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Abstract: The South China tiger suffered from continuous large-scale hunting, deforestation of habitats for timbers, reclaiming of agricultural lands, and limitation of prey due to uncontrolled hunting. This resulted in a rapid decline in the number of South China tigers as well as environmental deterioration of the habitats. The Ministry of Forestry of P. R. China included the project for saving South China tigers as a priority action in the "Forestry Action Plan For China's Agenda 21" in 1995. A draft outline of the "China Action Plan For Saving the South China Tiger" was completed in 1995 and implementation began. The plan contains a review of the status of wild and captive populations, existing implementation, threats, and formulates goals and time-bound objectives for tiger protection. A captive breeding programme and specific priority projects are presented, including responsible authorities, time frames and budget.

CHINA ACTION PLAN FOR SAVING THE SOUTH CHINA TIGER

Draft Outline

State Forestry Administration, P. R. China

PREFACE

The South China Tiger (*Panthera tigris amoyensis*) is the most endangered tiger subspecies in the world. In order to save these beautiful and mysterious animals from the threat of extinction and to secure and promote the natural development of their populations for peaceful co-existence with humans, the Chinese Government began active efforts to save the South China Tigers in 1980. The Ministry of Forestry of P. R. China included the project for saving South China Tiger as a priority action in *Forestry Action Plan For China's Agenda 21* in 1995. By creating the *China Action Plan For Saving South China* After five years' efforts, the State Forestry Administration of P. R. China completed a draft outline of the *China Action Plan For Saving the South China Tiger* and began implementation. However, the final success and overall execution of this *China Action Plan For Saving the South China Tiger* will rely on further scientific data and funding. Therefore, State Forestry Administration welcomes all organizations and persons concerned with the future and destiny of the South China Tiger to offer suggestions, technical assistance and capital.

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1. HISTORICAL BACKGROUND

The South China Tiger was widely distributed in the vast regions of East China, Central China, South China and Southwest China as well as part of Shanxi Province, Eastern Gansu Province, Western part of Henan Province and Southern part of Shanxi Province. For the total distribution area, the east reached the boundaries of Jiangxi and Zhejiang Provinces at east longitude 119° and 120°, the west ended the boundaries of Guizhou and Sichuan Provinces at east longitude 100°, the south arrived at northern latitude 21° and the north connected with Qinling Mountain and Yellow River at northern latitude 35°. The distance was about 2000 kilometers from east to west and 1500 kilometers from south to north. This range area was connected to the range area of Amur Tiger (*P. t. altaica*) in the northeast bordering on the range area of Indo-Chinese Tiger (*P. t. Corbetti*) in the southwest and the distribution areas of Bengal Tiger (*P. t. Tigris*) and Sumatra Tiger (*P. t. Sumatrae*). This definitely showed it was just the central tiger ranges in which the South China Tiger was distributed.

However, due to the limitation of knowledge during the 30 years before 1980 the wild population of the South China Tiger suffered from continuous large-scale hunting, deforestation of their habitats for timbers, reclaiming of agricultural lands, and pollution from chemical fertilizers. At the same time, their prey became limited from uncontrolled hunting. All of these activities directly resulted in a rapid decline in the number of South China Tigers as well as environmental deterioration of the habitats. By the end of the 1970s, it is estimated that the quantity of wild South China Tigers in China had been reduced to 40 to 80 tigers. The distribution area had been reduced to the hilly land of East China and South China (*Hu Hongguang, 1992*). Another evaluation estimated 30 to 80 tigers (*Tan Bangjie, 1986 and Yuan Xicai, 1994*). From 1990 to 1992, cooperating with the World Wildlife Federation, the Ministry of Forest of P. R. China conducted a survey of the wild population of South China Tigers and their habitats in the four provinces of Guangdong, Hunan, Jiangxi and Fujian. The outcome of the survey revealed that there were about 20 to 30 South China Tigers living in the wild at that time. Therefore, the South China Tiger is on the brink of extinction. Implementation of the *China Action Plan For Saving the South China Tiger* as soon as possible has become the last chance to save the South China Tiger from this regrettable fate which we can prevent.

2.0 CURRENT STATUS OF POPULATION OF THE SOUTH CHINA TIGER

The existing populations of the South China Tiger can be divided into wild population and captive-bred population.

2.1 STATUS OF WILD POPULATIONS AND THEIR HABITATS

After the survey in 1993, the Ministry of Forestry of P. R. China ordered continuous data collection of the trace information on wild South China Tigers. Over 2,000 pieces of information were collected by May of 2000, including eyewitness sightings, tigers roaring, tracks, scratches, hair and skeletons or parts of their prey. A comprehensive analysis of the possibility and reliability of above information was made in combination with the continuity of the natural landscape and vegetation. It is confirmed that there are still wild population of South China Tiger existing in China. The potential distribution area covers eleven natural geographical units and is about 90,000 square kilometers with six of the eleven units covering about 18,000 square kilometers. The activities of South China Tiger are very obvious and provide us exciting hope and possibility for the *China Action Plan For Saving South China Tiger*.

The total potential distribution area of the South China Tiger is estimated to be up to 90,000 square kilometers according to natural geographical units. The agricultural land and villages and towns occupy most platforms. Therefore, the South China Tiger can move only in the comparatively limited narrow zones, such as a ridge or small valley. Every South China Tiger needs to roam in a significantly larger area. Thus, the current density of South China Tigers resides within limited territories. Also the contact between individual tigers has become more difficult. Grasslands with sparse woods, bushes and plantations, mainly cover their habitat areas. The local wildlife are mainly leopard, serow, black bear, gold cat, zibet, rasse, rhesus monkey, mintjac (gold cat), water deer, wild boar and pheasant.

2.2 STATUS OF THE CAPTIVE-BRED SOUTH CHINA TIGER POPULATION

From the 1950s, some zoos of China procured some South China Tigers from the wild and began efforts of controlled breeding and propagation of the animals. In 1988, there were 40 South China Tigers living in sixteen zoos in China. This quantity increased to 51 by 1995 and to 62 by June 2000. However, many were bred as the second, third or fourth generations from the same father tiger. Hereditary diseases appeared in captive bred tigers caused by this serious inbreeding. Now, although we can see the continuous propagation of the captive-bred South China Tiger the more serious threat is inbreeding.

3. PROTECTION AND ADMINISTRATION OF THE SOUTH CHINA TIGER

With increasing recognition of the great values of the South China Tiger, China has been correcting the notion of considering the South China Tiger as a harmful animal and since the end of the 1970s has rapidly strengthened the protection of the animals. A series of strict measures has been executed for protection of the South China Tiger. The environmental deterioration of their habitat has been effectively stopped and poaching of the animals has been strictly prohibited. However, due to its extremely endangered status, there are still many difficulties, risks and obstacles yet to overcome on the road to total restoration of wild populations of the South China Tigers.

3.1 EXISTING IMPLEMENTATION FOR PROTECTION OF THE SOUTH CHINA TIGER

3.1.1 LEGISLATION

According to *the P. R. China Law for Protection of Wildlife* and *the List of Wildlife under National Important Protection*, the South China Tiger is under the first-level national protection and any hunting and killing of the animal are prohibited absolutely. *The P. R. China Criminal Law* also stipulates up to a seven-year imprisonment for any verified illegal behavior of hunting, or killing the South China Tiger. Commercial usage or trading of tiger products is also illegal.

3.1.2 ESTABLISHMENT OF NATURE RESERVES

In order to effectively prohibit the damage to the South China Tiger habitat and improve their environment, China has been energetically promoting the establishment of nature reserves for the South China Tiger. There are seven national and fourteen local nature reserves in its range with the total area of 5,000 square kilometers. Meanwhile, special protection agencies have been set up and patrol teams organized. Training courses for protectors and managers are held regularly to improve their competence.

3.1.3 BAN ON TRADE OF TIGER PRODUCTS

Considering that the trade of tiger products will certainly increase the pressure on protection, the State Council of the People's Republic of China issued a ban on the trade of rhinoceros horns and tiger bones in 1993. All domestic utilization and trade of the bone, skin and other parts of tiger were totally prohibited and many stock tiger bones and final products were destroyed, regardless of their purposes including production of traditional medicines or handicrafts. Since the ban, China wildlife authority and public security organizations have identified the strike against the trade of tiger products as one of their key job duties and they conduct yearly law-enforcement checks.

3.1.4 BREEDING IN CAPTIVITY

According to the present situation of the captive-bred population of the South China Tiger, China has established a special coordination committee to promote captive breeding of its population. To improve genetic structure of future generations, a gene bank has been established in the Shanghai Zoo that evaluates the record of every individual South China Tiger's health, family tree, mating pattern and current management in progress. To reintroduce the captive-bred population back to nature, China Meihua Mountain Breeding Center of South China Tiger has been set up to enlarge its population and train their behavior in the wild as the primary basis for the reintroduction program.

3.1.5 SCIENTIFIC RESEARCH

The current focus of scientific research on the South China Tiger is on breeding techniques, the tiger's biological behavior and habitat ecology. Considerable attention has been paid to re-establishment of the tiger's family tree, finding a substitute for the medical use for tiger bones. To find solutions to the above issues, China has organized some professional technicians and are searching for more to join the work.

3.1.6 INTERNATIONAL COOPERATION

Another priority is facilitating international cooperation on tiger protection, facilitating exchange of information, experiences and advanced technology. The Chinese government has signed bilateral special agreements on tiger protection respectively with the Indian Government and Russian Government. The Chinese wildlife protection authorities also have close connection and communication on tiger protection with international organizations, such as International Union of the Conservation of Nature, World Wildlife Fund, and Rhino & Tiger Conservation Fund. Moreover, China actively participates in the international academic exchange and is striving for more opportunities for international co-action in the field.

3.1.7 PUBLIC EDUCATION

In all areas of wildlife protection, public support is also very important to the protection of the South China Tiger. Therefore, Chinese wildlife agencies have included public education on tiger protection in their regular duties, especially for local residents in and surrounding the South China Tiger ranges. By distribution of brochures, pictures, posters, presentations and visits of residents, almost all local residents now know that it is illegal to poach any tigers, kill their prey, or to damage their habitat. Most of the public appreciate or support the recovery of the wild population of the South China Tiger.

3.2 DIFFICULTIES AND PROBLEMS

China has made great contribution to the protection of the South China Tiger and their habitat. However, what has been done is far from saving the subspecies from extinction and guaranteeing the recovery and natural development of its population. The following are possible explanations:

3.2.1 There is not enough information and data on detailed range, quantity and structure of the wild populations. This makes it difficult to evaluate the necessity and feasibility of some plans and their dynamic trend in different areas. For this reason, many decisions concerning conservation projects cannot be made timely while others are interfered frequently.

3.2.2 There is inadequate research on behavioral patterns, especially their predatory behavior propagation, and key environmental factors of their habitats. The situation led to an indefinite aim for management methods and necessary technological support for rehabilitation, barbarization and reintroduction of the bred population and recovery of their habitat.

3.2.3 There is genetic degeneration within wild populations caused by inbreeding. Gene communication is almost impossible among different wild populations because of isolated island-range, divided habitat, and deteriorated environment.

3.2.4 There is serious threat to the captive-bred population, which is suffering genetic diseases from inbreeding.

3.2.5 There are increasing conflicts between China's protection efforts and the local traditional economic development, which have been rigidly restricted from securing the habitats, environment and prey. These conflicts are posing problems to the execution of protection plans especially in the areas surrounding the protected ranges.

3.2.6 The financial capital and personnel of China's protection action are in serious shortage. The protection and monitoring network and the old patrol and observation devices cannot meet the requirement of the protection action. Many works cannot be put into operation.

4. GOALS

In view of the current status of populations of the South China Tiger and its protection, State Forestry Administration of P. R. China has proposed the overall goals and stage goals of the *China Action Plan For Saving the South China Tiger* according to the principle of “overall planning, reasonable arrangement and implementation by stages.”

4.1 THE OVERALL GOALS

4.1.1 Full recovery of South China Tiger’s habitat and environment to ensure that wild populations have integrated and sufficient natural ranges.

4.1.2 Establishment of several thriving wild populations of South China Tiger in different suitable ranges.

4.1.3 Achievement of rehabilitation and sustainable generation of derivative offspring of the captive-bred population.

4.1.4 Realization of the coordinated development for the protection of the South China Tiger and local society and economy.

4.2 THE STAGE GOALS (2000-2010)

4.2.1 Definition of three to five Project Areas for Saving Action in which agricultural lands will be recovered and residents resettled gradually. With the improvement of the environment and promotion of the increase of co-existing wildlife resources, it is expected that ranges will increase to 10,000 to 20,000 square kilometers in Project Areas for Saving Action. This size range can adequately accept 60 to 100 tigers.

4.2.2 Transferring of isolated roaming individual tigers in the wild (after detailed understanding of overall wild populations) or reintroduction of the captive-bred individuals to the Project Areas for Saving Action for better genetic structure leading to rehabilitation, stabilization and enlargement of the populations in the Project Areas for Saving Action. By the above measures, three to five populations with ten to thirty mature individual tigers each can be expected.

4.2.3 Establishment of complete Protection and Monitoring Network to effectively prohibit poaching and damage of the habitats. Research will be conducted concerning dynamic trends of the wild populations in their ranges.

4.2.4 Development of eco-tourism focusing on *Tigers in the Wild* to economically benefit local societies surrounding Project Areas for Saving Action to ensure more effective protection with more support from local residents.

4.2.5 Introduction of wild individual tigers or their sperm to mate with those bred in captivity to improve the hereditary structure of the captive-bred population and promote their rehabilitation and on-going generations.

5. PRIORITY FIELDS

To achieve the goals of the *China Action Plan For Saving the South China Tiger*, after full evaluation, of the South China Tiger as well as the local social and economic conditions around Project Areas for Saving Action, the priority projects have been outlined as follows:

5.1 SURVEY OF WILD POPULATIONS OF THE SOUTH CHINA TIGER

The defined areas of the survey cover total potential ranges of the wild population of the South China Tiger, including eleven natural geographic units with 90,000 square kilometers. The survey will be carried out in two stages.

5.1.1 General Survey (From September, 2000 to October, 2001)

5.1.1.1 Establishment of the Local Information System. A necessary number of local inhabitants in total potential ranges of wild populations of South China Tiger have been selected and employed as informants. After training, they will be responsible for collection of any possible information on tiger activities and tracks around their living areas. Timely reports will be made to the supervisor of the informants for comprehensive analysis.

5.1.1.2 Organization of Professional Survey Teams: The teams will make field surveys to collect the traces of activities of the South China Tiger in the six areas with more obvious evidences to understand the quantity, structure and behavior pattern of its population in the areas.

5.1.1.3 Presentation of the results after comprehensive analysis of all collected information and evaluation of existing populations in the wild and their habitats.

5.1.2 Seeking and filing of wild individual tigers (on the basis of funds).

To seek and take photographs of wild individual tigers directly from airplanes using infrared cameras to further understand behavior patterns. Files of wild individual tigers will be established in their distribution areas.

5.2 PUBLIC EDUCATION

The success of the *China Action Plan For Saving the South China Tiger* is dependent on the public understanding and support. Therefore, enhancement of public education to improve public awareness and promote their conscientious care for the South China Tiger must always receive utmost attention.

5.2.1 Permanent Signboards: to be set up to define the border for protected areas and publicize laws, regulations, and aims of the *China Action Plan For Saving the South China Tiger* and the requirements for protection in the areas.

5.2.2 Group discussion with stakeholders: to be held periodically with the local representatives informing them of progress and objectives of protection projects. It is important to understand the local residents' hopes and desires regarding the implementation of the projects or programs, in order to make considerate protection policies taking into account project objectives, public interests, and especially, public support.

5.2.3 Brochures and pamphlets: to be distributed in a timely fashion to popularize the problems that tiger protection faces for public attention and support.

5.2.4 Public consultation: to be made regularly for the professional personnel to address inquiries, suggestions and demands from the public.

5.2.5 Media publicity: to cover news on the South China Tiger's plight and introduction to the *China Action Plan For Saving the South China Tiger*.

5.3 PROGRAM FOR HABITAT REHABILITATION

This aim of this for habitat rehabilitation program is to define three Project Areas for Saving Action.

About 15,800 hectares of farmland will be rehabilitated back to natural tiger habitat, and approximately 3,900 families will be relocated. Three integrated, environmental and biodiversified habitats of up to 5,800, 1,000 and 6,000 square kilometers respectively will be established. The number of Protection and Monitoring Stations will also be increased by 20 to 30 to form a more effective protection network.

5.3.1 PROJECT FOR EXPANSION OF YIHUANG NATURE RESERVE OF THE SOUTH CHINA TIGER IN JIANGXI

The reserve covers an area of 230 square kilometers now and some evidences of the South China Tigers have been confirmed. This project includes:

- A. To expand this reserve to an area of 583 square kilometers by rehabilitating about 3,000 hectares of farmland and relocating approximately 400 families. The reserve will then connect naturally with surrounding hills of some 5,000 square kilometers to form an integrated protected area covering a total of 5,800 square kilometers with the reserve as its core. This Project Areas for Saving Action will be able to accept 30 to 50 individual South China Tigers.
- B. To trap four to six isolated roaming individual tigers in other areas and transfer them to this Project Areas for Saving Action for improvement of the population's genetic structure if scientifically feasible.
- C. To add ten more Protection Monitoring Systems in this Project Areas for Saving Action to carry out patrolling against poaching and monitoring of the population.
- D. To develop eco-tourism by building "tiger watching" hotels in suitable sites and flying tourists in the night for direct sighting of wild tigers. Surrounding lakes and ancient buildings have potential value as attractions. It will be very helpful to coordinate the protection and development of local community and economy.

5.3.2 PROJECT FOR EXPANSION OF FENGYANGSHAN-BAISHANZU NATURE RESERVE IN ZHEJIANG

This reserve came from the combination of Fengyangshan and Baishanzu nature reserves and now covers 109 square kilometers. Many evidences found here have determined the existence of a wild population of the South China Tiger.

- A. To expand this reserve to an area of 400 square kilometers by rehabilitating about 3,000 hectares of farmland and relocate some 800 families around it. A protected area of about 1,000 square kilometers will be available for the wild population of tigers that can reach ten to twelve individual tigers.
- B. To find a solution to better the population's genetic structure for its enlargement in this Project Areas for Saving Action after scientific evaluation and research.
- C. To build six additional Protection and Monitoring Stations on the basis of present Protection and Monitoring Network of reserves for more effective protection and monitoring.
- D. To support the development of local eco-tourism and bamboo processing industry

5.3.3 PROJECT FOR HABITAT REHABILITATION OF SOUTH CHINA TIGER IN LUOXIAO MOUNTAIN

This area covers 6,000 square kilometers including five nature reserves. They are Mangshan Nature Reserve, Taoyuandong Nature Reserve and Guidong-Bamianshan Nature Reserve of Hunan Province, Jinggangshan Nature Reserve of Jiangxi Province and Jiulianshan Nature Reserves of Guangdong Province. However, farmlands and villages separate the isolated populations. The following steps are proposed to connect the isolated populations:

- A. To rehabilitate about 11,000 hectares of farmland, relocate approximately 2,700 families and introduce sufficient prey to the rehabilitated areas. If successful, it is expected for this Project Area for Saving Action to be able to support 50 to 80 South China Tigers.
- B. To build eight to ten new Protection and Monitoring Stations for the bar areas to form a primarily complete Protection and Monitoring Network in combination with existing Protection and Monitoring Stations of nature reserves during the first stage.
- C. To develop eco-tourism by utilization of the **Tiger in the Wild** program and support other local ecological industries.

5.4 PROGRAM FOR REINTRODUCTION OF CAPTIVE BRED POPULATION BACK TO NATURE

This program is based on Meihuashan Nature Reserve of Fujian Province and will be implemented in stages. It is aimed to have at least ten captive-bred South China Tiger cubs before 2,007 and prepare an integrated habitat of over 600 square kilometers before 2,010 for reintroduction back to nature.

- A. Establish a breeding center and enlarge the captive bred population: Meihuashan Breeding Center of South China Tiger has been established specifically for breeding of the South China Tiger. If technically feasible, the next step is to obtain genetic material from wild South China Tigers for genetic diversification.
- B. Barbarization of individual tigers since infant stage: Baby tigers will be introduced to a larger, quiet and wild enclosure with natural vegetation for their active movement while feeding will slowly decline to force them to learn hunting of prey and to build their strength.
- C. Preparation of habitat: An integrated and safe environmentally protected area will be prepared by rehabilitating farmland of 900 hectares and relocating 300 resident families. Sufficient prey will also be introduced into the area. With Meihuashan Nature Reserve in the center, this Project Area for Saving Action will cover 600 square kilometers and be able to support ten to twelve tigers.
- D. Removal of the paling of the wild enclosure: Barbarized tigers will be able to act freely in nature while they can come back to base for food if they failed to trap their prey. It will help their connection with the indigenous wild population of South China Tiger and increase their survival rate.
- E. Enhancement of the Protection and Monitoring Network: eight to ten new Protection and Monitoring Stations will be established to form a comprehensive Protection and Monitoring Network totally covering this Project Areas for Saving Action in combination with the now existing Protection and Monitoring Stations.
- F. Development of eco-tourism by utilization of the Tiger in the Wild program and support of other local ecological industries.

5.5 TRAINING OF PERSONNEL RESOURCES

Insufficient access to specialists, limited capacity and technology has hindered conservation efforts for the South China Tiger. Training of specialists, managers and all people of Protection and Monitoring Network and Local Information System, will be conducted as follows:

5.5.1 Field Training: To hold 40-50 training courses with six to ten training courses a year in every Project Area for Saving Action so that every patroller, informant and monitor can join at least one training session. The courses will aim at protection obligation, exchange of experiences, summary of problems faced, discuss and share application of advanced methods, and definition of job requirements.

5.5.2 Special Symposiums: To hold one to two symposiums every year for senior specialists, policy researchers and governmental officials to review and evaluate the *China Action Plan For Saving the South China Tiger* progress and problems. Decisions will be made accordingly.

5.5.3 International Exchange: To enhance communications of advanced technology and management experiences by assignment of Chinese specialists, researchers and managers to visit other countries and work together with foreign colleagues. This is needed to strengthen the conservation efforts in China.

6. TECHNICAL REQUIREMENT

To completely implement the *China Action Plan For Saving the South China Tiger*, the following techniques are required.

- A. Identification of Traces
- B. Methods to Seek Individual Tigers
- C. Evaluation of the Population's Genetic Structure
- D. Analysis of Key Factors to Habitats
- E. Trapping and Transportation of Wild Individuals
- F. Rehabilitation and Optimization of Habitats
- G. Design of the Mating Pattern for Captive Population
- H. Design for Development of Eco-tourism
- I. Prevention and Treatment of Pollution from Eco-tourism

7. ORGANIZATION AND SUPERVISION

7.1 State Forestry Administration of P. R. China will be in charge of the overall formulation and implementation of the *China Action Plan For Saving the South China Tiger* and make implementation decisions. The head agencies responsible for executive organization and management of the programs and projects will also be appointed by State Forestry Administration of P. R. China.

7.2 Principally, organization and coordination of main projects under the *China Action Plan For Saving the South China Tiger* will be the responsibility of provincial wildlife protection authorities while the institutions responsible for their technical supervision will be authorized by State Forestry Administration of P. R. China.

7.3 Department of Wild Fauna & Flora Conservation of State Forestry Administration of P. R. China in cooperation with funding organizations will assume the duties to supervise the execution of the projects.

7.4 Special systems for organization and supervision of the projects can be established if necessary according to their actual situation.

8. BUDGET AND FUND RAISING

Based on the *China Action Plan for Saving the South China Tiger*, the following budget has been calculated for each project:

8.1 SURVEY OF WILD POPULATIONS OF THE SOUTH CHINA TIGER

8.1.1 GENERAL SURVEY (FROM SEPT OF 2000 TO OCT OF 2001)

Funds for the survey totaling US\$114,000 is ready by now and its sources are as follows:

A. State Forestry Administration of PRC	US	\$36,000
B. Worldwide Wildlife Fund	US	\$27,000
C. US Rhino and Tiger Fund	US	\$21,000
D. Provinces	US	\$30,000
Total	US	\$114,000

8.1.2 SEARCHING AND FILING OF WILD INDIVIDUALS

The funds needed for this survey are estimated to be US \$434,000. The Chinese side has committed to pay US \$120,000 as matching funds, while the rest amount of US \$314,000 is yet to be secured. The funds will be allocated for the following activities:

A. Training and Preparation of Teaching Materials	US	\$24,000
B. Employing 200 local informants (US\$240 per person annually)	US	\$48,000
C. Purchase of equipment (10 sets of infra-red device and 3 infra-red cameras)	US	\$60,000
D. Renting of airship for 200 working days	US	\$170,000
E. Subsidies, Accommodation and Travel Allowances for the investigators (15 persons, \$4,800 per person annually)	US	\$72,000
F. Workshop	US	\$18,000
G. Data processing, Establishment of an archive for wild individual South China Tigers and Publication of reports	US	\$18,000
H. Contingencies	US	\$24,000
Total	US	\$434,000

8.2 PUBLIC EDUCATION

This work will need an input of around US\$2,200,000 from year 2000 to 2005. The Chinese side has planned to invest US\$980,000, and another US\$1,220,000 is needed.

8.2.1 PERMANENT SIGNBOARDS:

The cost to set up one signboard is around US\$500. Based on the area and route situation in the main ranges, the total number of signboards to be set up is estimated to be around 1,900. The total investment is around US\$950,000. The Chinese side plans to invest US\$360,000, and the rest amount of US\$590,000 is still needed.

A. 450 signs for existing nature reserves	US	\$225,000
B. 900 signs for planned habitat rehabilitation areas	US	\$450,000
C. 550 signs for extended areas for South China Tiger s	US	\$275,000
Total	US	\$950,000

8.2.2 GROUP DISCUSSIONS WITH STAKEHOLDERS:

The discussions will be carried out in the Project Areas for Saving Action, surrounding areas and other main ranges based on the situation of the villages and towns. Three discussions will be carried out in each village (town), with 15 to 30 participants attending each time. The funds for one discussion is estimated to be US \$600, mainly for the renting of meeting rooms, preparation of materials and necessary documents and travel allowances for participants. It is estimated that 100,000 copies of questionnaires can be collected. Information processing will be made in time to serve as references for decision making. The total number of villages and towns in this region is about 600, and the funds needed for this activity is US \$1,100,000 in total. The Chinese side has planned to invest US \$500,000, and the rest \$600,000 is still needed.

8.2.3 BROCHURES AND PAMPHLETS:

According to the population in and surrounding the Project Areas for Saving Action and other main ranges, as well as the need for publicity at fixed intervals, it is anticipated that a total of 2,000,000 copies of various publicity documents will be disseminated. Calculated on the unit cost of US \$0.06 for printing and employing people to hand out the documents, there is a need for US \$120,000. The Chinese side will contribute all the funds necessary for this purpose.

8.2.4 PUBLIC CONSULTATION AND MEDIA PUBLICITY:

The Chinese wildlife agencies will organize professional staff to carry out consultation free of charge. Costs for media publicity will be absorbed by the media agencies

8.3 PROGRAM FOR HABITAT REHABILITATION

This program covers three Project Areas for Saving Action. The implementation of this program will be launched by different stages according to the funding available for its projects. The budget needed for this program is based on the first five-year plan of each project. The period from years 2000 to 2005 is the first phase. The estimated total input is US \$27,784,000. The matching fund from the Chinese side is US \$9,000,000, and we still need US \$18,784,000.

8.3.1 PROJECT FOR EXPANSION OF YIHUANG NATURE RESERVE OF SOUTH CHINA TIGER IN JIANGXI

The investment in the five years of the first phase needed for the project is US \$3,640,000. The Chinese side has committed to input US \$840,000, and we still need US \$2,800,000.

Eco-tourism will be conducted as economic projects. The estimated investment is US \$9,700,000. It is expected that 50,000 tourists will be received each year, bringing a total revenue of around US \$12,000,000 employing 600 people.

A. Resettle 400 families for habitat rehabilitation (subsidy of US\$6,000 per household)	US\$2,400,000
B. Rehabilitate 1800 hectares of farmland and introduce prey (US\$120 per hectares)	US \$220,000
C. Establishment of Protection and Monitoring Network C. Command center, the South China Tiger Protection Office of Yihuang County has been set up (increase motor vehicles, communication and commanding facilities and computers, total input US\$120,000) Ten Protection and Monitoring Stations have been planned to be established in the first phase, with a staffing scale of 4 people per station (one watch tower, 4 communication and observation facilities, 1 vehicle for each station, cost US\$72,000)	US \$840,000
D. Trap and Transfer isolated roaming tigers	US \$180,000
Total	US\$3,640,000

Development of eco-tourism with the theme of **Tiger in the Wild** and direct sighting: this project will be conducted as an economic project. There are large bodies of water, river channels suitable for drifting, ancient folk buildings and war sites in the surrounding areas, which can be utilized by the eco-tourism project. The estimated investment is US \$9,700,000 while 50,000 tourists are expected to be received every year, bringing a total revenue of around US \$12,000,000, and providing employment for 600 people.

8.3.2 PROJECT FOR EXPANSION OF FENGYANGSHAN-BAISHANZU NATURE RESERVE IN ZHEJIANG

The input in the first five years of the project is US\$ 544,000. The Chinese side has committed to input US\$960,000, and another US\$4,584,000 needs to be secured.

Eco-tourism will be run as economic projects. There is no analysis on its investment returns so far.

A. Resettle 800 families for habitat rehabilitation (subsidy of US\$6,000 per household)	US\$4,800,000
B. Rehabilitate 3000 hectares of farmland and introduce prey (US\$120 per hectares)	US \$360,000
C. Establishment of Protection and Monitoring Network the existing nature reserve management agency is responsible for overall control and there are 6 Protection and Monitoring Stations affiliated to the agency (increase vehicles, communication and commanding facilities and computers worth US\$168,000) Four new Protection and Monitoring Stations have been planned to be established in the first phase, with a staffing scale of 4 people per station (one watch tower, 4 communication and observation facilities, 1 vehicle for each station, cost US\$72,000)	US \$384,000
Total	US\$5,544,000

Develop of an eco-tourism project with the theme of **Tigers in the Wild** and direct sighting. This region has unique and beautiful landscapes and a variety of cultural heritage, which can be developed as a complement to tiger sighting activities. There is no investment returns analysis for the project so far.

8.3.3 PROJECT FOR HABITAT REHABILITATION FOR THE SOUTH CHINA TIGER IN LUOXIAO MOUNTAIN

The input for the first five years of the project is US\$18,600,000. The Chinese side is now trying to find enough resources to input US\$7,200,000, and we still need another US\$11,400,000.

Eco-tourism will be run as an economic project, and there is no investment returns analysis so far.

A. Resettle 2700 families for habitat rehabilitation (subsidy of US\$6,000 per household)	US\$16,200,000
B. Rehabilitate 11,000 hectares of farmland and introduce prey (US\$120 per hectares)	US\$1,320,000
C. Establishment of Protection and Monitoring Network to establish a control center, which is responsible for coordinating all the agencies in different nature reserves. (establish a command station, buy vehicles, communication and office facilities, which is estimated to be US\$480,000) Eight new Protection and Monitoring Stations have been planned to be established in the first phase, with a staffing scale of 4 people per station (one watch tower, 4 communication and observation facilities, 1 vehicle for each station, cost US\$72,000)	US\$1,050,000
Total	US\$18,600,000

Eco-tourism with the theme of **Tigers in the Wild** will feature wild tiger sightings. This region has unique and beautiful landscapes and a variety of cultural heritage, which can be developed as a complement to the tiger sighting activities. There is no investment returns analysis for the project so far.

8.4 PROGRAM FOR REINTRODUCTION OF CAPTIVE BRED POPULATION BACK TO NATURE

This program has started and China has invested US\$1,440,000 to build the Meihuashan Breeding Center of South China Tiger. To achieve the stage goal of reintroducing tigers back into the nature before 2010, a total of US \$3,920,000 is needed. The Chinese side has planned to invest US \$1,440,000, and another US \$2,480,000 is needed.

Eco-tourism will be run as an economic project and there is no investment return analysis so far.

1. Enlargement of the Captive Bred Population	US	\$420,000
A. Instrument and devices (medical devices, genetic analyzer and computers, etc.)	US	\$180,000
B. Introduction of genetic materials from wild (pursuit, trap of wild individual tigers and collection of sperm)	US	\$120,000
C. Feeding (\$2.5 for one tiger per day average, 5 years x 10 tigers)	US	\$43,800
D. Salary, allowance for communication and workshops	US	\$60,000
E. Data processing and Publications	US	\$36,000
F. Contingencies (5%)	US	\$24,000
2. Barbarization of individual tigers	US	\$1,000,000
A. 5km new railings for larger enclosure of 2000ha (\$96 per meter)	US	\$480,000
B. Establishment of 4 shelters to observe behavior patterns (cost \$24,000 each)	US	\$96,000
C. 5-8 bases for breeding of prey and expenses	US	\$180,000
D. Video and audio devices including infrared devices	US	\$96,000
E. Salary, allowance for communication and workshops	US	\$60,000
F. Data processing and Publications	US	\$36,000
G. Contingencies (5%)	US	\$24,000
3. Preparation of habitat		
A. Resettle 300 families for habitat rehabilitation (subsidy of US\$6,000 per household)	US	\$2,500,000
B. Rehabilitate 900 ha of farmland and introduce prey (US\$120 per hectares)	US	\$ 1,800,000
C. Establishment of Protection and Monitoring Network Command center, the management agency of Meihuashan Nature Reserve (increase motor vehicles, communication and commanding facilities and computers, total input US\$110,000) Six new Protection and Monitoring Stations have been planned to be established in the first phase, with a staffing scale of 4 people per station (one watch tower, 4 communication and observation facilities, 1 vehicle for each station, cost US\$72,000)	US	\$ 540,000

Eco-tourism with the theme of **Tigers in the Wild** will attract tourists interested in sighting wild tigers. This region has unique and beautiful landscapes and a variety of cultural heritage, which can be developed as a complement to tiger sighting activities. There is no investment return analysis for the project so far.

8.5 TRAINING OF PERSONNEL RESOURCES

The funds needed for planned training in 2000-2005 are about US \$1,076,000. China will invest US \$420,000 and the other US \$556,000 needs to be secured .

8.5.1 FIELD TRAINING:

It is calculated that US \$634,000 are needed to cover the expected training courses from 2000 to 2005.

A. Allowance for trainee of 40 courses per year (\$7.5 for a trainee per day, 30 trainees and 5 days a course, 5 years)	US	\$220,000
B. Allowance for 2 trainers per course (\$360 per trainer for travel and accommodation)	US	\$144,000
C. Training materials, equipment and meeting rooms (\$1200 –\$1600 a course)	US	\$240,000
D. Contingencies (5%)	US	\$30,000
Total	US	\$634,000

8.5.2 SPECIAL SYMPOSIUMS:

The total funds needed for symposiums from 2000 to 2005 are US \$124,000.

A. Allowance and accommodation for 50 participants each (\$25 a participants per day, 3 days a symposium, 5 years)	US	\$18,000
B. Travel and transportation for participants (\$240 per participant)	US	\$60,000
C. Training materials (\$4800 a symposium)	US	\$240,000
D. Equipment and meeting rooms (\$3600 a symposium)	US	\$18,000
E. Contingencies (5%)	US	\$6,000
Total	US	\$124,000

8.5.3 INTERNATIONAL EXCHANGE:

The Chinese specialists, researchers and managers will be assigned to visit reserves of other countries and work together with foreign colleagues in China and other counties. The needed funds from 2000 to 2005 shall be US \$318,000.

A. 10 person/times international visits each year (average \$4,800 each person/visit, 5 years)	US	\$240,000
B. Chinese side will cooperate with and provide necessary convenience to foreign colleagues if they come to China on business while they must be responsible for their main costs	US	\$24,000
C. Communication of information and data	US	\$24,000
D. Contingencies	US	\$30,000
Total	US	\$318,000

Note: China will cover the expenditure of salary, allowance and all other indirect expenses not covered by the above budget.

9. CONCLUSION

The tiger is the most beautiful and mystical animal in the world. The South China Tiger subspecies historically occupied China's central tiger range. This tiger has become the world's most endangered large cat subspecies. Its extinction would create an irreplaceable void. It is a bitter fruit of a previous attitude and ignorance toward the tiger and an insult to humanity to stand by and allow its extinction.

Today, people realize the invaluable role the tiger plays in maintaining regional ecosystems, therefore protection of this flagship species will greatly benefit regional biodiversities.

The Chinese government and the Chinese people are paying unprecedented attention to the destiny of this tiger subspecies and are making a great effort to its protection. Fortunately, information and data on hand have determined the possibility and promise of saving these animals from extinction. Although numerous risks, problems, and difficulties loom, we cannot detour from our goal. The only chance is to boldly face the challenges, embrace the technology of the world on nature protection and conservation, and encourage the spirit of cooperation among all humanity. However, China is committed to the cause and invite the world to help save the South China Tiger from extinction so that all can share the beauty and mystery of the South China Tiger forever.

10. REFERENCES

OVERVIEW OF THE BUDGET FOR THE *China Action Plan For Saving the South China Tiger*

Monetary unit: USD 1,000

Items	Duration	Total	CN IVT	Donation	Remarks
1. Survey		549	186	363	
1.1 General	2000-2001	114	66	48	funded
1.2 Search		1-2 years	434	120	314
2. Public Edu.	2000-2005	2,200	980	1,220	
2.1 Signboards	2000-2005	950	360	600	
2.2 Discussions	2000-2005	1,100	500	600	
2.3 Brochures	2000-2005	120	120		
2.4 Consultation	2000-2005				
2.5 Media	2000-2005				
3. Habitat Reh.	2000-2005	27,784	9,000	18,784	
3.1 Yihuang	2000-2005	3,640	840	2,800	
3.2 FYS-BSZ	2000-2005	5,544	960	4,584	
3.3 Luoxiaoshan	2000-2005	18,600	7,200	11,400	
4. Reintroduction	1996-2010	5,360	2,880	2,480	
4.1 Establish Center	1996-2000	1,440	1,440		Built
4.2 Breeding	2000-2008	420			
4.3 Barbarization	2003-2010	1,000			
4.4 Preparation of Habitat	2006-2010	2,500			
4.5 Back to Nature	2010 -----				
5. Training	2000-2005	1,076	420	656	
5.1 Field Training	2000-2005	634			
5.2 Symposiums	2000-2005	124			
5.3 Intl Exchange	2000-2005	318			
TOTAL		36,969	13,466	23,503	