

Kadoorie Farm & Botanic Garden

ANNUAL REPORT 2016

To harmonise our relationship with the environment



Kwun Yum Shan in 1960s



Kwun Yum Shan in 1970s

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**Kadoorie Farm and Botanic Garden
Annual Report 2016**

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Cover photo:

A view of Kwun Yum Shan Summit under clear blue sky, with the Yuen Long plain visible beyond.

About KFBG

Kadoorie Farm and Botanic Garden (KFBG) is situated in the rural New Territories, on the northern slopes of Tai Mo Shan, Hong Kong's highest mountain. Two steep spurs enclose its deep-set valley. Within KFBG are streams, woodlands, orchards, vegetable gardens, walking trails, live animal exhibits, floral exhibits, sustainable agriculture demonstration plots, art exhibits, a wild animal rescue centre, a native tree nursery, and, other conservation and education facilities.

In the post-war years, Hong Kong was flooded with destitute immigrants. Many had traditional knowledge of crop production and livestock farming but no stock, others had land but no experience. They required support to rebuild their lives. In 1951, in response to these pressing human needs Lawrence and Horace Kadoorie established the Kadoorie Agricultural Aid Association (KAAA), which became a key partner of the Hong Kong Government in devising and implementing a plan to help Hong Kong feed itself. The Kadoorie brothers, part of a well-established business family, saw wealth as a sacred trust to benefit mankind. With such aid, thousands of people received agricultural training; thousands of pigs, chickens and ducks were bred and given to farmers or sold to them on credit; thousands received micro-loans; and numerous wells, irrigation channels, roads, footpaths, bridges, pigsties and farm houses were built. The farm site at Pak Ngau Shek was established in 1956 as a base for livestock breeding and distribution, agricultural research, farmers training, public education and recreation. The barren slopes were terraced and planted with orchards and vegetable gardens. The development of the botanic garden began in 1963 and the plant conservation programme from 1972.

On 20th January, 1995, the Legislative Council of Hong Kong passed an Ordinance (KFBG Chapter 1156) incorporating KFBG as a non-profit corporation designated as a conservation and education centre with a new mission. It is a unique public-private partnership, for while the KFBG Corporation is a public organisation, it is privately funded by the Kadoorie Foundation (over HKD 100 million per year); these funds are supplemented by small donations from the public and occasional project-related Government grants that enable us to extend our work.

Since 1995, KFBG has been conducting a wide range of nature education, nature conservation and sustainable living programmes both on-site, and, throughout Hong Kong and South China.

In a time of severe global crisis – including the inter-related issues of widespread disconnection from nature, each other and self; the ever-increasing exploitation of, and unwise over-reliance on the world's dwindling resources to support unsustainable lifestyles; climate change; shrinking of natural habitats and species loss – KFBG, as an organisation, raises awareness, undertakes rigorous science-based species conservation and ecosystem restoration, and offers new ways of thinking and living to respond to the world's problems. Hence, our work brings hope and improvement by focusing on nature conservation, sustainable living and holistic education that re-connects people with nature. By working together with the public, Governments, academia, NGOs and businesses, we can protect our common future.

Mission and Vision

MISSION

To harmonise our relationship with the environment.

VISION

A world in which people live sustainably with respect for each other and nature.

VALUES

Sustainable Living

Appreciating the impact of our actions with regard to current and future generations. Having awareness of our connection with the environment. Valuing simple and responsible lifestyles.

Justice

Being fair and accountable. Valuing socially equitable systems that protect the health of the planet, the people and their way of life. Protecting future generations.

Love

Having self-awareness and understanding of the inter-relationship of all things. Having compassion and respect for all life. Recognising that outer discord is a reflection of inner discord. Striving for inner silence.

Participation

Engaging mentally, physically, emotionally and spiritually; fostering respect for different viewpoints, openness, dialogue and teamwork.

Professionalism

Being a role model of caring, integrity, commitment, professional standards and best practices for partners, organisations, individuals and communities.

Learning

Being adaptive and flexible to changing circumstances. Having a holistic outlook. Being practical, objective, creative and insightful.

Happiness

Appreciating that our happiness lies in creating and sharing happiness with others.

Foreword

2016 was KFBG's 60th anniversary, marking over 20 years of the KFBG Corporation's nature conservation and education work and 40 years prior to that of the Kadoorie Agricultural Aid Association (KAAA). We celebrated this milestone with a variety of events and exhibitions throughout the year, but the most poignant moment for me was the visit of the late Chow Yun Kuk, who had been one of the many recipients of KAAA aid. At aged 90 and wheelchair bound, it was no small effort for her to make the journey out to the Farm to pay her respects. She came exquisitely dressed in her finest clothes and with flowers for me, just as she used to bring them for my great-uncle, Horace Kadoorie, KFBG's principal founder. It was a humbling experience and I will always remember her graciousness and generosity of spirit, exemplifying the values for which KAAA was known and loved.

Whilst KFBG stands out for its holistic, integrated approach to protecting and promoting nature, each of its core programmes has nonetheless made its own mark. The number of wild animals received and cared for in our rescue center, a regional leader in the field, has now surpassed 40,000; the depth and breadth of our forest restoration project has been deemed by experts to be globally unique, with its standards now being officially applied internationally; and our Green Hub for sustainable living has met all its initial goals and been widely acclaimed, winning a number of awards. Whilst our nature conservation work expands into Laos and Cambodia, our education programme is deepening to provide residential experiences that are helping to shift humanity's understanding of itself as part of nature.

In this time of global crisis, rife with misunderstanding and mistrust, nothing could be more important than to step outside of our familiar boundaries and discover the joy and wonder of connection – with ourselves, with each other and with all of nature. This is the heart of what KFBG stands for – for therein lies hope, as well as fulfilment.

Andrew McAulay
Chairperson



The late Chow Yun Kuk (front right) visited KFBG with her family members and presented a flower bouquet to Andrew in November 2016.

KFBG Celebrates its 60th Anniversary

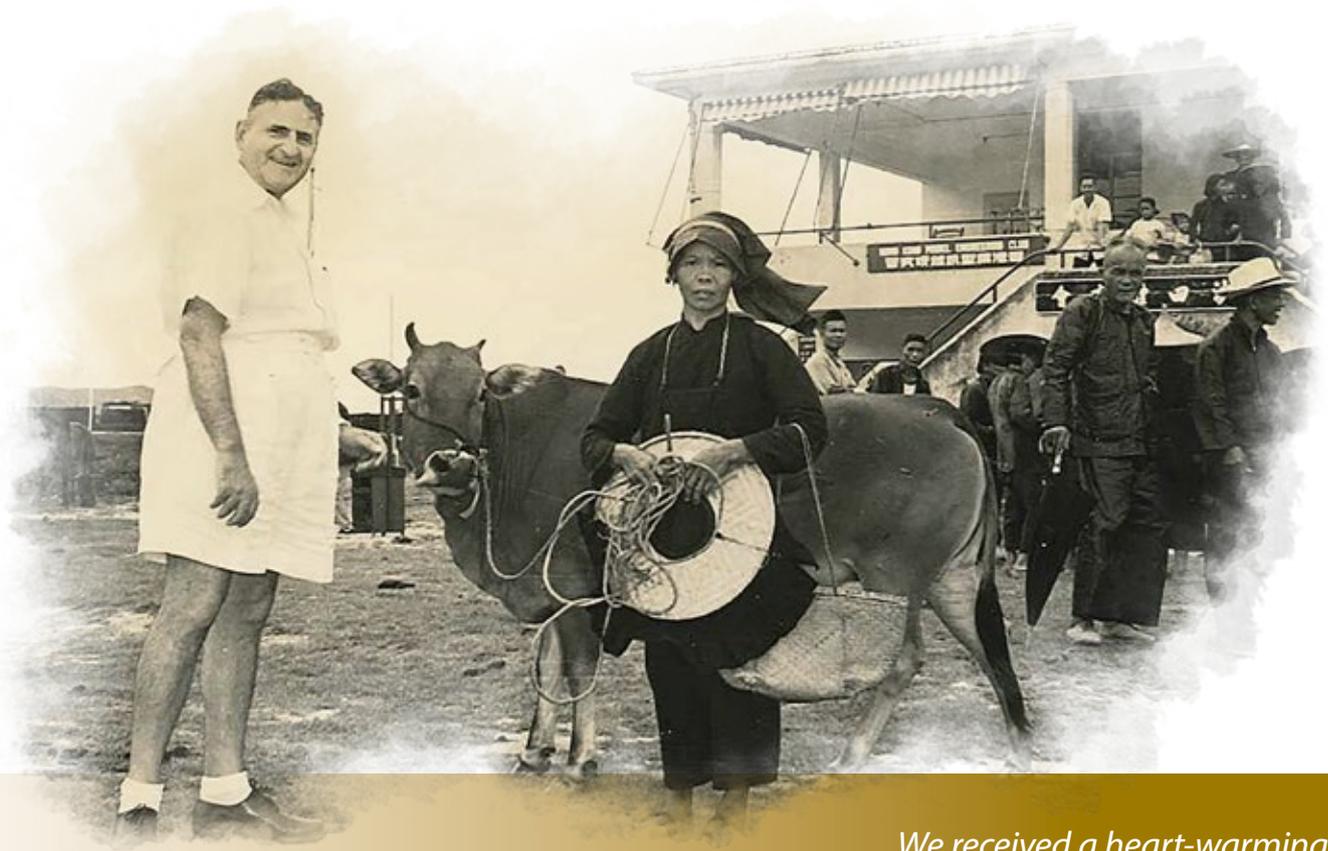
Kadoorie Farm has experienced many milestone moments throughout the course of its history, reflecting society's and nature's changing needs. In 2016 we celebrated our 60th anniversary.

Among the many activities organised to celebrate the anniversary was a fascinating set of timeline posters, spanning the years from 1956 to 2016. This can be seen on the kfbg.org website and in the KFBG Museum.

The 'KAAA Heritage Hunt' activity tapped into people's sense of curiosity and adventure, encouraging participants from the public and our staff to uncover some of the many Kadoorie Agricultural Aid Association (KAAA) heritage sites around Hong Kong.

In the '60 Years of Special Moments with KFBG' project, we asked members of the public to share their KAAA & KFBG experiences, thoughts and photos. We were honoured to receive so many stories and to meet some of the many people who were part of the KAAA programme.





We received a heart-warming handwritten letter from Lau Fuk Kiu. This is a photo of Lau Fuk Kiu's mother with Horace Kadoorie and a donated cow in 1958 in Tai Wai.



Timeline panels at the KFBG Museum



The hunt uncovered old structures such as paths, dams, wells, houses, irrigation channels, pigsties and bridges, built many years ago through the partnership between Government, villagers and the KAAA. These structures helped Hong Kong to feed itself and helped to bring stability and prosperity to many villagers. There are many more structures out there waiting to be found.

For the 'Kadoorie Agricultural Aid Association (KAAA) Heritage Hunt' project we created an interactive Heritage Map for members of the public and staff to create a record of the locations of KAAA heritage sites that could be found.



Local villagers were interviewed while looking for the KAAA heritage sites

An irrigation channel found in Tai O



Participants of KAAA Heritage Hunt and 60 Years of Special Moments with KFBG visited the KFBG 60th Anniversary Exhibition Section at JCCAC on 6th August 2016

In August 2016 we put on the 'Fantastic Forests - Embracing the Vitality of Trees - An Exhibition of Nature and Culture', at the Jockey Club Creative Arts Centre in Shek Kip Mei. This exhibition included a KFBG 60th Anniversary exhibition zone that showcased some of the history of the KAAA, a KAAA Heritage Map, historical photos and touching stories from KAAA beneficiaries. This exhibition is now on display at the Farm Museum at KFBG.



Panels of KAAA Heritage Hunt map, KFBG old photos and stories of past beneficiaries and visitors were displayed at the 60th Anniversary Corner at the Jockey Club Creative Arts Centre, Shek Kip Mei.

A celebratory event for KFBG's 60th Anniversary - attended by around 70 staff including Board members - was held on Wednesday, 30th November at KFBG. The party gathered at the KFBG Plaza before proceeding to the Walter Kerr Garden for a ceremonial tree planting. This was followed by a slow walk up to Misha's Bungalow where, after inspirational talks from our visiting teacher Dr. Satish Kumar and KFBG Chairman Andrew McAulay, refreshments and a birthday cake, prepared by the staff of the Eat Well Café at the Green Hub, were served.

Key extracts of the speech made by Andrew McAulay:

“ We are now entering the third phase of our work as the Kadoorie Farm and Botanic Garden. The first phase was developing a conservation ethic; the second phase was looking at the root causes, systems and structures behind the various challenges facing our planet. The third phase is opening the heart. Love is very present in everything we do, it's just a matter of recognizing that it's there. So many times I hear from visitors, that they are completely overwhelmed with the incredible staff and the incredible work you're doing. I see it myself as well. It's tremendous, precious and pioneering work.

In this new phase, experience this love which you are cultivating and sharing. Our founder Horace Kadoorie said that the secret of happiness is to give happiness to others. Let's move in that direction and I thank you from the bottom of heart for all the work that you're doing. Thank you. ”

Key extracts of the speech made by Dr Satish Kumar:

“ Nature is not just trees, and animals and rivers and oceans. We are all nature. What we do to nature we do to ourselves. We pollute water, we have to drink it. We pollute air, we have to breathe it. The word human and humus come from the same root. Humus means soil, and so humans are made of the soil. The food we eat, what is food – all this delicious cake - it's soil. It's a kind of magic; with the help of the sun, the land and the air, seeds become trees that produce blossom and then fruit. We are Earth, Air, Fire and Water.

What is most important, is imagination. It is what Horace and Lawrence and other members of the Kadoorie family had - the imagination that there should be a place like this. Without imagination, a place like this could not happen.

So, congratulations, on the 60th birthday of KFBG and the previous organisation behind it. Congratulations to all of you. It's wonderful to have leaders like Andy and Andrew, and all the other leaders, but without the staff, without the work you do, day to day on the front line - receiving guests and visitors, informing them about the work of nature, quality of nature, and beauty and gifts of nature, they will not understand. People have become eco-illiterate. If you ask if they recognise a tree, very few people know the name. Hundreds of varieties of trees, someone was telling me, you have here. So, you are performing a great service of eco-literacy for all.

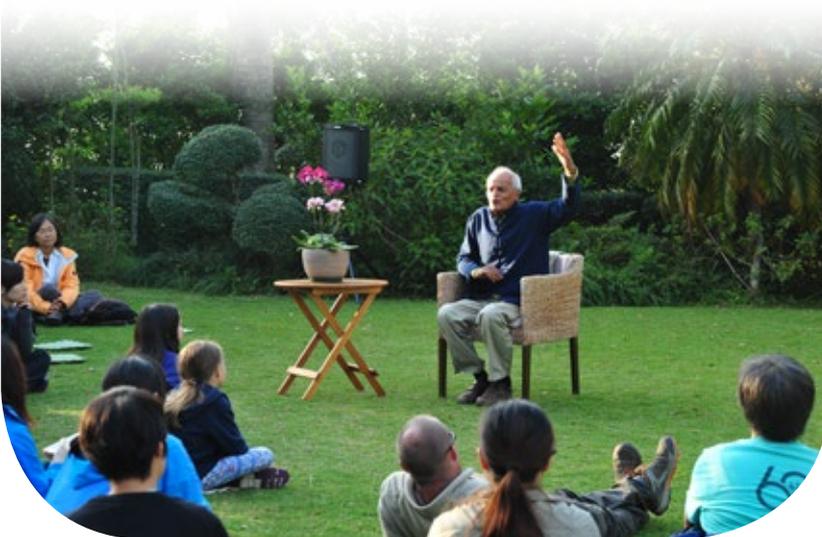
Congratulations on what you are doing. When you give service, you get joy. Whatever you do, always remember these two words: love and service, and do your work with love and pleasure. I congratulate and urge you to continue on this important work. We need you, we need Kadoorie Farm for years to come, and it is my honour, my pleasure, to be part of this great work. ”



Satish (left) and Andrew (right) planting native tree seedlings to commemorate the 60th anniversary of KFBG



The lime ginger birthday cake was made by the Eat Well Canteen staff at the Green Hub.



Satish encouraged KFBG staff to be a "catalyst" in carrying out education and conservation programmes.

KFBG in the Early Days



Demonstration of threshing machine with farmers



Sir Horace giving candies to children in Tsat Yeuk, Taipo



Widows receiving chickens in Sai Kung



Livestock farming at Paak Ngau Shek



Erecting of the Post Office Pillars (1977)



Kadoorie Brothers Memorial Pavilion - construction work in progress (1997)



Children participating in tree planting activity



Opening Ceremony of Har Tse Village Orchard

Sustainable Living & Agriculture

The Green Hub has been well received by the public, and its success acknowledged with many awards. As a result of the enthusiastic reception, we have extended the Green Hub programme more rapidly than outlined in the original business plan. The performance of the Green Hub continues to be extensively reviewed and was evaluated in a series of report submissions to the HKSAR Government.

A series of permaculture events, training programmes and gatherings were conducted to strengthen the local networks and increase their capacity to expand. Unfortunately, the cold snap in late January 2016, along with extensive damage caused by monkeys, has caused a substantial and lasting impact on food production at KFBG.



Re-skilling for Sustainable Living

Sustainable Farming Courses and Workshops Organised at KFBG in 2016:

Course Title	Date	Number of Courses	Venue	Number of Participants
Three-day <i>Introductory Course on Sustainable Agriculture for City Farmers</i>	Mar-Apr, Sep-Oct	2	KFBG	49
Aquaponics Workshop	May & Oct	2	KFBG	53
Introduction to Sustainable Farming	26 th Apr	1	KFBG	23
Two-day <i>Planting Vegetables in Synchrony with the Seasons of the Year</i>	7 th – 8 th May	1	KFBG	12
Permaculture Design Certificate Course	23 rd Mar – 5 th Apr	1	KFBG	14
Beekeeping Training Course	18 th & 19 th Jun	1	KFBG	14
Half-day Farmers' Reskilling Workshop	4 th Feb, 7 th Apr, 2 nd June, 4 th Aug, 6 th Oct, 1 st Dec	6	KFBG	142
Food Waste Recovery Workshop	9 th July	1	KFBG	21
Beekeeping Demonstration at Harvest Festival	12 th & 13 th Nov	2	KFBG	600



Introductory Course on Sustainable Agriculture for City Farmers



Permaculture students observing compost making

The Sustainable Living and Agriculture Department (SLA) facilitated the College of International Education from Hong Kong Baptist University, with the set-up of the roof farm, offering technical advice and support. 'Community Garden for Food Production and Education' workshops were organised to sustain the operation, attended by 30 people.

An Urban Farming technical workshop was delivered to nine students from the Hong Kong University of Science and Technology on 20th September 2016. Another workshop on pineapple transplantation was planned for April 2017.

SLA met members of the 'Partnership for Eco-Agriculture and the Conservation of Earth' (PEACE) in Nam Chung on 22nd February, to advise on crop planning and diversification. Another site meeting was held on 22nd July focusing on crop selection, farmland design, resource management and sustainable orchard production.



Planting Workshop organised for teachers from beneficiary schools of the Farmers Market's seed-funding scheme

SLA continues to maintain the Farmers' Market @ Central each Sunday as a fair-trade platform, creating a bridge between consumers and local food producers. Under a Seed-funding Scheme, each participating farm contributes \$100 per market-day to support the annual provision of organic crop seedlings to school farming initiatives. Nine schools benefited from the Scheme during 2016 and 240 organic seedlings were distributed. A planting workshop was organised at KFBG on 1st October for teachers to learn basic skills on community gardening and farming skills.

Fostering collaboration

The highly-regarded permaculture teacher from Australia, Robyn Francis, was invited to teach an advanced course on Permaculture for Sustainable Aid Work (PSAW). The course ran from 8th to 14th April at the Green Hub and was attended by 34 people. The course focused on resilience-building to counter the impact of climate change, resource depletion, food and water insecurity, and economic instability. Apart from learning from Robyn, the course also facilitated valuable exchange and networking opportunities among participants. Complementary workshops were organised by some course participants on the second day of the course. One of the participants, Hui-i Chiang, founder of the Taiwan education group 'Earth Passengers', shared the progress of the permaculture movement in Taiwan, attracting the participation of 40 attendees.

In collaboration with the Ark Eden Foundation, PermaClub Hong Kong and the Permaculture Institute of Hong Kong, an *Urban Permaculture Systems* public seminar was held at the Hong Kong Science Museum on 6th April, attended by 150 people. The seminar offered an opportunity for local and overseas permaculture activists to discuss the challenges and opportunities of the permaculture movement in Hong Kong.



Graduates of Permaculture for Sustainable Aid Work (PSAW) course

To strengthen the network of local Permaculture Design Certificate (PDC) holders, SLA organised a gathering on 16th July, attended by 38 people, with the theme of roof gardening, a hot issue in recent times. PDC holders from diverse professional backgrounds, ranging from architecture to landscape design to education, organic farming and aquaponics created a vibrant and comprehensive sharing session.

SLA organised the first Aquaponics Conference in the region on 26th November at the Charles K. Kao Auditorium in the Hong Kong Science Park. The conference was attended by 96 people, coming from Hong Kong, Mainland China, Taiwan, Malaysia, Singapore and Macau. Four overseas speakers from Taiwan, Singapore and USA, and three local speakers, shared their research findings, application and marketing models, education programmes and community engagement approaches during the Conference.



A field trip to e-farm was organised as one of the post Aquaponics Conference trips

Two post-conference field trips to the four aquaponics farms in Hong Kong were organised. The varying scale and type of operation of these case studies broadened participants' understanding of the application and potential of aquaponics in urban food production.

A learning trip was organised in Hong Kong in March for five young permaculturists from the Philippines. Bert Peeters - founder of the Cabiokid Foundation - graciously delivered a half-day workshop titled *Permaculture in the Philippines* at the Green Hub on 6th March, which was attended by 23 participants.

A delegation of seven engineers led by the Assistant Director of the Drainage Service Department visited KFBG's organic resource recovery systems on 26th May to discuss the application and operation of composting and wastewater treatment in wetland areas.

Sustainable living internships

SLA provided funding to support PEACE in setting up a scheme for young people in Nam Chung to learn practical farming skills. This concluded in May 2016. Four people were engaged between March and May 2016 to provide crucial support for PEACE in exploring ways to engage the public with managing farmland at Nam Chung. In August, PEACE's application for additional funding of \$249,740 was approved, enabling them to extend the trial project by nine months and set up a self-financing system.

Three students from the Hong Kong Baptist University College of International Education were engaged in an eight-week internship scheme at the Green Hub in July and August. On-the-job experiential learning at the Visitor Centre's operation and programme planning training were provided.

Working Demonstrations of Sustainability

SLA has been maintaining production at KFBG’s farming terraces as a live-demonstration of sustainable agriculture. The production in 2016 is outlined in the following table:

Type of Produce	Eggs (pcs)	Fruit (kg)	Vegetables (kg)	Coffee (kg)	Green Tea (kg)	Chrysanthemum (kg)	Dried Roselle (kg)	Fruit Tree Seedlings	Potted Plants	Compost (kg)
Yield	147,159	5,752.6	16,311.5	10	21.5	14.7	10.9	704	4,134	41,344

Establishment of the new aquaponics demonstration model at KFBG was halted by the cold snap in January 2016. Some 600 jade perch fingerlings were introduced into the KFBG aquaponics system in summer 2016 and will be mature in 2017.

Upon restoring stability to the water system, the model was used as the major training resource in subsequent aquaponics workshops on designing various aquaponics systems to serve different needs. Two 2-day aquaponics workshops were organised in 2016 and an introduction to KFBG’s aquaponics operation was provided to the Chinese International School on 18th May.

Apart from the established training programmes, an additional visit to an aquaponics farm run by Cityponics was introduced to the two recent training workshops to facilitate networking and experience sharing.

To enhance the sustainability of the aquaponics system, a trial was run using umbrella papyrus harvested from the KFBG wastewater treatment wetlands as a fish feed supplement. The trial has been extended to the application of Bokashi and effective microorganisms (EM) in KFBG’s aquaponics system—to enhance the health of the fish and quality of water in the system.

The study on reusing waste wood logs for mushroom cultivation took place in an orchard to enrich productivity during the transformation of the monocrop orchard to agroforest. 2.85 kg of Wood-ear and Shitake mushrooms were harvested and supplied to the staff canteen for consumption and programme use.

Sustainable Agriculture Promotion (SAP)

Sustainable Agriculture Promotion (SAP) Programme promotes the multiplication and improvement of Climate Smart Agriculture systems in China. In 2016, the Kadoorie Conservation China Department (KCC) continued to promote 3 agricultural systems that regenerate the soil and sequester carbon.



The trial run of mushroom production on waste wood logs has started to yield food

Organic mulch-no till corn at the left is growing better than organic tillage corn at the right.



Hainan native honey bee pollinating bitter cardamom, which are two important components of the system.

KCC staff introducing the concept of analog forestry to the villagers during the distribution of cardamom saplings in Qingsong, Bawangling.



Mowed grassland (left) can produce more biomass, conserve more soil moisture, lower soil temperature, and reduce bare soil than burnt grassland (right).

Mulch-No Till System is continued to be multiplied in Sichuan and is now being piloted in other 3 provinces in cooperation with our partner, the Sichuan Academy of Agricultural Sciences. The 5-year data of the Organic Mulch-No Till on Rice-Rapeseed Rotation System proves that organic rice production can yield better than conventional system and improves the soil. In December 2016, Hil Padilla from KCC was invited to deliver a presentation on Mulch-No Till System and Climate Change in the 8th China Community Supported Agriculture Conference held in Zhejiang, China.

Analogue Agroforestry System is a tree-based farming system that imitates the multi-layered structure of a tropical forest. Hainan is the largest rubber producing province of China. Rubber plantations occupy 16% of the island while protected areas are only 7%. Rubber monoculture had been destroying the tropical rainforest and decreasing biodiversity all over the island. After countless dialogues with farmers and some trials, a system acceptable to farmers and able to improve ecosystem services was developed - combining bitter cardamom, agarwood, rosewood, dumping leaf and native Hainan honeybee with rubber. Honeybees pollinate the bitter cardamom, currently the

main income earner since the price of rubber dropped. Rubber-cardamom is the most popular combination. A total of 17 demonstration sites for the more complex system that includes all the species mentioned were being set up with villagers surrounding nature reserves. KCC also collaborated with University of Hong Kong to study ant and arthropod diversity in rubber monoculture, rubber agroforestry and primary forest.

Rotational Mob Grazing is a pasture system that imitates the constant movement of large herds of ungulates like in the African Serengeti. The natural system actually improves the ecology of the grasslands. This system was tested in an Eld's Deer Nature Reserve in Bangxi, Hainan that had been facing land degradation and desertification due to overgrazing. As the deer is not in a large herd, the method was modified to rotational mowing to mimic the trampling effect of the animals. The trampled grass acts as mulch that retains moisture and induces regrowth. Preliminary results show that rotational mowing can increase soil moisture and above ground biomass, reduce soil temperature and decrease the amount of bare soil.

GREEN HUB

Programme Development

The Green Hub has been exploring different ways to bridge the gap between local and eco-friendly producers, and consumers, in order to build resilience and create alternatives. Apart from sourcing low-carbon products from sustainable producers to be sold at the Co-op Shop, the Sunday Co-op Market was launched on 17th January to facilitate direct interactions between local producers and local communities at the Green Hub. Activities, including hands-on workshops, cookery demonstrations and other thematic activities, were organised alongside the market. In total, 48 market-days were held in 2016 attracting 17,390 Green Hub visitors.



Visitors learning Hakka culture and the joy of simple living during one of Sunday Co-op Markets.



DIY workshops were organised every Sunday for visitors.



The Little Garden Living, one of the local producers attending the Co-op Market to sell unique, home-grown floral tea from Pat Heung.

The Green Hub hosted over forty courses in various formats, from residential camps, day-camps, training workshops, field trips and talks by guest-speakers, to promote sustainable living from different entry-points. These were attended by 1,039 people.



Participants harvesting chrysanthemum during a field trip featuring agroforestry in November.



Girl guides attending a 2-day Low Carbon Pioneer training course at the Green Hub in November.



Teachers and students of the 'Reconnecting with our Roots' residential workshop in November.



Participants exploring the environment at the Green Hub in different ways during a 2-day residential camp in August.



Cynthia Ong of Forever Sabah from Malaysia shared her insights on the relationships between culture, community and economy with local audiences on 26 June 2016.



A group from Macau visiting the old market place at Tai Po during a 2-day residential course on low carbon living.

With collaboration with different governmental and non-profit organisations, the Green Hub serves as a community place for people to appreciate and enjoy the revitalised heritage site through history, art, yoga and many other ways.



The Community Yoga Class held on the International Yoga Day 2016



The Secretary of the Environment Bureau, conservation officials and environmentalists celebrate Biodiversity Festival 2016 at the Green Hub on 15th October.



Ukulele Sunday organised in collaboration with the Ukulele Federation Hong Kong



Mr Dick Lee, the former police commissioner, together with conservation architect and curators of the Antiquities and Monuments Office (AMO), guides a special public tour at the Green Hub on 25th June.



In collaboration with the Commissioner for Heritage's Office, the Hong Kong Art Centre and Kung Music Workshop, young musicians performed in the Street Music Series event at the Green Hub on 21st February.

Demonstration of Sustainable Practices

The Green Hub project was awarded an Honourable Mention in September, during the 2016 UNESCO Asia-Pacific Awards for Cultural Heritage Conservation. The Jury of the Awards spoke about the achievements of the Green Hub project, commending *“the transformation of the Old Tai Po Police Station from a deserted relic into a vibrant venue for learning about sustainable development. It is notable for revealing layers of cultural history embedded in its buildings while maintaining the site’s distinctive ecosystem. Instilling new life into the oldest colonial property in the New Territories, the center provides an oasis in the midst of Hong Kong’s highly urbanised environment.”*

The Green Hub project won the Grand Award (Existing Buildings Category: Completed Projects - Institutional Building) and gained a Special Citation for the Eco-service Infrastructure Network under the Green Building Award (GBA) 2016, jointly organised by the Hong Kong Green Building Council and the Professional Green Building Council. The Green Hub won the Merit Award of the Hong Kong Institute of Landscape Architects’ Design Award 2016, and was a finalist of the Structural Excellence Award 2016 – Hong Kong Project.

The Green Hub’s Eat Well Canteen was rated Gold Class (the highest rating) in the Environmental Bureau’s Food Wise Eateries Scheme in 2015 and the Diamond Class (the highest) WasteNever Award, organised by the HK Women Professionals and Entrepreneurs Association in 2016. Besides supporting local, sustainable producers, Eat Well Canteen has adopted a lifecycle management approach to minimise the waste footprint in restaurant operation, from menu design, sustainable procurement, stock management, staff and customer education, waste collection to resource recovery. On average, less than 5 litres of kitchen waste is generated each day and all waste is recovered to be composted and used within the Green Hub.



The Secretary for Development presents the Green Building Award 2016 to the Green Hub Project team



The Kitchen Garden, adjacent to Eat Well Canteen, acts as a ‘digester’ to transform organic ‘waste’ to food and is also used as a teaching resource.



A salad fountain created by participants of the 5-day In Touch with Nature – Healthy Lifestyle Summer Camp.

Sharing and Learning

The Green Hub team has been actively sharing the experiences of conducting a revitalisation project with professionals and organisations of different sectors to facilitate wider adaptation of the integrated conservation approach in harmonising our relationship with the environment. Over twenty special tours and sharing sessions for exchanging ideas were organised in 2016.

In 2016, the Eat Well Ambassadors Scheme engaged seven individuals in in-service training at the Eat Well Canteen for three to six months. Two of the trained ambassadors were subsequently recruited as the Green Hub's programme staff.



The Protocol Division of the Government Secretariat organised a special event on 26th May at the Green Hub for the Hong Kong-based Consuls General of various countries.



Three undergraduates from the International College of Hong Kong Baptist University guided a heritage tour for their classmates after their completion of a three-month internship at the Green Hub in 2016.

A community currency scheme was launched as an exploration of an alternate economy system. The trial scheme rewarded volunteers' contributions in support of the local economy. Initially, the scheme only applied to purchases of Green Hub's services such as the Eat Well Canteen, Co-op Shop and workshops but was later extended to include the Sunday Market booths in March 2016.



Training programmes and thematic workshops were organised regularly for the Green Hub's volunteers to cultivate a shared mission.



Dr Gary Ades, the KFBG Head of Fauna Conservation, delivering training to Green Hub staff showing them how to address situations which may arise during a snake encounter.

Holistic Education

The Education Department continued to raise public awareness of the relationship between people and nature through holistic education programmes.

We worked with schools to organise some events, including overseas visiting teachers, regular “The Art of Tree Rings” workshops in the Art House, teacher training programmes, “Talk to Plants” and “The Secret World of Wild Animals”. Due to overwhelming response of the “In Touch with Nature” summer camps and winter camps in 2015, we ran the children camps again in 2016, providing participants with more interactive activities and unique experiences in the beautiful surroundings of KFBG and the Green Hub.

Renowned overseas teachers Dr. Satish Kumar and Dr. Claire Elouard visited KFBG again to help Hong Kong city-dwellers re-connecting with nature and their inner selves by giving insightful talks and workshops.

We organised other public events to connect people with nature including the tree exhibition at the Jockey Club of Creative Arts Centre (JCCAC).



Children on their way to the Parrot Sanctuary to give their handmade enrichment gifts to the parrots during the ‘In Touch with Nature 5-Day Summer Camp’ for Children

School Programmes

Throughout 2016, the 'Talk to Plants' one-day programme was held with 400 students attending in total from over a dozen colleges, secondary schools, associations and private groups.

Another year-round school programme was the 'A Secret World of Wild Animals' one-day programme. In 2016 the programme attracted 1,120 students from a total of 24 schools, institutions and private groups.



Children imitating a tree together during the In Touch with Nature 5-Day Summer Camp

The 'In Touch with Nature 5-Day Summer Camp' for Children was held for two consecutive weeks, from 11th to 22nd July. The camps were held largely at KFBG (*Exploring Nature*) for a total of 50 primary schoolchildren. They participated in activities such as treasure hunting, hiking, an interactive drama workshop, nature-art activities, an animal enrichment project and a low-carbon cooking workshop at the Green Hub.

The 'In Touch with Nature 3-Day Winter Camp' for Children was held in December, with 46 participants aged 7-9 years, plus our counsellors and staff. Highlights included an 'Animal Treasure Hunt,' where the children used a treasure map to locate our captive, rescued animals in the educational exhibits. They also learned about various habitats and designed a dream home for native animals on the biggest "canvas" at the Nature Chalk Workshop.

As a complement to the ongoing activities at KFBG, primary school and kindergarten teachers were invited to participate in an 'Art-based Environmental Education Teachers' workshop held on 19th March comprising of sharing and experiential sessions demonstrating how art-based environmental education can and does contribute to Hong Kong's wildlife conservation efforts.

Transformative Workshops and Events

Six 'Zentangle in Nature' workshops were held throughout 2016, enabling 90 participants to experience nature and meditate through art. One was held at the 'Healthy Lifestyle at the Green Hub' Summer Camp for 16 children aged 9 to 11, with the objective of engaging them in mindful drawing while exploring patterns in nature.

'Energy of Nature' Workshop by Dr Claire Elouard – the Level 1 and Level 2 workshops were held from 23rd September to 2nd October at KFBG, with a total of 22 participants. Places were in high demand with people eager to broaden their awareness and connection with nature.

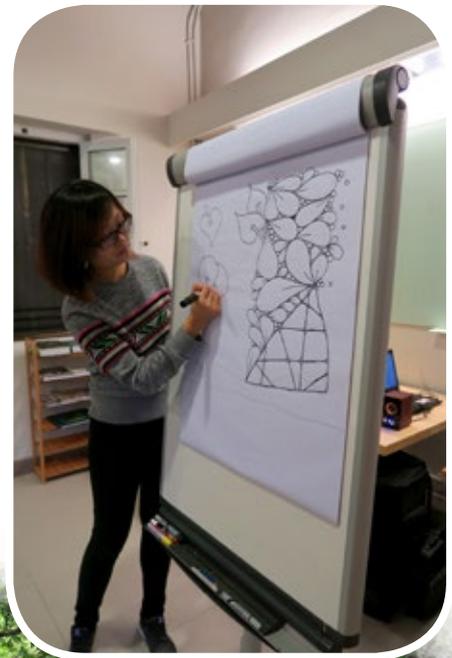
In 'Reconnecting with our Roots: Spirit, Culture & Nature', Dr. Satish Kumar, Jhon Kwano and Guest Speaker Dr. Billy Hau shared from their experiences growing up in different cultural contexts with 22 public participants at the Green Hub from 25th – 28th November 2016. The workshop began with a public talk by Dr. Kumar attended by more than 70 individuals. Over the following three days, through talks and storytelling sessions, Dr. Kumar and Mr. Kwano helped the participants explore what it means to live in harmony with nature, as our ancestors used to, and how to become truly happy as we face challenges.

In the 2-day residential transformative workshop titled Economics of Happiness – Global Vision for Local Action held from 29th – 30th October at the Green Hub, Helena Norberg-Hodge provided fresh insights for 11 public participants.

Conversation between Dr. Satish Kumar and Dr. Billy Hau during the Reconnecting with our Roots: Spirit, Culture & Nature workshop



Zentangle teacher showing the 'Zentangle in Nature' meditative art method



Many of the "Energy of Nature" participants said they felt more in touch with nature, more relaxed and more open-minded.

Community Programme

The 'Fantastic Forests – Embracing the Vitality of Trees' exhibition was held from 3rd to 21st August at the Jockey Club Creative Arts Centre (JCCAC) in Shek Kip Mei, attracting over 10,400 visitors. The educational panels and interactive guided tours introduced the significance of trees in the ecosystem to human society and culture, art workshops 'The Art of Tree Rings', 'Nature Art Installation' and 'Fallen Leaves Sensory Spaces' offered visitors a sensory and artistic approach to nature appreciation. Both parents and children enjoyed playing in the Tree Playground, listening to music and the storytelling performance. The carpentry demonstration and stick insect encounter were new and fascinating experiences for many.



'Fallen Leaves Sensory Section' at the Fantastic Forests – Embracing the Vitality of Trees exhibition



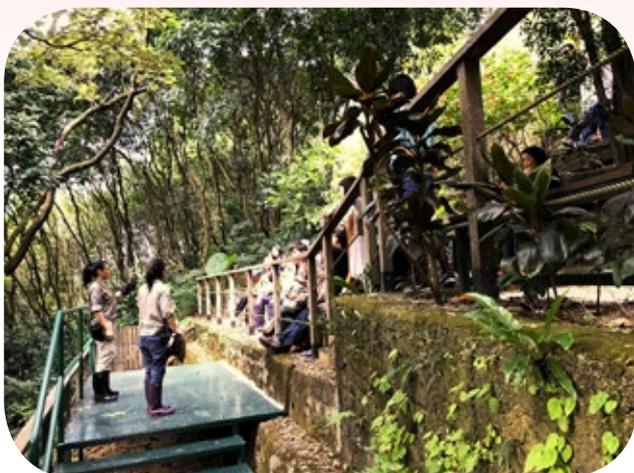
The wood carving workshop was very popular at the Fantastic Forests – Embracing the Vitality of Trees exhibition

Exhibit Changes

On 25th May, two young leopard cats were moved into the Native Mammal Display. They occupied the enclosure left vacant by the elderly leopard cats that passed away. Both settled in well and were regularly visible in the enclosure.



Leopard cats Chomel & Manis on exhibit.



The new Raptor Encounter Corner platform for presenting "Raptor Talk" on Sundays

A new Raptor Encounter Corner platform for public presentations was completed in October, raising the level of animal keeper presence and framing the animal encounter activity experience in a more focused, exciting way.

On 14th September, a KFBG 60th Anniversary exhibition zone was installed to showcase the history of KAAA, KAAA Heritage Map, historical photos and the touching stories of KAAA beneficiaries at the Farm Museum.



The re-developed Raptor Sanctuary South exhibit.



The Raptor Sanctuary South provides more spacious and flexible accommodation for larger Raptors.

The Jim Ades Raptor Sanctuary houses disabled and domesticized birds that cannot be released. In June 2016, we upgraded some of the enclosures and combined the previous Owl Sanctuary with the Raptor Sanctuary.

A non-native, blue-throated barbet received at the Rescue Centre on 28th April found a permanent home in the Life on the Wing exhibit. Its vibrant plumage makes it easy to spot.



An attractive Blue Throated Barbet joined the Life on the Wing Display.

Visitor Activities

37 Animal Encounter activities were held in 2016, with 128 animal talks - including python, mule, raptor and native mammal sessions - conducted by animal keepers and FAU outreach volunteers.

Some 65 Animal Keeper Talks were held for community and school groups in 2016, in addition to the Sunday Animal Encounters programme.

Blossom Indexes were issued at the Reception as well as online platforms (KFBG Facebook & Website) to provide the latest news of the popular Taiwan Cherry / Flowering Apricot's flowering status. During the cold winter, we now issue a Dragon's Breath Index to help visitors plan their journeys to witness this unusual occurrence.



Animal Keeper, Tracy Lui, showing a Ball Python to visitors during the Animal Encounters activity on 6th March.



Design of the Blossom Index and Dragon's Breath Index for the KFBG Website and Reception



The Artist-in-residence displayed her 'dishes' on the 'banquet table', and visitors were invited to add new ingredients and create a collaborative inventory of plant parts.



Walk-in visitors were encouraged to collect fallen plant parts at KFBG, to create a collage and capture the 'dish' through photography, drawing and watercolour.

The Artist-in-residence Programme – 'Botanical Banquet' - held from October to November at the Art House - encouraged participants to explore the woodland area to gather fallen plant parts collected around KFBG to create stunning plant collage, with the theme of food. During the artist's residency, over 750 participants joined the workshops. Most participants came from the regular walk-ins at the Art House, while some joined the half-day programmes and experiential workshops during the Harvest Festival.

The annual KFBG Harvest Festival was held at KFBG on 12th and 13th November 2016. It was targeted to celebrate and appreciate nature's gifts, while highlighting a way of living in harmony with our environment. The event included a wide range of activities: from green market to experiential activities, art performance, animal encounters, thematic talks and guided tours.

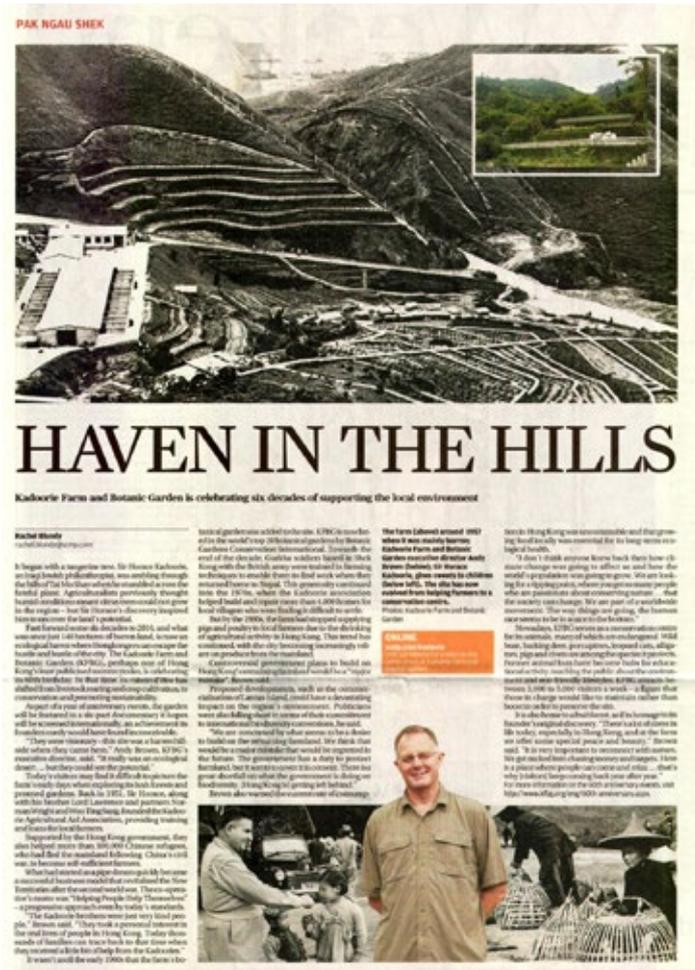
Pot planting, chalk drawing and the African Drumming Experiential Workshop, were some of the most popular activities of the event, participated in by many of the 5,504 visitors who attended the Festival.



The African Drumming Experiential Workshop was very popular amongst both children and parents



Children had great fun being creative during the Chalk Art activity



A feature story reported by South China Morning Post covering the past 60 years history of KFBG



KFBG's Golden Coin Turtle Conservation Project reported by a local newspaper Oriental Daily on 17 October 2016

KFBG Media Exposure

We have maintained a lively dialogue with the public via the Hong Kong media throughout the year. In Hong Kong, some 247 articles about KFBG's programmes were published in local newspapers, while 55 articles appeared in local magazines, 24 television stories and 14 radio programme interviews were broadcast, while 155 on-line media articles were uploaded.

In China, 159 articles mentioned the Kadoorie Conservation China Department's work.

During the year, we added 3,220 new Friends of KFBG, bringing the total to 9,765, while 11 electronic circulars were sent to the Friends of KFBG. During 2016, 10,673 Facebook users joined the KFBG Facebook page, and it reached 27,429 'Likes'.

Throughout 2016 we and Film director Michael Pitts and his team wrote and edited the scripts, images and sound of our TV documentary film series, 'Garden in the Sky', which will be released in late 2017.

On 17th February 2016, a new page commemorating KFBG's 60th anniversary was created on the KFBG website. The page includes an introduction, timelines of key events in our history, photo albums and a list of celebratory events to be held in 2016.

On 1st March, we launched a new activity - the KAAA Heritage Hunt - and created an interactive Heritage Map for members of the public to create a record of the locations of Kadoorie Agricultural Aid Association (KAAA) heritage sites. Even before our promotion campaign had started we had received nine submissions before the end of March. Advertising was launched from April 2016 to promote the KAAA Heritage Hunt and 60 Years of Special Moments with KFBG. Some 37 KAAA heritage sites were discovered and listed on the online heritage map as of 31st December 2016.

Meanwhile, a new page recording the stories of past KAAA beneficiaries and Farm visitors was launched in September 2016, the content of which was adopted for printed panels and displayed in the KFBG Museum.

Nature Conservation

In common with previous years, KFBG conducted a great deal of conservation action, research and liaison to support conservation in the region

and globally. Staff surveyed forests, attended specialist conferences and meetings,

held exchange visits, conducted capacity-building programmes, treated injured and confiscated wild animals, publish papers and collaborated with Governments, Universities, Botanic Gardens and other NGOs.



Wildlife Rescue Highlights

We have had a busy year at the Wild Animal Rescue Centre. Over the past 22 years since the Rescue Centre was established many rescued animals have been successfully rehabilitated and released, re-homed to suitable long-term facilities overseas, or repatriated to their country of origin, and few that cannot be released have joined our public education exhibits.



The unusual The Lesser Yellow Bat which arrived on 31st December 2015. The unusual colouration for this species presented identification difficulties when it first arrived with a wing wound.

An animal rescued in December 2015 was a lesser yellow bat with wing trauma. Initially its identity caused some confusion as its fur colouration was not typical of the species. However, its head and ear measurements and its call pattern proved definitive. The bat was released at KFBG on 1st March 2016.

A collared crow that had become entangled in kite string was the first of its kind received at the Rescue Centre, upon recovery it was released at Mai Po on 18th February.

The unusually cool weather during January 2016 brought an increased number of native wildlife cases to the Rescue Centre. Diverse animals were received but insectivorous fauna appeared most vulnerable, as insects seem to have been hard hit by the sub-zero conditions, with many house swifts and bats received.



The elusive Bornean Earless Monitor, endangered and highly sought after by reptile collectors

A Bornean earless monitor lizard, a unique species hardly known to science, was delivered by AFCD staff on the 20th February. The species, endemic to Borneo, has rarely been recorded in the past 50 years and had been discovered stray on an airplane! It is reported to be highly sought after by exotic reptile collectors.

A leopard cat received from the SPCA and admitted on 14th January with no serious injuries was fitted with a radio collar by AFCD and released from the KFBG woodland hack cage on 30th March. It was monitored for several weeks and was considered a successful rehabilitation.

Two cases of dog attacks were received and both unfortunately proved fatal. The first was a black faced spoonbill found in the Ma Cho Lung fishponds on 11th February and a ferret badger found on the KFBG Upper Hillside road on the 17th March.

Three Indian muntjak deer were admitted to the Rescue Centre between 15th February and 16th March, all having been trapped in roadside/perimeter railings at Ngong Ping, Lantau, the Shatin Hospital and Hiram Highway in Sai Kung. Due to the stress involved during entrapment and transportation all three deer suffered capture myopathy (normally life-threatening and resulting from a build-up of chemicals in the muscles as a result of stress) and were ultimately euthanised.

A further three Indian muntjak were admitted during the period 25th May to 10th July. One adult suspected of having been injured in a road traffic accident, resulting in a pelvic fracture, was later euthanised due to poor prognosis. Two other incidents were related to entrapment in water catchments on Lantau Island and one animal suffered from capture myopathy. One was euthanised due to organ shut-down and the other successfully released. The released female gave birth to a live fawn during her short stay in captivity but unfortunately the fawn did not survive.



A live fawn born in captivity. Unfortunately it did not survive but the mother was successfully released.

These deer cases have led to increased communication with Government departments concerning the adoption of more friendly animal railings and escape features in water catchments.

On the 26th September a juvenile Malayan Night Heron was received from the AFCD. It had been observed in the Yuen Long area by local bird watchers and was missing its upper bill. Initial capture attempts failed and unfortunately by the time it was eventually captured and transferred to KFBG for care it was weak and emaciated and died the next day. This was a first record for this species at the KFBG Wild Animal Rescue Centre.

On the 31st October a newly hatched Water Monitor was received via the stray snake project. The monitor was found at Hin Tin public swimming pool. This site is within 800m (straight line) of Shing Mun lower reservoir and in close proximity to Kowloon reservoir, both of which are known to harbour a population of naturalized Water Monitors. The hatchling was in perfect condition and possibly the first indicator of successful breeding in Hong Kong. The animal cannot be released and will join our educational exhibit programme.

On 12th September 2016, the 40,000th animal was admitted to the Wild Animal Rescue Centre; an Asian Barred Owlet (*Glaucidium cuculoides*) that was rescued by the AFCD in Fanling. The owlet recovered well from minor injuries, probably related to an in-flight impact, and was considered fit to go. FAU animal care staff celebrated by attending the release of the owlet into the KFBG woodland on the 25th October.



Asian Barred Owlet – the 40,000th rescued animal.

Total Number of Animals Received by the Wild Animal Rescue Centre from 1994 to 31 December, 2016

Mammals	854
Birds	4,587
Reptiles (excluding snakes via HK police)	26,235
Stray Snakes (via HK police up to 31 December 2016)	9,043
Grand total	40,719

The Status of Animals in the Collection and Received by the Wild Animal Rescue Centre, 1 January to 31 December, 2016

	Total in Collection at 1 January, 2016	Received/ Captive Bred	Released/ Relocated	Died/ Euthanised	Total in Collection at 31 December, 2016
Birds	91	807	325	487	87
Mammals	107	88	38	54	103
Reptiles	1,027	187	174	120	1,098
Stray Snakes	0	1,276	1,216	58	2
Amphibians	1	27	3	13	12
Fish	230	85	7	52	227
Total	1,456	2,470	1,763	784	1,529

Conserving Species and Ecosystems

In January 2016, Kadoorie Conservation China Department (KCC) and the Hainan Wildlife Conservation Bureau (HWCB) co-organised the Hainan Annual Wintering Waterbird Survey. Altogether 8,145 birds of 55 species were recorded. This was also part of the International Black-faced Spoonbill survey: 77 of these birds were recorded in Hainan.

In early May, KCC planted 25 saplings of *Bischofia javanica*, a native and fast-growing gibbon food tree, under the canopy bridge we constructed in late 2015, in an attempt to secure connectivity between forest gaps in Hainan Gibbon habitat. Students from the Hong Kong Academy raised 20% of the cost of this tree planting, in support of Hainan Gibbon conservation. A total of 16.33 ha landslide-damaged gibbon habitat has been planted with seedlings of native gibbon food plant species.

KCC visited BWL several times in 2016 to study the sleeping behaviour of Hainan Gibbon, and co-organised the annual Hainan gibbon population census during October. A total of 46 people spent 5 days in the forest and 4 groups of at least 26 gibbons were recorded.



Two Hainan Gibbons were seen cuddling during KCC's monitoring trip in March in Bawangling National Nature Reserve (BWL), targeting to study the gibbons' sleeping behaviours for the first time.



The first high resolution photos of the Eastern Hoolock Gibbon from Tengchong GLGS taken by KCC during the gibbon survey in November.

Gaoligong Hoolock Gibbon, formally classified with Eastern Hoolock Gibbon, was recently recognised as a distinct species confined to the east bank of the Irrawaddy River. To foster the conservation of the species in the Tengchong section of Gaoligongshan National Nature Reserve (GLGS), KCC supported the Reserve to establish a Gaoligong Hoolock Gibbon Monitoring Team in 2016. KCC also provided relevant training and necessary equipment to the team. KCC and GLGS organised the first ever comprehensive Gaoligong Hoolock Gibbon population census in November. Fifty participants spent 5 days in the forest; at least 2 new groups were discovered making a total of 6-7 groups of 17-20 gibbons.

KCC conducted a rapid biodiversity survey in Bangxi Nature Reserve (BX) in May, in order to understand the faunal and floral communities of the reserve. A number of species were new records for the reserve.

KCC conducted site assessment using Geographic Information System (GIS) and aerial photography to better manage the deteriorating landscape of BX, which is one of the last refuges of Hainan Eld's Deer.

KCC is working with the International Union for Conservation of Nature Species Survival Commission (IUCN SSC) Deer Specialist Group and the European Association of Zoos and Aquaria (EAZA) Deer Taxonomic Advisory Group, to verify the taxonomy of the Vietnamese Sika *C. n. pseudaxis* and the South China Sika *C. n. kopschi*, to explore the feasibility of reintroducing Vietnamese Sika deer into southwestern Guangxi.



Hainan Eld's Deer in Bangxi Nature Reserve, which is one of the last refuges of this State Class I protected and globally endangered species.



Two Asian Small-clawed Otters were camera-trapped in Yingjiang County, Yunnan by KCC. This represents the first clear photo of the species in the wild in China.



Leptobrachium tengchongense, with iconic turquoise eyes, is one of the two frog species new to science discovered by KCC team in Gaoligongshan, Yunnan.



Book cover of the bilingual pocket field guide "Biodiversity of Tengchong, Gaoligongshan" written by KCC.



The rare local orchid *Bulbophyllum bicolor* being visited by the house fly *Neomyia claripennis*

Li Fei of KCC has been conducting otter-specific survey in Guangdong, Hainan and Yunnan during the year. Photos of Asian Small-clawed Otter were captured in Yunnan, for the first time ever in China. A remnant population of Eurasian Otter was discovered in Zhuhai, Guangdong; FLO's conservation lab assisted in species identification using DNA technique.

KCC launched comprehensive biodiversity surveys in Tengchong section of Gaoligongshan National Nature Reserve (GLGS) in 2014 and has yielded fruitful result, including two new-to-science amphibian species namely Tengchong Leaf Litter Toad (*Leptolalax tengchongensis*) and Tengchong Spadefoot Toad (*Leptobrachium tengchongense*), which were described by Yang Jianhuan of KCC and collaborators in 2016. KCC and GLGS co-authored the first field guide for Tengchong area based on the result of our joint biodiversity surveys.

The first seedlings of *Phalaenopsis* (formerly *Doritis*) *pulcherrima* to be raised from seed capsules, collected in the field in Hainan last year, were produced through ex situ micropropagation in Hainan in March. These plants are designated to assist with research being conducted by Mr. Zhe Zhang, our doctoral student based in Hainan University, and will be grown-on for eventual reintroduction into the wild.

Our conservation programme for the flagship orchid *Bulbophyllum bicolor* reached a milestone in June 2016 with the reintroduction of 300 artificially raised seedlings at a streamside location within KFBG. Our research has revealed that this species cannot form fruits if its flowers are self-pollinated, and that genetically distinct individuals must therefore be cross-pollinated in order to produce seeds. However, all remaining wild populations in Hong Kong appear to have undergone severe genetic erosion as a result of centuries of habitat fragmentation, with most reduced to just one single individual or 'genotype'. To make matters worse, the natural pollinator also appears to be rare or locally extinct, leaving little possibility for the orchid to produce offspring unaided by ecologists.

By transporting pollen from one population to another and hand-pollinating plants that are known to be genetically distinct, Flora Conservation Department staff have been able to propagate thousands of seedlings that can be used to help restore numbers – and genetic diversity – in the wild. Several different methods of attaching the seedlings to rocks and trees are being tested at the trial reintroduction site in KFBG, with the use of a plant-based, non-toxic glue and simply pushing the plants into crevices in rocks so far proving successful. It is hoped that this process can be repeated in the wild in future, to help save the species from extinction.



Staff of KFBG planted 620 seedlings of native trees at the KFBG Tree Planting Site on 5 May 2016

Ecological Forest Restoration

As part of our attempt to ecologically restore the montane forest in the upper area of KFBG, and to help to establish a methodology that can be shared worldwide, staff engaged in our annual tree planting activity on 5 May 2016. This year, 122 staff and volunteers planted 620 seedlings of 20 native tree species in 3 experimental plots to test whether soil amendments with compost-activated biochar and fertiliser-activated biochar can improve the soil quality and enhance the survival and growth rates of native trees. The treatments, including a zero control without any soil amendment and a treatment with organic fertiliser, were incorporated into the soil during the planting process by mixing the soil with the amendments. To avoid that the biochar and the fertiliser would be washed away in heavy rain, the planting pit was covered with a coconut mat, whereas tree guards protected the saplings from deer and other animals. Previous successful experiments have already shown that weeding mats and tree guards can increase seedling survival rates to more than 90%, making it an essential treatment for ecological restoration.

In June, the experimental plantings were continued with a further 1,300 seedlings consisting of a different set of 20 species planted in the same experimental design to see whether there are any species-specific responses to biochar-amended soil.

The survey data of the Tai Po Kau forest dynamics plot has been visualised by creating topographical and distribution maps of the 174 tree species identified there. The information will help to better understand natural succession in a 70-year old secondary forest in Hong Kong and inform on-going forest restoration initiatives.

Seeds of rare tree species of Hong Kong pensilwood *Dysoxylum hongkongense* - listed in the one hundred species of rare and precious plants of Hong Kong - were collected, under Government license, in Country Parks for propagation at KFBG.

Seeds of incense trees (*Aquilaria sinensis*), a listed species in the rare and precious plants of Hong Kong, under threat from poachers engaged in organised crime, were collected under license in Country Parks for propagation at KFBG and are to be used for forest restoration and ex-situ conservation.

Throughout the year, a total of 9,817 native tree seedlings were supplied for habitat restoration projects within country parks and for research purposes, while about 3,944 seedlings were planted in KFBG to contribute to the restoration of the upper area and canopy enhancement in various locations.

External Capacity-Building for Conservation

In January, KCC and Yinggeling National Nature Reserve (YGL) co-organised a workshop to celebrate the 10th Anniversary of the YGL Biodiversity Survey. More than 60 experts and colleagues who participated in the year-long biodiversity survey in 2003 and 2005 gathered and offered advice on YGL's future strategic development.

Construction of an orchid nursery within the grounds of the Biotechnology and Ecology Institute (BEI) in Vientiane, Laos, was completed in mid-March, in line with KFBG's Memorandum of Agreement with the Lao Government and as part of our ongoing project 'Confronting the Wild Orchid Trade in the Indo-Burma Hotspot'. The nursery will serve a significant role in achieving our goal of improving understanding of the full diversity and conservation needs of the country's orchid flora. Although around 600 species of orchids have been recorded in Laos, the Flora Conservation Department's orchid team believe the real figure is likely to climb much higher because, at present, many parts remain botanically unexplored. Ensuring that our counterparts at BEI are trained in horticulture, ecology and conservation is an important aspect of our work there, since many local orchids suffer rampant collection to meet international demand for pot plants and traditional Chinese medicine.

Four KFBG staff attended the official opening ceremony of the orchid nursery in June, which was officiated by the Lao Vice-Minister of Science and Technology. Two joint field trips were held in 2016, the first to Xayaboury Province in the northwest of the country in June, and the second to the southern province of Savannakhet in December. The trips provided a wealth of new data on the distribution and ecology of many local orchid species in the country, as well as information on key threats to their survival in the wild.



Bulbophyllum spathulatum (L) and *B. reclusum* (R), two striking orchid species encountered by FLO staff during recent plant surveys in Central Laos

Nervilia kasiensis, a new species of orchid recently discovered in the course of our field work in Laos

Flora Conservation staff with one of our local counterparts in the newly inaugurated orchid nursery in Laos



With the addition of over 100 accessions during the FLO field trip to Laos in December, the orchid nursery at the Biotechnology and Ecology Institute in Laos that was established with assistance from KFBG at the beginning of the year now houses over 500 plants for long-term ex situ conservation. The collection includes several species new to science and others newly recorded in Laos, providing important information on plant diversity in the country and material for propagation and education programmes.

Dr. Bosco Chan of Kadoorie Conservation China (KCC) represented China at the Board meeting of the Association for Tropical Biology and Conservation (ATBC) Asia Pacific Chapter meeting in Singapore from 29th June to 2nd July, during which the team delivered eight oral presentations on different KCC projects. Before the meeting, Bosco was invited by the Iskandar Regional Development Authority (IRDA) of Johor, Malaysia to give a talk on conservation and sustainability in China on 29th June. An audience of over fifty people, including Malaysian government officials, NGOs, and developers, attended.

On 13th January, the KCC team participated in Yinggeling National Nature Reserve's Annual Assembly with participation of over 200 reserve officials and wardens. Dr. Bosco Chan presented a review of some significant findings from the biodiversity expeditions in YGL between 2003-2005, while Hilario Padilla and Joanne Li gave a talk on Analogue Rubber Agroforestry and beekeeping.

On 26th January and 3rd March Dr. Gary Ades of Fauna Conservation Department attended meetings of the Animal Welfare Advisory Group (AWAG) to discuss actions to raise awareness concerning 'mercy release' activities in Hong Kong and to work on a Code of Practice for the trade in reptiles. In August, Dr. Ades was invited by AFCD to join the Wildlife Crime Task Force meeting comprising Government departments (AFCD, Police and Customs) and specialists.

In July, Dr. Bosco Chan and Li Fei of KCC were invited to attend the 13th International Otter Congress held in Singapore. Bosco was elected as the China Representative of the IUCN SSC Otter Specialist Group, and delivered a presentation on the status of otters in China.

Dr. Bosco Chan was invited to give a keynote talk highlighting knowledge gaps of China's mammals and camera trapping techniques during the 2nd National Camera Trapping and Biodiversity Monitoring Workshop held in Beijing in August.

KCC assisted YGL in the design, construction and enhancement of the wastewater wetland treatment system at Yinggezui substation. In October a pond mimicking a natural rain pool was constructed to provide wildlife habitat.

KCC made several visits to Bangxi Nature Reserve, to train staff on rangeland ecology and drafted a habitat management strategy for the Reserve, to conduct field investigations with staff to identify possible intrusion points and developed a new patrolling system and strategies to combat poaching.

During 28th to 29th November, KCC and Gaoligongshan National Nature Reserve organized a training workshop on the biodiversity and conservation of Tengchong for all staff and wardens of GLGS. KCC staff delivered presentations on different faunal groups based on results of our joint survey conducted between 2014 and 2016. In total 165 participants attended, including five members from the Forestry Department of Yingjiang County and Tongbiguan Nature Reserve.

Influencing Policy

In 2016, KFBG's Ecological Advisory Programme team (EAP) made submissions on a total of 135 planning applications, three Environmental Impact Assessments, five Public Engagement Exercises and 6 draft Outline Zoning Plans (OZPs) and amendments to OZPs. Suspected unauthorised tree felling, illegal structures and ecological destruction at many sites were reported to the relevant authorities. Members also attended many meetings with various government departments with regard to some high profile conservation issues and policies.

Numerous site visits were conducted across the SAR related to ecological destruction cases, to gather ecological information for submission and for general or routine checking of sites of ecological concern. In addition, EAP worked closely with KFBG Departments and external environmental NGOs to provide comments regarding ecological and conservation issues related to various large-scale development projects or proposals in Hong Kong.

The Government initiated a public consultation for the Biodiversity Strategy and Action Plan (BSAP) for Hong Kong in January. Staff attended a public hearing by the Panel on Environmental Affairs of the Legislative Council in March. At the hearing, we expressed our disappointment about the scope of the BSAP Consultation Document and the process, and staff provided views and recommendations on what is required for a BSAP tailored to Hong Kong's needs and conditions.



An illegal bridge found in Sha Lo Tung, Tai Po

Sha Lo Tung, Tai Po has been earmarked by the government for decades as an ecologically important area, and is one of the Priority Sites under the New Nature Conservation Policy. Unfortunately, large-scale vegetation clearance and

excavation have been observed again, threatening both the Site of Special Scientific Interest and the wetlands. EAP and other environmental NGOs immediately reported the situation to the authorities, and, also held frank in-depth discussions with the Sha Lo Tung Development Company. Vegetation clearance and excavation activities ceased, and further action by the government and the company is planned to try to prevent a re-occurrence of such environmentally-damaging events.

The government formed a Lantau Development Advisory Committee in 2014 and has run a public consultation. The Committee published a working paper in January 2016 proposing many development projects on the island. We consider that these proposals will greatly threaten the natural landscape and biodiversity of Lantau Island, which is an ecological hotspot. EAP held meetings to discuss the environmental degradation impacts and non-sustainable elements of these projects with various environmental NGOs.

The Flora Conservation Department (FLO) reported to the EAP their concerns about a potential works site at Mui Tsz Lam, Ma On Shan. During one of their field trips, staff spotted some tags attached to the trees at the site which is within one of the best *fung shui* woodlands of Hong Kong. The site contains some rare plant species which can only be found at this locality and a few other places in Hong Kong and mainland China. After liaison with various Government departments (Agriculture, Fisheries and Conservation Department, Planning Department and Lands Department), staff finally discovered that the Water Supplies Department (WSD) was planning to build a pipeline through the woodland. If the project had commenced, we believe that the *fung shui* woodland would have been seriously disturbed by the construction works. After much direct liaison with WSD together with the Conservancy Association, EAP has been informed that WSD would no longer undertake any works at the site.

KCC and the Provincial Forestry Department of Guangxi co-organized a special workshop in early March on reserve re-zoning of Xidamingshan Nature Reserve (XDMS). More than 30 representatives from ten governmental agencies attended the workshop. Philip Lo presented a reserve zonation proposal with emphasis on connectivity of the hornbill habitat. A joint action on combating encroachment of XDMS took place shortly after the meeting.

Our Executive Director Andy Brown and KCC's Dr. Bosco Chan met with the directors of various sections of the State

Forestry Administration on 10th August 2016 in Beijing to discuss potential collaboration in the future.

KCC was invited by the Hainan Provincial Department of Agriculture to provide conservation advice on an eco-friendly management protocol of Cambodian forests owned by Chinese entrepreneurs. A study tour was organised in August with a delegation of Chinese government officials and Chinese agricultural entrepreneurs, during which KCC made a rapid site assessment and delivered a talk on Cambodian biodiversity and eco-friendly farming techniques to the delegates.

A meeting was organised by KCC and Bangxi Nature Reserve in September, in which government officials and leading Chinese mammalogists provided expert opinions on Hainan Eld's Deer conservation and reserve management. KCC was asked to compile the recommendations and submit them to the Provincial Forestry Department of Hainan.

Engaging Communities in Conservation

KCC, together with Hong Kong Bird Watching Society, co-ordinated two South China-wide surveys in 2016 of the little-known Chinese grassbird (*Graminicola striatus*). Eight local birdwatching societies from Guangxi, Guangdong, and Hainan participated, covering an area of 455,500 km². A training workshop was held in Shenzhen on 5th March. Nine survey routes were designed based on historical records, recent sightings and habitat suitability. The volunteers visited more than 100 sites in Hainan, Guangdong and Guangxi, and discovered three additional breeding sites. Overall we find that the Chinese Grassbird is more widespread and more adaptable to different habitats than once thought.



A Chinese Grass Bird found in one of the three new breeding sites discovered in 2016, during the survey co-ordinated by KCC and Hong Kong Bird Watching Society. (photo credit: FU Fun, Guilin Naturalists' Association)

In July, 15 volunteers from KCC's Rainforest Ambassador Citizen Science Programme painted murals and conducted a community survey in Bangxi, Hainan. KCC organized a series of field visits for primary school children at Bangxi Central Primary School from October to December. A total of 675 students visited the Reserve for the first time, and had a chance to appreciate the rich biodiversity, especially the Hainan Eld's Deer, close to their home.



Volunteers from KCC's Rainforest Ambassador Citizen Science Programme painted murals with Eld's Deer theme at Bangxi Nature Reserve, Hainan.



Students from Bangxi primary school making seedballs of food plants for Hainan Eld's Deer.



Hong Kong Flower Show 2016 Display

The Flora Conservation Department conceptualised and designed KFBG's display, 'Garden for the Senses', for the Hong Kong Flower Show 2016 in Victoria Park in March. Staff and a team of enthusiastic volunteers interacted with the public to inform them how gardens play an important role to stimulate and sharpen our senses, interpretation panels also offered additional advice. The display was extremely well received and was awarded the 'Grand Award for Unique Feature Display' in the show.



Children and KCC staff had fun during a relay game, themed on gibbons' family structure, during the "Eastern Hoolock Gibbon Funfair" co-organised by KCC and Gaoligongshan National Nature Reserve.

KCC collaborated with Tengchong Bureau of Gaoligongshan National Nature Reserve (GLGS) to organise the 'Gaoligong Hoolock Gibbon Funfair' at two primary schools in Tengchong, Yunnan, in March. Twenty volunteers, reserve staff and wardens designed eight booth games and an exhibition to deliver conservation messages. The two-day event attracted over 800 students.

KCC produced tailor-designed 'Hainan Rainforest Honey' labels in March for three eco-beekeeping demonstration villages surrounding Bawangling and Yinggeling National Nature Reserves. Villagers were trained in bee-keeping and on hygiene standards. A monitoring system will be developed and advice given on how to comply with the safety and quality standards of China.

The Critical Ecosystem Partnership Fund (CEPF) National Advisory Committee meeting was held in Kunming in November to select grantees; five small grant projects were selected, from a list of 30 applications, to be supported by CEPF, under the management of KCC.



An eco-beekeeper from Qingsong village, Li Wenyong and his wife proudly showing a slice of honeycomb under his care. He is also a member of the Hainan Gibbon community monitoring team.



Hainan Rainforest Honey labels designed by KCC for the spring honey harvest in villages surrounding Bawangling and Yinggeling National Nature Reserves; to be sold in our two shops.

Networking for Conservation

On 7th March, Dr. Gary Ades attended an international workshop titled 'Changing Behaviour to Reduce Demand for Illegally Traded Wildlife Products'. The workshop was organised by TRAFFIC East Asia, the wildlife trade monitoring network, and considered demand reduction activities.

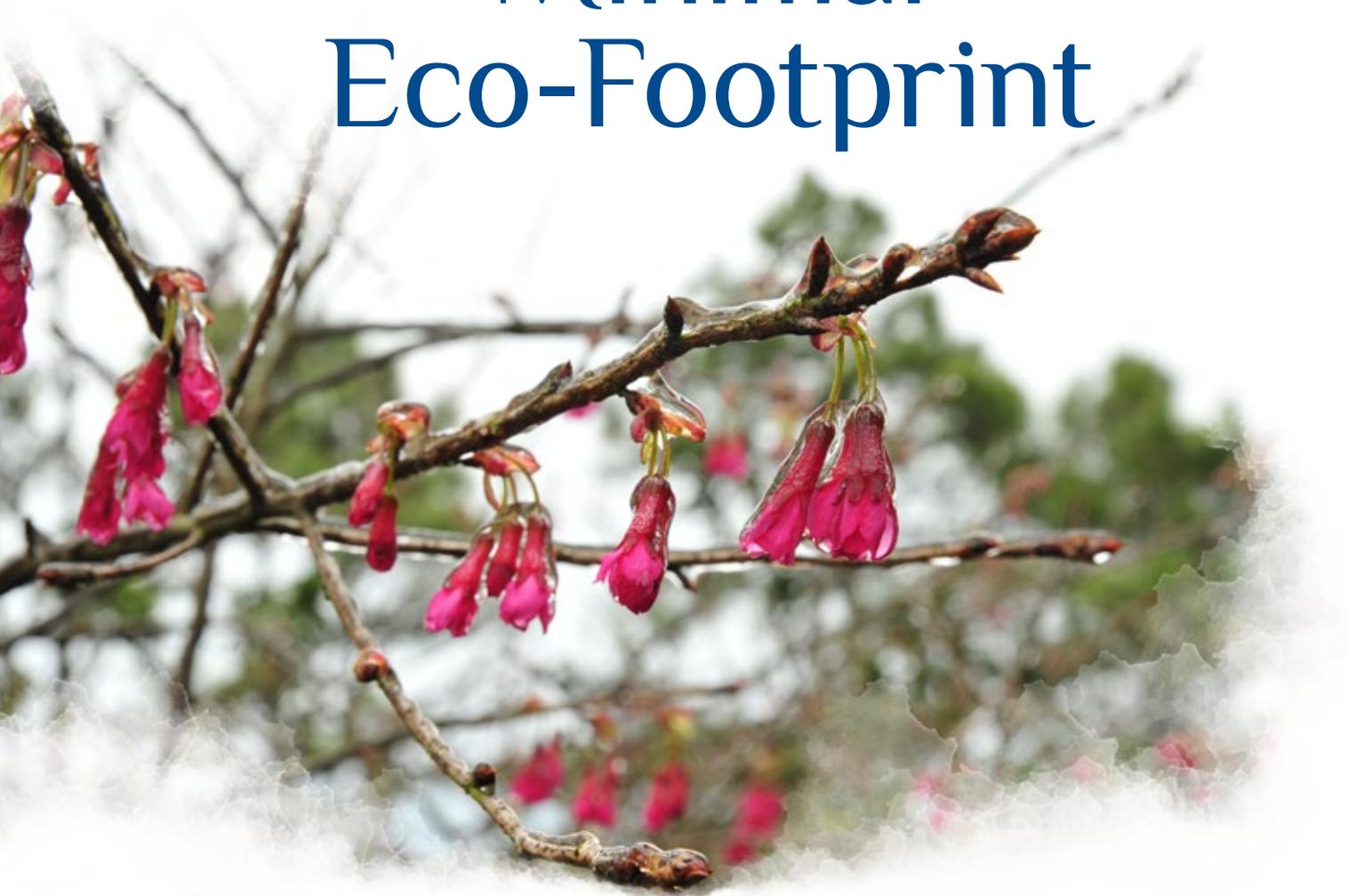
On 19th March, Dr. Ades attended a Wildlife Crime Law seminar at The University of Hong Kong at which the key speaker - John Sellars (CITES Crime Investigator) - highlighted some major enforcement and judicial areas which could be improved in Hong Kong.

The 6th International Orchid Conservation Congress (IOCC6), hosted by KFBG and held in Yau Ma Tei, opened on 16th May and concluded successfully on 20th May 2016. IOCC6 provided a forum for the world's orchid scientists and conservationists to share their knowledge, experiences and views on how to bridge the gap between science and practice. Around 150 delegates from 27 different countries participated. The conference was divided into 13 scientific sessions with 59 oral presentations including four keynote talks, and also featured 26 research posters. KFBG staff Dr. Huarong Zhang and Jihong Li presented their work, while one of our own PhD students, Daisy Hu, won an award for her presentation. The delegates visited KFBG on 18th May, with guided tours to give them a glimpse of our conservation and education programmes. The conference was highly appraised by the delegates for its scientific aptitude, applied take-home message on conservation and overall organisation.



Delegates visiting the KFBG orchid greenhouse during the International Orchid Conference excursion trip

Holistic Estate Management & Minimal Eco-Footprint



This year, the Estate Management teams were active in managing and monitoring the condition of trees around KFBG as well as reducing waste and saving energy. The Biochar machine continues to be a success since its installation in 2015, producing tonnes of biochar by converting felled trees into an extremely effective fertiliser to improve the soil quality in our organic farming terraces, gardens and reforestation project. Steps have been taken to make the estate friendlier for wild animals. In addition, Meta 4 Design Forum have been appointed to work with us to develop a new office building to replace our aging building.

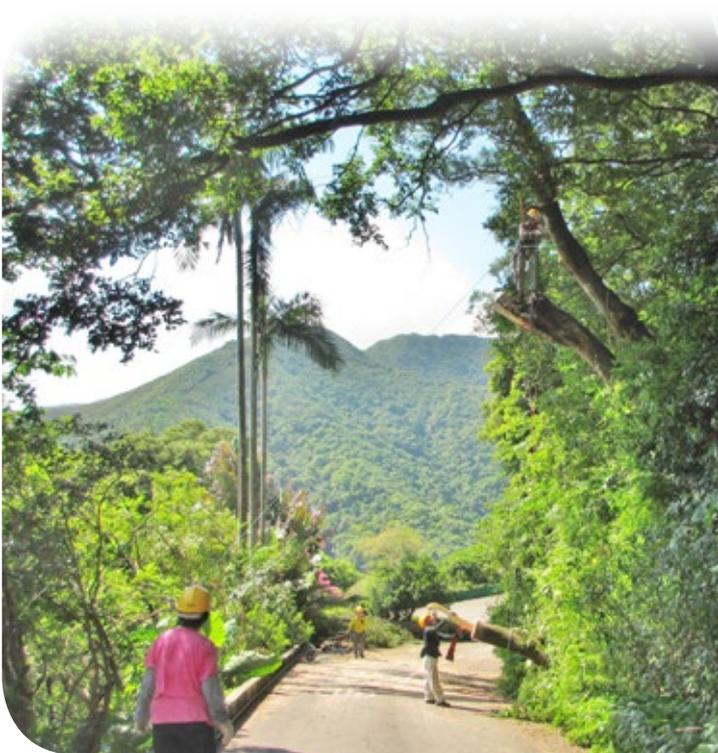
Tree Management

Due to unusual polar vortex conditions, temperatures dropped to -13.5°C with wind-chill on 24th January 2016. The plants and trees on the middle and upper slopes of KFBG iced over, and the top layer of soil froze solid. Many frost damaged trees were deemed dangerous to visitors and staff, and the Tree Management Team concluded that the removal of between 800 - 900 exotic Acacia and Brisbane Box trees was the best course of action. A felling plan was developed and implemented by several contractors. Our in-house team also conducted many tree surgery and felling operations on aging and sick trees.

The very large and old *Erythrina variegata* tree in the Gloria Barretto Orchid Sanctuary was damaged by a typhoon and announced unsafe by the Tree Management Team in October; it was removed in November.



Ice coated the trees on 24th January



The contractor removing a hazardous *Acacia confusa* near the Great Fall

Routine tree monitoring was conducted along the main carriageways and footpaths, with the updated conditions of each tree recorded in the tree inventory using ArcGIS mapping software. In addition, advanced tree risk assessment was conducted on ten potentially hazardous trees using the specialist tool RESISTOGRAPH® alongside tomography.



Tomograph test being conducted on an *Araucaria heterophylla* for checking its internal wood condition to check tree health and safety.

KFBG's Themed Gardens and Natural Forests

Apart from the management of existing flora, more than 1,400 pots of herbaceous plants and more than 500 trees and shrubs were used to beautify different areas of KFBG, particularly around the Fern Walk, Ilex Garden, Butterfly Garden, Walter Kerr Gardens, Greenhouse area, Plants & Us Greenhouse and its surrounding areas.

Reducing Waste and Saving Energy

The Facilities Department (FAC) has made changes to increase the efficiency of our existing facilities and equipment as well as reorganising the way we deal with food waste in a concerted effort to reduce the ecological footprint of the estate.

Air conditioners and fridges which use ozone-depleting refrigerant R22 were replaced at various locations.

Earth Systems, our biochar machine developer, upgraded and modified our CharMaker MPP20, fine-tuning it to improve fuel efficiency. Throughout 2016, some 23.3 tonnes of biochar were produced.



Our mule team continues to provide an alternative means of transportation within the KFBG estate

Photosensitive sensors were installed in the public toilets to detect external light intensity. This was integrated with the existing occupancy sensors to control the on-off operation of the lights. Existing defective photo-voltaic (PV) panels positioned on the upper roof of the Conservation Building were replaced. The testing and commissioning of these newly installed panels showed greatly improved power efficiency.

FAC has been evaluating the Farm-wide waste management process, conducting a trial of re-scheduling and less frequent waste collection operations to minimise the fuel usage in waste collection. Large capacity lockable waste bins have been placed at strategic locations in the Lower Farm area to cope with the new waste collection practice.

FAC installed a food waste composter in the Upper Canteen reducing the need to collect and dispose of the food waste generated. This will help to reduce the fuel usage in the waste collection process.

In 2016, the Mule Team transported 6,576kg of cargo and covered 300 kilometres. The majority of the cargo was compost for the Sustainable Living and Agriculture Department and rubbish collection for FAC from the Upper Farm. The Mule Team also delivered organic waste for composting to the Flora Conservation Department compost area below Sign Post Corner.

Animal-friendly Facilities & Pest Management

Animal-friendly improvement work was completed for one of the main drainage channels in the lower section of the Woodland Trail. New openings in the walls of the channel now allow trapped animals to escape the deep drain. Other features such as a footbridge over the channel were also created. The engineering improvements were featured in a KFBG Facebook and Blog story in May.



Animal friendly engineering along the Woodland Trail allows trapped animals to escape from the deep drainage channel

We have switched to deep food bins for the flamingos. This has successfully deterred rats as they are reluctant to jump into the bins to take the food, while the flamingos with their long necks have no problem feeding. In addition, we placed signage on the bird enclosures informing the public about the difficulties of preventing wild rodents from entering animal enclosures; we reminded the public that KFBG does not use traditional, indiscriminate, poisons in the Nature Reserve.

New Office Building

Meta 4 Design Forum Limited and Langdon & Seah Hong Kong Limited were appointed as the Lead Consultant and Quantity Surveyor of the re-development of our main office building. Related Ground Investigation work has just been completed. Several rounds of interviews took place with the Heads of Department and staff, and the layouts of the project were fine-tuned with our Redevelopment Steering Committee. Planning will continue throughout 2017.



A model showing the design of the planned new Office Building

An Evolving Organisation

To celebrate the 60th Anniversary of KAAA several events were arranged throughout the year.

Memorial Race

The 22nd Kadoorie Brothers Memorial Race was held on 18th December 2016. This year we have received over 300 applications and 153 runners participated on the day. Among them, Ms Yiu Kit Ching a 2016 Olympic Games representative of Hong Kong and her husband Mr Chan Ka Ho, the Hong Kong record holder for the 3,000 metres steeplechase, participated in the race for the first time. They broke both the men's and women's records for the Race. The new time records are 26 min 42 sec (Men) and 32 min 16 sec (Women) respectively.



Chan Ka Ho (middle) won the Men's Race and broke the previous Men's record.



Yiu Kit Ching, a Hong Kong Olympian, established a new record in the Kadoorie Brothers Memorial Race, Women's Race.

60th Anniversary

As part of our 60th Anniversary celebrations a KAAA Heritage Hunt was conducted in various areas across Hong Kong for KFBG staff on 19th February. The purpose was to identify old structures such as dams, wells, paths, buildings and bridges built by the KAAA, or with KAAA funding, many years ago. 'Search teams' scoured destinations from Lam Tsuen, Lamma Island to Lai Chi Wo, Lantau Island, and Ting Kok (Tai Po). This exercise served as a great historical record collection initiative and was a bonding exercise for staff and help us to connect to the many villagers encountered in the countryside. Our findings were added to those provided by the public and amassed into a fascinating Heritage Map published on our KFBG 60th Anniversary Commemorative web page.

We also collected the stories and met many members of the public who had been involved in the KAAA aid programme.

To mark the end of 60th Anniversary celebrations we had a walk through the gardens for staff, tea catered by the Green Hub and inspirational talks by our friend and visiting teacher Dr. Satish Kumar and Andrew McAulay, our Chairman and great-nephew of Sir Horace Kadoorie. (please refer to Chapter One for more details of the celebration on that day)

A Vibrant Culture Experience Programme – "Weightless Body Peaceful Mind", was held for staff at the Kadoorie Centre of The University of Hong Kong in May by a very experienced yoga teacher.



On 5 May 2017, staff interviewed a villager (front right) of Ngau Keng Village, Yuen Long; learning more about the impacts of KAAA's pig donation scheme in the past.



KFBG staff found a KAAA plaque in Tin Liu Ha, near Lam Tsuen, Tai Po. The path was funded by the KAAA.



A well with the KAAA logo found in She Tau, Sai Kung.

Great People

KFBG has a large and dynamic workforce of around 220 people. In 2016, we recruited 48 new members of staff, while 43 members left. Training and capacity building of our staff, both externally and in-house, is a continuous process as we strive to meet present and future challenges.

Our arborists joined the technical seminar *'Reducing Risk & Accidents in Tree Work; the Latest from the USA'* organised by the Institute of Arboriculture Studies and Asia Tree Preservation Limited. Two staff also joined the *'Tree Planting on Slopes in Hong Kong'* organised by the China Arborist Association. An in-house refresher course on aerial rescue was organised, by the Flora Conservation Department (FLO), for six Tree Team members, while two staff members attended the *'Annual International Conference of the International Society of Arboriculture'* in the USA. Four FLO staff members joined seminars regarding tree work safety, Japanese pruning techniques and demonstrations of tree climbing techniques in the *'Asia Pacific and Hong Kong Tree Climbing Championship'* organised by International Society of Arboriculture, Hong Kong Chapter in November. Five FLO staff attended Helicopter Ground Crew training, in preparation for the use of helicopter transport to move tree planting equipment up the mountain for the internal Tree Planting event to celebrate Earth Day in April.

In addition, three Sustainable Agriculture Officers attended the *'Organic Aquaculture Inspection Workshop'* organised by the International Organic Inspectors Association (IOIA) in June.

Kadoorie China Conservation Department (KCC) has also benefitted from knowledge sharing events. Five members attended three post-conference workshops organised by the ATBC (The Association for Tropical Biology and Conservation) Asia-Pacific Chapter, meeting in July to discuss spatial ecology, linear modelling (statistics) and innovative conservation education and outreach. Zheng Xi and Li Fei of KCC also participated in the 2nd National Camera Trapping and Biodiversity Monitoring Workshop in



Five Flora Conservation team staff members joining the in-house refresher training on aerial rescue.

August, addressing topics on survey protocol, experiment design and data analysis. Michelle Wong of KCC attended the CEPF (The Critical Systems Partnership Fund) 'Safeguarding' training in Hanoi, Vietnam in July aimed at refreshing the regional implementation team's understanding of the safeguarding policies, introduction of new safeguarding policies and the review of difficulties and issues.

A 3-day course in Wilderness First Aid training was run in September.

Also, three sessions of macaque conflict-management training were provided to staff by members of the Fauna Conservation Department. The talks were compulsory for all new KFBG staff to attend and demonstrated how staff should respond to disturbances caused by macaques, especially in public areas with high visitor traffic.

Three Supervisory Skills training sessions were arranged for Assistant Foreman to Assistant Officer levels in October 2016, conducted by a trainer from the Hong Kong Management Association.

Four Journal Club sessions - specifically designed for the internal sharing of scientific knowledge - were conducted in 2016; topics included 'Using Drones for Forest Conservation' by Mang Lung Cheuk on 28th October, and 'An introduction to the Mountain Rainforest in Tropical Hainan Jianfengling' by Huiling Zhu and Jingang Liu on 25th November.

Volunteer and Internship Programme

A key part of KFBG are the team of dedicated volunteers who are crucial to KFBG's conservation and education programmes. In 2016, we continued our volunteer capacity-building work by provided them with training and team building activities and held events to express our appreciation.

In January, activities were organised to encourage bonding between the Central Farmers Market volunteers and other volunteers, with 21 volunteers joining the event; activities included a Green Hub guided tour, a bartering-activity and a certificate presentation ceremony.

Also in January, we ran an Art House volunteer training session, and on 6th February Fauna Conservation Department (FAU) conducted a team building activity and review at the Green Hub for Fauna Outreach Volunteers.

A half-day volunteer activity was held in March for 26 specially selected, active Education Department (EDU)'s Nature Education Volunteers to express appreciation for their efforts, with activities including a vegetarian lunch, bread making, simple woodwork and afternoon tea. FAU recruited 20 volunteers for the Fauna Outreach Volunteer Programme, with four days of training being conducted in June and July. Newly trained volunteers have been helping to guide FAU Education activities such as the Sunday Animal Encounters Programme and Discovery Tables.

The Education Department's Internship Programme recruited 22 interns from local universities. Between June and August, the interns supported three summer camps, the exhibition at the Jockey Club Creative Arts Centre, guided tours and one-day programmes. Their duties included leading participants, designing the technical rundown of the summer camps and the exhibition, and managing their implementation.



Eat Well Ambassadors teaching Green Hub volunteers how to make the signature dessert of the Eat Well Canteen.



Group photo of the Fauna Outreach Volunteer Programme training 2016, showing new volunteers, existing volunteers and Fauna Conservation staff.

Governance

We are governed by the laws and regulations of Hong Kong and the People's Republic of China, as well as the Kadoorie Farm and Botanic Garden Ordinance (CAP.1156). We periodically update our internal policies and actions to ensure compliance and best practice.

The financial year-end audit for 2015/2016 was carried out in October 2016.

We thank the KFBG Board for their continued support and advice.

We thank the Trustees of the Kadoorie Foundation for their trust and investment in the important work of KFBG.

We also thank our other donors for their grants and other contributions to our programmes.

Number of Visitors to KFBG over the Past Five Years:

	2012	2013	2014	2015	2016
School groups	47,385	49,212	44,611	35,749	34,056
Commercial groups	13,032	9,834	10,347	7,616	4,004
NGO groups	19,154	18,809	16,748	8,868	11,474
Individuals	76,070	79,752	94,964	107,786	95,509
Total	155,641	157,607	166,670	160,019	145,043

The decline of visitor numbers is mainly due to the unusual cold and rainy weather in the first quarter of the year. On 24th January, sub-zero temperatures were recorded on high ground, with temperatures at Tai Mo Shan falling to -6 degrees (before wind chill). Frost was also reported on Chinese New Year's Day (8th February). Bitterly cold and rainy weather caused a significant drop in visitor numbers during the Chinese New Year holiday and the flower blossoming periods of Taiwan Cherry and Flowering Apricot. Moreover, several typhoon signals / Rainstorm Warning Signals were issued and the Very Hot Weather Warning Signal was persistently in-force during the second and third quarter of the year. In conclusion, the frequent bad weather conditions caused a significant drop in visitor numbers especially from Commercial groups.

Number of Visitors to the Green Hub

Visitor Numbers in 2016				
Self-guided Visitors	Eat Well Workshop Participants	Course Participants	Heritage Tour Participants	Total
47,159	1,545	1,039	8,007	57,750

During 2016, the Green Hub was visited by 57,750 people, far exceeding the target number of 20,000.

Financial Figures (excluding depreciation):

Expenditure (HK\$)	*Year Ended 31.3.16 (audited)	**Year Ended 31.3.17 (unaudited)
Capital	33,970,902***	16,420,000
Operating	89,449,536	93,472,000
Total	123,420,438	109,892,000
Income (HK\$)	Year Ended 31.3.16 (audited)	Year Ended 31.3.17 (unaudited)
The New Kadoorie Foundation	109,500,000	105,500,000
Sir Horace Kadoorie Special Fund	Nil	2,197,000
Kadoorie Farm Botanic Garden Reserve Fund	Nil	454,000
Shop Sales	1,840,750	1,713,832
Government and other funding (see breakdowns below)	4,743,392	1,162,158
Entrance fees	2,554,455	2,221,125
Workshop fees and Guided Tours	2,353,600	1,897,904
Public donations (see breakdown 3)	66,223	54,829

* From Audited Accounts (expenditure includes commitments accrued and not yet settled).

** From Management Accounts (expenditure includes commitments accrued and not yet settled).

*** Expenditure includes the commitments of previous years which are settled during the year.

Breakdown 1. Government Funding

Government Funding	Year Ended 31.3.16	Year Ended 31.3.17	Utilised by KFBG to provide:
Development Bureau (Green Hub)	4,743,393	1,124,658	Revitalization of Old Tai Po Police Station

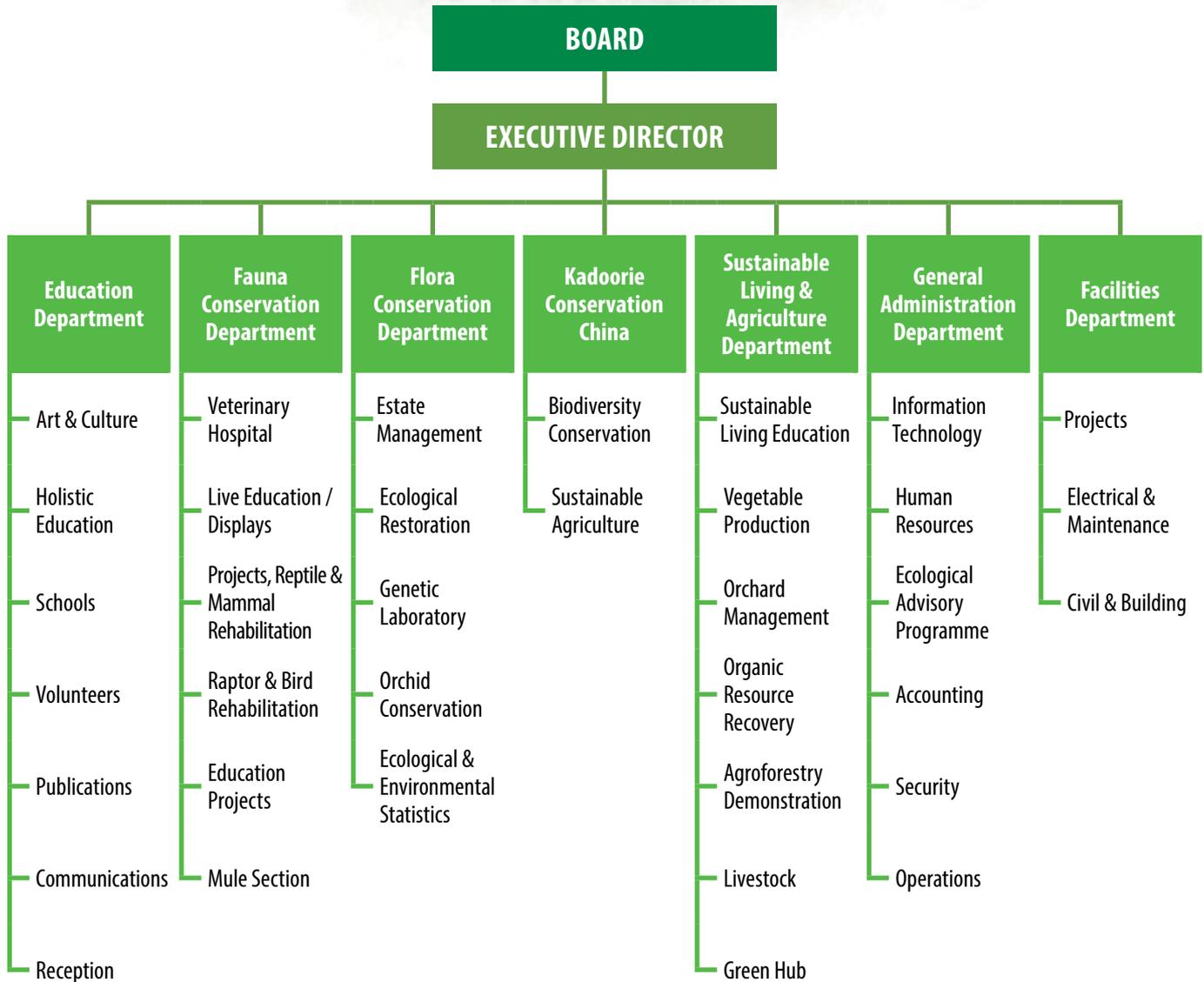
Breakdown 2. Other Funding

Other Funding	Year Ended 31.3.16	Year Ended 31.3.17	Utilised by KFBG to provide:
Bank of China Charitable Trust	215,000	Nil	Annual Mainland China national youth education project.

Breakdown 3. Public Donations to our General Conservation Fund and Usage

General Conservation Fund	Year Ended 31.3.16 (audited)	Year Ended 31.3.17 (unaudited)
Opening Balance B/F:	88,678	69,489
Utilised Funds:		
- Utilised in Golden Coin Turtle project	(33,513)	—
- Utilised in Restoration and canopy bridge at Bawangling, Hainan	(21,899)	—
- Utilised in Tree planting event	(30,000)	—
Public Donations	66,223	54,829
Closing Balance C/F:	69,489	124,318

KFBG Organisation



KFBG Staff (as at 31 December, 2016)

Department	No. of Staff
Executive Director's Office	2
Education	15
Fauna Conservation	24.5
Flora Conservation	58
Sustainable Living & Agriculture	57
General Administration	32.5
Facilities	20
Kadoorie Conservation China	9
Total Number of Staff	218

Members of the Board

of the Kadoorie Farm and Botanic Garden Corporation

Andrew McAulay (*Chairperson*)

Dr Lawrence Lee

Deborah McAulay

Ruy Barretto, S.C.

Daniel R. Bradshaw

Andrew Brandler

Senior Management

of the Kadoorie Farm and Botanic Garden Corporation

Executive Director

Andy Brown

Heads of Department

General Administration Department

Florence Au

Fauna Conservation Department

Dr Gary Ades

Kadoorie Conservation China

Dr Bosco Chan

Education Department

Joshua Chan

Flora Conservation Department

Dr Gunter Fischer

Facilities Department

Denis Ng

Sustainable Living & Agriculture Department

Idy Wong

Appendix 1

The following table lists KFBG activities through 2016 aimed at building capacity in community organisations and partnerships for sustainable living.

Partner Organisation	Date	Programme Title	Location
Hong Kong University of Science and Technology	24 th Feb and 21 st Apr	Provided site advice regarding orchard management	Hong Kong University of Science and Technology
Partnership for Eco-Agriculture and the Conservation of Earth (PEACE)	22 nd Feb, 22 nd Jul and 28 th Nov	Provided advice regarding crop planning, orchard management and pruning techniques	Nam Chung
Hong Kong Baptist University College of International Education	Jul and Aug	An eight-week internship scheme	Green Hub
Hong Kong University of Science and Technology	20 th Sep	A talk featuring urban farming	Hong Kong University of Science and Technology
"BEAM Plus Neighbourhood" Seminar Series for green building professionals organized by Green Building Council	1 st Nov	Public talk featuring the revitalization of Old Tai Po Police Station to the Green Hub for sustainable living	BEC Auditorium, Jockey Club Environmental Building

Appendix 2

Specialist scientific publications from **KFBG staff** and collaborators/ project executants for 2016 are listed as follows:

Title	Authors	Journal/Publication
A taxonomic revision of the tribe Oryzeae (Poaceae) in Thailand.	Traiperm P., Norsaengsri M., Gale S.W.	ScienceAsia 41: 363–376
Phylogenetic analysis of a 'Jewel Orchid' genus <i>Goodyera</i> (Orchidaceae) based on DNA sequence data from nuclear and plastid regions.	Hu C., Tian H., Li H., Hu A.-Q. , Xing F., Bhattacharjee A., Hsu T., Kumar P. , Chung S.	PLoS ONE 11(2): e0150366.
Studies in Asian <i>Nervilia</i> (Nervilieae, Epidendroideae, Orchidaceae) VI: <i>N. mekongensis</i> , a new species from Thailand, Cambodia, Laos and Vietnam.	Gale S.W. , Schuiteman A, Watthana S, Sando T, Souvannakhoummane K, Averyanov L, Suddee S	<i>Phytotaxa</i> 247: 267–273.
Diversity hotspots and conservation gaps for the Chinese endemic seed flora.	J Huang, J Huang, C Liu, J Zhang , X Lu, K Ma	Biological Conservation. 198, 104-112.
Re-evaluation of the taxonomic status of <i>Hackelochloa</i> O. Kuntze (Poaceae) based on anatomical and phenetic analyses.	Arthan A., Traiperm P., Gale S.W. , Norsaengsri M., Kethirun L.	<i>Botanical Journal of the Linnean Society</i> 181: 224-245.
<i>Podochilus warnagalensis</i> (Orchidaceae), a new species from Sri Lanka.	Wijewardana I.H., Priyadarshana T.S., Arangala N.S., Atthanagoda A.G., Samarakoon R.T.B., Kumar P.	<i>Phytotaxa</i> 266: 151-156.
<i>Habenaria sahyadrica</i> (Orchidaceae, Orchideae) a new species from the Western Ghats (India) with critical notes on allied taxa.	Kumar P. , Prabhukumar K.M., Nirmesh T.K., Sreekumar V.B., Hareesh V.S., Balachandran I.	<i>Phytotaxa</i> 244: 196-200.
Principles behind designing herbarium specimen labels and the R package 'herblabel'.	Jinlong Zhang, Huiling Zhu, Jingang Liu, Gunter A. Fischer	Biodiversity Science, 24(12): 1345-1352.
Altitudinal patterns of maximum plant height on the Tibetan Plateau.	Lingfeng Mao, Shengbin Chen, Jinlong Zhang , Guangsheng Zhou	<i>Journal of Plant Ecology</i> (https://doi.org/10.1093/jpe/rtw128)
Identifying orchid hotspots for biodiversity conservation in Laos: the limestone karst vegetation of Vang Vieng District, Vientiane Province.	Kumar P. , Gale S.W. , Schuiteman A., Bouamanivong S., Fischer G.A.	Journal of Threatened Taxa 8: 9397–9417.
A new species of the genus <i>Leptolalax</i> (Anura: Megophryidae) from Gaoligongshan of western Yunnan Province, China.	Yang, J.H. , Wang, Y.Y., Chen, G.L. & Rao, D.Q.	<i>Zootaxa</i> , 4088 (3): 379–394.

Title	Authors	Journal/Publication
<i>A new species of the genus Leptobrachium (Anura: Megophryidae) from the Gaoligongshan mountain range, China</i>	Yang, J.H. , Wang, Y.Y. & Chan, B.P.L.	<i>Zootaxa</i> , 4150 (2): 133–148
<i>Assessing current genetic status of the Hainan gibbon using historical and demographic baselines: implications for conservation management of species of extreme rarity</i>	Bryant, J.V., Gottelli, D., Zeng, X. Hong, X, Chan, B.P.L. , Fellowes, J.R., Zhang, Y., Luo, J., Durrant, C., Geissmann, T., Chatterjee, H.J., Turvey S.T.	<i>Molecular Ecology</i> , 25(15): 3540–56
<i>Improving ecosystem services of monoculture rubber plantations</i>	Li, J. & Padilla, H.	Conservation Asia Abstract Book: 28
<i>Looking for a needle in a haystack - survey of the inconspicuous Chinese grassbird Graminicola striatus in South China's extensive grassland</i>	Zheng, X. & Chan, B.P.L.	Conservation Asia Abstract Book: 71
<i>Engaging local community to conserve the most endangered primate</i>	Mak, C.F. & Chan, B.P.L.	Conservation Asia Abstract Book: 86
<i>SWOT analysis of China's environmental advocates</i>	Li, H.L.A. & Chan, B.P.L.	Conservation Asia Abstract Book: 88
<i>To disclose or not to disclose: a conservation dilemma for karst specialist species</i>	Yang, J.H. & Chan, B.P.L.	Conservation Asia Abstract Book: 100
<i>Restoring the Hainan Eld's deer habitat: could we learn from climate-smart agricultural systems?</i>	Padilla, H. & Li, J.	Conservation Asia Abstract Book: 122
<i>Drastic decline of otter populations indicates major conservation gaps in freshwater ecosystems of tropical China</i>	Li, F. & Chan, B.P.L.	Conservation Asia Abstract Book: 139
<i>Drawing the line between wildlife conservation and deer farming – the story of Eld's deer on Hainan</i>	Wong, M.H.G. & Chan, B.P.L.	Conservation Asia Abstract Book: 164
<i>Two new species of Podostemaceae from the Yinggeling National Nature Reserve, Hainan, China</i>	Qin-wen Lin, Gang Lu & Zheng-yu Li	<i>Phytotaxa</i> 270 (1): 049–055
<i>Post Release Survival Monitoring of a Rehabilitated Leopard Cat (Prionailurus bengalensis) in Hong Kong SAR China</i>	Paul Crow, Yorkie Wong	Kadoorie Farm & Botanic Garden Publication Series No. 13
<i>Mammals observed during a brief visit to Pantli Forest, Johor, Peninsular Malaysia.</i>	Li Fei & Chan, B.P.L.	South Asia Vertebrate Records SEAVR 2016: 121-124
<i>Recent amphibians and reptiles observed at Pantli Forest Reserve, Johor, Peninsular Malaysia.</i>	Yang, J.H.	South Asia Vertebrate Records SEAVR 2016: 105-107
<i>Mammals observed during a road trip west of Jemaluang, Johor, Peninsular Malaysia. SEAVR 2016: 140-141.</i>	Chan, B.P.L. & Li Fei	South Asia Vertebrate Records SEAVR 2016: 140-141



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