

Kadoorie Farm and Botanic Garden

ANNUAL REPORT 2005/2006



To increase the awareness of our relationship with the environment and bring about positive change in the world through conservation and education.

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Kadoorie Farm and Botanic Garden Annual Report (April 2005 - March 2006)

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About KFBG

Kadoorie Farm and Botanic Garden (KFBG) is situated below the northern slopes of Hong Kong's Tai Mo Shan mountain. Two steep spurs enclose its deep-set valley, which shelters streams, woodlands, orchards and vegetable terraces, together with conservation and education facilities. In the post-war years, Hong Kong was flooded with destitute immigrants. Many had traditional agricultural knowledge of crop production and livestock farming. They required support to rebuild their lives. In response to these pressing human needs, Lord Lawrence and Sir Horace Kadoorie established the Kadoorie Agricultural Aid Association (KAAA) in 1951. The Kadoorie brothers, part of a well-established business family, saw wealth as a sacred trust to benefit mankind. The KAAA provided agricultural input, interest-free loans and training. With such aid, countless families and communities built small wells, irrigation channels, terraces, pathways, pigsties and houses. The success of the KAAA sponsored a self-help movement that brought many laurels, including the Ramon Magasasay award in 1975.

Hong Kong's unparalleled prosperity since the mid-1970s has led to a decline in farming. In the midst of wider social change and rapid economic expansion, a new direction was needed. Growing ecological knowledge indicated that Hong Kong and South China's natural diversity was under much greater threat than previously thought. In January 1995, the Legislative Council of Hong Kong passed an Ordinance (Kadoorie Farm and Botanic Garden Corporation Ordinance CAP. 1156) incorporating Kadoorie Farm and Botanic Garden as a non-profit corporation. The new focus was to promote conservation education, environmental sustainability, and the protection of biodiversity in Hong Kong and beyond.

KFBG has a unique public-private partnership. Though KFBG is a public corporation, its funding and management is in private hands. A board of directors appointed by the Trustees of the Kadoorie Foundation independently manages KFBG. The annual budget of KFBG is around HK\$80 million, met through grants from the Kadoorie Foundation. KFBG spreads over 148 hectares on land leased from the government. KFBG runs many collaborative programmes with government agencies, universities and non-government organisations.

Mission and Vision

MISSION

We exist to increase the awareness of our relationship with the environment and bring about positive change in the world through conservation and education.

VISION

KFBG will help create a world without environmental crisis, in which conservation of the natural heritage and sustainable living enable people to live in contentment, with respect for each other and nature.

CORE VALUES

Sustainable Living

We believe in simple and responsible lifestyles. We examine the impact of all our actions, and strive to take only what we need, having regard for future generations and the natural environment.

Fairness and Justice

We strive to be fair and accountable in the way we do things. We value socially equitable systems that protect natural and cultural diversity and the interests of all generations.

Love and Happiness

We value love for the environment and awareness of the interrelationship of all things. We recognise the intrinsic worth of people and nature and have compassion and respect for all life. We believe our own happiness lies in creating and sharing happiness with others.

Learning and Openness

We believe in learning, continuous improvement, respecting different viewpoints and participation. We translate environmental principles into practical, holistic solutions, balancing scientific objectivity and creative intuition.

Professionalism

We strive to be caring and committed, and to uphold professional standards and best practices. We value our independence as well as our partnerships with individuals, communities and organisations.

Foreword

I am very happy to let you know that 2006 marks the 50th anniversary of the Farm.

It was in the early summer of 1956 that the Kadoorie Agricultural Aid Association started to acquire the leases to our site to continue the work that it had begun 5 years earlier. At that time, we were known as the Kadoorie Experimental & Extension Farm – and, as the name suggests, we were a centre for both a wide range of agricultural experiments and an extension programme that eventually touched the lives of hundreds of thousands of farmers & fishermen throughout Hong Kong.

What made this programme special was the level of care and attention that was paid to the situations of those who were helped. The “K triple A”, as it was known, was conceived not as a charity, but as a partnership with people. The motto was “To Help People to Help Themselves” and the most important thing was to preserve peoples’ dignity.

Each case was different. Amongst the early beneficiaries was a group of people who complained that the land they had been given was full of rocks; the KAAA offered to supply cement so that if the rocks were dug up, they could be used to build pigsties. At the same time, 2 pigs were promised for each pigsty that was built and training was offered in how to cultivate the land that had been cleared. It was in ways like this that the Farm built its reputation for caring deeply for people.

Of course, it took the hard work of many people to carry out these programmes – but one person stood out as the figurehead and that was Horace Kadoorie, whose personal philosophy was that the secret to happiness is to give happiness to others.

Some of you will remember Horace. In his final years, he was confined to a wheel chair. He had a broken thigh, a broken hip and Parkinson’s disease – which meant that he couldn’t move or talk and had to have everything done for him. And yet, even in this condition, he was still thinking of ways to help people.

He would come to the Farm every Saturday and when I introduced him to new staff, I noticed that his eyes would shine in welcome. To me he was a great example that there is something inside a human body that is beyond pain and that each one of us can access that by living selflessly.

This KAAA spirit, which Horace embodied, continues to inspire our work. And to me it is no accident that the Farm is located on the slopes of Kwun Yum Shan, a mountain dedicated to a symbol of love and compassion. There is a powerful energy here, whether you attribute it to KAAA or Kwun Yum or the beauty of the gardens – and many peoples’ lives continue to be uplifted by visiting the Farm.

In 1995, the Legislative Council passed an ordinance to incorporate the Farm with a new environmental mission. We officially became a refuge for animals and plants as well as a place that cares for people. This reflects our growing awareness that all living things are connected – that the happiness of all other beings is related to our happiness.

Since 1995, we have established new departments and developed new programmes to protect nature and touch peoples’ hearts in an ever-increasing number and variety of ways.

From wildlife rehabilitation and reforestation to promoting organic farming and running workshops and events with both science and art based agendas – it has been truly awesome to see how much our staff and volunteers have achieved.

In the last few years, we have been refining and expanding our mission, giving it a depth that was not previously apparent. We have undertaken to explore the way our society works, in order to better understand how we have ended up in our current predicament – facing an environmental crisis that threatens much of life on earth. This requires a lot of soul searching – it cannot be carried out by just one group of individuals or sector of society; it has to be carried out by *each* and every one of us.

At the heart of this process is a questioning of the assumptions that we – and our society – hold most dear; for example, the idea that economic growth benefits everyone. We need to ask who really benefits from economic growth? What happens to the gap between rich & poor? What happens to the environment?

We need to exercise great discrimination with respect to our sources of information – being aware of the different forces that shape the content of the media. And finally we must ask questions about ourselves: What really makes us happy? How deeply do we contemplate this question or do we just trust what other people – or the media – have to say?

A big part of our mission is education and many of our staff play the role of education officers, in one capacity or another. So in order to do our job effectively, we are seeking to become a learning organization – continually deepening our understanding of the links between different perspectives: environmental, political, economic, social and spiritual.

Here in Hong Kong, at this particular time, we are cushioned from the effects of the environmental crisis. We are not poor farmers; we are not the people, animals & plants of the forests that are being destroyed to provide us with the things we take for granted; and we have yet to feel the full impact of issues such as climate change and oil depletion. But we will have to face the consequences eventually.

When that time comes, what will determine how we cope personally and how we are able to support each other, will be the effort that we have put in at this time – especially the attitude, towards ourselves and others, that we have cultivated. We have a lot of work to do and it is not all going to be easy – but it is nonetheless a joyful enterprise.

In fact, it is an amazing opportunity for all of us to evolve as human beings. We sometimes talk loosely about connecting to the environment, but it is a profound topic – one that has the power to uplift and completely transform our experience of life. Ultimately, it is about connecting to the deepest part of ourselves.

So, I want to thank all those who have contributed to our mission so generously over the years, as well as all those who continue to do so.

Andrew McAulay
Chairperson
August 2006

Preface

As we celebrate our 50th Anniversary in 2006 we look back over the last half-century and look forward to the next half-century. In my mind I can see a metaphor of us all standing half way up a steep mountainside; the mountain being an accumulation of the troubles of the world. Looking back with pride we review and remember the long struggle behind us, while looking ahead and above us we see that the terrain is unexplored and strangely hidden by cloud.

Looking back I would like to pay tribute to the very many individuals who have put their hard work, passion, creativity and dedication into the Farm over these last 50 years. Thank you to the founders and to the many hundreds of workers, officers, managers, executives, partners, supporters and other stakeholders. These people played a very important role to establish, develop and maintain the Farm and the organization. They explored the unexplored and created something unique. Because of them we now have the privilege of having a solid platform from which to plan and dream for the future. Though you may be far behind us now, obscured by forest and mist, you the people of the past, we salute you.

On the steep mountainside of my metaphor, looking forward and upwards into the unknown of the future we have two choices:

One: Settle down here in this comfortable, safe, forest, celebrate getting this far and take things easy, perhaps explore nearby and do the things that we know well. We may perhaps be unprepared for the coming storm, and miss the opportunity to fulfill our destiny, but at least it will all be familiar.

Two: Be courageous, prepare ourselves well, become even stronger and more organized, use all of our shared skills and learn some new ones; use our ingenuity, knowledge and passion, ready to overcome the huge obstacles that lay ahead, choose a point high on the mountain to aim for, then push outward and upward without fear into the unknown and forge a path for others to follow.

The young people of Hong Kong are the main focus of our work now and in the future. In the young people we hope that we can influence them to consume less, conserve more; fear less and build greater self worth; seek less from technology and find love for the wonder and mystery of nature; accept less and question more; take less and give more. We hope, and we try to find the path to make this possible.

There is a very tough journey ahead. Today's culture of, 'take what I can now, make a profit and don't worry about the future' works against us. These are the avalanches that will try to drive us back.

The mindsets of apathy and waiting for others to fix things are the blizzards that could make us lose heart and lose our way.

In the world today *reality* for some people is an endless cycle of making profit at all costs, striving for unlimited growth, shopping, sitcoms and inner confusion. This 'stuff' has no value in the natural world.

Reality for others is a bleak, blackness of despair over global warming; poisonous air, soil, rivers and food; deforestation; globalization; greed, injustice and inequality. On our mountain journey these people can keep us informed though they are not always good company and may drag us down.

We will need a major shift in our awareness to bring about a completely different kind of reality for the future for those who wish to make that leap. This is a *reality* built on hope, faith, local community, self-sufficiency, simplicity and low profits. There is great joy to be found in searching for this reality and leading others to explore its possibilities.

In our mountain metaphor what makes a difference is having a clear goal, traveling light, taking only what we need in our backpack and leaving the rest behind, eating healthily, sleeping well, moving steadily one small step at a time, being flexible, working around obstacles; keeping spirits high and encouraging each other. In this way we cannot fail to reach our goal.

A long time ago humans understood how and why to be conservers, how to take no more than the earth was able to replenish, (populations do still exist in some parts of the world – they are often thought of as backward). Conserving was a natural instinct. It was how they lived a bountiful life. Modern, developed society has lost this natural instinct. In the next fifty years we will all have to relearn that ancient wisdom and live by it with pride and happiness. KFBG can help people to learn, but first we must rediscover it ourselves. The only journey is the one within.

At KFBG we are part of a worldwide movement of people who are pushing against spin, over-consumption, pollution and hate; with wisdom, simplicity, education and compassion. Together we can help each other to scale this mountain. The view from the summit should be spectacular.

Andy Brown
Executive Director
August 2006



Visitors in our Eco Garden.

AGRICULTURE

In the course of promoting sustainable agriculture and sustainable living, as well as the fundamental doctrine of 'local food production for local consumption', the Agriculture Department saw many of its projects come to fruition this year. The department's composting practices received a boost when its 3-in-1 vermi-composting unit generated significant interest from Government & community groups & individuals. The Organic Farmers' Markets held monthly at the Farm and at Tai Wo have become firmly established with much community support. The community has proved to be very receptive to organic farming with requests for training, advice and support both locally and from the mainland.

1. Demonstration of Sustainable Agriculture Production Practices

During 2005/06, the Agriculture Department continued to refine and improve on the sustainable agriculture practices adopted within the farm.

A. Composting

Basket composting, a practice introduced in recent years of "composting directly into the soil" is now utilized in almost all of the Farm's vegetable gardens. A 3-in-1 vermi-composting bin-cum-planting unit was developed, allowing

kitchen waste to be composted by earthworms directly in a container which could be simultaneously used for indoor planting of vegetables or flowering plants. To improve on the composting process, we imported the *Eisenia foetida* earthworm, which was found to be far more effective than local earthworms (*Pheretima* spp.). This design is now being adapted for use in the Farm to process food waste from the canteens.



Different working examples of a 3-in-1 vermi-composting unit.



B. Orchard Management

The Orchard Rejuvenation Plan has commenced with the aim of converting the aging mono-crop lychee/longan orchard areas into a mixed forest-like habitat. Intensive mulching and the cultivation of nitrogen-fixing plants have been carried out in preparation for the conversion of the land to a mixed fruit orchard.

As an effective control of the Lychee Stinkbug, about 1,280,000 parasitic wasps (*Anastatus japonicus*) were released in March 2006, mostly within the orchards and planting areas closed to the public.

C. Avian Influenza Prevention Measures

The Chicken Section has been closed to visitors since mid-November 2005.



As an additional measure against the pervasive threat of Avian Influenza, a new protocol: 'The KFBG Biosecurity Measures for Zoonotic Avian Disease Response for Livestock Handling' was implemented in February 2006, with the re-introduction of disease surveillance testing. The Unit operation and facilities have been upgraded to offer greater protection to the workers and poultry in accordance with Government guidelines.

2. Community Outreach, Technical Support & Training

A. Community Outreach

The Department was invited to the Opening Ceremony of Green Peng Chau Association's organic farm in January 2006 to deliver a talk on organic farming. Other talks were conducted for various sectors of the community including one for the staff of the Land Registry on organic farming and sustainable living.



KFBG was engaged to provide advice on the development of the Green Peng Chau Association's organic farm.

B. Technical Support

The increasing popularity of community organic farms has generated numerous requests for KFBG's advice and technical support from local as well as mainland sources. In October 2005, we visited the Centre for Development of Transformation Ministry International's farm at Zengcheng, Guangdong, to provide technical advice on its conversion into an ecological farm. Numerous talks were given to local schools and elderly centres to assist in the development of community organic farms for these organizations.

Study tours were organized to give local farmers greater exposure to different farming techniques used in Hong

Kong. In August 2005, staff from KFBG, the Hong Kong Organic Farming Association (HOFA) and the Federation of Vegetable Marketing Co-operative Society (FVMCS) accompanied ten local farmers to O-Farm to discuss species selection, farming techniques and ecological farm design. Another study tour in November 2005 addressed the transplantation techniques for two hedgerow species: *Flemingia macrophylla* and *Desmodium rensonii*.

In an effort to facilitate voluntary aid to assist local organic farmers, we organized farm visits for 40 O-Farm volunteers and 6 Community Supported Agriculture (CSA) members.

C. Training

Training courses on organic farming, composting, soil management, permaculture and beekeeping were conducted for various community groups including the Correctional Services Department (CSD) and the Environmental Protection Department (EPD). The 'Community Farming Course' was also conducted this year with 21 participants from 15 different organizations including schools, the Scout Association of Hong Kong, social service units, elderly and youth centres.



Members from 15 different associations joined our "Community Farming Course 2005".

Several training courses and workshops were conducted in cooperation with partner organizations. In the 2005 HOFA Organic Farming Training Course, KFBG ran the Soil Management sessions and provided the venue for the organic farm theory lessons. A marketing and farm design course for farmers was organised with the FVMCS and The Organic Farm in July 2005. A permaculture course for potential trainers of the subject was given by O-Farm and KFBG from July to September 2005.

In conjunction with Partnerships for Community Development (PCD), a permaculture workshop was held at the Yan Yangchu Country College in Hebei Province in June 2005. Twenty-seven participants including representatives from other NGOs attended to formulate a model for an integrated ecological farm for the institute.



Introducing the concept and operation of square foot gardening to Community Farming Course's participants.

3. Media & Publications

A book in Chinese (從三斤半菜開始), featuring eleven CSA case studies was published in February 2006. With an initial print run of 2,500 copies and priced at \$35, this publication is now available at leading bookstores and at the KFBG Farm Shop.

A booklet on "Zero Pollution Living Tips" was produced for distribution at the Organic Farmers' Markets. Articles promoted our doctrine of 'local production for local consumption' and advocated the recycling of resources and the use of environmentally friendly detergents.

Newspaper articles in the *Economic Post*, *Hong Kong Economic Daily* and *Ming Pao* drew attention to certain types of agricultural practices employed at the Farm: composting, square foot gardening and organic herb planting.

A number of episodes in children's television programmes shown on TVB featured staff members promulgating the benefits of conservation related to choice of diet and gardening techniques.

4. Promotion of Sustainable Food Systems, Health & Nutrition

A. Farmers' Markets

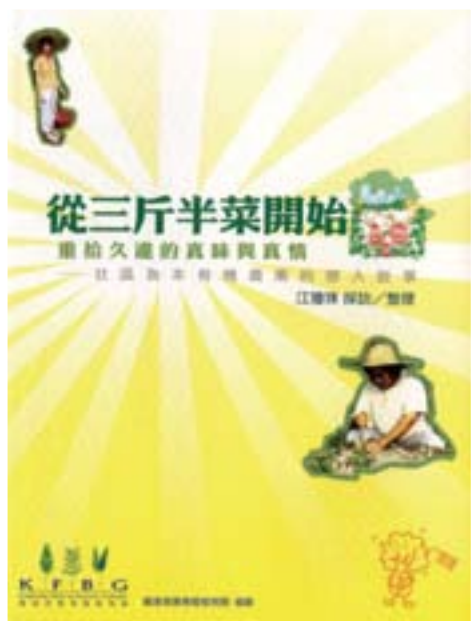
In the 12 months since they were launched, both the Organic Farmers' Market (OFM) at KFBG and the Farmers' Market held at Tai Wo by the FVMCS have become well-established features of the local community.

Over 20,000 visitors have attended KFBG's OFM since March 2005. Each OFM is frequented by an average of about 1,500 visitors, with about 4 NGOs and 15 organic farms participating every month. Sales of vegetables average about HK\$1,000 per farm. A review is under way to encourage the involvement of more farms in the OFM.

Although the Tai Wo Farmers' Market no longer receives any start-up funding from KFBG, community support has ensured that visitor levels are high and the sales volume of farmers is satisfactory. KFBG still supports this event as a project committee member.



Farm produce for sale (above); KFBG Book featuring CSA case studies (below left); The Farmers Market held on the first Sunday of every month in the Farm (below).





B. Community Supported Agriculture (CSA) Scheme

The CSA Scheme continues to expand, with a new group established in Tseung Kwan O in May 2005 in partnership with Hong Mui Farm. Following an orientation workshop and a farm visit, the Tai Wo CSA is now entirely run by volunteers independently of KFBG.

C. Organic Ambassadors

Following the third Organic Ambassadors' training course, there are now 39 registered volunteers participating in the scheme. The organic ambassadors promoted their green message by holding organic cooking demonstrations at the farmers' markets and other venues, and by performing a role play advocating environmentally friendly housekeeping practices at the Lion's Nature Education Centre in Sai Kung in January 2006.



(From Top) The Organic Ambassadors using drama to deliver conservation messages; The KFBG Farmers Market provides a platform where farmers can directly exchange views with consumers; The 3rd Organic Ambassador Training held in July 2005 includes the making of soap from used oil.



"Forest of Flowers" Chinese Painting Exhibition was held at Kwun Yum Garden, February 2006.

EDUCATION

In striving to fulfill KFBG's mission statement --- "To increase the awareness of our relationship with the environment and bring about positive change in the world through conservation and education", the Education Department has been active in conducting many programmes for the general public and other community groups. New initiatives launched during 2005/06 have included the KFBG Community Tree Planting Programme, the Woodland Ecology Field Studies Programme and Forest Care Training for Scouts. These, together with the many other continuing programmes run by the department, are aimed at instilling in the public a sense of unity with nature and motivating the community to become proactive in protecting the environment.

1. Special Visitors

Many local and international visitors toured KFBG during the year, including Dame Jane Goodall, the renowned primatologist. Other visiting groups included children from the Love Faith Hope charitable foundation's Project Sunshine, the Hong Kong American Chamber of Commerce's Business Orientation Programme members, the Conservancy Association's Train-the-Trainer course participants and State Environmental Protection Administration officials from the Mainland.

A. Guided Tours

The Group Visit Programme was revitalized with three new guided tours and a sensory Nature Walk with a map

provided for self-guided visitors. Three different themes for guided tours are now offered for visitors and school groups: the 'Exploring Hong Kong Wild Animals Tour' with interactive games and exercises for primary schools, the equally interactive 'Sustainability Tour' for secondary schools and the 'Eco-Tour' for all other visiting groups. In addition, an 'Eco-Garden Tour' and a 'Wild Animals Tour' are conducted by volunteers for visitors to the monthly Organic Farmers' Market (OFM).



During 2005/06, the Education Department led 243 guided tours with a total number of 10,853 participants.

B. KFBG Night Safari

The ever-popular Night Safari programme was enhanced by the set-up of a trial feeding station, where infra-red camera traps have captured Barking Deer, Masked Civet Cats, Chinese Porcupine and Wild Boar feeding on vegetable scraps and off-cuts laid out not only to attract these animals but also to serve as a designated long-term feeding area for wildlife. Bats and tree frogs have been observed, as well as some of the 1,171 recorded species of moths at KFBG during moth trapping exercises held for visiting groups.

2. Educational Programmes

New programmes and activities were initiated for the monthly Farmers Markets, including organized tree planting activities and a "Green Gardening" workshop offering environmentally friendly planting tips. New and ongoing programmes included:

A. KFBG Community Tree Planting Programme

This programme was launched in June 2005 to encourage community participation in reforestation of Hong Kong's hillsides and to disseminate the value of native trees. Members of the public and community groups actively participated in the tree planting activities. Native seedlings are planted on the upper hill slopes of Tai Mo Shan beyond the perimeter fence of KFBG. By April 2006, over 5,000 seedlings had been planted by the many participant groups.

Volunteers assisting in tree planting activities were given training in a Tree Planting Skills Workshop in March 2006.



B. Environmental Conservation Workshop

This workshop formed part of the 11th International Gold Event (IGE) of the International Award for Young People (AYP). Ninety AYP delegates from 40 participating countries, staying at the Kadoorie Agricultural Research Centre (KARC), attended sessions organised by KFBG addressing "Sustainable Farming and Community Agriculture", "Countryside Protection and Afforestation in Hong Kong" and "Wetland Conservation". The IGE programme was chaired by HRH The Prince Edward, Earl of Wessex.

C. Woodland Ecology Field Studies Programme

This new programme brought Advanced Level Biology and Geography students from 15 local secondary schools to the Farm to practice field study techniques, learn about the inter-relationship between different elements within a woodland ecosystem and to appreciate the differences in the biodiversity of native and exotic woodlands. This programme is closely aligned with syllabus requirements of the school curriculum.



Participants in the Wildlife Habitat Enhancement Scheme enjoying themselves on the slopes of Tai Mo Shan.

D. Forest Care Training for Scouts

Participating scouts were taught tree identification skills, the importance of forests and the use of different tree-planting tools, and then honed their newly-acquired skills in tree planting activities.

E. GIS Day 2005 - "Protect Our Watersheds" workshop

Fifty secondary school teachers attended this workshop jointly organised with ESRI China (Hong Kong) on 19th November, 2005 --- Geographic Information Systems (GIS) Day. Using the Lam Tsuen River watershed as a model, the attendees gained experience in how GIS technology and mapping could be used as a tool to evaluate, protect and manage a watershed.

F. Ongoing workshops & training courses

The Wildlife Habitat Enhancement Scheme for secondary school students and teachers continued during the year. As part of the scheme, 20 secondary schools with over 160 students participated in a tree planting exercise while 5 secondary schools received awards for the most outstanding bird and bat box design.



This year's Environmental Interpreter Certificate Course attracted 63 adults and university students, all keen to contribute to environmental education. Similar Environmental Interpreter (EI) Training Schemes were jointly run with the Hong Kong Institute of Education in October and December 2005. Our team of volunteers now stands at 250.



Hong Kong Institute of Education Early Childhood Education Student Teachers Training Workshop (November 2005).

3. Art and Environment Programme

The objective of the programme is to inspire participants to explore the relationship between self and nature through thinking, experiencing and creating "Art for nature" by working in the idyllic surroundings of KFBG.

A. Artists-in-Residence programme

The "Garden Whisper" project, continuing from 2004/05, culminated in a student art workshop, involving 160 students from 8 schools creating over 80 pieces of artwork. A photographic exhibition documenting this project was displayed at the Hong Kong Arts Centre (December 2004 - January 2005), after which this exhibition was shown at the Tainan Municipal Cultural Center (Tainan) in Taiwan from June to August 2005.

In October 2005, the "Songs of Flowers" programme commenced, with Ms. Tseng Wen Ting, an award-winning Taiwanese horticulturist-turned-artist, as the Resident Artist. Sixty-four participants attended a series of workshops on pressed-flower art techniques, creating over 80 pieces of artwork for an ensuing exhibition at KFBG from December 2005 to January 2006.

In February 2006, the "Forest of Flowers" Chinese painting workshop and masterclasses were held at KFBG, featuring renowned artists Mr. He Rui Hua and Mr. Chen Wen You from Xishuangbanna Tropical Botanical Garden (XTBG), Chinese

Academy of Science. An exhibition of these paintings was held at KFBG beginning March 2006.

B. Other Art Projects

On 1st November, 2005, a ceremony was held at XTBG in Menglun, Yunnan Province to celebrate the opening of a joint KFBG-XTBG art and environment photographic exhibition, "Rhythm of Nature". Fifty-six pieces of artwork were displayed from November 2005 to May 2006, with the aim of showcasing the relationship between man and the environment.

Various art and craft workshops were run by volunteers for visitors to the Farmers Markets including a Green Painting workshop, a Green Creation workshop using pressed flowers technique to make bookmarks, and a Natural Handicrafts workshop using Screw Pine (*Pandanus tectorius*) leaves.

KFBG also served as an inspiration for 140 participants of the Youth Arts Festival (YAF), who gathered natural materials for creating sculptures for the Hong Kong Jockey Club Urban Jungle Exhibition held in November 2005. Another 80 YAF participants created mosaic designs by the stream, under the direction of artist, Gareth Dunster and Karen Bao in the 'Sheraton Project'.

An installation art workshop run by local artist, Kelvin Tsang, for 20 final-year Applied Arts students of the Hong Kong Academy for Performing Arts was also held at KFBG.



(Clockwise from left) "Forest of Flowers" Art Exhibition in Kwun Yum Garden; "Rhythm of Nature" Exhibition in Xishuangbanna – Opening Ceremony; "Rhythm of Nature" exhibits; "Songs of Flowers" – Ms Tseng Wen Ting demonstrating pressed-flower art techniques.





(Clockwise from left) Statue of Kwun Yum; "A Celebration of Life" — Photo Exhibition; KFBG 50th Anniversary Calendar; Memorial Garden; Dennie and Duffi.

4. In-House Projects

Department staff designed numerous displays, signage, and various other materials for use around the Farm, examples of these design works include:

Item	Notes
1 KFBG 50th Anniversary Calendar (2006)	To commemorate the 50th anniversary of KFBG
2 "Memorial Garden"	Landscape design, memorial plaque & sculpture
3 "A Celebration of Life" --- Photo Exhibition	Horace Kadoorie Memorial Day (22nd April, 2005)
4 Hong Kong Flower Show 2006 --- "Keeping South China Alive"	Venue design and display
5 Focus on Hong Kong Bats booklet	Publication
6 Leaflets, posters & signs	Organic Farmers Market (OFM)
7 Packaging for organic seeds & eggs	Farm sales products
8 Tree identification booklet	Publication
9 12 common birds at KFBG	Poster display at Reception
10 The Story of Bic, the Malaysian Giant Turtle	Panel display at Waterfowl Walkthrough
11 Buffalo display	Buffalo diorama
12 Mule Notice & Shuttle Bus Schedules	Visitor signage
13 Sustainable Living Display	To rouse awareness about sustainable living
14 Facade of Kwun Yum Garden Building	For "Forest of Flowers" Exhibition
15 Fern Walk	Education display



5. Media Exposure

Pui Pui was undoubtedly the "celebrity of KFBG" and continued to attract visitors and media attention. Several interviews focused on Pui Pui and her keepers. In April 2005, Australian crocodile expert John



Lavers, who failed to catch Pui Pui when she was still at large in the Shan Pui River, visited her together with AFCD officials.

Two mules, Dennie and Duffi, arrived in July 2005 from the Lantau Cable Car Project. They have been taken on as working animals and provide pack transport

for materials around the hillside. They also help us to highlight in the media, the need to use less fossil fuels.

In January 2006, the Tai Po Wild Pig Hunting Team wrongly accused KFBG of shooting a wild boar in the Farm. The killing of the wild boar actually occurred in the KARC. After KFBG complained, the Hunting Team issued a clarification and apology in the newspaper.

During this period, several staff from different departments were interviewed by various media including Cable TV, RTHK, TVB, and newspaper groups such as *South China Morning Post*, *HK Economic Times* and *Apple Daily*.

There were 276 news reports about KFBG between 1st April, 2005 and 31st March, 2006. A total of three press releases were issued by KFBG during this period.



Collared Scops Owl chick.

FAUNA Conservation

This year, the Fauna Conservation Department enhanced its educational capacity by providing visitors with more close-range, live native animal displays to cultivate a stronger connection with nature. New enclosures were constructed, with panels recounting the 'life story' of the animals on display. Night Safari participants enjoyed the increased close contact with snakes and raptors. Unfortunately, the bird enclosures had to be closed off to the public in early 2006 due to Avian Influenza (AI) security measures. Nonetheless, more displays of other rescued animals are planned for the near future.

1. Wild Animal Rescue Centre (WARC)

The WARC continued its unique work as the only private facility in Hong Kong involved in wildlife rescue, rehabilitation, release and rehoming of wild animals.

A. Sanctuary

During the year, the WARC received 159 animals and 504 stray snakes. Two Radiated Tortoises (*Geochelone radiata*) with deformed shells arrived after having been confiscated by the Agriculture, Fisheries and Conservation Department (AFCD), from a pet shop illegally possessing this highly endangered species.



Dr. Kendrick providing highlights to the moth trapping exercise during a Night Safari in November 2005.

"Red", a Military Macaw (*Ara militaris*) classified as a 'vulnerable' species, was donated by a member of the public. Red will hopefully be rehomed with a suitable conservation programme. Another feathered newcomer, a male Moluccan Cockatoo (*Cacatua moluccensis*), is currently housed with the African Grey Parrots after clearing quarantine. Fourteen Amazon Parrots treated for a *Chlamydophilia* infestation by AFCD were received for temporary holding. They will eventually be rehomed at Kowloon Park.

Several rescued animals rehomed during the year included:

Animals	Rehomed to
2 Spotted Linsangs (<i>Prionodon pardicolor</i>)	Taipung Zoo, Malaysia.
6 Malaysian Box Turtles (<i>Cuora amboinensis</i>)	Donated to local school for education purposes.
2 Painted Terrapins (<i>Callagur borneoensis</i>)	Turtle Survival Alliance (TSA) partner zoo in Spain. Originally confiscated by AFCD in 2004.
34 endemic Vietnamese Leaf Turtles (<i>Annamemys annamensis</i>)	Cuc Phong Rescue Centre, Vietnam.
"Bic", a Malaysian Giant Turtle (<i>Orlitia borneensis</i>)	Taipung Zoo, Malaysia.
2 Malaysian Giant Turtles (<i>Orlitia borneensis</i>)	Rotterdam Zoo, Netherlands.
5 Pygmy Lorises (<i>Nycticebus pygmaeus</i>)	Riga Zoo, Latvia. (Pending)
White-Cheeked Gibbon (<i>Hylobates leukogenys</i>)	Pingtung Rescue Centre, Taiwan. (Pending)

Taking up residence permanently, the 2 mules, Dennie and Duffi, arrived in July 2005 from the Lantau Cable Car Project. They have already proven themselves invaluable as a more eco-friendly means of transport around the Farm, regularly transporting around 150 loads a month of native seedlings, animal feed and compost for various Departments.

The hand-raised male and female orphaned Barking Deer were moved to new quarters at the Peafowl Enclosure and have quickly settled down to become excellent wildlife ambassadors, enjoying their interaction with visitors.

The 14 Sika Deer (*Cervus nippon*) were moved to their new residence at New Deer Haven on the upper Farm slopes. Tragically, feral dogs broke into the enclosure, killing 2 bucks and injuring 5 other deer, two of which were subsequently euthanised. Traps obtained from AFCD were laid and the perimeter fence was fortified to prevent a recurrence of this tragedy.

Overall bio-security procedures have been upgraded in line with Government guidelines for AI prevention. All bird enclosures have been closed to the public since 2nd February, 2006, whilst disinfectant footbaths, face masks and protective gloves are now essential for staff working inside aviaries or directly handling birds. All birds are now surveillance-tested for AI and all poultry vaccinated against the disease.

B. Rehabilitation & Release

Fully recovered from a broken pelvis, a Crested Serpent Eagle (*Spilornis cheela*) was released on 25th November, 2005 at our new bird release platform. Another was released on 29th November to celebrate the Memorial Garden Opening Ceremony.

Several baby birds found displaced from their nests in May 2005 were either reared at WARC or returned to nests of known location. In a few incidents, this involved an athletic



Pygmy Loris awaiting repatriation to Vietnam (top); Bic, The Malaysian Giant Turtle, shortly before being rehomed to Taipung Zoo, Malaysia (above left).

ascend up trees to return chicks of the Collared Scops Owl (*Otus lempiji*) and the Black-Eared Kite (*Milvus migrans*).

C. Veterinary Work

Aside from performing regular health checks on all Farm animals including the 3 Leopard Cats which underwent X-rays, ultrasound scans and blood testing, the veterinary section encountered some interesting cases during the year.

A rare Akaran Forest Turtle (*Heosemys depressa*) received a limb prosthesis using a Plexiglass hemisphere to facilitate ease of movement. This successful procedure was the subject of a journal article discussing the technique employed to conduct the operation.

A Crested Goshawk (*Accipiter trivirgatus*) received from the AFCD died unexpectedly despite all appropriate treatment. A post-mortem examination revealed the unusual presence of a foreign body in its bronchus, causing the bird respiratory distress.



Crested Serpent Eagle in flight shortly after release back to the wild in November 2005.

White-cheeked Gibbon undergoing health check pending its rehoming to Taiwan (below).



D. Fauna Statistics

Animal movement during 2005/06:

No. of animals	In Collection at 1/4/05	Received/ captive-bred	Released/ relocated	Dead/ euthanised	In Collection at 31/3/06
Birds	111	96	46	46	115
Mammals	77	44	18	22	81
Reptiles*	217	73	39**	45***	206
Total	405	213	103	113	402

* Excludes stray snakes received from the Police.
 ** Includes 24 stolen turtles.
 *** Includes 36 unhatched/infertile eggs.

Total number of animals received by WARC from April 1994 to 31st March, 2006:

Mammals	356	Reptiles	9,975
Birds of Prey	452	Stray Snakes	1,733
Other birds	614	(via HK Police)	

2. Conservation

The Golden Coin/Three-Lined Box Turtle (*Cuora trifasciata*) Conservation Breeding Project suffered a tremendous setback when thieves escaped with 24 of these turtles on the 24th April, 2005. Security was upgraded, and a second break-in attempt foiled by the security guards. Fortunately, no breeding adults were stolen.

Two trapping exercises were undertaken in streams in the Tai Po Kau Nature Reserve, with external consultants and assistance of AFCD staff, to augment breeding numbers. Special permission to remove the 4 locally protected wild turtles captured in the exercise was granted by AFCD.

Blood collected from the Golden Coin Turtles for genetic sampling has yielded some interesting, though as yet early, results, being apparently indicative of the uniqueness of the Hong Kong species. This will indeed justify all efforts to conserve the species.

3. Media & Publications



Louis Cheung was featured on Cable TV Children's Channel and Sing Pao newspaper discussing Pui Pui, the Yuen Long crocodile, and crocodile conservation in general.

The first KFBG Fauna Checklist, recording all animal species within the Farm's protected areas, was

Fauna Conservation Supervisor Leo Ko returning kite chick to nest (right); Baby black eared kite (below).



published in July 2005 as a reference guide for academics and consultants to compare fauna biodiversity in various habitats in Hong Kong.

A pamphlet on bat facts and conservation issues was produced to address local misconceptions and conflicts involving bats.

4. Advisory & Outreach

Department staff gave presentations at various workshops, conferences and symposiums during the year (for details, see table on next page).

Twenty Asian freshwater turtles were loaned to the Polytechnic University for a radiology research project investigating techniques for veterinary diagnostic work. They were later returned unharmed.

Presentation	Event	KFBG Presenter(s)	Notes
Event hosted by KFBG	"Turtle Husbandry & Veterinary Workshop", Turtle Survival Alliance (TSA), 30th May - 2nd June, 2005, KFBG.	Dr. Gary Ades. KFBG's living & deceased turtle collection was used in the workshop.	Attended by 45 delegates from China, Vietnam, Myanmar, Malaysia, Indonesia, Cambodia, USA & Singapore.
2 oral presentations & 5 poster presentations	"5th Conference on Protected Areas of East Asia", International Union for the Conservation of Nature (IUCN) – World Commission on Protected Areas, 21st-25th June, 2005, Chinese University of Hong Kong.	Dr. Gary Ades & Dr. Roger Kendrick (also invited to be co-chairs for symposium sessions).	250 participants from East Asia attended to discuss sustainable management of protected areas.
"Ecological Survey & Monitoring of <i>Platysternon megacephalum</i> at KFBG"	"7th Annual Symposium on Zoo Research", British & Irish Association of Zoos & Aquariums (BIAZA), 7th - 8th July, 2005, Twycross Zoo, UK.	Paul Crow	Paul's presentation was awarded the Symposium prize for best oral presentation. An outline was included in BIAZA's "Zoo Research News", vol. 6 no. 3.
3 workshops on critical & supportive care, emergency therapy, capture & handling of wild animals	Workshops held for training SPCA veterinarians, in August, September & November 2005, SPCA headquarters, HK.	Dr. Alex Grioni (Coordinator)	---
Work of the Fauna Conservation Dept	Beijing Zoo, November 2005.	Dr. Gary Ades	---
History of KFBG & KFBG's conservation breeding projects	Institute of Zoology, Chinese Academy of Sciences, 14th November, 2005.	Dr. Gary Ades	---
"Ex-situ Conservation in Action"	Lecture given in MSc. Environmental Science course, University of Hong Kong, 24th November, 2005.	Dr. Gary Ades	---
"Pathology, Disease Control & Treatment of Injured Spoonbills"	"Keeping Asia's Spoonbills Airborne", International Symposium on Research & Conservation of the Black-Faced Spoonbill, Hong Kong Bird Watching Society, 16th – 18th January, 2006.	Amanda Haig	Several international Spoonbill experts visited KFBG during the symposium.



Newly completed WARC Flight Test Enclosure.

5. Capital Projects

A WARC flight test enclosure for rehabilitated birds was completed in March 2006, with soft netting and sand-covered flooring to minimize injuries. This unique and versatile design using recycled telephone poles has already been successfully put to the test by a Chinese Pond Heron and a Black-Necked Starling.

Bat housing for non-releasable fruit bats has been incorporated into the Small Bird Aviary to produce Hong Kong's first mixed bat and small bird enclosure.

Renovations have begun to convert the old Deer Haven into a large permanent enclosure for the 5 long-term resident macaques.



Bic the Malaysian Giant Turtle (top); New mules Dennie and Duffi with handlers delivering material to the compost sheds (above); Black Baza shortly after move to the newly renovated Raptor Sanctuary in December 2005 (right).





Incense Tree (*Aquilaria sinensis*).

FLORA Conservation

The work of the Flora Conservation Department staff including surveys and propagation of rare plant species, restoration of habitats, organizing seminars and workshops, educational talks and media exposure, helped spread our message on conservation, education and "connection with nature" more widely and effectively into the community.

1. Landscaping Section

A. Flower shows

KFBG took part in two flower shows this year. The North District Flower, Bird, Insect and Fish Show in December 2005 received some 159,000 visitors and the theme of our



School children making drawings at our Flower Show display in Victoria Park in March 2006. Our theme was "Keeping South China Alive" with paddy field in the front and forest settings in the background.

prize winning display was *Oasis in a Concrete Jungle*. In the Hong Kong Flower Show 2006, which received some 516,000 visitors, KFBG's exhibit "Keeping South China Alive" highlighted the threats to wildlife in South China.

B. New gardens

Many new gardens were opened and old ones upgraded, including the Memorial Garden, Kwun Yum Shan Summit and lower sections of the new Nature Trail.

C. Horticulture Therapy

The department organized several seminars on Horticulture Therapy with Ms. Connie Fung, the sole registered horticulture therapist in Hong Kong. More collaborations are planned.

D. Nursery production

Planted at KFBG	Loaned to Government Departments & schools	Donated to community & schools	Sold to NGOs or at Farm Shop
9,500 pots	560 pots	3,300 pots & seedlings	1,400 pots & seedlings

2. Tree Conservation and Management

Closer links were forged with the International Society of Arboriculture (ISA) through joining ISA-organized seminars, formal training workshops, and study trips to Guangzhou and Singapore. We also helped translate a

glossary of the ISA Tree Climber's Guide into Chinese for wide dissemination.

Senior Conservation Officer Ken So passed the ISA assessment to become a Certified Arborist, an internationally recognized qualification in professional tree management.

The department continued to assist the Home Affairs Department in protection of the famous Wishing Tree in Lam Tsuen, by giving advice and technical support.

Tree management works within the Farm were improved to cope with the many trees needing management especially pioneer species such as the aging Bauhinias. Regular tree inspections and operations were conducted with 172 hazardous trees pruned or felled this year. Another 50 trees were damaged during a squall on 9th May, 2005, resulting in a mammoth clearing-up exercise.



TVB News Magazine telecast KFBG Tree Management Team in action in April 2005.

Native Tree Nursery Production

- 155,000 seeds of 79 native trees and shrubs, including 3 rare & 9 protected species, were collected during the year.
- Around 55,400 seedlings of 320 native trees, shrubs and climbers were held in stock at the Native Tree Nursery.

No. of seedlings and saplings donated or sold during the year are as shown below:

Organisation	Seedlings donated	Seedlings sold	Total charged (HK\$)
NGOs	1,231	522	6,975
Schools, Universities & Government Departments	20,668	6	1,100
Housing Estates	20	---	---
Commercial sector	---	2,289	43,696
Others	69	---	---
Total	21,988	2,817	51,771

Conservation Officer Terry Fung received a 2-week Asian Conservation Training Programme organized by Earthwatch Institute to study seed dispersal in a tropical forest in Australia in September 2005.

3. Conservation of Buddhist Pines

To combat persistent illegal felling and smuggling of Buddhist Pines (*Podocarpus macrophyllus*), a 6-month pilot study on the distribution of existing *Podocarpus* populations



Flora staff take part in a 6-month territory-wide pilot study on *Podocarpus* (Buddhist Pine) distribution in collaboration with Marine Police and AFCD, with support from the Government Flying Services and Civil Aid Services for difficult and dangerous sites.

in Hong Kong was undertaken jointly with the Marine Police, and the Agriculture, Fisheries and Conservation Department, with support from the Government Flying Services and Civil Aid Service. Ten baseline surveys were jointly conducted to establish the future conservation and law enforcement strategy.

4. Orchid Conservation Section (OCS)

Ex-situ propagation of rare and endangered orchids formed a major part of the Farm-based work. In 2005/06, the OCS propagated 35 native species (some very rare) and a few exotic species of orchids by aseptic seed culture in 761 flasks. About 2,000 flasks of aseptic orchid seedlings were sub-cultured from 40 species, mostly native and a few hybrids (for ornamental purpose within the Farm). In addition, 5,500 seedlings of about 30 native species underwent the hardening process.

A. Orchid Conservation Programmes in Mainland China

In March 2006, KFBG co-organized an Orchid Conservation Workshop in Yunnan at Xishuangbanna National Nature Reserve which was attended by 50 staff of nature reserves in Yunnan.

Senior Conservation Officer Gloria Siu was invited to advise on orchid conservation programmes at the first orchid



Paphiopedilum hirsutissimum blooming in Guangxi Yachang, China's First Orchid Nature Reserve.



Seedlings of a threatened species, *Paphiopedilum appletonianum*, in flower after successful hardening process in KFBG.

nature reserve (provincial) in China, which was an initiative resulting from the Orchid Conservation Workshop jointly organized by KFBG, the State Forestry Administration (SFA) and other organisations in Guizhou Province in March 2004. Gloria was appointed as a member of the "Science and Technology Committee" and as Vice-Chairperson to the "Orchid Conservation Committee" of the China Wild Plant Conservation Association within the SFA to advise on conservation and sustainable uses of orchids in China. She also presented a talk entitled "Implementation on Plant Conservation and Sustainable Uses in Botanic Gardens" at the Annual Academic Conference of China Botanic Gardens, in Changsha, Hunan Province, in September 2005.

Gloria joined two China Programme biodiversity surveys in Yinggeling Provincial Nature Reserve, Hainan, in May and August 2005, and found a newly-recorded orchid species for Hainan (*Calanthe masuca*) and some new-to-China species (e.g., *Nephelaphyllum pulchrum*).

B. Doritis Project

To further conserve and reintroduce the endangered *Doritis pulcherrima* orchid, a field study on its pollination mechanism was conducted jointly with Dr. Jin Xiao-Hua and the Hainan Provincial Forestry Department in August 2005. The insect pollinator was confirmed.

5. Fern Conservation

As part of the South China Fern Conservation Programme, Conservation Officer Wicky Lee visited the Da Peng Wan Peninsula in Mirs Bay, Nanling National Nature Reserve in North Guangdong, Dayao Shan and Mulun National Nature Reserves in Guangxi, and Bawangling National Nature Reserve and Qixingling Forestry Park in Hainan with mainland counterparts. New records and some very rare ferns such as *Osmunda mildei* were found in Mirs Bay. Spores of rare species were brought back to KFBG for propagation trials with some successfully germinating.

6. Seed Bank

During the year, 115 species of seeds were collected and underwent germination test, while 81 species of seeds were stored in our seed bank.



Osmunda mildei, a very rare fern in South China, was recorded in Mirs Bay in May 2005.

7. Butterfly Garden

Experience managing KFBG's popular Butterfly Garden enabled staff to provide advice and donate larval food plants and nectar source plants to many organizations such as the Hong Kong Wetland Park, Fung Yuen Butterfly Reserve, the Warehouse Environmental Resource Centre and Queen's College Old Boys' Association Secondary School.

8. Collaborative projects with the BGCI

The major event of the year was the "6th National Workshop on Biodiversity Conservation for Botanic Gardens in China" in November 2005. About 80 participants from over 30 botanic gardens across China attended talks given by 23 speakers from China, Hong Kong (including 5 KFBG staff), Australia and the USA, on the theme of "The Role of Botanic Gardens in Plant Conservation and Sustainable Development".

In February 2006, eight botanists from different botanic gardens across China studied at KFBG under the Botanic Gardens Conservation International (BGCI) Travel Scholarship Exchange Programme, now in its third year.

Senior Manager Dr. Lawrence Chau attended a BGCI East Asian Botanic Gardens Network Workshop in Japan in April 2005, aimed at forging links between botanic gardens in East Asia, in order to encourage more collaboration and cooperation in plant conservation in the region.



Flora staff took part in a Horticulture Skills & Management Training course at South China Agriculture University in Guangzhou in January 2006.

9. Media

Highlights of the numerous media appearances by department staff during the year include:

- A gardening series (twelve 5-minute episodes), broadcasted weekly on TVB for children beginning in October 2005,
- Five 30-minute episodes '*Venturing Into Mt. Kinabalu*', about nature and heritage conservation in Sabah, broadcasted on TVB from November 2005,
- Three 30-minute episodes of the RTHK programme '*Hong Kong Geographic*' on hill fires, arboriculture, trees, *Podocarpus* and orchid conservation broadcasted in January 2006,
- A *People's Daily* newspaper article celebrating Gloria's 10-year orchid conservation work in January 2006.



(Top) Autumn colour of *Ginkgo biloba* (golden leaves) at Golden Pavilion in KFBG, October 2005; (left) Strangler figs (the peripheral trunks in the photo) killing a 300-year-old *Shorea* tree (the single largest trunk in centre-right), which measures 50 metres tall and weighs over 40 tonnes, in the tropical rain forest in Danum Valley, Sabah, September 2005.



Viburnum hanceanum, a very rare native plant, bloomed at Kadoorie Brothers' Memorial Pavilion.

10. Publications

Staff members produced or co-authored the following articles in 2005/06:

Title	Authors	Notes
Pictorial Guide Book of KFBG Plants	Joanne Loi, Charlotte Shiu, Lawrence Chau & Terry Fung	---
<i>Begonia hongkongensis</i> (Begoniaceae), a New Species from Hong Kong	Xing F.W., F.G. Wang, H.F. Chen & Lawrence K.C. Chau	<i>Ann. Bot. Fennici</i> 42: 151-154.
Using Native Tree and Shrub Species for Ecological Rehabilitation of Man-made Slopes in Hong Kong	Hau, B.C.H., So, K.K.Y., Choi, K.C. & Chau, R.Y.H.	Proceedings of the 25th Annual Seminar, Geotechnical Division, The Hong Kong Institute of Engineers, 4th May, 2005, pp. 273-286.
Native Tree Planting Scheme for Secondary Schools in Hong Kong, China	So, K.K.Y. & Hau, B.C.H.	Papers presented at the Symposium on Tropical Rainforest Rehabilitation and Restoration – Existing Knowledge and Future Direction, 26th-28th July, 2005, Kota Kinabalu, Sabah, Malaysia.
Propagating Native Tree Species for Forest Rehabilitation in Hong Kong	Hau, B.C.H. & So, K.K.Y.	
Ecogreening	So, K.K.Y. & Hau, B.C.H.	Papers presented at the "Workshop on Concepts and Practices on Slope Bioengineering" held at The Chinese University of Hong Kong on 19th November, 2005.
A Review of the Field Performance of Native Tree and Shrub Species Planted on Man-made Slopes in Hong Kong	Hau, B.C.H. & So, K.K.Y.	
Preliminary Study on Orchidaceae Plants in Limestone areas of Hainan	Siu Lai Ping, Jin Xiaohua & Qin Haining	Abstract presented at "Workshop on Hainan Limestone Habitats and their Biodiversity", Changjinan, Hainan, 20th- 23rd March, 2006.
Conservation and Sustainable Uses of Orchidaceae Plants	Gloria Siu Lai Ping	<i>The Botanical Gardens of China</i> , Vol. 9, pp. 116-121.



The project site in Gansu has good potential for developing sustainable agriculture.

CHINA Programme

In its four focal areas of forest conservation, critical species protection, sustainable agriculture and sustainable living, the China Programme (CP) continued to develop its partnership with Mainland China this year. Initiatives, including three very productive biodiversity surveys in the Yinggeling Provincial Nature Reserve, a workshop highlighting the conservation importance of Hainan's limestone forests and the Hainan Gibbon Habitat Restoration work, were enhanced by publications of survey reports and scientific papers, and supported with public education and awareness programmes.

1. Enabling Effective Conservation of Hainan's natural forests

A. Yinggeling – Hainan's largest tropical forest

To achieve effective management of a nature reserve of high biodiversity importance, CP has been actively involved in securing National Nature Reserve status for Yinggeling, the largest remaining patch of rainforest in Hainan, and home to many threatened plant and animal species. In 2005/06, three biodiversity surveys were conducted in Yinggeling Provincial Nature Reserve with Chinese experts

and the Hainan Wildlife Conservation Centre of the Hainan Provincial Forestry Department.

Exciting discoveries included 2 new species of herb (*Begonia* sp. and *Munronia* sp.), a new species of tree frog (*Rhacophorus* sp.), over 140 species of plants and animals previously unrecorded in Hainan, 3 species new to China (including the tree *Trigopnobalanus verticillatus* and the orchid *Nephelaphyllum pulchrum*), many nationally protected species, as well as the Pale-capped Pigeon (*Columba punicea*), which had been unrecorded in Hainan for decades. These findings underline the importance of this reserve, and will reinforce measures to upgrade it to a national-level nature reserve. A socio-economic survey of the Yinggeling



A new-to-science tree frog found during the biodiversity survey in Yinggeling, Hainan.

communities was also undertaken to obtain data for the proposed upgrade and to help plan future management actions.

B. The Conservation of Hainan's Limestone Forests

Hainan's tropical limestone forests possess high conservation value, due to their unique vegetation and the many threatened snail species dwelling within such areas. Limestone habitats are fragile because of the thin layer of soil and the serious threat posed by deforestation and environmental degradation.

To help save this unique ecosystem, we have collaborated with mainland partners to conduct biodiversity studies so that a conservation strategy can be formulated, and with the Hainan Wildlife Conservation Centre to advocate the establishment of limestone nature reserves.

A "Workshop on Conserving Hainan Limestone Habitats and their Biodiversity" was jointly organized with the Hainan Provincial Forestry Department in March 2006 in Shilu City, Hainan. Over 50 local and international experts, government and community representatives, and journalists attended the event. The workshop highlighted the conservation importance of Hainan's limestone habitats and identified the threats they faced from uncontrolled exploitation of natural resources. A letter recommending the protection of the two most important limestone sites and other conservation measures was drafted and will be sent to the Provincial Government of Hainan, and lobbying continues.

2. The Conservation of the Hainan Gibbon (*Nomascus nasutus hainanus*)

The Hainan Gibbon Habitat Restoration work at the Bawangling National Nature Reserve (BNNR) in Hainan commenced with an agreement signed with the Bawangling Forestry Bureau for the planting of native fruit trees for the gibbons. On 31st July, 2005, a tree-planting ceremony was held, officiated by the first researcher on the gibbon, Professor Liu Zhen He, Hainan forestry officials, and Ruy Barretto SC and Andy Brown of KFBG.

Public education and awareness programmes have been launched to support this project. A ten-day tree planting cum interflow tour at BNNR was organised for university students from Hong Kong and Hainan to raise their awareness and knowledge of gibbon conservation. In December 2005, 5,000 calendars bearing gibbon conservation messages were distributed to village schools near BNNR. Another 1,000 calendars were distributed by volunteers in Haikou City. Educational kits were also



(From top) Hainan Gibbon; The restoration of Hainan gibbon habitat was kick-started with a tree planting ceremony – Andy Brown, the Executive Director of KFBG, and Zhou Xu Jian, the Nature Reserve ex-Director, plant native trees.

developed for use by reserve staff and school teachers for environmental activities.

By the end of 2005, 15 hectares containing 16,000 native tree seedlings had been planted. CP plans to monitor the trees three times a year and also determine the ecological footprint balance for this project. Detailed plans for future habitat restoration have also been agreed with BNNR.

3. Mammal Survey



A serow, a large but secretive IUCN 'vulnerable' species subject to poaching, was first photographed, using remote cameras, in Nonggang Nature Reserve, Guangxi.

Ongoing surveys of mammalian fauna were conducted in Nonggang, Guangxi and Wuzhishan and Yinggeling Nature Reserves, Hainan, using infrared auto-triggered cameras.

4. Small Grant Project

A small grant project studying the “Impacts of hydroelectric scheme on nature reserves” was initiated during the year with Keith Wilson of Dragonfly Ecological Services and the South China Agriculture University.

5. Publications

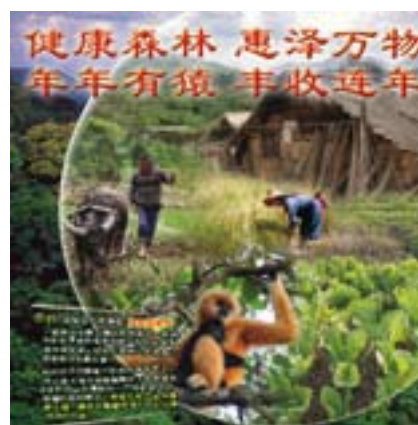
Eleven reports (in Chinese) on information acquired from the biodiversity surveys were published in the South China Forest Biodiversity Survey Reports series. In October 2005, 1,100 copies of issue No.10 of the *Living Forests* magazine were distributed, focusing on the theme “What is Environmental Education?”

Several scientific papers were published or in press, including:

Article	Author/Co-author(s)	Journal
Bird fauna of Bawangling National Nature Reserve	Chan Bosco Pui Lok and Lee Kwok Shing (KFBG), Zhang Jianfeng (Bawangling NNR) and Su Wenba (Hainan Wildlife Conservation Centre)	<i>Forktail of the Oriental Bird Club</i>
Distribution and status of the White-eared Night Heron in China	Prof. He Fenqi (The Institute of Zoology), John R. Fellowes, Lau Michael Wai Neng, Lee Kwok Shing and Chan Bosco Pui Lok (KFBG)	<i>Bird Conservation International</i>
A new catfish species in South China	Li Jie, Chen Xianglin (South China Normal University) and Chan Bosco Pui Lok (KFBG)	<i>Zootaxa</i>
A new-to-science tree frog found at Yinggeling	Dr. Chou Wenhao (Taiwan National Museum), Lau Michael Wai Neng and Chan Bosco Pui Lok (KFBG)	<i>Raffles Bulletin of Zoology</i>
Hainan waterbird surveys	Lee Kwok Shing, Chan Bosco Pui Lok, John R. Fellowes (KFBG) and Su Wenba (Hainan Wildlife Conservation Centre)	<i>Forktail</i>



A commercial organic farm sheltered by forested hills near Kunming.



Calendar posters with gibbon conservation messages were distributed to several villages in Hainan to arouse awareness (above); *Living Forests* Issue #10 (right)



6. Studentships

KFBG studentships were awarded to four mainland Chinese postgraduate students in 2005/06.

Name	Institution	Project Title
Li Guangjun (Ph.D.)	Northeastern University, Liaoning	Comparative analysis of ecological footprint and sustainability evaluation of China's cities
Qin Yongrong (Ph.D.)	Zhongshan University, Guangzhou	Comparative analysis of ecological recovery in denuded karst areas
Zheng Xilong (M.Phil.)	South China Botanical Garden, Chinese Academy of Science, Guangzhou	Study on ethnobotany of Li minority and biodiversity conservation in Hainan
Zhou Youbing (Ph.D.)	Xishuangbanna Tropical Botanical Garden, Chinese Academy of Science, Yunnan	Habitat utilization, seed dispersal and forest regeneration by Masked Palm Civets in Guangxi



Compassionate release of animals often results in cruelty, suffering and death.

EAP and EMP

Ecological Advisory Programme (EAP)

In its role as an advisor on environmental practices in Hong Kong, the EAP continued to monitor and pursue new and on-going issues of environmental concern in 2005/06. Its most significant project during the year was the development of a model for a Conservation Trust for Hong Kong.

1. Planning, Environmental Impact Assessments & Land Use

A. Construction waste dumping at recreational fishing farms within the "Coastal Protection Area" at Lau Fau Shan in Deep Bay: the dumping at these sites were to reclaim land for recreational use. The Planning Department advised us that it was an illegal development. Enforcement and reinstatement notices were sent to the landowner in January 2006.

B. Bird collisions with transparent noise barriers at the Kam Tin Bypass: a proposal to use falcon stickers on the barriers was forwarded to the Agriculture, Fisheries and Conservation Department (AFCD) for consideration.

2. Consultation & Policies

Consultation meetings were held with Government departments and environmental NGOs regarding various environmental issues:

A. The Government's port development policy and identification of 331 hectares of land for open storage or port back-up use in the New Territories: the EAP

proposed that two ecological hotspots be protected and that attention be paid to a neighbouring egret, when applications for approval to use the land were screened by the Planning Department.

B. The Drainage Services Department's (DSD) Drainage Improvement Works Package C covering major streams in the North East New Territories: the EAP and other environmental NGOs expressed concern over the environmental impact of the design for Emergency Vehicle Access works at three streams.

C. Construction of bat roosts at the Yuen Long Bypass Floodway: the DSD welcomed the EAP's recommendations on heat reduction, compartment facilities and other aspects of bat house designs.



Ecological Advisory Programme continues to monitor illegal dumping in Hong Kong.

3. Other Activities

A. Liaison meeting between environmental NGOs and the Planning Department:

Five NGOs (WWF Hong Kong, Green Power, Conservancy Association, Green Lantau Association and KFBG) attended this first of many future biannual meetings organized by the EAP, to facilitate a dialogue and enhance understanding between the relevant parties.

B. Compassionate animal release: The EAP met with Buddhist leader, The Venerable Kok Kwong, and heads of the Buddhist group, Heung Hoi Ching Kok Lin Association to raise awareness of the detrimental environmental impact of releasing large numbers of captive birds with a bilingual leaflet produced by the Fauna Conservation Department.

4. Conservation Trust

A provisional model for a Conservation Trust for Hong Kong was formulated following a visit to the U.K. National Trust and to 12 Government-identified ecological hotspots in Hong Kong. This concept was discussed at meetings with the Secretary for Environment, Transport and Works, Dr. Sarah Liao, and the Chief Executive, Donald Tsang, and with other stakeholders including NGOs, Lands and Planning Department officials, developers and a Heung Yee Kuk leader at a workshop. Consultations are continuing with the relevant stakeholders.



(From top) Leaflet produced by KFBG to raise public awareness of the risks and suffering caused by animal release; Inappropriate release may threaten ecological balance.

Ecological Management Programme (EMP)

The EMP's main areas of responsibility are pest management and land use within the Farm.

1. Pest Management

A termite infestation of structures in the Native Tree Nursery area was controlled using an ecologically friendly agent (Premise SC Termiticide). Long-term management will involve the replacement of these wooden structures with a more termite-resistant material.

Feral dogs infiltrated the Sika Deer compound at the upper farm, killing 4 deer. Traps obtained from AFCD were set, and the perimeter fence was fortified.

Following the contraction of Tick Borne Typhus (Spotted Fever) by a KFBG staff member, a tick management protocol was implemented for staff entering high risk areas, eradication treatment was undertaken and the perimeter fence was fortified against entry by straying feral cattle.

Treating one of the Sika Deer's injuries.



2. Land Use

Staff members and other volunteers contributed to the tree planting programme to reforest a disused orchard by planting an additional 300 trees this year.

To manage fallen trees and branches ecologically, woodpiles were created in several locations as shelters for wild animals.



The school building at Xifeng, Gansu designed and constructed with a KFBG grant.

SUSTAINABLE Living

Our work in sustainable living has grown steadily this year in collaboration with strategic partners.

1. A demonstration sustainable village primary school in Gansu, PRC

The project to research and construct a school at Xifeng, Gansu using sustainable design, materials and workmanship continued in collaboration with the Department of Architecture of the Chinese University of Hong Kong (CUHK). The construction work was slow due to the unexpected necessity to redesign the project to keep costs under control.

The project addressed the problems of lighting, ventilation and space limitation without compromising the environmental performance of traditional design. In this project, mud-brick, which has been long used in the region, was selected as the main construction material because of



Children at Xifeng using drawings to express their expectation of the new school.

its low ecological footprint – mud has very low embodied energy, high insulation capacity, high durability and is easily available locally. The construction technique is manageable by local workmen with almost no use of machinery. The project is expected to inspire people to consider alternative paths for sustainable development in rural China.

A TVB crew from Hong Kong covered the project and produced a programme for HK viewers. The project is due for completion in September 2006.



Poor ventilation, limited space and insufficient lighting are common problems of traditional earth-built housing at Gansu.

2. Ecological Footprint

The implementation plan of the KFBG Zero Footprint Task Force was completed. The ideas were integrated into the Farm strategic planning and departmental operation plans.

KFBG produced 5,000 copies of the Chinese version (in both traditional and simplified characters) of the Ecological Footprint (EF) Wallet Card to disseminate EF messages to the public in Hong Kong and Mainland China.

We were involved in the production and distribution of the Chinese version of the second Asia-Pacific Ecological Footprint Report entitled 'Asia-Pacific 2005 – The Ecological Footprint and Natural Wealth'. This includes China as one example of five countries. The report was made accessible to Chinese audiences including policy makers. The English report is now available online at: http://www.footprintnetwork.org/newsletters/gfn_blast_ap_report_2005.html

As a member of the Global Footprint Network (GFN) Communication Standards Committee, KFBG was engaged in the development of guidelines and standards for communicating EF issues.

Interest in EF was strengthened by networking with Global Village Beijing, WWF China Programme and other overseas organizations. A number of workshops were organized to introduce the concept of sustainable living to local audiences in areas ranging from architecture, food production, education and global trade.

A presentation on the subject of EF and the KFBG's Study was made on 16 November 2005 at the Botanic Gardens Conservation International Conference held at Kadoorie Agricultural Research Centre. The presentation aroused interest and constructive discussion about the potential application of EF in botanic gardens' education work around China.

3. Educational Activities

Seven sessions of a locally produced play "American Shrimp 2005" were run in November in collaboration with the HKSAR Government Leisure and Cultural Services Department and the Hong Kong Professional Teachers' Union. The play explored a World Trade Organization (WTO) Turtle/Shrimp dispute that occurred in the 1990s. This play helped young people to understand WTO related issues ahead of the WTO meeting in HK by presenting the different perspectives of traders, shrimp farmers, consumers, WTO negotiators, the media, environmentalists and biologists. KFBG assisted in the development of the online educational resources, in assisting in the running of pre-show and post-show workshops for teachers.

4. Sustainable Living Training for Student Teachers

Two introductory workshops featuring Sustainable Living were included as part of the training programme organized by KFBG Education Department for student teachers of the Hong Kong Institute of Education on 16 November and 9 December 2005. Concepts about EF, brutal facts about the environmental and social crisis, and, their link to our modern lifestyle were highlighted.



Intercropping of leguminous plants with corn – one of the traditional farming practices commonly used at Xifeng, Gansu Province.

5. Food System and Environmental Crisis – training programme for organic farmers

A half-day workshop was organized on 4 September for 30 participants who joined a Permaculture Course supported by KFBG. The workshop used EF methods to analyze the ecological and socio-impact of the food system and highlight the importance of sustainable agriculture and lifestyle.

6. Sustainable Living and Living Environment

A lecture was delivered on 15 September for Year 3 architecture students at CUHK. The lecture focused on urban metabolism, the importance of sustainable architecture design in enabling sustainable living and community building. A follow-up KFBG visit was organised for students on 14 November.

7. Visiting Scholar – Professor Zhou Xiao Zheng

Upon the invitation of KFBG, Professor Zhou, the Director of the Law and Social Science Research Centre of Remin University of China, Beijing, visited Hong Kong from 4-10 September. Professor Zhou met and exchanged views with staff of KFBG, Partnership for Community Development and Farless Limited. He also delivered several talks at the Chinese University of Hong Kong, Hong Kong University of Science and Technology, and, Hong Kong Baptist University about the importance of Green GDP in sustainability and his perspective on the root causes of the social and environmental crisis in China.

The Sustainable Living work of KFBG was carried out by Idy Wong who also took on the role of Acting Head of the Agriculture Department in November 2005. By early April 2006 we had decided to integrate a number of programmes under the new 'Sustainable Living and Agriculture Department' with Idy as the Head of the Department.



Sir Horace Kadoorie
Memorial Day, April 22nd, 2005.

GENERAL Administration

Farm visitor numbers stabilized this year after the surge in 2004/05 caused by heightened public interest in Pui Pui, the Yuen Long crocodile. However, the number of group visits showed a slight decline in early 2006 possibly due to cautiousness arising from concerns about Avian Influenza (AI). Capital expenditure increased significantly, as improvements were made across the Farm in line with KFBG's mission. Similarly, operating expenses were increased as our programmes continued to develop.

1. Accounting & Finance

Financial data from 2004/05 and 2005/06:

	2004/05 (audited)	2005/06 (unaudited)
Operating (HK\$)	47,331,000	52,567,000
Capital (HK\$)	11,769,000	19,034,000
Total (HK\$)	59,100,000	71,601,000

2. Administration

Number of Farm Visitors:

1 April 2004 – 31 March 2005	1 April 2005 – 31 March 2006
179,578	187,662

3. Human Resources

A. Staff

Staffing levels changed with the recruitment of 28 new staff while there were 11 resignations and 5 retirements. In March 2006, the Long Service Award was presented to Cheung Shui Lun (General Administration Department) for 20 years' service at the Farm. Ah Lun, it should be noted, was actually born on the Farm.

B. Training

Thirty-four staff members were awarded their First Aid certificates from St. John Ambulance Association. Over 150 staff attended a one-day communications skills workshop in February 2006.

4. Sustainability Management

To improve KFBG's practice of sustainable living, the Sustainability Committee initiated various guidelines. These were: 1. Sustainable Procurement Guideline; 2. Air Conditioner Usage Guideline; 3. Farm Sustainable Vehicle Usage Guideline; and 4. A Sustainability Justification Form is now required for purchases and capital projects.

To improve sustainability of Farm operations, we introduced biodegradable garbage bags, 11 solar streetlights, a solar seed dryer and a waterless urinal system, utilising natural microbes to treat discharge and eliminate odour-causing bacteria.

5. Security and Occupational Health & Safety (OH&S)

Following the theft of Golden Coin Turtles from the Fauna Conservation Department in April 2005, a new Security and OH&S Officer was appointed and various initiatives were introduced to improve Farm security, staff and visitor safety. These included a uniform for the Security Team for greater visibility and an alarm system for the sensitive areas of the Fauna Conservation Department. Deterrent spikes and barbed wire were also installed along the Farm gates and perimeter fences.

As visitor vehicles were once again permitted to use Farm roads, a registration system was reintroduced and a speed gun was acquired to monitor vehicle speeds within the Farm premises.



(From left) Cheung Shui Lun received the Long Service Award from Andrew McAulay, Chairperson of KFBG; Participating staff in the 2005 Memorial Race with Mrs Rita McAulay and Andrew McAulay; Landscape refurbishment of Kwun Yum Shan Summit.



OH&S talks were conducted for staff members and demonstrations of the use of full body harnesses were given to Agriculture Department staff. Review of bio-security measures for the prevention of AI and Spotted Fever were also undertaken by the management team.

6. Facilities

Major capital and maintenance projects completed in 2005/06 included:

A. Water Quality & Waste Disposal Improvements

Water sterilization systems were installed at critical locations around the Farm, water pipes were replaced, water tanks maintained, and an underground bore well was constructed as a backup water source. A sub-surface flow wetlands system is to be constructed to serve as a sustainable waste water treatment system.

B. Geotechnical Assessment & Upgrading of Slopes

Slope stabilization procedures were undertaken around the Farm. This is an ongoing project and ground investigation

was carried out on 16 suspect slopes and 2 slopes were upgraded.

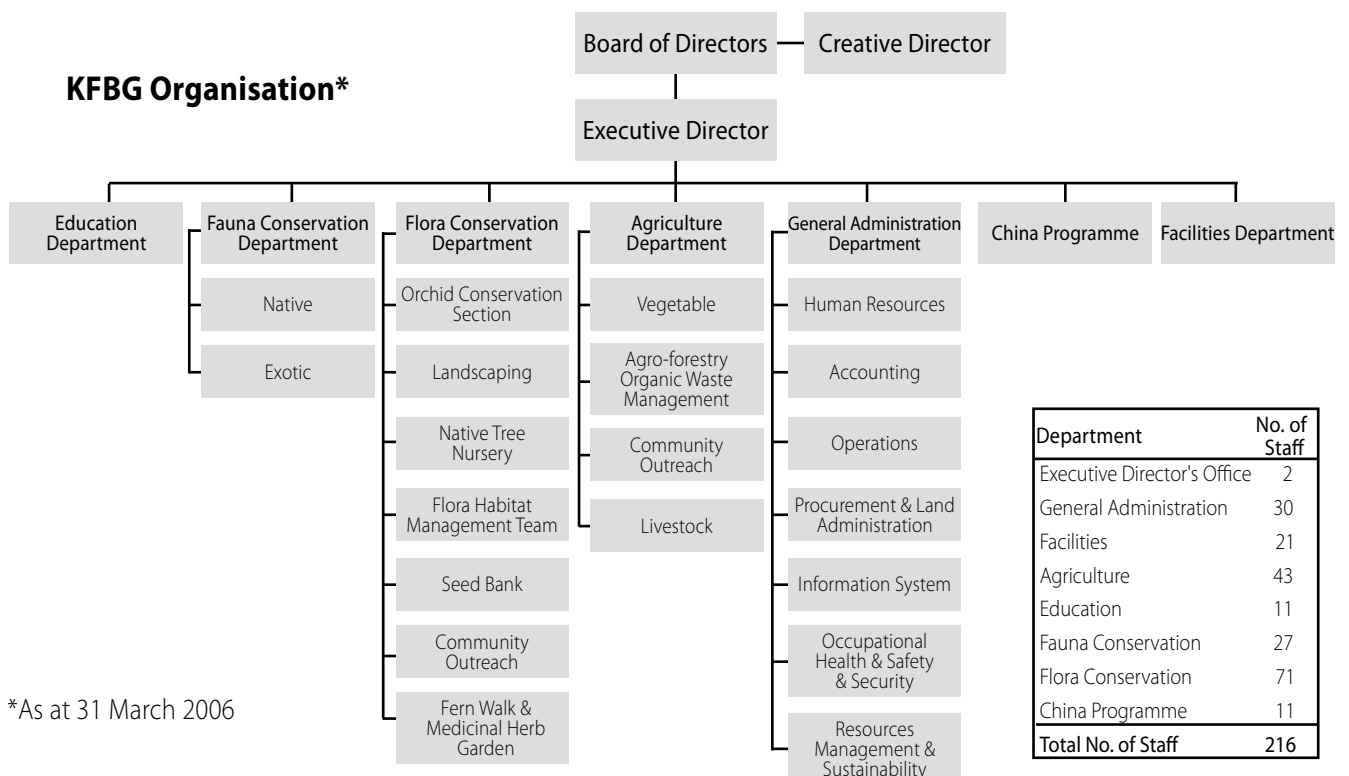
C. Building Renovations & Landscape Improvements

The landscape at Kwun Yum Shan summit was refurbished to commemorate the Farm's 50th Anniversary. New developments included the Memorial Garden beside the Post Office Pillars and the mules' stable behind the chicken houses. Renovations of existing structures included the upgrading of the Raptor Sanctuary, Conservation Building, Plant Laboratory Extension, pigsties and greenhouses.

D. Safety & Security Enhancement

These included the installation of a lightning protection system, replacement of existing asbestos roofing and construction of reinforced concrete walls along the kerbs of the farm roads.

KFBG Organisation*



Department	No. of Staff
Executive Director's Office	2
General Administration	30
Facilities	21
Agriculture	43
Education	11
Fauna Conservation	27
Flora Conservation	71
China Programme	11
Total No. of Staff	216

*As at 31 March 2006

**Members of the Board of the
Kadoorie Farm and Botanic Garden Corporation**

Andrew McAulay (Chairperson)

Ian D. Boyce

Dr. Lawrence Lee

Ruy Barretto, Senior Counsel

Ho Wai Chi

Deborah Whittle

**Senior Management of the
Kadoorie Farm and Botanic Garden Corporation**

Executive Director

Andy Brown

Heads of Department

Fauna Conservation Department

Dr. Gary Ades

General Administration Department

Florence Au

Flora Conservation Department

Dr. Lawrence Chau

Education Department

Dr. Chiu Sein Tuck

China Programme

Dr. Michael Lau

Facilities Department

Denis Ng

Sustainable Living & Agriculture Department

Idy Wong



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