implementing responses to unexpected or unforeseen events that threaten the integrity of the restoration site.
- The project prepares contingency plans and protocols in case known degradation drivers re-emerge (e.g., populations of invasive animals that were previously managed through a biocontrol agent that ceases to function).
- The project consults the monitoring and evaluation plan before conducting implementation and ongoing management, to avoid activities in a manner that reduces the ability to learn about treatment outcomes.

Continuous Improvement:

- The project adopts a policy of continuous improvement informed by reliable monitoring. Such a policy can allow managers to continually upgrade and build on project goals to advance initial recovery towards progressively higher outcomes, seeking the highest level of recovery possible over the long term.

- The project seeks opportunities for the implementation of additional restoration activities or projects at the project site or in the broader landscape or seascape through replication or scaling up.
- The project conducts additional restoration activities that take advantage of the improved condition of the site (e.g., infill planting, reintroduction or augmentation of rare species, reinstatement of natural disturbance regimes).
- The project promotes engagement and buy-in from local stakeholders and rights and knowledge holders, including indigenous peoples and key groups, so that they can foster and be part of continuous improvement.
- The project explores further funding mechanisms and capital investment to extend restoration to adjacent or nearby sites, including the development of partnerships with local agencies and other organisations.

Monitoring and Evaluation:

- The monitoring programme was planned while the restoration project or programme was being designed, rather than after implementation.
- The monitoring programme/activities is adequately resourced.
- The monitoring programme/activities has the proper timing, frequency and duration so that lessons learned can be applied to adaptive management.
- Monitoring questions are directly linked with restoration objectives.
- Monitoring questions are clearly described in planning documents, with specific measurable indicators that include the amount of change desired and a specified time frame.
- The monitoring programme/activities includes collecting, managing (including cleaning and meta-data documentation) and archiving data.
- The monitoring programme/activities includes statistical analyses (if appropriate).
- The monitoring programme includes a plan for interpreting results and sharing findings.
- The monitoring programme/activities is being used to apply lessons learned to adaptive management within and across programmes.

Certification issued to:

Kadoorie Farm and Botanic Garden

Lam Kam Road, Tai Po, New Territories, Hong Kong, Hong Kong NA, Hong Kong

Website: https://www.kfbg.org/en/

Social Safeguarding:

This project has not undergone a social safeguards assessment by The Global Biodiversity Standard. Responsibility for identifying and managing environmental and social risks lies with the implementing organisation and associated funders.