



## **Twenty years Endangered Primate Rescue Center, Vietnam – Retrospect and Outlook - Report 2012**

**Tilo Nadler**

Endangered Primate Rescue Center, Cuc Phuong National Park, Nho Quan District, Ninh Binh Province, Vietnam.  
<t.nadler@mail.hut.edu.vn>

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### **Summary**

As the first rescue center in the whole of Indochina, the Endangered Primate Rescue Center over the years has developed into a recognized leading institution both on national and international level. After twenty years of existence the Endangered Primate Rescue Centre has grown, and now it is a good opportunity to review the development and to summarize the work of the EPRC.

The year 2012 started with a new protectorate for the Endangered Primate Rescue Center. In the past a part of Frankfurt Zoological Society's projects in Vietnam with beginning of the year Leipzig Zoo, Germany became the partner and bearer of the EPRC. The EPRC continues the "Vietnam Primate Conservation Program" for a number of highly endangered primate species.

During the last twenty years the number of cages at the EPRC has grown to now 50 enclosures with a total surface of 3200 m<sup>2</sup>, which house 150 primates which are either 'Critically Endangered' or 'Endangered' species. More than 180 primates of 9 species are born at the center, several for the first time in captivity. The reintroduction of captive bred individuals is the final goal of the center and started with the reintroduction of lorises, followed by Hatinh langurs and Delacour's langurs.

The EPRC is dedicated to educating the public about primates, it is able to do this through: guided visitor tours, TV-reports, publications, training courses for students, rangers, and caretakers from other animal holding facilities in Vietnam.

The scientific work conducted at the EPRC, is often carried out in close cooperation with national and foreign institutions and is represented in over 130 publications, which include scientific papers, books and presentations at international conferences and events.

## **Hai mươi năm – Nhìn lại quá trình phát triển của Trung tâm Cứu Hộ Linh trưởng Nguy cấp, Việt Nam – Báo cáo 2012**

### **Tóm tắt**

Sau hai mươi năm thành lập và tồn tại của Trung tâm Cứu hộ Linh trưởng Nguy cấp, đây chính là thời điểm để nhìn lại sự phát triển và tổng kết các hoạt động mà EPRC đã thực hiện trong thời gian qua. Là một trung tâm cứu hộ động vật hoang dã được thành lập đầu tiên trong khu vực Đông Dương, Trung tâm đã phát triển qua thời gian và được sự công nhận và hoan nghênh cả trong nước và quốc tế.

Năm 2012 là một mốc đánh dấu thay đổi đối tác và nhà tài trợ cho Trung tâm Cứu hộ Linh trưởng Nguy cấp. Trước đây, được Hội Động vật học Frankfurt, CHLB Đức tài trợ thì nay Trung tâm được Vườn thú Leipzig, CHLB Đức tiếp quản. Trung tâm Cứu hộ Linh trưởng Nguy cấp Việt Nam vẫn tiếp tục tiến hành nhiều hoạt động của dự án “Chương trình Bảo tồn Linh trưởng Việt Nam” nhằm quan tâm tới những loài thú linh trưởng nguy cấp cao.

Trong 20 năm hoạt động và phát triển, Trung tâm đã cho xây dựng 50 chuồng nuôi có tổng diện tích mặt chuồng là 3.200 m<sup>2</sup>, đang cứu hộ và nuôi dưỡng hơn 150 cá thể của 15 loài linh trưởng “Cực kỳ Nguy cấp” và “Nguy cấp”. Với 180 cá thể của 9 loài đã được sinh sản tại Trung tâm, trong số đó có một số loài linh trưởng lần đầu tiên được sinh sản thành công trong điều kiện nuôi nhốt trên toàn thế giới. Chương trình tái hòa nhập linh trưởng quý hiếm được sinh sản trong nuôi nhốt trở về tự nhiên là mục tiêu cuối cùng của Trung tâm với một số thử nghiệm đã thực hiện với loài Cu li nhỏ, voọc Hà Tĩnh và voọc mông trắng.

Trung tâm Cứu hộ Linh trưởng Nguy cấp đã đóng góp cho việc phổ cập kiến thức về linh trưởng và nâng cao nhận thức bảo tồn linh trưởng trong cộng đồng thông qua công tác của nhân viên chăn nuôi thú, hướng dẫn viên du lịch, nhiều phóng sự và tin bài trên các phương tiện thông tin đại chúng. Nhiều ấn phẩm khoa học được công bố cả trong nước và quốc tế, đào tạo và tập huấn cho sinh viên, lực lượng kiểm lâm về nghiên cứu ngoại nghiệp, cứu hộ và chăm sóc linh trưởng.

Công tác nghiên cứu khoa học của Trung tâm rất chuyên sâu và luôn có sự hợp tác khoa học với các viện nghiên cứu, các trường đại học và các tổ chức bảo tồn trong và ngoài nước. Đến nay, Trung tâm Cứu hộ Linh trưởng Nguy cấp đã công bố được hơn 130 ấn phẩm bao gồm các bài báo khoa học, tạp chí, sách và tham luận khoa học tại nhiều Hội nghị khoa học Quốc gia và Quốc tế.

## Introduction

After twenty years of existence the Endangered Primate Rescue Center has grown, and now is a good opportunity to review the development and to summarize the work of the EPRC. The EPRC first started as an experiment to rescue some single individuals of highly endangered primate species. But before long, the center developed over the years into a recognized leading institution both on national and international level, which is highly praised through visits of numerous politicians and renowned scientists (Fig. 1 and 2). Since its establishment in 1993 – as the first rescue center in Indochina – the number of primate species and individuals has grown over the years and the center now keeps a high number of ‘Critically Endangered’ and ‘Endangered’



**Fig.1.** The former President of Vietnam Tran Duc Luong and his wife on their third visit at the Endangered Primate Rescue Center. Photo: Luong Van Hien.



**Fig.2.** The former President of Vietnam, and successor of Tran Duc Luong, Nguyen Minh Triet, and the Chairman of Ninh Binh Province Bui Van Trang visit the Endangered Primate Rescue Center. Photo: Luong Van Hien.

primates in captivity (Fig. 3).

The year 2012 represented a new start for EPRC as a new partner and sponsor emerged. In the past the center was run as a project of Frankfurt Zoological Society. With an intensified focus from Frankfurt Zoological Society on the protection and conservation of large wilderness areas with a high biodiversity, the function and profile of a rescue facility doesn't correspond anymore with the strategic profile of the organisation.

Leipzig Zoo in Germany made the generous offer to act as organizational and financial bearer for the Endangered Primate Rescue Centre. The funding and support offered from Leipzig Zoo, which itself is a leading European zoo in animal husbandry and care is a profitable advantage for the management and future development of the center. This connection opens up the chance for future improvement at the center, through innovative techniques regarding captive breeding, nutrition, enrichment, husbandry, veterinary care and reintroduction.

The center acts as refuge for confiscated primates of endangered species. The possibility for housing of the endangered primates at the EPRC supports the activities of forest protection authorities in combating the illegal wildlife trade. With the increasing number of animals at the center, the establishment of captive breeding programs for highly endangered primate species was applicable as a source for future reintroduction. Beyond this the center provides an unique possibility for research and studies on highly endangered primates under captive conditions and in the field.

The EPRC continues the *Vietnam Primate Conservation Program* for a number of highly endangered primate species.

Frankfurt Zoological Society continues the conservation work in Vietnam, focusing on the conservation of the 'Critically Endangered' grey-shanked douc langur and protection of its habitat, in particular Kon Ka Kinh National Park...

## Endangered Primate Rescue Center

### Facilities at the EPRC

The facilities at the EPRC have grown along with the center; temporary cages built in 1993 were replaced by two 275 m<sup>2</sup> double cage units which were constructed in a new area of the EPRC (Fig. 4). Over the years the number of cages has grown to 50 with a total surface of 3.200 m<sup>2</sup> (Fig. 5). In addition to the enclosures three houses were built. These houses are equipped with electrical heating systems to provide suitable conditions for individuals from southern Vietnam, confiscated during the winter season and for groups with young animals. In 1997 a separate quarantine complex was built with four indoor and four outdoor cages, a surgery and a preparation room (Fig. 6). In 1998 the first 2 ha electric fenced semi-wild area with primary forest was completed which enables the center to keep langur groups under natural conditions without provisioning. A second 5 ha semi-wild area was built in 2001 (Fig. 7). The total area of the center now comprises 1.5 ha with cage constructions and the two semi-wild areas.



**Fig.3.** The EPRC was recognized in the "Vietnamese Guinness Book of Records" as the facility with the highest number of 'Critically Endangered' and 'Endangered' primates.



**Fig.4.** In 1995 the first two cages and a station house were constructed in the new area of the EPRC at Cuc Phuong National Park. Photo: Tilo Nadler.



**Fig.5.** Currently the EPRC has 50 cages in the shadow of large native trees which were planted at the beginning of the cage construction in this area. Photo: Tilo Nadler.



**Fig.6.** In 1997 a separate quarantine complex was finished with indoor and outdoor cages and a surgery. Photo: Jens Gerlach.

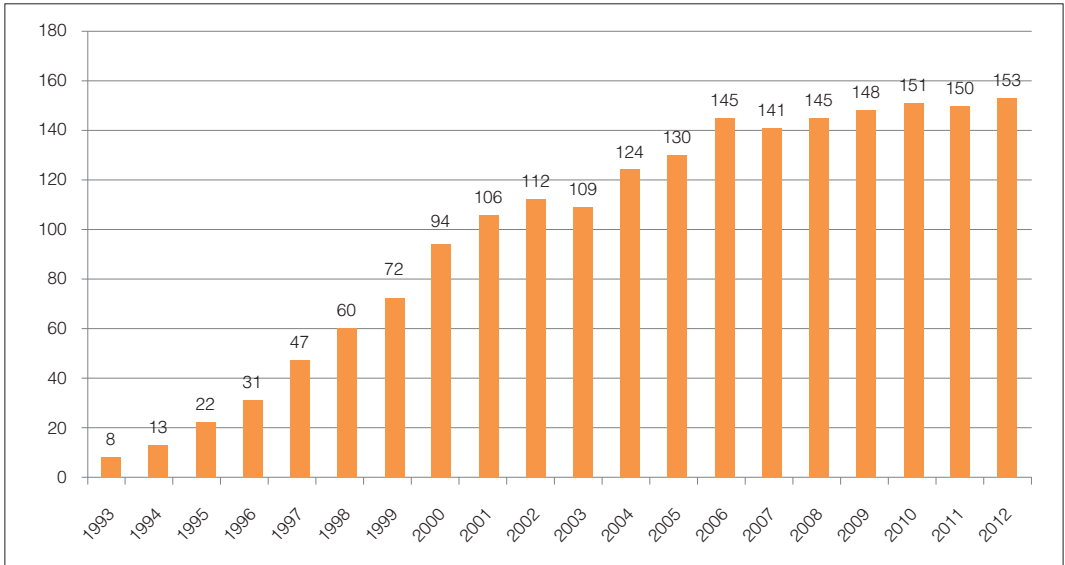


**Fig.7.** In 2001 a second and 5 ha large semi-wild area with primary forest was completed. Photo: Tilo Nadler.

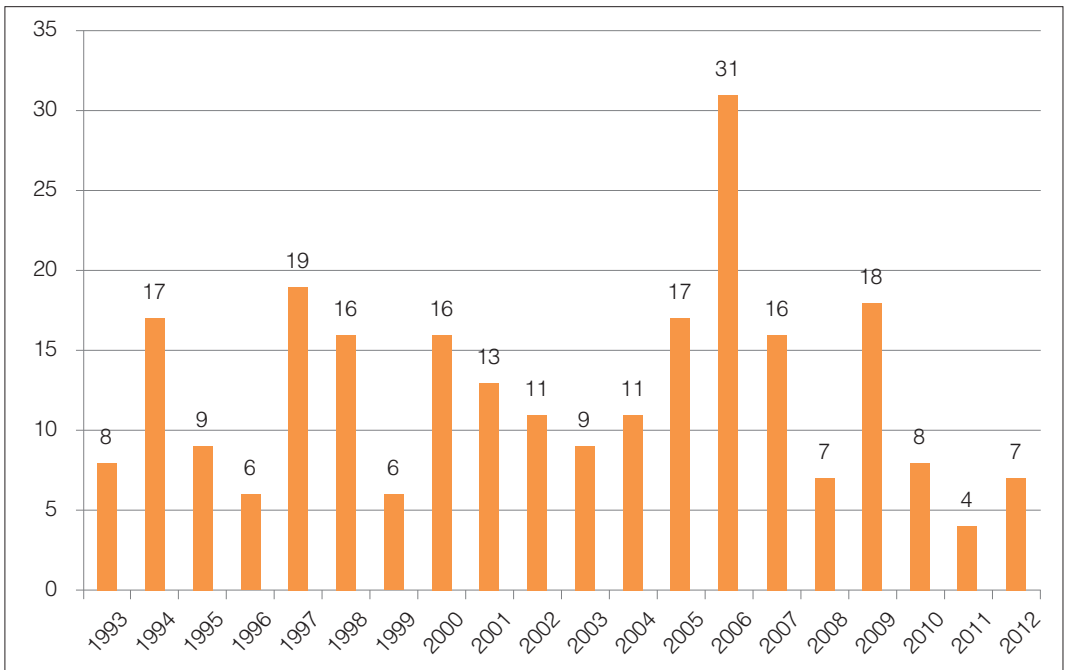
### Animals at the EPRC

In 1993 the EPRC started off with the housing of 8 primates, four langurs, two gibbons and two lorises. The number increased during twenty years to 153 individuals in 2012 (Fig. 8). The increase was a result from high numbers of incoming individuals and animals born at the EPRC, following the established captive breeding programs at the center. In total 249 primates have arrived at the center since it was established, on average 12.45 individuals per month. Most of these individuals were confiscated from Forest Protection Departments in cooperation with the EPRC (Fig. 9). Few individuals, especially lorises, were donated from their owners, who were illegally keeping them. Roughly 30% of the confiscated primates didn't survive, despite intensive veterinarian care. This is often due to the state the animals are in when they arrive at the center, as many show physiologically as well as physical signs of distress. Some arrive badly injured through snare traps or have other physical problems including heavy digestion disorder.

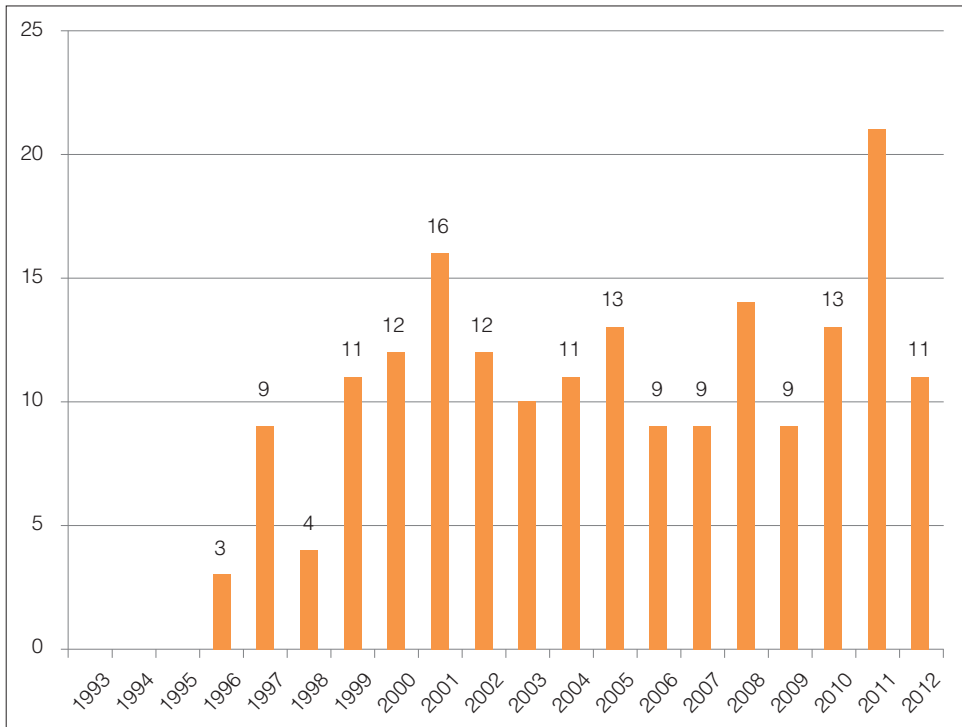
The center is very successfully with breeding programs. In 1996 it saw the first animals born at the center, and this number has grown to 187 from 9 different species. In average 11 individuals a year are born at the EPRC (Fig. 10).



**Fig.8.** Number of primates housed at the EPRC.



**Fig.9.** Primates arrived at the EPRC.



**Fig.10.** Primates born at the EPRC.

The highlight of the EPRC is the successful keeping of sensitive leaf-eating primate species and the establishment of successful breeding programs with these species. Currently the EPRC houses 15 species, four listed as ‘Critically Endangered’ (IUCN-List of Threatened Species) and three of them belong to the “25 World’s Most Endangered Primates” (Mittermeier et al., 2012). Seven species listed as ‘Endangered’ and three as ‘Vulnerable’. The newly discovered northern yellow-cheeked gibbon is not evaluated by IUCN but also most probably has the status ‘Endangered’.

Three ‘Critically Endangered’ species, - the Delacour’s langur, the Cat Ba langur, and the grey-shanked douc langur – which are kept only at the EPRC bred for the first time in captivity.

With 5 founder individuals of the Delacour’s langur, all confiscated from the illegal wildlife trade, 22 individuals were born at the center, four already in the F2-generation.

Three Cat Ba langurs, the world’s rarest langur species, were born at the center and the four individuals at the EPRC makes more than 5% of the total population with only about 60 individuals in the wild.

For the grey-shanked douc langur - a species discovered in 1997 at the EPRC based on confiscated primates – a captive breeding program was initiated and in 2002 the first individual was born. Now in total 17 individuals are born at the EPRC.

For the ‘Endangered’ Hatinh langur and red-shanked douc langur breeding programs with confiscated individuals started in 1996 and 1998 respectively. From 11 founder individuals of Hatinh langurs 65 individuals, and from 12 red-shanked douc langurs 34 individuals have been born at the center. A number of Hatinh and red-shanked douc langurs are already born in the F2-generation.

The ‘Endangered’ southern white-cheeked gibbon have successfully bred 8 individuals.

The center has developed a successful nutrition and feeding regime for confiscated juvenile leaf-eating langurs. Ten red-shanked douc langur babies were hand reared from the first day of life. They are the offspring from a female with missing milk glands. As a consequence she was unable to rear their babies. And more than 10 individuals arrived at a very young age of only two to three month. Nearly all of these hand reared babies have grown up.

A special advantage of the center is the possibility to integrate the juveniles in a “kindergarten” to enable contact with other young orphaned individuals, even of different species. This contact seems to be an important behavioral impact for the development of the juveniles and several hand reared female langurs have bred already without problems (Fig. 11 and 12).



**Fig.11.** The EPRC developed successful nutrition and feeding concepts for babies of leaf-eating primates. Photo: Tilo Nadler.



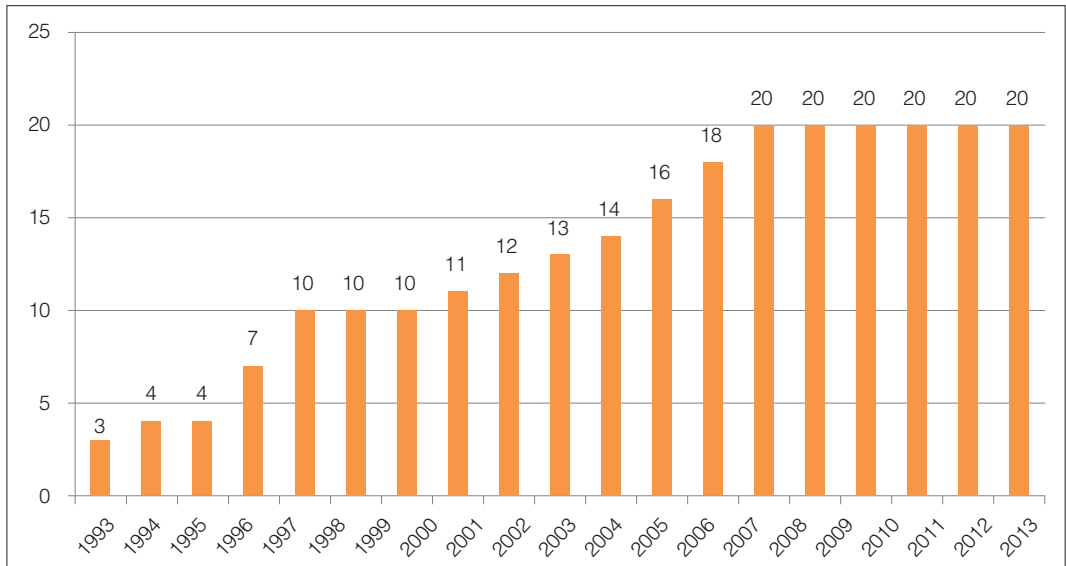
**Fig.12.** A number of sensitive leaf-eating langurs were successfully hand reared at the EPRC. Photo: Tilo Nadler.

All new arrivals undergo a quarantine time of about six weeks and a health check including blood screening for diseases. The genetics of all these individuals are determined and their DNA samples stored at the Gene Bank at the German Primate Centre.

## Staff

Parallel to the increasing number of animals also is the number of animal keepers which has increased considerably since 1993 (Fig. 13). The Vietnamese workers are recruited from villages close to the national park (Fig. 14). This job creation enables local workers to gain a stable income in an area which is primarily inhabited by a Muong minority where job possibilities are limited. The income from the work they complete at the center enables considerable support for a number of families within the village. The staff is working under supervision of three Vietnamese head keepers, with more than 10 years of work experience at the EPRC. In addition an experienced and trained foreign animal keeper will be present. In January and February Denny Lohse, animal keeper from Leipzig Zoo filled this position. In July started Maria Bischoff in this position, who is also animal keeper from Zoo Leipzig and continued the work to early 2013.

Nguyen Thi Thu Hien oversees the work at the center as a Vietnamese manager and also works as a secretary for the director of the EPRC, helping to translate and working as a contact person for the administration of the park and the ministry.



**Fig.13.** Number of Vietnamese animal keepers at the EPRC.



**Fig.14.** Animal keepers at the EPRC.

### Animal food

For the members of the three primate families at the center (Lorisidae: lorises; Cercopithecidae: langurs and douc langurs; Hylobatidae: gibbons) different food is prepared depending on individual requirements. Lorises are fed with an array of different fruits and additional insects like grasshoppers, stick insects and occasionally meal worms. The gibbon food consists mainly of vegetables and some fruits purchased at the local markets. The langurs are fed exclusively with leaves, collected two times daily in the surrounding of the national park. The daily food composition

comprises leaves from 8 to 12 different plant species, mostly trees. The offered plant species changes seasonally, depending from the availability of young shoots. The necessary daily amount of leaves for roughly 100 langurs is more than 300 kg (Fig. 15).

### Reintroduction

The final goal of the captive breeding programs of highly endangered primate species is the reintroduction of captive born individuals to strengthen decreased wild populations, or to establish new populations where the species originally existed but has been eradicated. For confiscated individuals who are not integrated in captive breeding programs, release recommendations and techniques should be developed to support their survival in the wild after a release.

In 2000 the first release study of pygmy lorises was carried out. Pygmy lorises are hunted and also confiscated in remarkably high numbers. Ten pygmy lorises were released with radio collars, tracked and the data analyzed.

In 2005 began the construction of a 20 ha semi-wild area in Phong Nha-Ke Bang National Park as a cooperation project between Frankfurt Zoological Society and Cologne Zoo, as first step for the reintroduction of Hatinh langurs. In 2007 8 captive bred Hatinh langurs were transferred to this facility in preparation for the release. Through mismanagement of the reintroduction project the release of the animals was never completed and the animals still exist in this large facility and have now developed to a small population.

After more than 10 years close cooperation with Van Long Nature Reserve, successful improvements have been seen in the protection through a community based protection unit. Education programs in the surrounding communes, field surveys and a genetic population study in the area, which has allowed the area to be assessed as a safe and suitable reintroduction locality for the 'Critically Endangered' Delacour's langur (Ebenau, 2011; Ebenau et al. 2011). In 2011 three captive bred individuals were equipped with GPS radio collars, released into the nature reserve and tracked for about one year (Nadler, 2012). In November 2012 two further individuals with GSP radio collars were released and tracked. The data will be analyzed in PhD and master theses.

### Education and capacity building

The EPRC is open for the public, but only on guided tours. More than 10.000 visitors per year visit the center and get information about the primates of Vietnam, the problems about their conservation and the critical situation of wildlife in the country.

A number of lectures and training courses were carried out at the EPRC, for guides of the national park, for animal keepers from other animal keeping facilities in Vietnam, for rangers, students, and school children. The center produced a number of posters, leaflets, cartoons and story books for children, and toys and games, occasionally in cooperation with other organizations.

Special events are school programs for children at Hanoi's International School and Hanoi's UN-International School (UNIS) at the EPRC. In each program about 80 children visit Cuc Phuong



**Fig.15.** The preparation of more than 300 kg leaves for the leaf-eating primates requires a high amount of working time. Photo: Tilo Nadler.

National Park and the EPRC to get information about Vietnamese primates and to carry out “primate studies” at the EPRC.

### **Television reports and PR**

Several Vietnamese TV-stations produced reports about the work of the EPRC with screen time ranging from 30 to 45 minutes. Additionally short reports and information about the center are broadcasted in average four times per year.

In total about 20 reports (20 to 45 min.) were also produced from foreign TV-stations and companies, based in Germany, UK, Japan, China, Singapore, Australia, US, Finland, France and Holland.

All reports focus on the critical situation of wildlife in Vietnam, and in particular on primates.

Since 1993 and the beginning of the project, 260 papers, articles and books were published referring to the primate work. About 50% of the publications and reports contains popular information in newspapers and magazines, especially highlighting the importance of raising awareness and attention about protection and conservation of Vietnamese primates in the public, nationally and internationally.

### **Scientific research**

The EPRC offers with a number of endemic and highly endangered primates an unique research base. Running programs are linked with national and foreign universities and institutions. Both Vietnamese and foreign students and scientists study at the EPRC. More than 130 scientific papers have been published and contribute to the knowledge we have of Vietnamese primates, including information about biology, systematics, distribution and status.

Special highlights are the contribution of the EPRC to the discovering of two new primate species, the grey-shanked douc langur (Nadler, 1997) and the northern yellow-cheeked gibbon (Van Ngoc Thinh et al., 2010). An important contribution to the conservation of Vietnamese primates is also the clarification of the taxonomy. A remarkable number of systematic changes are based on studies at the center and the collection of DNA samples of the housed individuals (Nadler et al., 2005; Roos et al., 2007; 2008, Hoang Minh Duc et al., 2012).

More than 20 Diploma, master and PhD theses were written based on studies at the EPRC or in connection with field projects under supervision of the EPRC (references Appendix 1).

Since 2000 results of research and activities of the EPRC were presented on all biannual congresses of the International Primatological Society.

### **Future planning**

The EPRC continue to stabilize small captive populations of highly endangered species as source for future reintroduction projects. A special challenge outside the EPRC, is securing adequate habitats for reintroductions of these individuals. Reintroduction is only justifiable if a safe habitat is available. To provide a safe habitat in Vietnam is unfortunately a long and difficult road and requires close cooperation with rangers, strict law enforcement and especially a very close cooperation with the communes in selected areas. The involvement of the local communes in such projects is essential and is one of the key points for a successful reintroduction project.

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## Appendix 1

### Diploma, Master and PhD theses based on studies at the EPRC or in connection with field projects under supervision of the EPRC.

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