

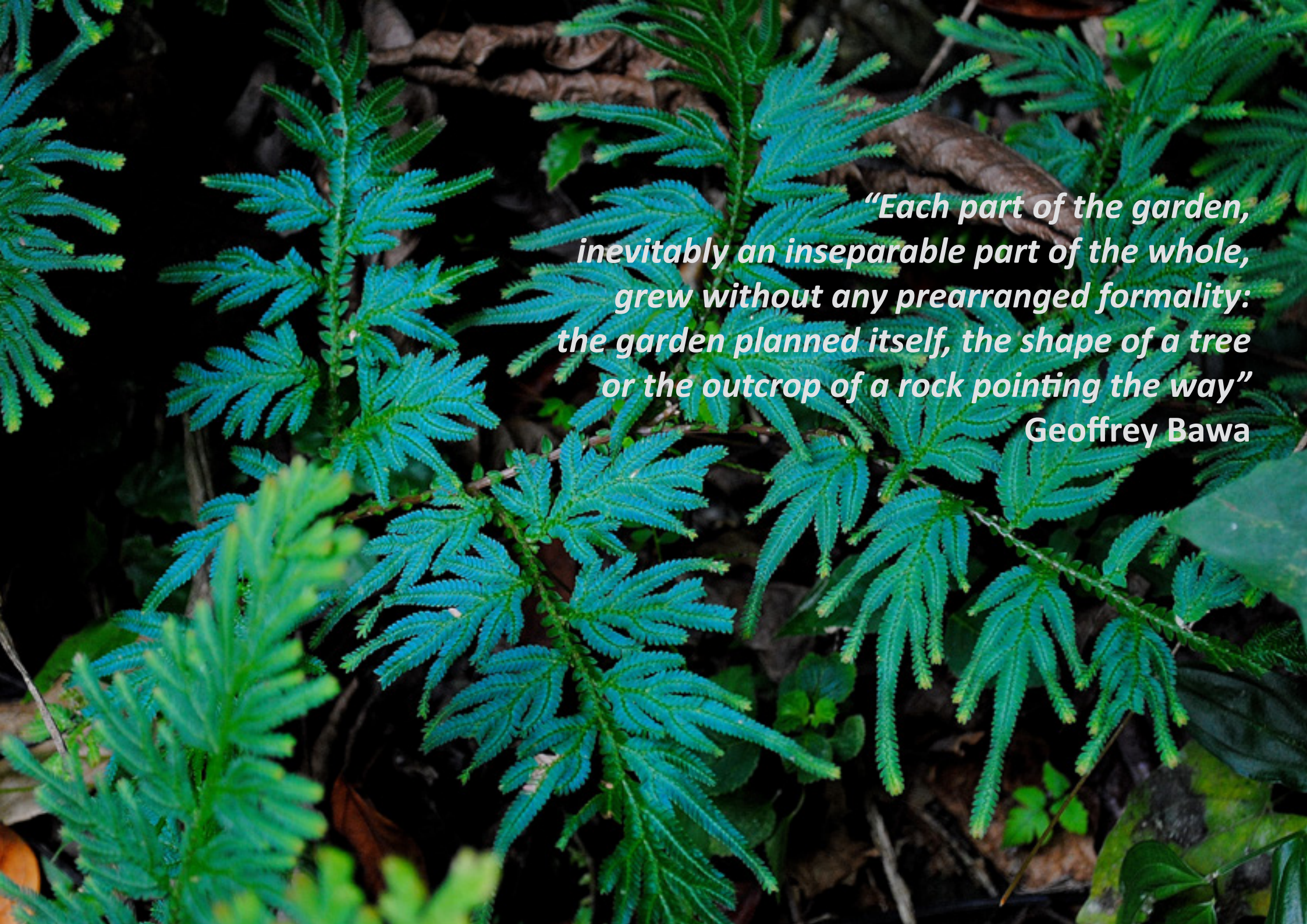
Pha Tad Ke Botanical Garden, Luang Prabang, Laos

Eleven years in a nutshell - 2008/2018

An exciting and turning point year - 2019

Launch of our second phase - 2020/2025





*“Each part of the garden,
inevitably an inseparable part of the whole,
grew without any prearranged formality:
the garden planned itself, the shape of a tree
or the outcrop of a rock pointing the way”*

Geoffrey Bawa

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When I first arrived in Laos, it was a holiday, just for a week ...

Then, Luang Prabang got under my skin and I decided to stay for three months to catch up on my reading. Whilst looking for a small bamboo hut where I could do so quietly, my friends took me for a walk at Pha Tad Ke, only two kilometres down the Mekong River from Luang Prabang. Full of weeds and magnificent old wild mango trees, spirits galore... I started to dream what I would like to do with the rest of my time and what made sense for me in these enchanting surroundings; the idea for a botanical garden grew rapidly and firmly, like most plants do in this semi-tropical region.

After working in the art world for over 25 years, jetting between Paris and New York, a new path seemed enticing and peaceful. Little did I expect the challenges lurking around the corner, but here we are ten years later, with the first part of our gardens opened to the public.

I would like to thank all the people and organisations that have helped us over these years, with scientific, financial and emotional support, too many to mention but you know who you are.

The staff at Pha Tad Ke who have worked so hard and made this truly their home.

We have now been open to the public for two years, and i think this is a good moment to look back at what we have achieved over the last ten years, eight years building and now since two years sharing with the visitors the beauty and energy of our mountain as it has slowly revealed itself to us over the years.

We will share with you here what have done so far, what the projects are for the coming year and the important plans we have for the second phase of our development, so that we will be a truly selfsustainable important institution and international partner for biodiversity conservation, research, education and continous capacity building.

Rik Gadella, Founder and General Director

*“One invents and one creates; one’s whole being is carried away in action.
That action, that’s the all-important thing.”*

Le Corbusier

Mission Statement

The Mission of Pha Tad Ke is to stimulate a fundamental change of awareness that leads towards a holistic view of nature and society for sustainable ecological and biodiversity conservation.

Pha Tad Ke has created the first botanical garden in Laos for the conservation and study of the Flora and ethnobotany of Laos. A regional biodiversity research and education centre with the first living collection of plants.

The centre, supported by the collaboration and exchange of information with prestigious botanical institutions of South East Asia, the United States and Europe has as its objectives the development of educational programs, the publication of books and scientific articles, research into environmental conservation, botany, horticulture, and ethnobotany in order to promote biodiversity and ecological conservation.

Our four main goals are

- Research, Educate, Show and Preserve the Flora and Ethnobotany of Laos
- Promote Sustainable Organic Farming to Mitigate Effects of Global Warming and Support Biodiversity Conservation
- Promote and Develop Green Tourism Projects in Luang Prabang and the Region
- Develop and Promote Art and Cultural Programs to Engage a New Generation in Creative and Intelligible Thinking

Eleven Years in a Nutshell - 2008/2018



Roots

“Nature is always changing, it is a continuous dialogue and I don’t want to fix nature, nature is life and always, always changing”

Kengo Kuma

The inspiration for the Pha Tad Ke Botanical Garden bloomed in 2007. On his visit to Laos in 2007, the garden’s founder and general director, Rik Gadella, was in awe of Luang Prabang’s cultural legacy and surrounding natural environment. This unique and fragile heritage compelled him to move to Luang Prabang and establish the first botanic garden dedicated to preserving the biodiversity and ethnobotany, or cultural traditions related to plants, of Laos. The natural environment plays important roles in the lives of the citizens of Laos. Plants provide shelter and sustenance, and natural fibres are transformed into practical and spiritual items. Plants heal individuals as medicine or as part of religious ceremonies. The rapid development of Laos threatens this centuries old traditional knowledge. Preservation is critical as modernization continues, and little has been recorded.

Since 2008, the botanical garden has taken root in Ban Chan Village on the right bank of the Mekong River. In collaboration with international institutions with similar missions, visiting scientists and the garden’s Lao staff we have collected specimens and carried out research on the ethno-botany and plant diversity of Laos. Research and training as well as scientific collaboration is ongoing. Both students and professors continue to study and carry out research at the garden. They also assist in the training of the garden’s staff. Some staff are now studying advanced degrees abroad.

Some of the institutions collaborating with Pha Tad Ke Botanical Garden include: National University of Laos; Queen Sirikit Botanic Garden (Chiang Mai, Thailand); Singapore Botanic Gardens; and Royal Botanic Garden Edinburgh. Pha Tad Ke Botanical Garden has also hosted trainings and workshops with the aim to reconnect the local community to nature and their traditions related to plants. A team of advisors has guided the development of the layout of the gardens. Jean-Pierre Dovat (artistic advisor), Dr. Tiao Somsanith Nithakong (cultural) and Dr. Bouakhaykone Svengsuksa (scientific), form the team that assists the garden's founding director, Rik Gadella. The opening of Pha Tad Ke Botanical Garden to the public in November 2016 enabled visitors, both local and international, to learn about the country's plant diversity and the central roles it plays in the lives of the country's population. The garden will continue to document and research the biodiversity and ethnobotany of Laos with the aim to preserve this heritage for future generations.

Trunk and Branches

The general area of the 14-hectare botanical garden consists of a reception, restaurant and shop. The section devoted to education and research features the gardens, a herbarium, a research centre, and a plant nursery. Guests' physical and social wellbeing are nurtured by walks and treks in the various gardens. Cultural events, exhibitions and workshops are held at our Baci sala and throughout the gardens.

A spa based on the indigenous knowledge and traditions of Laos, guest accommodations, and artist studios are planned for the future. The garden will continue to support the arts and education by publishing books, sponsoring cultural events in the garden as well as in town, and hosting the Artists in Residency program.

The Gardens

Limestone Habitat (20,000 sq. m)

This area showcases local plants from the limestone mountains of Laos, such as cycads and tree ferns. Limestone karsts possess unique biodiversity and geology, and some plants and animals are unique to this kind of environment. Enjoy a trek around the base of the mountain (35 minutes) to our beautiful Pha Tad Ke cave.

Ethnobotanic Garden (3,000 sq. m)

Curated by Dr. Biba Vilayleck the ten themed garden plots demonstrate the rich plant life of Laos and its daily use. Medicinal plants for people and elephants, species used for creating textiles, poisonous plants and plants for the spirits are just some of what is waiting to be discovered here.

Ginger Garden (1,200 sq. m)

Developed in collaboration with ginger expert Dr. Jana Škorničková from Singapore Botanic Garden, this garden features over 100 different ginger species. Highlights include edible species, Luang Prabang natives and an ornamental display around the pond.

Arboretum (25,000 sq. m)

Our arboretum provides a lovely setting for a stroll, containing over 200 species of trees found from the region, information on their local uses and natural habitat can be found on signs throughout this area of the garden.

Palm Garden (6,000 sq. m)

This garden features more than 30 species of palm, and there is a great diversity of frond shapes on show. We have also included the famous Rattan (Yes, it's a palm!) that can grow up to 200 metres long.

Bamboo Garden (4,000 sq. m)

Bamboo serves as food and material for a variety of purposes in Laos, including construction and handicrafts. A wide range of different types are used locally, and more than 30 of them are displayed here.

Orchid Nursery (500 sq. m)

We have opened one of our nurseries to you for a glimpse behind the scenes! The main collections shown are orchids (over 260 species) and ferns (over 150 species). Take the chance to learn a bit more about the orchids on display during our free orchid talk (10 min), held here.

Permaculture Demonstration and Research Farm (2,000 sq. m) (opens April 2019)

Biodiversity conservation is greatly threatened by unsustainable farming methods such as slash and burn. We think Permaculture provides a sustainable way to help the 75% of the Lao population living on small-hold farms improve their livelihoods, while still taking into account their cultural sensibilities and incorporating them into sustainable and green agriculture. This garden shares our knowledge of organic gardening and growing food crops and is designed around low, mid and high mountain land. The garden reflects the various ethnic groups that inhabit these regions. A 2,500 alley cropping trial project will be adjoining the farm on the lower slopes of the Pha Tad Ke Mountain. Workshops for Lao farmers and visiting tourists will be provided here as well as permaculture design courses with international designers.

Mist House (300 sq. m) (planned 2019)

Featuring delicate plants such as endemic orchids, ferns, and carnivorous plants in a specially designed enclosed environment. By bringing these unique species together you can enjoy their beauty and learn about the threats facing them in their natural habitat.

Buds and Flowers

“I used to think the top environmental problems were biodiversity loss, ecosystem collapse and climate change. I thought that with 30 years of good science we could address those problems. But I was wrong. The top environmental problems are selfishness, greed and apathy ... and to deal with those we need a spiritual and cultural transformations and we scientists don’t know how to do that.”
Gus Speth, US Policy Maker and Environmentalist

The garden and its natural surroundings create a breathtaking setting. Spectacular vegetation, sheer cliffs, and the sweeping currents of the Mekong River relax and stimulate the senses simultaneously; the natural setting of Pha Tad Ke Botanical Garden encourages contemplation and creativity. The garden’s mission supports initiatives in the arts, fulfilling the need to activate different intelligences - emotional, logical, physical and spiritual.

The arts join culture and science in Pha Tad Ke’s mission to raise awareness about the importance of biodiversity and ecological conservation to avert imminent disaster. We can no longer close our eyes and mind to the problems of the heart. Pha Tad Ke Botanical Garden is a new place for both visitors and members of the local community to shift their ideas and thoughts about these and other topics. The arts stimulate expressions of mind, body, and spirit, and regular exposure to the arts promotes cultural and social development. The garden presents art via exhibitions, publications, and the works of visiting artists to assist and develop this shift in consciousness.

Botanical Art

At Pha Tad Ke Botanical Garden we have always been active with botanical illustration workshops and six of our publications for Lao children have been illustrated by one of our staff, Kongngern Sengdee.

We are planning new collaborations with, amongst others, the art program from the Royal Botanic Garden Edinburgh as well as a new series of book publications with botanical artists and literary texts. We are especially honoured with the recent donation from Phansakdi Chakkaphak of 12 prints of his beautiful botanical paintings.



Phansakdi Chakkaphak

Born Sriracha, Thailand 1949.

One of the most gifted botanical artist in the world Phansakdi Chakkaphak's work has been exhibited in many solo shows in Thailand and numerous group shows in Bangkok, Royal Kew Gardens in London, Pisa, San Francisco, New York and Singapore. His paintings are included in various private and corporate collections worldwide.

Yellow Tulip Tree

Watercolor and gouache on paper, 51.5 x 37.5 cm
Shirley Sherwood Collection

Publications

Pha Tad Ke Botanical Garden has taken the initiative to develop and publish books focusing on art, botany, and ethnobotany. Illustrated children's books, bi-lingual teaching manuals, field guides, and monographs that focus on various aspects of the plants of Laos are some of the garden's publishing achievements. The garden has also published books celebrating contemporary art in Laos and will expand to contemporary art in Southeast Asia in collaboration with international authors and institutions.

Exhibitions and Installations

From 2010 to 2014, Pha Tad Ke Botanical Garden actively collaborated with Project Space • Luang Prabang and its proprietor Jean-Pierre Dovat. This collaboration initiated several cultural projects in the city of Luang Prabang with various local partners and supported by the Lao Culture Challenge Fund from the Swiss Agency for Development and Cooperation. After opening in November 2016, Pha Tad Ke Botanical Garden was fortunate to be able to utilise its entire grounds to expand these activities and organised several cultural events, open houses and exhibitions as well as initiated our Artists in Residence Program to encourages artists to create art and conduct workshops for visitors in situ. Since the opening of Pha Tad Ke Botanical Garden, several internationally acclaimed artists have participated as the first members of the Artists in Residence Program and created exciting sculptures and installations.

We gratefully acknowledge these artists for their generosity, support and the artworks they created for Pha Tad Ke.

Etienne Fouchet - Stumbling Rooms

Krijn de Koning - Green Room

herman de vries - one in all, all in one


Dana Wyse - Mo Ya

“The job of the artist is always to deepen the mystery.”

Francis Bacon



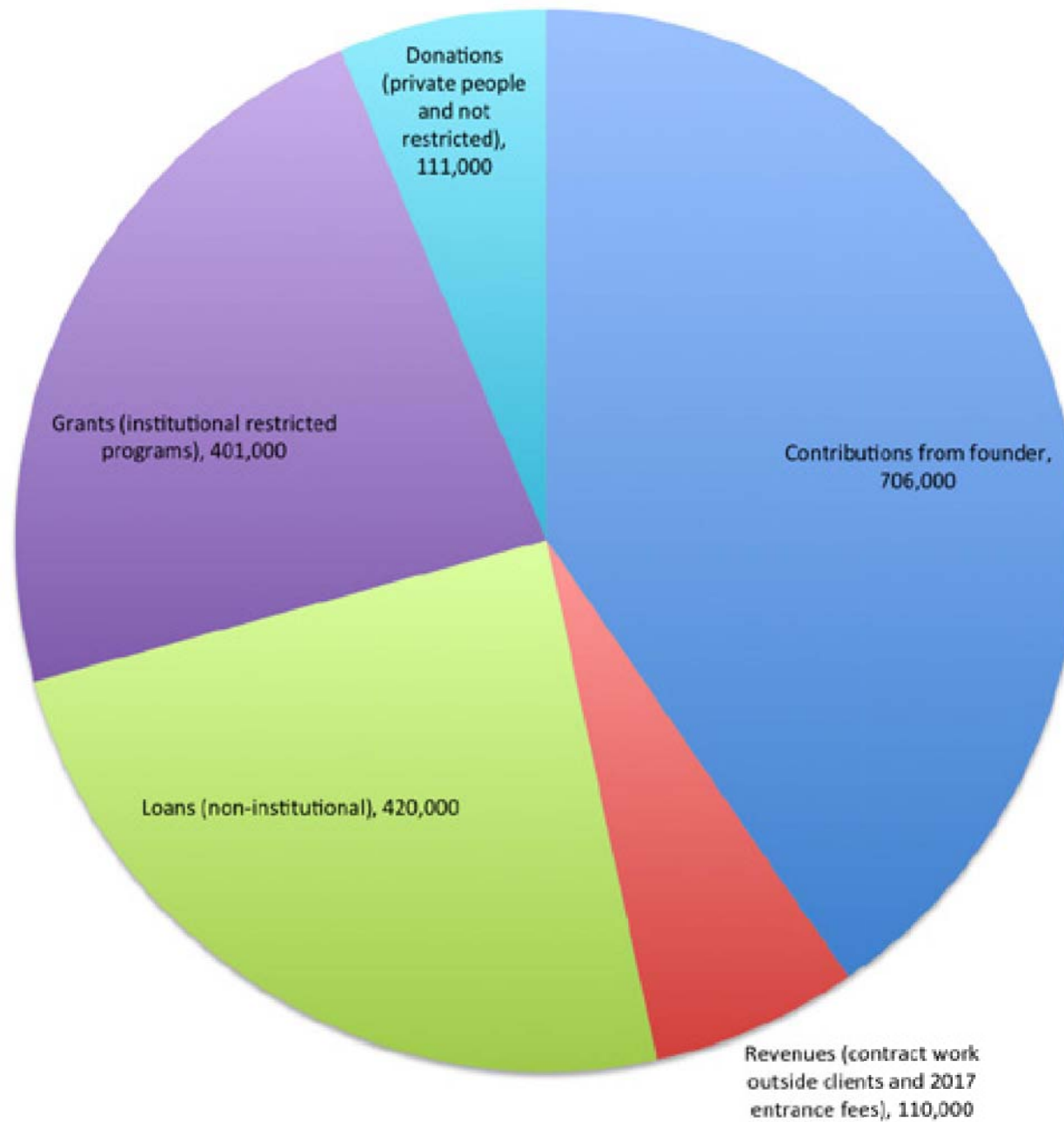


A large, dark, textured rock formation, possibly a natural rock wall or a large boulder, is the central focus. The rock has a rough, uneven surface with various shades of grey and black. A small, green, leafy plant is growing from a crack in the rock on the left side. The text "one in all" is inscribed on the rock in a yellow, sans-serif font, with "all in one" written below it. The background shows a dense forest with green foliage and tree trunks. The foreground is filled with green moss and small plants.

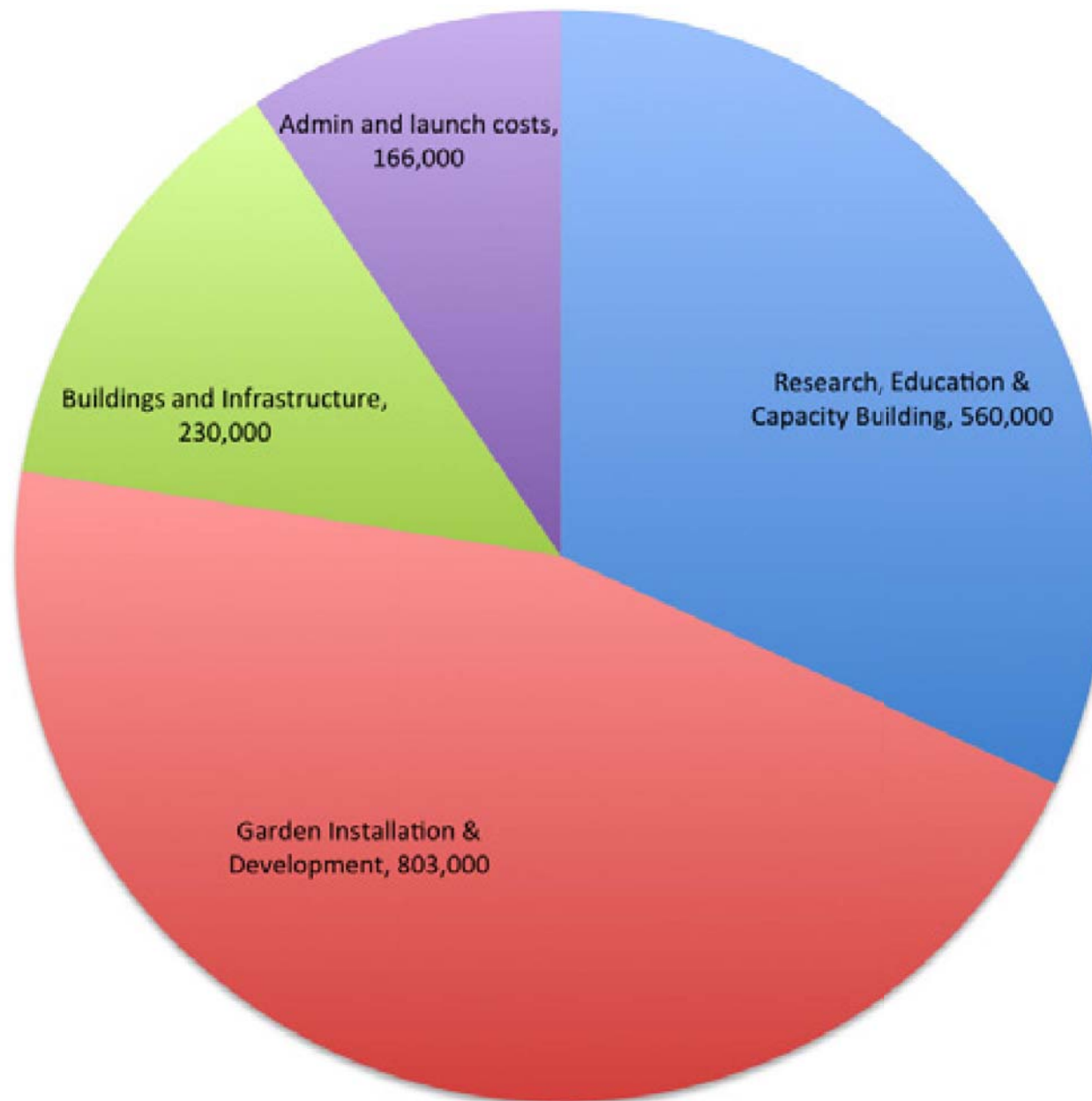
one in all
all in one



Sources of Capital for Building Phase 2008/2016 - Total 1,748,000 US\$



Investments for Building Phase 2008/2016 -Total 1,759,000 US\$



Income and Expenses 2017/ 2018 / 2019 forecast in US\$

Income 2017 / 2018 / 2019 forecast	2017	2018	2019 forecast
Revenues (contract work, 2018 entrance fees, café & shop)	79.000	143.000	200.000
Grants (institutional restricted programs)	39.000	43.000	60.000
Donations (private people not restricted programs)	43.000	11.000	40.000
Total	161.000	197.000	300.000

Expenses 2017 / 2018 / 2019 forecast	2017	2018	2019 forecast
Research, Education & Capacity Building	51.000	61.000	95.000
Garden Operations and Development	95.000	93.000	123.000
Hospitality services	44.000	52.000	72.000
Admin and marketing costs	25.000	29.000	32.000
Total	215.000	235.000	322.000

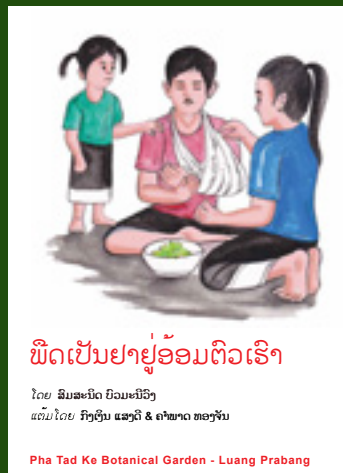
Balance	(54.000)	(38.000)	(22.000)
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Some Key Numbers and Accomplishments since 2008



Here's some of what we have achieved at Pha Tad Ke Botanical Garden since we began our project in 2008 to create the first botanical garden of Laos:

• 16 books published and 3 educational manuals





- 36.000 copies of our books distributed free of charge to Lao schools and libraries
- 8 scholarships given to Lao students
- 2.900 Lao school children have visited PTK as part of organized excursions
- 12 school gardens installed with 36 teacher trainings





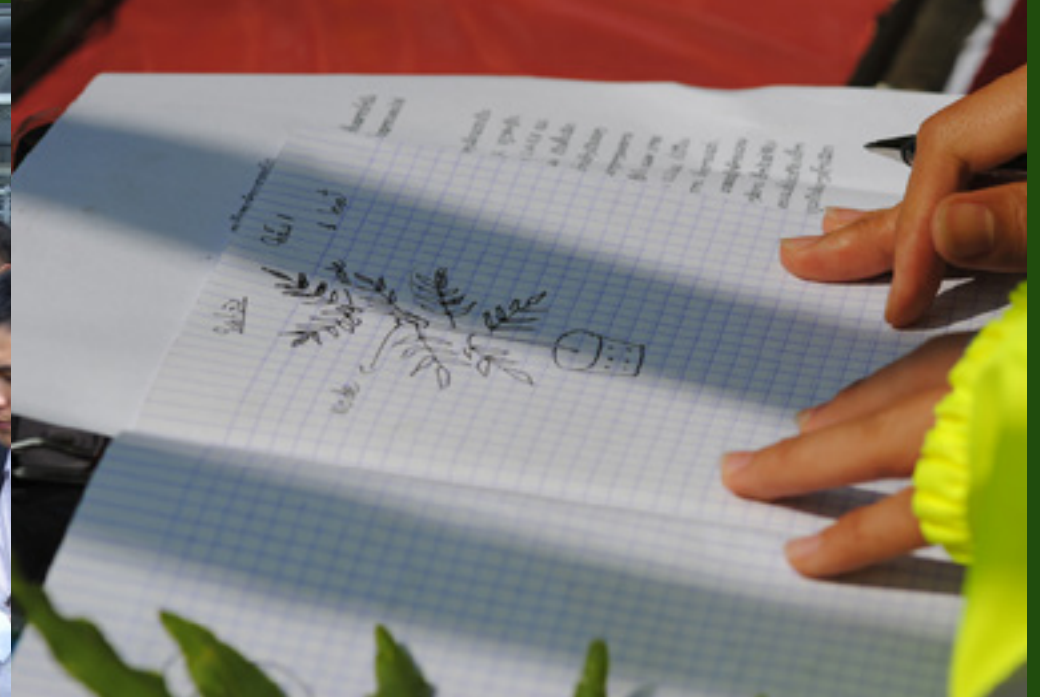
- 42 Lao staff working in the garden
- Over 20.000 plants and trees planted in the garden
- Drilling hard to find water



- 140 plus botanical field trips undertaken
- More than 980 Herbarium specimen collected
- 1.500 plus different plant and tree species in our living collections







- 3.000 staff training days organized in Laos;
over 1.000 staff training days completed internationally
- 84 workshops given to Lao college & university students in Field Botany, Green Horticulture, Ecology, Management Coaching, Photography and Botanical Drawings
- Over 1.100 university and college students came for training visits.



• 16 shows organized at Project Space • Luang Prabang



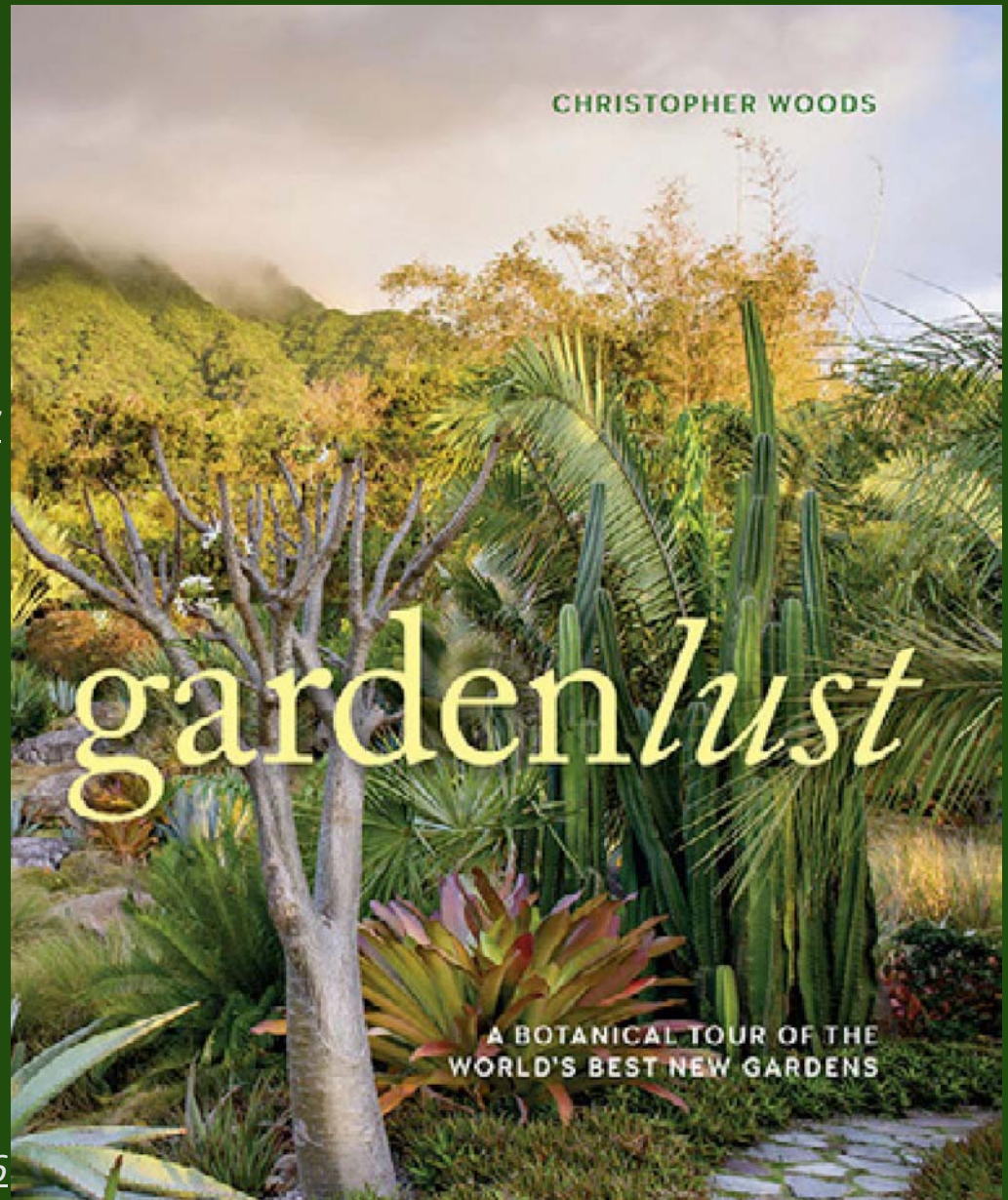


6 exhibitions organized with Tcheu Siong

- APT18 - Queensland Art Gallery - Nov 2018 / April 2019
- Elevations Laos - November 2018 / January 2019
- Singapore Biennale - December 2016 / February 2017
- Chapman Gallery, Willard Hall - Spirit Works: The Art of Tcheu Siong - Augustus / September 2016
- Concordia University, H. Williams Gallery - Spirit Works: Tcheu Siong - February / April, 2016
- Project Space • Luang Prabang - Tcheu Siong, The Genie Behind the Scissors - December 2010 / February 2011

Over 40 articles in the press:

- *Sereen Laos / De Telegraaf – 1 December, 2018*
- *The Flora of Laos / Bangkok Post – September, 2018*
- *Forbes Top 10 of Best 'Table to Farm' Dining Experiences*
- *Botanical garden nurtures job hopes of young trainees / Vientiane Times – 29 December 2017*
- *Dream Garden / Bangkok Post – 31 July 2017*
- *The Gallivanter's Guide / Special Luang Prabang – July '17*
- *A dream garden blooms in Luang Prabang / Nikkei Magazine – 15 July 2017*
- *Pha Tad Ke, Lao's first and only botanical garden / Life Style Magazine – March/April 2017*
- *Pha Tad Ke Botanical Garden opened in Laos / Sacred Seeds Sanctuary – January 2017*
- *Pha Tad Ke, the first Botanical Garden in Laos / Champa Muang Lao Magazine – January 2017*
- *Pha Tad Ke, Luang Prabang's Garden of Eden / Oh Magazine – November 2016*
- *She taught D.C. to respect Lao food / Washington Post – September 2016*
- *A First Botanic Garden for Laos / Garden Drum – July 2016*
- *The Dream Garden of Laos / Nikkei Asian Review – January 2014*
- *Een Tuin aan de Mekong / HP – June 2011*



- **14 Pages in Gardenlust: A Botanical Tour of the World's Best New Gardens. By Christopher Woods**

Forbes Magazine Top 10 of Best 'Table to Farm' Dining Experiences !

Wonderful

"Fascinating nature and peaceful surroundings! A magical experience. The staff were very friendly and helpful and the garden was quiet and beautiful."

"nice Mekong boat trip, great walk and a wonderful outdoor restaurant"

The problem resolving cliff

"The world requires more projects this way to develop an understanding of the planet of ours and also the wealthy biodiversity which had backed human evolution."

"Haven of peacefulness with a lovely restaurant"

Beautiful! A must do!

"This really is a must do when you visit Luang Prabang."

"Wowed by the Green"

"Beautiful, peaceful, like a vacation from vacation!"

Loved the medicinal plants

"Great boat ride, all the staff were wonderful and spoke great English. Enjoyed wandering around the gardens but the highlight for me was learning about how Laos people use all the different plants for medicinal purposes, but also to ward off bad spirits and there is even a section on poisons! Highly recommended."

"A peaceful place for painting"

"Fantastic gardens with a bonus trip up the river"

"Boat trip, ginger garden and cafe are highlights"

"Loved every minute !"

Superb.....!!!! Perhaps the Garden of Eden, reincarnated.

"You would be doing yourself a great disservice if you travel to the Luang Prabang region and do not visit this botanical garden..... content rich and stunningly beautiful with occasional vistas over the Mekong."

Visitor numbers 2010/2018



Visitors paying/FOC	2010/15	2016	2017	2018	Total
Paying visitors	NA	408	2.957	4.413	7.778
FOC, Lao students, children, open house	2.500	1.232	2.697	3.185	9.614
Total	2.500	1.640	5.654	7.598	17.392



An exciting and turning point year - 2019



Now that we are going into the third year that we are open to the public we are expanding and starting up some new projects and international collaborations that we are excited to share with you. Let us also take a glance behind the scenes and introduce our Founder, our Advisors, some of our Key Staff and our Scientific Committee to you.

- Launch of the Alliance for Conservation Tree Genomics with Dr. Joeri S. Strijk & Damien D. Hinsinger - January

In recognition of the urgent need for on-the-ground conservation and research efforts in the mega-diverse tropics, the Alliance for Conservation Tree Genomics has partnered with Pha Tad Ke Botanical Garden in Luang Prabang, Lao PDR. The Alliance conducts tree genomics research with the aim of understanding and conserving biological diversity. To support rapid biological assessments on the ground and to help train local researchers, we also provide training and workshops in genomics, molecular systematics, floristics and associated fields using the latest advances. These are especially needed in frontier regions where high biodiversity, conservation challenges and limited research facilities meet. Alliance members regularly attend international conferences, conduct fieldwork and can be contacted via our website. Here you can also find information on our projects, announcements of upcoming meetings and conference talks/posters, our workshops and new publications by the Alliance. For a chronological overview of our work, please check out member CVs and the [Alliance publication pages](#).

- Opening and first trainings of the Permaculture Demonstration and Research Farm - February

This project will involve the development and installation of a permaculture demonstration/research farm in Pha Tad Ke Botanical Garden, with support from a UNDP GEF grant with a training program for local farmers, government staff and NGOs. As part of this program we will teach and showcase sustainable practices and demonstrate how to improve livelihoods for poor upland farming communities based on permaculture principles. The main goal is to improve farming yields through permaculture, resulting in less stress on forest biodiversity, and better livelihoods for the farmers through climate-smart innovative agro-ecology.

The permaculture demonstration farm will also include a 2ha Alley Cropping area to investigate the potential of local leguminous tree species that are good nitrogen fixers, fast growers, take pruning well, provide good mulch, shade-out weeds and provide secondary products (such as timber). These areas will also be open to the general public who can thus gain a better understanding about the Lao farmer communities and their hardships. Long-term sustainability of the trainings is assured through tourists participating in our “*One-day Introduction to Permaculture*” program, with each tourist’s financial contribution going directly towards paying for more Lao farmers to be trained in permaculture.

- Installation of a Butterfly farm with community development programs - March

Pha Tad Ke Botanical Garden is starting a new project in collaboration with [Banteay Srey Butterfly Centre](#) for farming butterfly pupae for scientific research and conservation projects. This project aims to promote alternative livelihoods and to protect biodiversity by supporting sustainable natural resource management in Luang Prabang province. Butterfly farming is a proven way of utilising an environmental resource sustainably.

- Collaborate with [Projet Anoulak](#) - April

Pha Tad Ke is providing technical assistance in botanical studies conducted in Khammouan Province (Nakai-Nam Theun) which will contribute to research and conservation projects on several endemic species of the Annamite Mountains, notably primate species (Red-shanked Douc *Pygathrix nemaeus*; White-cheeked Gibbons *Nomascus* sp.)

- Open house with cultural traditional and contemporary arts - 4/5 May

For the fourth time we will organise an Open House targetting especially local Lao visitors. During our last open house, November 2018 for the launch of the Pha Kao Lao App supported by TABI we received over 2.000 visitors over two days. For this event we will collaborate with Nith Somsanith our Cultural Advisor and focus on cultural and artistic events such as an unique exhibition of 26 panels with stencils based on the murals of the Vat Hat Seaw. Music performances from the No Phao group as well as workshops on the art of stencil and traditional flower arrangements.

- Slow Food Garden - May

In support of and in collaboration with the [Lao Food Movement](#) we will open a new garden with over 4.000m² of local herbs, spices, edible flowers and organic vegetables. Introducing a series of workshops on amongst others, herbal teas and how to make delicious, simple and healthy Lao dishes such as papaya salad, laap or the famous fiercely spicy jaews .

- Three-months horticulture training for underprivileged youths of rural communities - May/July

For the third time running we will provide a three-month introduction training for future gardeners for hotels and plant nurseries delivered by staff from the Pha Tad Ke Botanical Garden in Luang Prabang. This course is for beginners so no prior knowledge is needed. Basic horticulture and organic gardening techniques will be taught in practical sessions as well as general employee social skills and team work. The first two trainings were developed by the head gardeners at Pha Tad Ke and delivered in 2018 with support from [LUXDEV](#) (Project LAO/029 - Skills for Tourism, with financial support from the Governments of Lao PDR, Switzerland and the Grand Duchy of Luxembourg). From these two trainings 37 trainees graduated of which 90% found jobs immediately.

- Ex-situ Genetic Conservation and Restoration of the Endangered Glyptostrobis pensilis trees - October

Once very widespread in China, Vietnam and likely Laos, natural populations of *G. pensilis* are on the brink of extinction with less than 400 individuals recorded. The level of natural regeneration capacity is low and wetland habitat conversion represents a main threat across its current range. In 2017, a project was initiated with support from the Franklinia Foundation and BGCI to develop an integrated conservation programme for *Glyptostrobis pensilis* including ex situ conservation collections in China, Vietnam and Laos as well as reinforcement of remnant populations in situ. In Laos, investigation of the wild population, seed collection and development of working relationship between Pha Tad Ke Botanical Garden and the local management authority of the *G. pensilis* habitat is ongoing and we currently have nine individuals in the garden nurseries waiting to be planted in the garden. This project is funded by Fondation Franklinia through the [Global Trees Campaign \(GTC\)](#) by [BGCI](#).

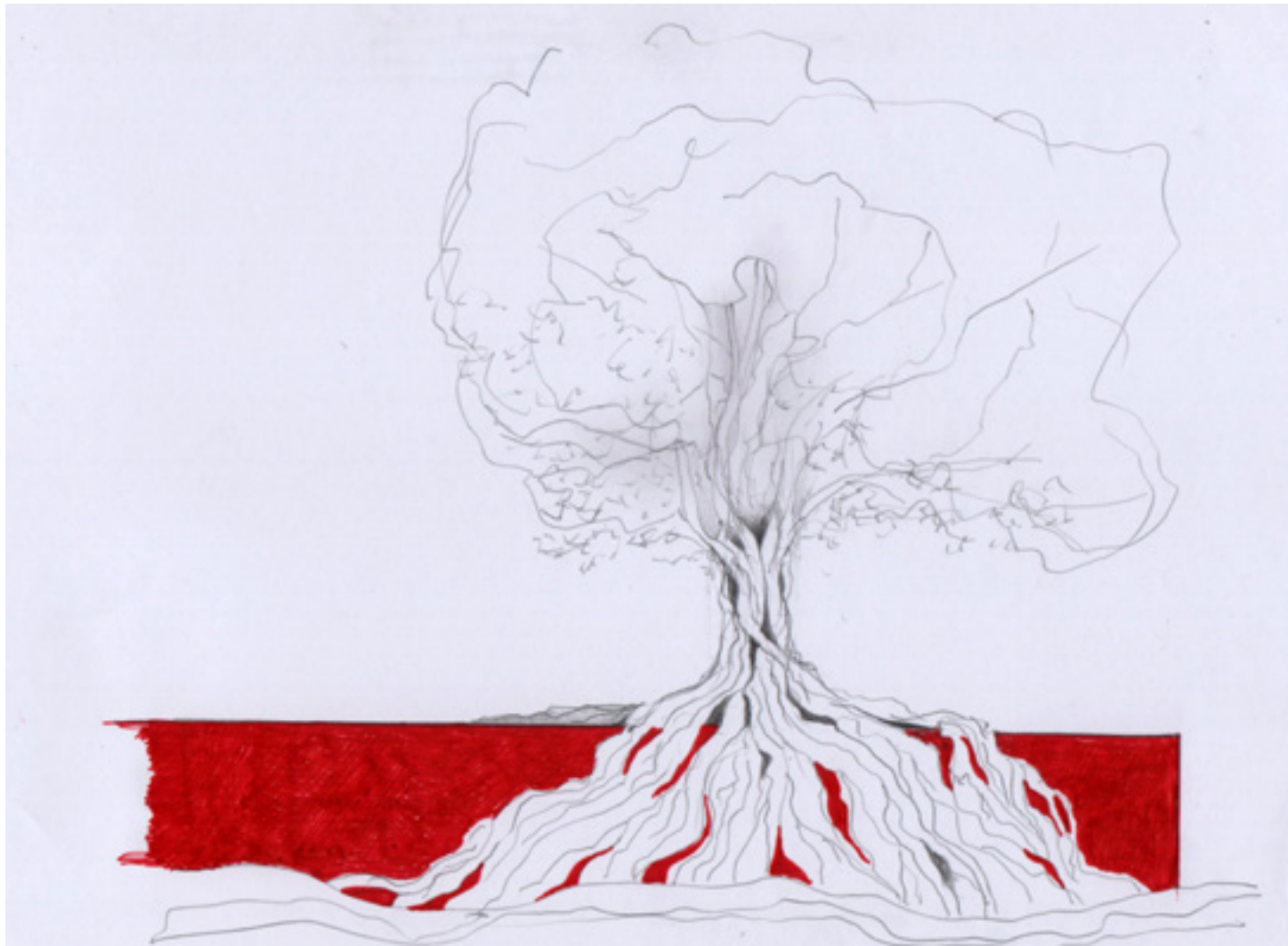
- *Banyan Fever*

Landscape Architect and certified Permaculture designer, Goustan Bodin believes we can make our tropical cities cooler and friendlier to life by using trees on rooftops and around our homes. He has found a technique to grow very large trees (any shape or size) in just a few years and calls that technique '*Banyan Fever*'.

Banyan Fever is very simple: plant banyan trees on a structure, so that tree roots grow and take the shape of the structure! We plant or sow a very large number of tiny trees that connect together when they grow, becoming a single large tree of the shape we designed !

For Pha Tad Ke, we'll arrange a duel between two fig species, that will display their growth strategies over the conquest of a red folly.

Spectacular and fascinating, fig roots will organize different spaces and views for the visitors. This structure will be a World Premiere.





Founder & General Director

Rik Gadella

Born in Aruba, in the Caribbean, in 1964. After studying philosophy, he established in Amsterdam a publishing house and gallery called Picaron Editions, devoted to works of philosophy, poetry and art and published over 100 books and 4 magazines. In 1992 he moved to Paris and New York where he created the internationally renowned art fairs Paris Photo, ArtistBook International, and Parcours des Mondes.

In 2007, he visited Laos, and had a revelation.

“Who would have thought that a week’s stay in Laos would have turned my life around so much that I’d end up moving to the other side of the world, into a country and a culture that I knew nothing about, to launch myself on a completely new path and adventure. Here I am in Luang Prabang, one of the most fascinating places on earth. And, I also have the privilege of working with amazing people on the discovering and classifying of an exceptional flora for the creation of the first botanical garden in Laos.”

Thus the project of a botanical garden took shape with the necessity of setting up a research centre worthy of the name. This decision required rigorous scientific work and the valuable input of committed partners.

For Rik Gadella, it is vital to make known the extraordinary but little-recognized biodiversity of Laos and that Pha Tad Ke is also involved in the promotion of responsible ecotourism and in a dynamic education process of a new and creative generation.



International Advisors

Jean-Pierre Dovat – Artistic Advisor

In 2004, a trip down the Mekong River took him to Luang Prabang. He immediately fell under the spell of this ancient town and decided to move there. With his associate Khamphanh Inthavong, he has set up a company called Inthado, with the aim of building a collection of long-term rental houses in a style that respects the town's UNESCO protected Lao colonial architecture. From 2010 to 2014 he ran Project Space, a multifunction non-profit space for producing exhibitions and events.



Nithakhong Somsanith – Cultural Advisor

Graduated from the National School of Medicine in Vientiane, before leaving his homeland in 1985 to continue his higher education in France. He received his Master's degree from the Institute of Visual Arts at the University of Orleans, and his PhD in Psychology from the Sorbonne. In 2005 he returned to Laos where he now devotes his time predominantly to his art and education programs for the community with the mission to preserve, promote, and transmit the cultural and artistic heritage of Laos. Somsanith is known as an international embroidery artist with his contemporary creations rooted in the traditions of his youth. In the last ten years he has exhibited his works in France, Germany, England, Italy, Spain, Sweden, the Netherlands and the USA.



Bouakhaykhone Svengsuksa – Scientific Advisor

Is a distinguished botanist with a PhD from the National Museum of Natural History in Paris, France. From 1996 till 2005 she was Dean of the Faculty of Science, NUoL, Member of National University Council and Senior Lecturer. Author of many publications amongst others the “*Field guide of wild Orchids of Lao PDR*” (2005) and “*The Dipterocarpaceae of Lao*” (1995). Now that she is retired she is busier then ever as head of several research projects and an invaluable advisor to Pha Tad Ke.



Biba Vilayleck – Resident Ethnobotanist

Biba Vilayleck is a doctor in ethno-linguistics and author of several publications on ethno-botany. She lived in Laos for over ten years and now visits every year as resident ethnobotanist at Pha Tad Ke. As a regular contributor to the French/Lao magazine *Le Renovateur* she wrote a weekly column that published over 600 plant descriptions. With Baj Strobel she wrote “*Fleurs de la Devotion*”, published by Pha Tad Ke in 2011 as the first book in our ethno-botanic series, followed in 2014 by “*Jouer la nature*”, illustrated by Tiao Somsanith Nithakhong. We are now preparing a new publication on edible flowers



Meet six of our young and dedicated staff

Veo Dalavong – Database Manager

Veo started at Pha Tad Ke as gardener in 2010 but with her passion for plants moved up and since 2015 is our Database Manager. As such she has a pivotal role to keep track of all the living and herbarium collections with over 4.500 plant records recorded in the last year. She loves plants and enjoys the family feeling at PTK. She is a graduate of the Northern Agricultural and Forestry College and comes from a farming family. Veo wants to *“be someone who helps our country to protect our plants.”*



Khamphart Tongchan – Garden and Landscape Design

Finished his BSc at the Faculty of Forestry at Souphanouvong University in Luang Prabang. He loves to draw and is in charge of all the landscape design. He comes from a nearby village and started as a gardener at PTK. He began to see what plants thrived together and what looked good. Behind his quiet demeanor and shy smile there is a real passion for his art and for nature. *“I like to see the plants grow and to move them to the place where they will grow best. You need to care for them and find what they need and how to put them together.”*



Phetsamone Manola – Coordinator of the Lao Friends of Pha Tad Ke Association

Has been working for the garden since 2010. She's from Vientiane but has lived in Luang Prabang since 2005. She brings her natural drive and energy, coupled with an impressive array of studies including nursing and business degrees, to the task of promoting local awareness of PTK. *"I heard about the garden, and when I saw it I said 'Wow! I love it!'"* Phetsamone handles interaction with government authorities, organizes the school outreach program working with teachers and children via schools and libraries, and manages the Pha Tad Ke reception at our boat landing in town.



Sith Nithaphone – General Manager

He's been a monk and a waiter and thought he would go on to be a teacher, but now he has found his niche here at PTK, where he started in 2009 as day labor and has now grown up to be the General Manager. He uses his excellent language skills to serve as liaison between staff and visitors. Sith says that he knew nothing about ecology when he first came here. *"I would cut down a tree without a second thought, but now I understand that we need to preserve and protect the natural world. So this is more than a job, it's important work for me. And not just for me, but for my country and for the world."*



Chan Khantisouk – Chef

Chan started at Pha Tad Ke in November 2016 when the garden opened to the public as our chef. With her passion for Lao cuisine and locally sourced food, she has taken the garden on to the Forbes Top 10 Table to Farm experiences. She is from the North of Laos and spent many years working in her family and then her own restaurant before moving to Luang Prabang. Chan loves working at the garden where she can create seasonal menus, using lots of herbs and healthy organic products and edible flowers. As a chef, Chan loves to talk with her customers about the food and to find out what they enjoy. *“PTK is very quiet, there is a nice view of the lily pond and everyone here works together and I enjoy.”*



Sengthong Soulinnaphou – Head Gardener

Sengthong started work at Pha Tad Ke in 2010 while studying at the Northern Agricultural and Forestry College. A good student, he successfully applied and received a Pha Tad Ke scholarship to continue his studies. After graduating, Sengthong took the opportunity to train in Israel before coming back to work at the garden as a gardener. Over 3 or 4 years Sengthong became Senior Gardener. *“I love plants and animals and now I will start working on our new butterfly farm project.”*



International Scientific Committee

Dr. Nura Abdul Karim – Plant Records Manager, Singapore BG

Prof. Dr. Jin Chen – Director Xishuangbana Tropical Botanical Garden, China

Dr. Luu Hong Truong – Head of Bioresources, Institute Tropical Biology, Hochiminh, Vietnam

Prof. Dr. Francis Halle – Botanist, France

Assoc. Prof. Dr. Sovanmoly Hul – Museum national d’histoire naturelle, Paris, France

Prof. Dr. Paul Kessler – Prefect Hortus Botanicus Leiden, Netherlands

Dr. Mark Newman – Tropical Systematic Botanist, Royal Botanic Garden Edinburgh, UK

Prof. Dr. Pranom Chantaranothai – Khon Kaen University, Thailand

Dr. Yue-Hsing Star Huang – Director General Taiwan Forestry Research Institute, Taiwan

Dr. Piyakaset Suksathan – Director Horticulture Queen Sirikit Botanical Garden, Thailand

Prof. Dr. Wei-Bang Sun – Executive Director Kunming Botanic Gardens, Yunnan, China

Laos Scientific Committee

Assoc. Prof. Dr. Somchanh Bounphanmy – Dean Faculty of Science, NUoL

Somsanith Bouamanivong – Director National Herbarium Laos

Dr. Sounthone Ketphanh – Director Forest Research Center, NAFRI

Assoc. Prof. Dr. Bouakhaykhone Svengsuksa – Scientific Advisor Pha Tad Ke Botanical Garden

Dr. Sy Sohmer – International Scientific Advisor Pha Tad Ke Botanical Garden

Second Phase Development - 2020/2025



Pha Tad Ke is setting new standards in sustainable and environmentally responsible tourism, giving back to Lao communities, preserving local culture and the environment. The garden provides jobs to local villagers and creates a nurturing platform for young talent to develop new skills from gardening to science, education and hospitality.

To bring the garden and our vital work for biodiversity conservation to the next level we will be establishing a capital campaign to improve our facilities and create an ambitious five-year research, education and capacity building program. With this Pha Tad Ke Botanical Garden will take a major step towards the realization of its goals.

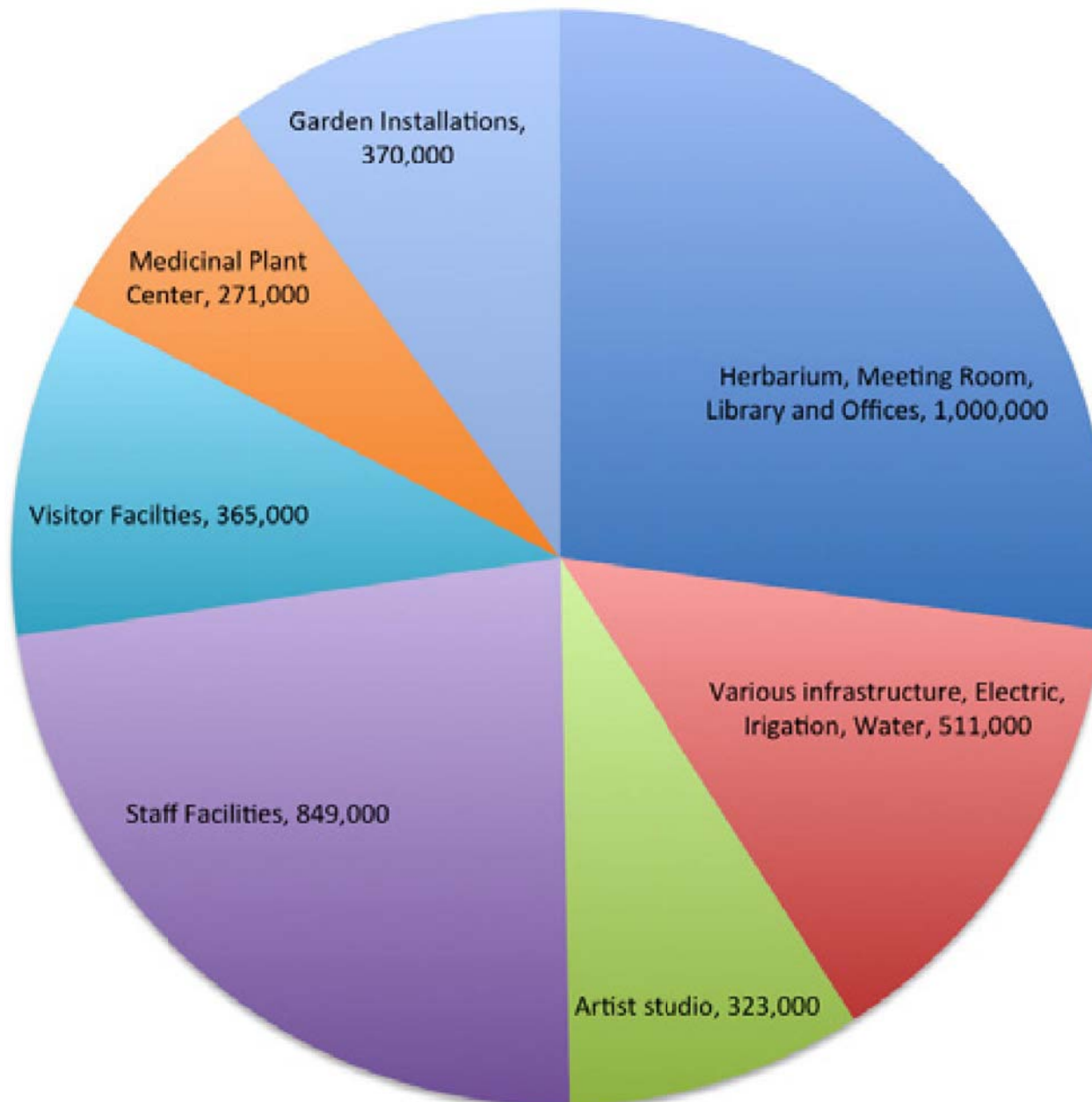
The proposal for our Five-year plan, followed by A General Introduction to Plant Collecting and the Flora of Lao PDR, is included. This summarizes why the Flora of Lao PDR is one of the least known in Asia, and why this work is needed in order to be able to study and conserve one of the worlds least known bio-diversity ecological hot spots.

Our goals are:

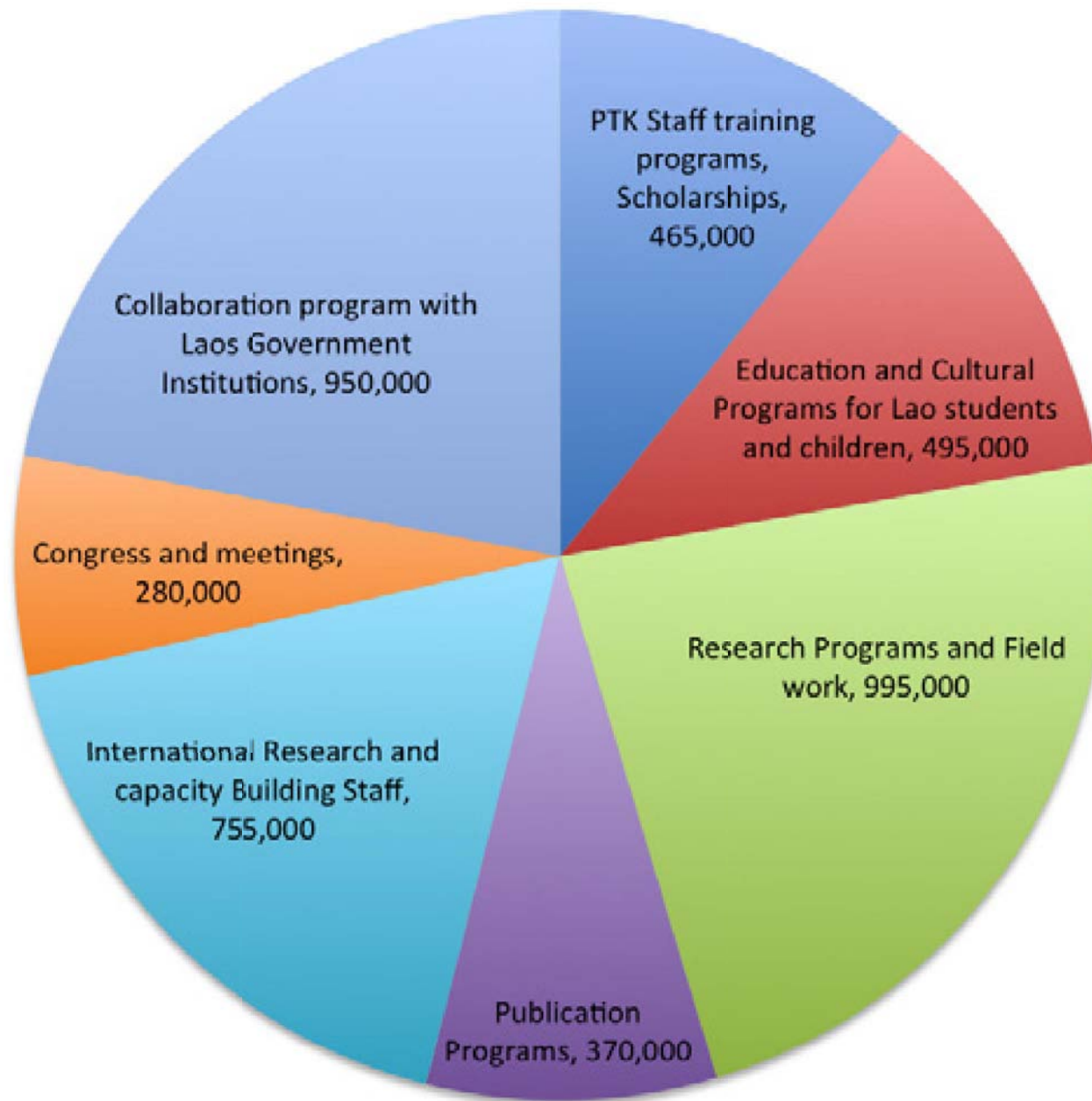
- To establish an endowment fund to support 32% of our yearly overhead, the other 68% coming from our own revenues from visitors and donations and;**
- To raise Eight-million US\$ for the installation of our necessary infrastructure and buildings (3,7mln) and 4,3mln for the five-years Research, Education and Capacity Building Programs.**

2nd Phase Capital Fundraise Drive

Garden Development and Infrastructure - 3,689,000 US\$



2nd Phase Capital Fundraise Drive Research, Education & Capacity Building - 4,310,000 US\$



Collecting

The mission of Pha Tad Ke Botanical Garden is to establish a collection of living plants with ethnobotanical information and a biodiversity conservation program that will be useful for botanists and their research projects. This project is the first of its kind in a country suffering from a lack of knowledge in this field. Our objectives are to establish a number of specialized collections of native plants, to preserve the customs and uses associated with these plants, and to promote their future use both in ceremonies and as medicines or in traditional construction. The Garden is creating five thematic collections, which will make possible research directed at the reintroduction of wild plants and their restoration into the natural environment. To date over 140 botanical field trips have been organised in collaboration with international botanical gardens and several in and ex-situ conservation projects are in development.

Herbarium & Offices

Pha Tad Ke will create a 400m² herbarium to accommodate specimens collected in the field, to facilitate biodiversity research and to encourage the study of the preservation of the Flora of Laos. In addition to the Herbarium, there will be a 400m² area for the library, meeting room, staff offices and a seed bank.

The herbarium will be a tool for training and also for providing subjects for study in the flora and biodiversity, and will eventually consist of more than 15,000 indigenous species. This herbarium will demand rigorous discipline in its development and careful conservation work. Each collected specimen will be given a classification, a description and precise details of its collecting history.

Medicinal Plants & Nursery

Laos has many medicinal plants. The uses of these were once the province of minority groups living in the mountains, and little remains known by the greater Lao population. Pha Tad Ke has created a medicinal garden of about 4,000m² to show and evaluate the usage of these plants through research, educational programs and publication of academic works on the subject. Already ten thematic ethnobotanic plots have been established and two more are in development. We create a 4.000m² nursery for our scientific and garden collections of over 1.500 different plant and trees species we currently have in the gardens.

Mist House

To show our scientific collections of orchids, ferns and carnivorous plants, Pha Tad Ke Botanical Garden will build a Mist House. A 300m² structure will hold 900 species from Laos and neighbouring areas. The purpose of the house is the protection of these fragile and sensitive plants and to improve their visibility and accessibility. Once they are in place and have been developed and studied, the house will give visitors the opportunity to discover the orchids of Laos in an environment designed for serenity and peace.

Education

One of the main goals of PhabTad Ke is that, within 20 years, it will be directed and run by an all-Lao team (administration, training, and reception) and to transfer the ownership to a foundation. The population of Laos to date has not had the benefit of the necessary resources to conduct such a project, and there few Lao botanists. For this reason, Pha Tad Ke created these teams and promotes botanical and horticultural education in Laos. Thus, an important part of the budget of Pha Tad Ke is used for training and capacity building. Over 3.00 staff training days have been organised in Laos and over 1.00 training days completed internationally. Over 84 workshops have already been given to Lao college and university students in Field botany, Green horticulture, Ecology, Management coaching, Photography and Botanical drawings.

Publications

To promote our goals and to reach a broad public, in Laos as well as internationally, we have published 16 books, over 36.000 copies of our books have been distributed free of charge through local schools and libraries. We are preparing several new book publications: Children's Books, Field Guides as well as Teachers Manuals and to be able to reach a public as large as possible we will create several online databases and have already started to make available through our website important source materials.

Ecological Awareness & biodiversity conservation

Among its principal objectives, Pha Tad Ke seeks to support environmental education in Laos, a country blessed with a considerable degree of biodiversity, an essential keystone for the region in terms of natural resources. At this point,

it is imperative that Lao people understand the importance and uniqueness of their natural heritage and want to preserve it. Pha Tad Ke seeks to involve institutions in financing teaching programs in environmental awareness aimed at the Lao people and the general public.

To this end we have published a manual for primary school teachers and provided trainings to teachers on how to set up simple school gardens. Over 2.900 school children have visited PTK as part of organised garden excursions, and over 1.100 university and college students.

Sustainable agriculture

Part of PTK's research and education work will focus on sustainable agriculture through permaculture and organic gardening practices. A large area of the garden is currently being developed for a permaculture demonstration and research farm and will open to the public and for teaching courses in February 2019. Sustainable, ecologically sound agricultural practices and trainings will be developed in partnership with local and international organisations.

PTK will run trials of the "Alley Cropping" farming technique pioneered in Central and South America. These trials will be conducted next to the permaculture farm on 2ha of land and will include the investigation of potential local leguminous tree species that are good nitrogen fixers, fast growers, take pruning well, provide good mulch, shade-out weeds and provide secondary products (such as timber). The results of these trials will be used to improve the alley cropping technique best suited to the environment of Lao PDR.

Arts & Culture

It is our conviction that biodiversity conservation can only be attained through a fundamental change of awareness that leads towards a holistic view of nature and society. Arts and Culture play a vital role in this, as they facilitate our reconnection with our imagination and guide us to embrace our relationship with nature, as an integral part of the whole. Through the installation of an artist studio where we can receive artists in residence as well as provide workshops and trainings and host festivals in the garden we strive to achieve these exciting goals.



Pha Tad Ke Botanical Garden

Proposed Five Years Plan for Research, Education and Capacity Building Programs

Currently the flora of Lao PDR is poorly studied and barely understood. There are many potential avenues of plant research to pursue and over the next five years, research at PTK will be focused along four of them: important plant groups, ecological profiles and biodiversity conservation projects, ethnobotany and sustainable agriculture with a permaculture demo and research farm.

Important plant groups

The plant groups that will be worked on are the Gingers (Zingiberaceae), Orchids (Orchidaceae), Dipterocarp trees (Dipterocarpaceae) and Ferns (various families). PTK has established Orchid and Ginger collections and gardens. These were created and are managed with help from expert collaborators at other institutions. Staff at PTK work with the National University of Laos on Orchids and with Singapore Botanic Gardens and the Royal Botanic Gardens, Edinburgh on Gingers. These plant groups are very diverse in Lao PDR and continued study is crucial.

The Dipterocarps and Ferns are very poorly documented and understood, and yet are of key importance in many ecosystems. The Dipterocarps are under serious threat due to their high timber value, and Lao PDR has a number of Critically Endangered and Endangered species. PTK will research on where to find these trees and how to conserve them, as well as establishing a comprehensive living collection at the garden. The first stages of this work will involve extensive fieldwork. Dipterocarps do not fruit and flower regularly, but only do so when the conditions are exactly right. Each species has a unique phenology, and there will be regular trips to field sites to establish what this is for each tree. Only once this is established will PTK be able to plan ex-situ conservation efforts. The seeds of this family cannot be stored (they are recalcitrant) and they must be collected and planted within about one week of maturing. This presents obvious challenges, and it is expected to take many years to perfect horticultural processes and gather all the necessary information. The initial work will be done in collaboration with South East Asian Botanic Gardens network partners.

Work on the ferns of Lao PDR will be undertaken with researchers at Singapore Botanic Gardens, and potentially other institutions, and will include the establishment of

a Fern Garden for public display. There are many fern families represented in Lao PDR, and their taxonomy is not always clear. The information gathered from the plants in the collection and from field surveys/collection trips will assist in undertaking more complex botanical taxonomic work in the future. The initial, small field guide on ferns to be published will be a starting point.

All of PTK's planned field guides will be of general use, as well as useful scientific documents.

Ecological profiles

PTK's work on ecological profiles will result in the publication of six books (80 pages) each dealing with one type of environment. These six profiles books will be created in collaboration with other Lao organisations, National Protected Areas Management and will consider environment types found in Nationally Protected Areas (NPAs). Of general interest, they will include information on key plants and animals, and will provide a foundation for future scientific work in these areas.

Limestone karst areas are unique ecosystems, and have high rates of endemism and speciation, particularly in plant groups such as Gesneriaceae, Balsaminaceae,

Orchidaceae, Dracaenaceae and Araceae. They will be a focus for one of the books. Due to the climatic regime of Indochina (particularly the long dry season) many of the species found on these karsts are found nowhere else in the world. The Laotian areas have not yet been greatly disturbed, and there are good-sized areas remaining. Information gathered from this work will be used to inform documents such as the IUCN (International Union for Conservation of Nature) Red List, a globally important conservation document used by governments to decide conservation strategies.

Another important environment to be worked on is the unique forest found in the Nam Nakai Theun National Protected Area (NPA) in central eastern Lao PDR. Project Anoulak, a conservation NGO based in this NPA, will work with us on this. PTK will also work with botanists and field staff from the National University of Laos and international gardens/research institutes such as the Royal Botanic Garden, Edinburgh. PTK is in discussion with a number of other organisations, both national and international, to establish working partnerships for this work in other NPAs.

Ethnobotany

One of the central themes of our garden is the rich cultural history of the use of a wide range of different plants by the people of Lao PDR for everything from food and medicine to clothes and construction. The people of Laos are still very connected to this heritage, but the knowledge is being steadily lost as Lao PDR develops. Preserving this ethnobotanical knowledge through PTK's ethno-botanic garden, teaching and publications is something PTK is doing, and it will continue to be developed with the help of PTK's resident ethnobotanist, Dr Biba Vilayleck.

PTK will publish at least two more ethnobotany books during the next five years and collaborate on the National Biodiversity Web Portal. This will be based largely on PTK's existing ethnobotany garden and living collection, which will be expanding and diversifying. Dr Vilayleck has extensive information on plants currently not grown at PTK. New plants will be acquired. PTK staff will continue to gather information from local contacts and through organisations such as the Elephant Conservation Center, whose mahouts are able to provide new information on plants of importance for elephant husbandry.

The garden includes a section dedicated to the medicinal plants of the Hmong ethnic group. This will be expanded to include areas dedicated to some of the other ethnicities found in Lao PDR, such as the Khmu and Akha and an area with the historical Heritage plants of Luang Prabang.

Sustainable agriculture

PTK's research and education work will focus on sustainable agriculture through permaculture and organic gardening practices. A permaculture demo and research farm will open in 2019 and will provide trainings to local farmers as well as the international public. Sustainable, ecologically sound agricultural practices will be developed in partnership with local and international organisations, as well as proposing international level permaculture design courses.

Climate change and its global impact presents enormous challenges and stress on biodiversity conservation. The climate in Lao PDR presents a challenge for year-round growing due to the long dry season, and there is inadequate knowledge currently available on how to combat this issue without resorting to measures such as

using large quantities of chemical fertilizer and extensive irrigation. PTK staff are researching and teaching more environmentally friendly organic methods to increase crop yields and to expand the growing season.

PTK will also be running trials of the “Alley Cropping” farming technique pioneered in Central and South America. These trials will be conducted in conjunction with the permaculture farm, and will include investigation of potential local leguminous tree species that are good nitrogen fixers, fast growers, provide good mulch, shade-out weeds and provide secondary products (such as timber). In the future, the results of these trials will be used to intensify alley cropping techniques best suited for the Lao PDR and help mitigate climate change effects and reduce slash and burning.

Capacity Building

Since the start of our project a major part of our work has focussed on capacity building for our own staff as well as university and agricultural college students, primary and secondary school children. In collaboration with the Royal Botanic Garden Edinburgh, Queen Sirikit Botanic Garden Chiang Mai and the Singapore Botanic Gardens much in

and ex-situ trainings have been provided.

We have published six books in Lao on ecological and ethnobotanic subjects as well as three manuals; on horticulture, a Teachers’ Manual for school gardens and a Permaculture Manual. We intend to expand these activities on a larger scale by developing more research projects and collaborations with national and international colleges and universities as well as providing study grants for Lao students and organize regional and international workshops at Pha Tad Ke.

Bryony Smart

Botanist at Pha Tad Ke 2016/2018



A General introduction to plant collecting and the Flora of Lao PDR

The flora of Lao PDR is one of the least known in Asia. Although it was revised in the *Flore générale de l'Indochine* (Lecomte 1907–1950) and is being revised again in the *Flore du Cambodge, du Laos et du Viêt Nam* (Aubréville 1960–present), neither of these projects has treated Lao PDR independently. Both these studies group the flora of Lao PDR with that of its neighbours, Cambodia and Vietnam and the great majority of specimens cited are from Vietnam.

The earliest botanical collectors in Lao PDR were French. Clovis Thorel was the first to make a significant contribution, collecting along the Mekong in southern and central Lao PDR from 1866–1868. He was followed by Jules Harmand who also worked mainly in the south in the 1870s. These pioneers were followed by Henri D'Orléans (1892, in northern Lao PDR), Clément Dupuy (1900, around Louangphrabang) and Jean- Baptiste Counillon (1909, along the Mekong). The most prolific collector in the 20th century was Eugène Poilane who worked in various provinces of Lao PDR from the 1920s–1940s.

At the same time Camille Joseph Spire was collecting in Xiengkhouang. More detail about the flora and collectors in Cambodia, Lao PDR and Vietnam may be found in the “*tome préliminaire*” to the *Flore générale de l'Indochine* (Gagnepain 1944).



Historical events all but prevented botanical work in Lao PDR between World War II and the 1990s though some collections were made by Jules Vidal, Pierre Tixier and Allen D. Kerr in the 1950s and early 1960s. Taking all these collections together, it's roughly three specimens per 100 km² that have been collected in Lao PDR up until the early 1990s. Such figures bear comparison with statistics such as 50 per 100 km² in Thailand, and 1.500 in the UK.

Starting around 1990, Lao botanists began to intensify their study of the flora, often in cooperation with foreign scientists. They have contributed to accounts of families for the *Flore du Cambodge, du Laos et du Viêt Nam* and several broadly based forestry projects with a taxonomic component, such as the DANIDA funded Lao Tree Seed Project (LTSP) that formed part of the regional Indochina Tree Seed Project. A significant output of this project was the manual, *Forests and Trees of the Central Highlands of Xieng Khouang* (Lehmann et al. 2003). Other studies have focused on plants which yield non-timber forest products such as rattans or medicinal plants (for example Evans et al. 2001, Somsanith Bouamanivong 2005) or on particular National Protected Areas (Maxwell, 1999; Chansamone Phongoudom, 2000).



Orchids have been of special interest and there has been a considerable increase in our knowledge of this group (Schuiteman & De Vogel 2004, Svengsuksa & Lamxay 2005). This is continuing through the work of the ORCHIS project (www.orchisasia.org), a collaboration between the National University of Lao PDR (NUoL), Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD) and the Nationaal Herbarium Nederland. Other botanical work that is currently under way in Lao PDR includes Biodiversity Informatics and co-Operation in Taxonomy for Interactive shared Knowledge base (BIOTIK), an EU funded project concentrating on large tree species, and a number of MSc and PhD ethno botanical projects based at NUoL and Uppsala University.

Three checklists for the plants of Lao PDR have been published:

1. *Noms vernaculaires de Plantes en Usage au Laos* (Vidal 1959), lists more than 1000 species with their local names and uses.
2. *Checklist of Lao Plant Names* (Callaghan 2004) lists more than 2000 taxa, including more than 300 cultivated and introduced plants. This second checklist

is primarily based on Vidal's work, the fascicles of the *Flore du Cambodge, du Laos et du Viêt Nam* that have been published since 1960, enriched with a range of unpublished field surveys.

3. A checklist of the Vascular Plants of Lao PDR was published in 2007 as part of the Darwin Initiative project: Taxonomic Training in a Neglected Biodiversity Hotspot in Lao PDR. This checklist was made by:

Mark Newman - Royal Botanic Garden Edinburgh

Sounthone Ketphanh - Forestry Research Centre, National Agriculture and Forestry Research Institute, Laos

Bouakhaykhone Svengsuksa - Department of Biology, Faculty of Science, National University of Laos

Philip Thomas - Royal Botanic Garden Edinburgh

Khamphone Sengdala - Forestry Research Centre, National Agriculture and Forestry Research Institute, Laos

Vichith Lamxay - Department of Biology, Faculty of Science, National University of Laos

Kate Armstrong - Royal Botanic Garden Edinburgh

The checklist includes 4,850 species of native, introduced, cultivated and naturalised vascular plants. The information in this checklist derives from several sources. The first was an electronic version of Latin names

contained in Callaghan's *Checklist of Lao Plant Names* (Callaghan 2004) and generously donated by the compiler. The second is the specimen based accounts in the fascicles of the *Flore du Cambodge, du Laos et du Viêt Nam* that have either been published since 1960 or are due to be published in the near future. For each taxon, at least one specimen per province was selected for inclusion in the database. The third source is the records of specimens collected during recent botanical projects in Lao PDR. In most cases the specimens are lodged in Lao herbaria with duplicate sets at Paris, Edinburgh and Leiden.

In addition to the specimen-based records, a range of non-specimen based electronic and printed literature sources have been used. Published and unpublished accounts for the Flora of Thailand and the Flora of China have been consulted and taxa that have been noted to occur in Lao PDR included in the checklist. The *World Checklist Series*, both published and available on the internet has also been used. These records are not directly supported by specimens and are therefore not as reliable.

Pha Tad Ke Legal and Financial Structure, Donors and Partners

Pha Tad Ke Botanical Garden is a Foreign Investment company registered in Luang Prabang, Lao PDR.

As a social '*profit-for-purpose*' business 100% of our revenues are reinvested in the garden development, research, education and community projects. To support the work of Pha Tad Ke Botanical Garden several non-profit associations help us with scientific, educational and financial support.

Donations to these organisations can be tax-deductible if you are a citizen of that country.

Les amis de Pha Tad Ke Botanical Garden, created in 2010 in Paris, France.

President Hugues de Saint Simon / Secretary Nathalie Amae / Treasurer Alexandre Espenel

Stichting Vrienden van Pha Tad Ke Botanical Garden, created in 2011 Rotterdam, the Netherlands

President Koos de Wilt / Secretary Peter Happel / Treasurer Krijn de Koning

Laos Friends of Pha Tad Ke Botanical Garden, created in 2012 in Luang Prabang, Lao PDR

President Michel Somsanouk / Secretary Bouakhaykhone Svengsuksa / Treasurer Sith Nithaphone

Luang Prabang Fund for Culture and Conservation (LPFCC)

Founded in 2011, the mission of LPFCC is to celebrate cultural and natural diversity in Luang Prabang and Laos, through education, research, exhibition, and dissemination. LPFCC supports innovative projects and activities that share the same goals upon which the Fund was founded. LPFCC is a United States-based 501(c)(3) organization.

Donors

PLATINUM - upwards of 100.000\$

Jean-Pierre Dovat, Switzerland

Private Foundation, Netherlands

GOLD - 25.000\$ to 100.000\$

CEPF Program – Conservation International, USA

FSD Program – French Embassy, Laos

John and Monique Hummel, Netherlands

SDC – Swiss Agency for Development and Cooperation, Laos

Toon and Carmen Gadella-Every, Netherlands

SILVER - 5.000\$ to 25.000\$

Anna Maria, Fabio & Monica Rossi, UK / Hong Kong / Italy

Antoine Barrere, France

Adriana Pietta & Markus Barmettler, Switzerland

Claude Burke, Switzerland

Anne Pennicot-Faiveley, France

Brennan Foundation, Australia

CHK Charities, UK

Diesslin Foundation, USA

Dr. Cecilia Koo Botanic Conservation Center, Taiwan

FAO, Laos

IRI – International Republican Institute, USA

Jean-Marc Decrop, Hong Kong

Jeremy and Kristin Andrus Fund, USA

John Tan, Singapore

Luang Prabang Fund for Culture and Conservation, USA

Maxwell Family Foundation, Australia

Giancarla and Michael Alen-Buckley, Ireland

Partners

Pha Tad Ke gratefully recognizes the following organizations for their support over the years:

Agence Francaise de Developpement – AFD

Alliance for Conservation Tree Genomics – South East Asia

BKF – Bangkok Forest Herbarium – Bangkok, Thailand

BGCI – Botanic Gardens Conservation International – UK

Chanticleer Botanic Garden – USA

Conservation International Foundation – CEPF Program – USA

Dr. Cecilia Koo Botanic Conservation Center – Taiwan

Embassy of the United States – Vientiane, Lao PDR

EXO Foundation – Phnom Penh, Cambodia

FAO – Vientiane, Lao PDR

Fondation Cartier – Paris, France

Fondation Franklinia – Belgium

Fonds Social Developpement – Ambassade de France, Vientiane, Lao PDR

GEF – USA

IRI – International Republican Institute, USA

IUCN – Lao PDR

Khon Kaen University – Thailand

LUXDEV – Luxemburg

Missouri Botanical Garden – Sacred Seeds Program – USA

National Herbarium Laos – Vientiane, Lao PDR
NAFRI – National Agriculture and Forestry Research Institute – Lao PDR
National University of Laos – Vientiane, Lao PDR
Northern Agriculture and Forestry College – Luang Prabang, Lao PDR
PUM – Netherlands senior experts – The Netherlands
Queen Sirikit Botanic Garden – Chiang Mai, Thailand
Royal Botanic Garden Edinburgh – UK
Royal Horticultural Society – UK
SDC – Swiss Agency for Development and Cooperation for the Mekong Region – Lao PDR
SEABG – South East Asian Botanic Gardens Network – Taiwan
Singapore Botanic Garden – Singapore
Souphanouvong University – Luang Prabang, Lao PDR
Sydney Royal Botanic Garden, Australia
TABI – Lao PDR
TISTR – Thailand Institute for Scientific and Technological Research – Bangkok, Thailand
Thip Khao & Chef Seng – Washington DC, USA
Traditional Arts & Ethnology Center – Luang Prabang, Laos
The Royal Botanic Gardens Domain and Trust – Australia
UNDP – GEF Program – Lao PDR
University of San Francisco – USA
Xishuangbanna Tropical Botanical Garden – Chinese Academy of Sciences, China

And for their continuous and generous help and support The Friends of Pha Tad Ke Associations in France, the Netherlands, Lao PDR and the Luang Prabang Fund for Culture and Conservation in the USA.

A scenic view of a river at sunset. The sky is a mix of blue, orange, and yellow. In the background, there are dark silhouettes of mountains. In the foreground, a wooden boat with a canopy is on the river. A person is standing on a small wooden platform next to the boat. The water is calm and reflects the colors of the sky.

with all our thanks

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Pha Tad Ke Botanical Garden

Ban Wat That PO Box 959

06000 Luang Prabang, Lao PDR

Telephone +856-71-261000 & Garden +856-30-2866000

contact@pha-tad-ke.com

www.pha-tad-ke.com