Priority Domestic Animal Species and Varieties (continued)

Species	*Varieties*	*Location*
Sheep	Hu sheep	Zhejiang Province
	Haixi Tibet sheep	Qinghai Province
Chicken	Beijing You chicken	Chinese Academy of Agriculture Sciences
	Xjaoshan chicken	Zhejiang Province
	Xianju chicken	Zhejiang Province
	Langshan chicken	Jiangsu Province
	Chahua chicken	Yunnan Province
	Gushi chicken	Henan Province
Duck	Z-line of Peking duck	Beijing Municipality
Goose	Shitou goose	Guangdong Province

Major Areas of Wild Species and Varieties of Crops Requiring Protection

- Wart-grained wild rice, Xima Township, Mengjiang County, Yunnan Province
- Wart-grained, ordinary and medicinal wild rice, Yaxian County, Hainan Province
- Ordinary wild rice, Dongyuan Township, Dongxiang County, Jiangxi Province
- Ordinary wild rice, Hanguang Township, Yingde County, Guangdong Province
- Wild Dali tea and big tea tree, Menghai County, Yunnan Province
- Wild soybean, Chayu County, Tibet
- Wild soybean, Longtan Lake area, Wuhe County, Anhui Province
- Wild soybean, Xiongxian County, Hebei Province
- Wild soybean, Xinmiao Township, Yikezhao County, Inner Mongolia
- Wild soybean, Guofu Township, Keshan City, Heilongjiang Province
- Wild soybean, Kenli County, Shangdong Province
- *Amphicarpaea,* (wild white flower bean), Yinan County, Shandong Province
- *Amphicarpaea*, Yaxian County, Hainan Province
- Huashan new wheat grass, Huashan Mountain, Shaanxi Province
- Wild primative Japanese mulberry, wild shallot, Yangtao, Shennongjia Mountain, Hubei Province
- Long spike mulberry, Xinshan District, Weifeng County, Hubei Province
- Wild leek, Fubaoshan, Lichuan County, Hubei Province
- Wild buckwheat, Weining County, Guizhou Province

Annex 3
SELECTED PROJECT PROFILES

This Annex contains project profiles for a few, but not all, of the high priority projects needed to implement the Biodiversity Conservation Action Plan. The profiles list suggested participating agencies in China, but do not list the foreign bilateral, multilateral or nongovernmental agencies that could assist with project implementation. The profiles also do not contain budgets. These profiles will need further development prior to submission to potential funding agencies in China or elsewhere.

Project 1
(Objective 1, Action 1)[1]

1. **Title**: Comprehensive and integrated review of the biodiversity of China
2. **Participating Agencies**: National Environment Protection Agency, Ministry of Forestry, Ministry of Agriculture, State Oceanographic Administration, Ministry of Construction, Chinese Academy of Sciences, Census Office, State Meteorological Commission, various University departments
3. **Objectives**: To prepare a comprehensive review of the status and sigificance of the biodiversity and biological resources of the country as a basis for detailed planning of biodiversity conservation measures
4. **Justification**: Attempts so far to assemble in one document, in a standard format, the information already available on the biodiversity and biological resources of China have been hindered by poor collaboration between the various institutions holding the information and a lack of integration of the data from the various sources. Without a firm base on which to build further, decisions on priorities for biodiversity conservation action will be flawed. A comprehensive review and the data it supports will serve as a baseline for the collection of further information.
5. **Activities**: A small team will be assigned to collect the information needed and to analyze data in an integrated way. Wherever appropriate, GIS will be used to store these data as maps and overlays. Data will be collected on:
   - Human population demography
   - Infrastructure development
   - Land tenure and property rights
   - Economic factors (per capita income, agricultural production value, income from harvesting of wild species and from tourism)
   - Cultural factors such as sacred hills or trees
   - Land-use and marine and freshwater resource use
   - Distribution of crop types and stock and stocking densities and the ranching, harvesting or domestication of wild animal species
   - Distribution of forest types with logging regimes
   - Fishing regimes and catches, with details of species and numbers landed
   - Aquaculture: species and production, and areas under aquaculture production
   - Soil, meteorological, topographic, hydrologic and current vegetation maps, with details of ecologically sensitive areas, fragmentation of habitat types and, if possible, recent rates of change of habitat area, and estimates of pre-

1. Project references are in Chapter 3.

dicted rates of change under the present regime.

- Species distribution for species whose distribution is known, concentrating on threatened species, those with restricted distributions (especially national endemics).
- Areas of high endemism of diversity

Analysis of the benefits from biodiversity and the costs of conserving it, with estimates of the net monetary value of conserving it.

6. **Outputs**: A document summarizing the main results with plentiful maps and references to GIS databases holding the original data. Identification of the main gaps in the data necessary for planning biodiversity conservation measures.
7. **Timing**: One year

Project 2
(Objective 2, Action 1)

1. **Title**: Review of protected area system of China
2. **Participating Agencies**: Ministry of Forestry, Ministry of Agriculture, National Environmental Protection Agency, Oceanographic Administration, Ministry of Construction, Ministry of Geology and Mines, Chinese Academy of Sciences
3. **Objectives**:
   - To establish a comprehensive and authoritative database on the protected areas of China and the extent to which they protect the different biogeographical units and species of the country.
   - Make decisions on priorities for establishment of new protected areas and for further allocation of resources to existing protected areas.
4. **Justification**: At present there is no integrated database, either on paper or in computer files, of the protected areas of China. Essential information is lacking on precise location, total area, area of each type of habitat, shape, species inventories, extent of human impact, level of protection provided, management objectives and effectiveness, and threats. Such information is essential for planning a protected area system.
5. **Activities**: A small team will be recruited to collect all relevant information from the various agencies responsible for the nature reserves of China. Existing numerical and text data will be entered into a computer database and map data will be entered into the GIS database established under Project 1. Once gaps in the data have been identified, the team will solicit further information from the relevant agencies, arranging meetings at the agencies' offices. Some information will have to be sent in from the provinces or even the counties, so questionnaire forms should be sent out to the appropriate authorities for all reserves for which data are missing, and spare forms for reserves that may have been established without the knowledge of the staff in Beijing. Each agency responsible for protected area management should be collecting and updating information on the areas under their management, so the team's task will be to establish in each major agency copies of the database to be updated by trained staff in the agency. A publication will be produced presenting the results of the systems review in a simple form, with clear maps showing the location, size and functional category (using the IUCN classification if possible) of each reserve, followed by a system analysis that assesses the coverage and effectiveness of the existing system and its completeness in terms of protection given to habitats and species and critical areas. The team will also develop a systematic procedure that identifies additional areas of high priority for inclusion in the national protected area network.

   A small workshop with a selected team of Chinese and foreign experts would be convened at the end of the review to assess the results, prepare a summary report analyzing problems and opportunities. It could also make recommendations for needed follow-up action.
6. **Outputs**:
   - Full information on all protected areas of China, including all reserves and national parks will be available for the first time in a **readily accessible form.**

- A plan that identifies rationally: (i) the sites of highest priority for establishment as new protected areas; and (ii) existing protected areas that need improvement in level of management and protection.
- The capability to keep up-to-date information on the protected areas will have to be established, and the means of obtaining recent information will have to be instituted.

7. **Timing**: One year to eighteen months

Project 3
(Objective 2, Action 2)

1. **Title**: Biodiversity conservation research and training fellowship program
2. **Participating Agencies**: National Environmental Protection Agency and other relevant agencies
3. **Objectives**: To encourage young people to enter a career in biodiversity conservation.
4. **Justification**: One of the main limitations to biodiversity conservation programs is the lack of incentives for young people to enter a career in the field. Better working conditions is one way of addressing this issue, but some of the work in biodiversity will never be in "good working conditions," as the phrase is generally interpreted. There is a need to find people who are willing to work in nature reserves and remote places. Research and training grants may be one way of encouraging interested young graduates to start working in the field of biodiversity conservation, and of providing incentives for existing staff to further their careers. Pro-jects that combine research with management, or bring together workers in biodiversity conservation from different sectors would be encouraged.
5. **Activities**:
   - Establish a fund for training and research fellowships in biodiversity conservation
   - Solicit applications for grants to conduct research or surveys relevant to biodiversity conservation in China, to attend training courses, or do an exchange work visit in an appropriate institution.
   - Assess effectiveness of the programs by monitoring progress of former fellows.
6. **Outputs**:
   - Training and research fellowship program
7. **Timing**: 10 years

Project 4
(Objective 2, Action 2)

1. **Title**: Developing manpower for biodiversity conservation.
2. **Participating Agencies**: Ministry of Forestry (MFO)
3. **Objectives**: Improve pre-service and in-service training in wildlife conservation and nature reserve management
4. **Justification**: There are reported to be about 15,000 people employed in some capacity (including part-time) in the 420 or so nature reserves under MFO, and another 2,650 employed in wildlife conservation or nature reserve management offices at the national, provincial, prefectural or county levels.

There are about 12 universities or colleges that have existing undergraduate, post-graduate or in-service short term training courses of particular significance to wildlife conservation and nature reserve management. The contents of the majority of these course on wildlife conservation and nature reserve management are broad but do not provide the knowledge, skills and understanding necessary to maintain biodiversity in nature reserves. The different discrete courses are not integrated into an overall approach to conservation and management, and there is little on the biological principles of conservation, ignoring important concepts and advances in the fields of conservation biology nature reserve management and social forestry, and contributing to conservation practices that are outmoded. To ensure that the future recruits to nature reserves management and wildlife conservation have the necessary skills to maintain maximum biodiversity, there has to be a revision of the courses delivered at the pre-service stage. The course need to be thoroughly revised, new concepts need to be introduced, and new materials and teaching meth-

ods are required. Concurrently, a series of short-term training course modules should be developed, using the same teaching materials. This integrated approach can train the existing and future staff of China's nature reserves.

Other nature reserve staff development needs must be addressed. Many of these stem from the basic characteristics of nature protection work. For example, it is not easy to measure productivity, so supervision of employees, and assessment of performance is more difficult than on a factory production line. Guards in particular are not well supervised because their leaders are far away. There is a disincentive to go out on patrol in many reserves because discovery of poaching or illegal logging within a guard's range results in criticism and possibly punishment for the guard. This can be changed by management's introduction of incentives for guards to patrol and arrest offenders. However, one of the main requirements for success in nature reserve management is for the managers themselves to motivate employees and create an environment where then staff want to work in conditions that are often physically difficult. At present, the nature reserve management structure is top heavy, with too many people in big reserve bureaus, often far from the reserve, and out of touch with what the guards are doing in the field. A review of management is needed here, with training as a component of changing the structure.

5. **Activities**:
   - Course development at Northeast Forestry University (Harbin), Southwest Forestry College (Kunming), and Nanjing Forestry University. A training specialist will be resident at either Harbin or Kunming for 18 months to assist in this process, and teaching staff will spend one year overseas being trained in protected area management course development.
   - Conduct 30 short, in-service training courses for various categories of reserve and nature reserve division staff, ranging from reserve guards to planners, researchers, trainers of guards and extension workers. Some staff from the Ministry of Agriculture, Ministry of Geology and Mines, State oceanographic Administration, National Environmental Protection Agency, zoos and botanic gardens provincial TV stations, customs officers, police officers, and local officials will be invited to attend some of the courses.
   - A staff development team will travel to reserves to train reserve staff in personnel management and organizational management and discuss with the local authorities changes that are needed in the management structure and processes. The team should start with several reserves to develop models. A central team will be trained in Beijing with the help of a staff development expert, and then a pilot training exercise will be carried out together with the visiting expert, before the teams continue the process on their own.
   - In order to train nature reserve social affairs staff and extension workers in social forestry ideas, techniques and planning, a unit of trainers will be trained to run short courses at reserve and provincial level. The target groups for such training will be social affairs staff in the reserves, and extension workers in the areas adjoining reserves. The topics to be covered will include resource management, survey techniques (household surveys and rapid rural appraisal), negotiation with leaders, communication of technical data to villagers, identification of local experts, provision of technical assistance, development of training courses, participatory planning and project management.

6. **Outputs**: By the end of the project:
   - New courses in wildlife conservation and nature reserve management will have been developed (these courses will include in-service training courses for nature reserve staff, and pre-service courses for undergraduate and diploma students);
   - 30 short-term training courses of 8 types will have been delivered to a total of 800 trainees, mainly from Ministry of Forestry Na-

ture Reserves, but also some from other units;
- A core of professional teachers at forestry universities and colleges will have been trained to deliver the new and revised undergraduate, diploma and in-service training courses;
- A team of guard trainers from Provincial Forestry Bureaus and nature reserves will have been trained in who to train reserve guards;
- A staff development unit at the Ministry of Forestry will have been trained to work in reserves and at the provincial level to develop better staff management systems;
- A social forestry training unit, based either at Beijing forestry University or at the Ministry of Forestry, will have been trained to deliver training at the reserve and provincial level in social forestry principles, techniques, planning and project implementation; and
- A group of nature reserve or nature reserve office staff will have been on a study tour in the Asian region to gain experience from other countries' nature reserve management and problems.

7. **Timing**: Five years

Project 5
(Objective 2, Action 2)

1. **Title**: Testing of models for integration of conservation with development in buffer zones of nature reserves
2. **Participating Agencies**: Ministry of Forestry, Ministry of Agriculture, National Environmental Protection Agency, and other relevant agencies
3. **Objectives**: Investigation of the feasibility of integrating conservation of biodiversity with efforts for economic development by people living in areas surrounding nature reserves.
4. **Justification**: Most of China's nature reserves are located in poor rural areas with limited opportunities for economic development. People depend heavily on natural resources for subsistence and cash generating activities. They continue to utilize resources from high biodiversity ecosystems set aside for protection, and increasing population and economic growth lead to overexploitation of the land and degradation of the resource base on which the people depend. Pressures then increase to use resources inside nature reserves, and ecological damage of surrounding areas threaten the function of protected ecosystems. As a result many nature reserves have been severely degraded since they were established, and some have entirely lost the biodiversity values they were intended to protect.

The future viability of the nature reserve system depends on developing successful programs to address the economic needs of local people while still fulfilling the conservation goals. Instead of simply discouraging unwise development, nature reserve managers need to cooperate with local communities to encourage the search for types of development sustainable over the long term and compatible with reserve management goals. The issue is whether the natural resources outside reserves can support the human population in the long term. The chief obstacles to sustainable development are:

- Lack of coordination among the various agencies;
- Lack of information among the local people about the values of biodiversity and of methods of development that protect biodiversity;
- Lack of opportunities developed to allow local people to benefit from biodiversity while not destroying the biological resources;
- Lack of funds necessary for the short-term investments that will generate long-term benefits; and
- Too much focus on immediate financial gain (this can ruin the most carefully planned sustainable development projects, because a few people may not be satisfied with the benefits provided by the "sustainable activities" and may decide to over-exploit the natural resources as before, for extra personal or community gain).

This project will address the obstacles as best it can by developing four model programs at four selected nature reserves, one from each of the ma-

jor ecosystem types: forest, wetland, steppe, and marine. Selection of the sites for the sub-projects will be based in part on its importance for biodversity, but additional criteria will include the prior effectiveness of the reserve staff in addressing local resource issues and the willingness of the local government to commit its own resources to the project.

5. **Activities**:
   - Training of staff of nature reserves and local resource agencies in resource planning and public participatory planning procedures.
   - Intensive program of public awareness and education about the importance of conservation and development and the need to live within the limits set by the rate of renewal of biological resources. Encouragement of a sense of responsibility for the natural resources as well as a sense of wonder and pride in them.
   - Development of a variety of conservation-development plans for selected local communities near the nature reserve. These may involve proposals such as new crops or rural industries, income from tourism or from employment in the reserve, or straight compensation for the villagers' role in conserving the biodiversity value of the reserve in the form of tax rebates, for instance.
   - Provision of financial and technical support to implement the new plans. This can be in the form of low-interest or interest-free loans.
   - Assessment of the success of the projects in terms of the conservation of biodiversity and the satisfaction of the villagers.
   - Dissemination of the results of successful projects, if any, and planning for future use of conservation funds repaid (if any).
6. **Outputs**: Results of a number of experiments on setting up sustainable development projects that will be of use in guiding future nature reserve managers.
7. **Timing**: Four to six years

Project 6
(Objective 2, Chapter 3)

1. **Title**: Planning and establishment of the Longmenshan Reserve, Sichuan Province
2. **Participating Agencies**: Ministry of Forestry, Sichuan Forestry Bureau
3. **Objectives**: To establish a nature reserve in the northern Min Mountains to protect more of the fragmented range of the Giant Panda (Ailuropoda melanoleuca) and with it the high biodiversity of the region
4. **Justification**: The proposed Longmenshan Reserve lies at the northern end of the Min Mountains in northern Sichuan, at the southeastern edge of the Qingzang Plateau. It has diverse relief, with numerous steep slopes and narrow valleys, and grassland plateaus at high altitude. Altitude ranges from 1100 to 4800 meters AMSL, with much of the reserve lying above 3000 meters AMSL. The reserve is rich in plant and animal species, reflecting the wide range of vegetation zones, and there remain considerable areas of primary forest. The lower broad-leafed forests have been affected by logging, but the higher altitude mixed and coniferous forest is in good condition. However, some logging has been started now, and a road is being built up the main valley. The reserve has been given high priority in the Ministry of Forestry's Programmes for the Protection of the Giant Panda and its Habitat. Apart from the Giant Panda, which may be regarded as a "flagship species," the reserve protects a large number of State-protected animals and plants, including the Sichuan Snub-nosed monkey (*Rhinopithecus roxellanae*), takin (*Budorcas taxicolor*) and Chinese Monal (*Lophophorus lhuysii*). Also of importance are two species of birds endemic to the area, the Sichuan Wood-owl (*Strix davidi*) and the Sichuan Jay (*Perisoreus internigrans*) that are thought likely to occur in the reserve. The reserve also serves useful hydrological functions.

The reserve proposed at present covers 970 square kilometers and is split between three coun-

ties (Pingwu, Beichuan and Songpan). The Pingwu section (Sier) is the most undisturbed, with a human population of less than 900, and no road in to the main valley, although a short one is under construction and may be extended if needed for logging. The other parts are more heavily populated (2600 in Songpan, and 19,000 in Beichuan), but reassessment of the proposed boundaries may reduce the numbers within the reserve.

5. **Activities**:
   - Prepare a realistic plan for establishment and management of the Longmenshan reserve, consulting with local people and government throughout.
   - Establish the reserve.
6. **Outputs**:
   - A management plan for the proposed Longmenshan N.R.
   - A functioning nature reserve.
7. **Timing**: Two to three years.

Project 7
(Objective 3, Action 1)

1. **Title**: Comprehensive review of species conservation needs.
2. **Participating Agencies**: Ministry of Forestry, Ministry of Construction, Ministry of Agriculture, State Oceanic Administration, Chinese Academy of Sciences
3. **Objectives**: To carry out a comprehensive and systematic review of species conservation needs in order to determine priorities for action.
4. **Justification**: The best way to conserve species is by protection of sufficiently large areas of their natural habitat to ensure the long term viability of populations. Once the biodiversity and the protected area systems reviews have been completed a species conservation review would indicate which species are insufficiently protected by existing nature reserves or scenic areas and therefore require additional conservation measures to ensure their survival. In some cases, there may be sufficient coverage of the species range by protected areas, but the actual protection afforded on the ground may be insufficient. In other cases, there may be no protected areas in the species range, or the coverage may be insufficient to ensure the survival of a viable population. Objective assessment of the level of threats to different species is an important prerequisites to setting priorities for conservation action. Without a systematic review of the type proposed there is a danger that conservation efforts will be expended on species that do not warrant them (either because they are not endangered or because there is no hope of success) and that genuinely endangered species, or those for which there is a better chance of success, will be neglected.
5. **Activities**:
   - Review knowledge of species distributions and status, including coverage by protected areas, level of protection afforded by the protected areas, and level of hunting, habitat destruction and other threats outside protected areas.
   - Assess the level of threat to each species using the new IUCN classification of categories of threat: Extinct, Extinct in the wild, Critical, Endangered, Vulnerable, Susceptible, Safe/Low risk, Insufficiently known, Not evaluated.
   - Assess the effects of various courses of action on the threatened species making use of experience with procedures such as Conservation Assessment and Management Planning, and Population and Habitat Viability Analysis workshops for different taxonomic groups of animals and plants.
   - Determine urgent actions that are necessary for each threatened species, such as immediate improvement of protected area management, establishment of new reserves, increased emphasis on law enforcement, drafting of new regulations, compensation to local communities, or captive breeding initiatives.
   - Show priorities for action according to the results of the data analysis and workshops.
   - Prepare detailed project proposals for each species selected.

6. **Outputs**:
   - A comprehensive review of species conservation needs;
   - A list of priority projects for species conservation; and
   - Detailed project proposals for implementation of the actions for the highest priority species.
7. **Timing**: one year.

Project 8
(Objective 3, Action 3)

1. **Title**: Survey of the trade in wildlife in China.
2. **Participating Agencies**: Ministry of Forestry, Minorities Commission, Ministry of Public Security, Chinese Academy of Sciences, Academy of Chinese medicine, Customs Service
3. **Justification**: There is still illegal wildlife trade somewhere in China, yet there is hardly any information available on the numbers taken from the wild to support the trade or where they come from. The trade is almost certainly responsible for the near extinction of several species in China and is now threatening species, such as the tiger, in other countries in the region. Unless this trade is brought under control many more species are likely to become threatened or extinct in China. But without knowledge of the trade and its impacts, it is difficult to control.
4. **Objectives**: Develop a plan of action to reduce harmful impacts of wildlife trade on biodiversity conservation.
5. **Activities**:
   - Investigate, using undercover agents, the main market places to determine the species being traded, the quantities traded, the sources of the animals or plants, the retail and wholesale prices paid and trends in both trade volume and prices.
   - Investigate the use to which the various species are put, the types of customers who buy them and the level of awareness among the customers and the public in general about the threats to biodiversity and the extent to which they care about its conservation.
   - Follow the trail back to the sources and investigate again who obtains and sells the animals and plants, the middlemen, prices paid at each stage, the number taken from the wild, trends in numbers and prices, and public awareness of the threats to the species and the importance of biodiversity conservation.
   - Based on the information collected, prepare an action plan to control the trade.
6. **Outputs**:
   - An action plan that, among other things, is likely to recommend: (i) Police action, where appropriate, to arrest and prosecute identified merchant and to close down illegal businesses. (ii) Improved protection for wild species in specific areas, whether in reserves or not. (iii) Initiation of a wideranging public awareness campaign both in the areas from where the animals and plants are collected, and in the cities where most of them are finally sold, to persuade people of the folly of unsustainable utilization of the natural resources of the country.
   - A strategy and plan for dealing with the problem of animals and plants used in traditional medicines.
7. **Timing**: Two years

Project 9
(Objective 3, Action 4)

1. **Title**: Review of all artificially maintained collections of living plants and animals.
2. **Participating Agencies**: Ministry of Urban Construction, Chinese Association of Zoological Gardens, Chinese Association of Botanical Gardens, Ministry of Forestry, Ministry of Agriculture, State Oceanographic Administration, National Environmental Protection Agency, Chinese Academy of Sciences, State Education Commission, Medicinal Products Corporations
3. **Objectives**: To collect accurate information on the holdings of all zoos, botanic gardens, rare breed collections, and field gene banks so that integrated plans can be made for the use of ex-situ facilities in biodiversity conservation.
4. **Justification**: Various institutions are construct-

ing or planning the construction of captive breeding stations for plants and animals with the stated aim of conserving biodiversity. Several captive breeding farms have already been built up, and the effectiveness of the conservation effort has not been evaluated. There is an important educational and research role for zoos and botanic gardens. Zoos can also serve as a home for species that are likely to become extinct in the wild in the next 100 years or so. However, under the present conditions in China, populations of zoo animals are too small to contribute significantly to conservation efforts. Unfortunately, zoos still capture wild animals from the wild. This study should provide guidance on the adequacy of the present facilities and their operations, how they could be improved, whether they should be expanded or reduced in number, and how to improve coordination between them.

5. **Activities**: Information will be collected on:
   - Species, numbers, sexes, ages, places of origin, date of accession;
   - Records of births, deaths, accessions, sales, donations and breeding or exhibition loans for each species;
   - Staff, their level of training and ability;
   - Animal and plant housing and enclosures; and
   - Health care and disease diagnostic capability.

   Assessments will be made of the:
   - Adequacy of the animal and plant care at each place;
   - Extent to which there are exchanges of animals and plants or genetic material between facilities; and
   - Level of coordination between facilities for the establishment of breeding plans for individual species that minimize in-breeding.
6. **Outputs**: A comprehensive review of ex-situ conservation facilities and their impacts on biodiversity, and recommendations for changes.
7. **Timing**: one year to eighteen months.

Project 10
(Objective 3, Action 5)

1. **Title**: Conservation of the South China Tiger (*Panthera tigris amoyensis*).
2. **Participating Agencies**: Ministry of Forestry, Ministry of Urban Construction (Chinese Association of Zoological Gardens)
3. **Objectives**: To ensure the survival of the south China subspecies of tiger, known as the South China Tiger.
4. **Justification**: The South China Tiger, the only sub-species of Tiger (*Panthera tigris*) with its distribution entirely within China, is in immediate danger of extinction. It was formerly abundant and widespread in south China, ranging (west to east) from Sichuan (100 E) to Zhejiang and Fujian (120 E) and (north to south) from Shaanxi (30 N) to Guangdong (including Hong Kong), Guangxi and Yunnan (23 N).

   As late as 1950, there were probably over 4,000 individuals of the South China subspecies. Hunting, encouraged by government bounties for skins, was a major cause of the rapid decline of the south China tiger over the following years. The Siberian Tiger (*P.t. altaica*), together with the giant panda and the golden monkey, were declared protected animals in 1959, but in the same year, the South China Tiger, leopards, wolves and bears were declared pests, and hunters were called upon to eradicate them as quickly as possible. Between 1951 and 1955 a mean of 400 South China Tiger skins were taken annually: the mean dropped to 152 skins per year for 1961-65, 19 per year for 1971-75, and 5 per year for 1976-79. Only in 1977 was the South China Tiger declared a protected animal, but by then it was almost too late: the population had fallen to probably no more than 200 individuals living in scattered areas of forest habitat that had been fragmented by the spread of agriculture and felling of timber to fuel pig-iron plants. The law was not enforced, and poaching continued: many people still regarded the tiger as a pest, and there is a flourishing trade in parts of tigers, from the bones to the testes and the eyeballs, for traditional Chinese medicine.

   A 1991 survey estimated that there were fewer than 50 *amoyensis* left (10 in the wild, 40 in zoos), distributed in the mountainous regions of northern

Guangdong, southern, eastern and northern Hunan, and western Fujian provinces with some second-hand reports from central Jiangxi. The same survey found that tigers were breeding in southern and northern Hunan and western Fujian, but that the existing nature reserves were too small, the habitat too fragmented, and the hunting pressure from humans too high for survival of the tiger in the wild. Experience with tiger conservation elsewhere in Asia has shown that large blocks of suitable habitat (at least 400 sq km) would be expected to be necessary to support a viable population of South China tigers in the wild, and it is dangerous to rely on small, isolated reserves. Only two reserves in the range of the South China Tiger are larger than this, and there are no recent records of tigers from one of these. Although man and tigers can coexist, tigers are extinct or rare where man has dominated the landscape. Reserves with a minimum of human activity are essential for conservation of tigers and their prey. The size of blocks necessary depends on the habitat type and the prey density, causes of mortality, and the tigers social organization. Reports indicate that prey density is how very low in the range of the South China tiger. If the tiger is to be saved in the wild, poaching and encroachment into tiger habitat will have to be stopped,and the surviving tigers will need access to large, continuous areas of suitable habitat: new reserves will have to be established.

5. **Activities**:
   - Develop subspecies survival plan for the South China Tiger and a comprehensive scheme for integration of tiger conservation with agricultural and other development activities. The following activities are likely to be included.
   - Survey local public opinion on tiger conservation and explore ways in which tiger conservation can be accepted by the rural communities that share its habitat.
   - Tighten enforcement of existing wildlife protection laws to stop hunting for tigers and setting traps for other species that kill tigers incidentally.
   - Take measures to protect tiger prey from human hunters: this will involve the passing of new regulations and enforcing them.
   - Modify forestry practices to improve the habitat for tigers and their prey. this will involve thinning existing single species conifer plantations and encouraging the planting or regeneration of native trees and vegetation to provide cover and forage for ungulates. Grasslands at higher elevation should not be converted to conifer plantations.
   - Enlarge existing reserves and combine neighboring reserves; enlarge Meihuashan and Longxi in Fujian, and Bamianshan in Hunan.
   - Survey Yuhuang in Jiangxi, and other areas from which tigers are reported, and make plans according to the results of the surveys.
   - Continue and expand public awareness and conservation education programs, and training for reserve staff.
   - Carry out research on selected tiger populations to collect of prey species, effects of human disturbance and activities on tigers, and effects of tigers on humans and their livestock.
   - Establish coordinated breeding plan for South China Tiger in captivity.
6. **Outputs**:
   - an integrated sub-species conservation plan;
   - enlarged reserves;
   - enforcement of wildlife protection laws and introduction of special regulations to protect prey species; and
   - public cooperation in protected area and tiger management.
7. **Timing**: Five years

Project 11
(Objective 3, Action 5)

1. **Title**: Protection of the Sichuan Hill Partridge (*Arborophila rufipectus*).
2. **Participating Agencies**: Ministry of Forestry, Chinese Academy of Sciences (Institute of Zoology)

3. **Objectives**: To save the Sichuan Hill Partridge from extinction
4. **Justification**: The Sichuan Hill Partridge is confined to a small area of sub-tropical evergreen forest in the Liang mountains of southern Sichuan. It is restricted to broadleaved forest between 1000 meters and 2000 meters AMSL, and due to logging operations such forests are fast becoming extremely scarce. It is heavily reliant on primary forest, although there is some evidence that certain types of felling and planting schemes could be compatible with its survival. It is one of the most threatened birds in China yet its habitat is being rapidly eroded by timber felling operations.

At present rates of felling, the best habitat will have been destroyed within 10 years, and unless action is taken, the best prognosis in other areas, which are all due to be logged, is 30 years before the species becomes extinct. Logging on Mount Huanglian has destroyed all but 10 square kilometers of the primary forest. There is another small population in a relative inaccessible area of about 13.5 square kilometers in Mabian (District 5) that is not scheduled to be logged in the immediate future, and could perhaps be established as a reserve.

The exact current status is uncertain, however, because there is a population in Dafengding Nature Reserve (Mabian County, Suchuan Province), though the number is not large. A combination of building a new reserve and expanding the present one could be effective. Management measures such as clarifying the district division, strengthening management and conservation, and scientific research would need to be emphasized.

5. **Activities**:
   - Negotiate with local forest industry bureau of Mt. Huanglian for changes in the forestry practices to increase the suitability of the habitat after logging for survival of the partridge.
   - If possible, declare the Mt. Huanglian Forestry Farm as a reserve, but this will depend on negotiations over the future employment of the 200 workers, only some of whom could be taken on as reserve staff.
   - Continue surveys for the partridge and if possible establish a nature reserve for its protection in the 13.5 square kilometers in the Fifth District of Mabian.
   - If it is not possible to establish a full nature reserve, establish some kind of local sanctuary under local regulations to protect the bird, and at the same time conduct research into the species' habitat requirements to explore the possibility of combining modified forestry practices with conservation, such as leaving patches or corridors of primary forest, and replanting in strips with lower density at the edges to allow birds to use understory away from the core primary habitat.
6. **Outputs**:
   - a new reserve in important lowland broadleaved forest of southern China;
   - continued survival of the Sichuan Hill Partridge in the wild.
7. **Timing**: Three years.

Project 12
(Objective 3, Action 5)

1. **Title**: Conservation of *Nipponia nippon*.
2. **Participating Agencies**: Ministry of Forestry, Shaanxi Observation and Protection Station of the Crested Ibis, Beijing Zoo
3. **Objectives**:
   - Improve habitat and protection for the last wild population of the crested ibis;
   - Strengthen ex-situ breeding program as a complement of in-situ conservation; and
   - Generate local support for the conservation of the crested ibis.
4. **Justification**: One of the world's rarest birds, the Crested Ibis (*Nipponia nippon*), once distributed from Japan to Siberia, and widespread in China, is now restricted to a single county, Yangxian of Shaanxi Province, in the Qin Mountains. Causes of its decline over the past century include hunting, and drainage and contamination of the rice paddies, where it feeds, with pesticides. It was thought to be extinct in

China but was rediscovered in 1981, and has since been protected intensively in a specially designated Crested Ibis Conservation Area, where paddies are stocked with leaches (a main food of the bird), and farmers are offered compensation for not using agrochemicals on their fields. Intensive field studies are being carried out, and public education programs have been initiated. Nesting sites, which are very scarce, are guarded during the breeding season by Protection Station staff, who also follow the birds during the winter and live as near as possible to their nesting sites. Each pair of ibis usually lays 3-4 eggs and fledges 2-3 chicks, but the number of nesting pairs has remained at four—perhaps because of the shortage of suitable nesting sites. Most of the sites used are ancient oaks at sacred burial grounds. Two captive breeding programs have been started by taking the weakest chicks from nests. There are perhaps 28 birds in the wild now, and about 15 in captivity. In 1992, two chicks were successfully reared in captivity from eggs laid in Beijing Zoo.

Continued protection, public education, and research into the factors that are limiting the population are needed. Shortage of nesting sites could perhaps be remedied by provision of artificial sites. It is not clear whether compensation for not using fertilizers is an effective use of money: there is no unequivocal research showing that fertilizer use reduces food abundance or quality. The staff of the Protection Station are extremely keen but inexperienced, and there is a risk of inappropriate actions such as taking whole clutches of eggs for captive breeding in the hope that a replacement clutch will be laid and chicks from it reared successfully. Training and work experience is needed. Cooperation is needed between the Beijing and Yangxian captive facilities to promote captive breeding in both, and to ensure retention of genetic diversity in this tiny population.

5. **Activities**:
   - Secure nesting areas of ibis and fence them. This may require purchase of the sites in some cases.
   - Manage farmland to provide optimum habitat for ibises, perhaps creating an artificial wetland.
   - Review compensation scheme for farmers: is it necessary, and is it effective? Some farmers continue to use chemicals because they regard the compensation as less than the loss they suffer in lower yields.
   - Improve captive breeding facilities.
   - Strengthen cooperation between breeding centres and the ibis centre in Japan.
   - Provide training in field research, habitat management and captive breeding techniques to appropriate staff, through visits of experts to the Yangxian centre and work-visit(s) of centre staff to endangered bird conservation projects in U.K. or U.S.A.
   - Expand public education programs to increase local understanding and support for ibis conservation.
   - Develop incentives whereby local people receive benefits as ibis number increase.
   - Develop a low level of specialist bird-watching tourism to help to fund the ibis conservation work. There are many bird watchers who would pay a lot to see such a rare species, especially at the nest.
6. **Outputs**:
   - Improved level of training of Station staff
   - Increased level of protection for the birds
   - Simple tourism facilities, with bunk beds, and a blind with telescopes far away from nesting trees to prevent disturbance
   - Results of research on population limiting factors
   - Improved captive breeding facilities in Beijing and at Yangxian.
7. **Timing**: Three years

Project 13
(Objective 3, Action 6)

1. **Title**: Utilizing the full potential of the existing ex-situ facilities for conservation
2. **Participating Agencies**: Ministry of Construction, Ministry of Forestry, Ministry of Agriculture, State Oceanic Administration

3. **Objectives**:
   - To improve the cooperation between zoos and captive breeding centre and establish fully co-ordinated captive breeding plans, as part of integrated species conservation plans, with careful planning of priorities
   - To bring animal housing, behavioral management, and husbandry in zoos and captive breeding centres up to uniform, high standards.
   - To improve conservation education and public awareness function of zoos, breeding centres and botanic gardens.
   - To respond to needs for ex-situ conservation efforts for particular species by allocating captive spaces to endangered species, reducing, if necessary, holdings of expensive exotic species and putting the needs of conservation of native species before the desire to display individuals of a wide variety of eye-catching species.
4. **Justification**: Cooperation between zoos, and between the various Ministries involved in captive breeding is growing, but is still not near the level required for utilization of the full potential of the existing facilities. Zoos are cooperating on some breeding plans (for instance, for the giant Panda), but stud books are kept for only a few species and most animals are not permanently marked, so identification is unreliable and individual records of age, ancestry and place of origin are sketchy.

   Animal housing and care in many zoos is poor, in some cases inhumane, and in most cases has deteriorated rather than improved, in recent years. This is a wasted opportunity in the field of public awareness of conservation. Furthermore, the poor conditions in which animals are kept in many zoos are unlikely to promote a caring attitude to animals in particular and to biodiversity in general.
5. **Activities**:
   - Establish procedure for development of captive breeding plans, using the data collected under Project 9, and responding to the priorities established under Project 7. The experience of two or three foreign zoo managers will be useful in the initial stages of the Chinese Association of Zoological Gardens, Ministry of Forestry, Ministry of Agriculture and State Oceanic Administration. A reporting system will be established so that data on each species in a breeding plan will be kept centrally for planning purposes, using the International Species Information System (ISIS)—a computer-based information system for wild animal species in captivity.
   - Expand training courses in animal husbandry and housing, building on biannual courses on Zoo Biology held at Shanghai Zoo in collaboration with Smithsonian Institution.
   - Execute recommendations of Project 9, improving, expanding reducing or closing down facilities as appropriate. Funds will be required for improvement of animal housing. Initially five zoos will be selected for development as examples of how it should be done: Beijing, Shanghai, Guangzhou, Chengdu and Kunming.
   - Hold training courses for zoo and botanic garden staff in conservation education and public awareness, and the techniques for presenting precise, relevant and interesting information in forms that are durable and attractive.
   - Improve links between those responsible for conservation in the wild and breeding in captivity. Establish regular consulta-tions on species survival plans for those species that are deemed to need spaces in breeding facilities in order to ensure their survival.
   - Consider how to raise more money from the public, for instance by raising entrance fees, or by charging extra for special exhibits, including educational ones.
6. **Outputs**: An ex-situ conservation system that addresses the important problems, responds to newly identified needs, puts conservation of native species first, and plays an important role in conservation education and public awareness.
7. **Timing**: Four years.

Project 14
(Objective 3, Action 6)

1. **Title**: Development of health centre to serve Chinese zoos and captive breeding units
2. **Participating Agencies**: Ministry of Construction (Chinese Association of Zoological Gardens), Ministry of Forestry
3. **Objectives**: As part of the effort to improve conditions for animals in captivity establish a health centre with the staff and the technical resources to provide advice on zoo design, animal care and diagnostic testing for diseases important to captive breeding and release programs for Chinese endangered species
4. **Justification**: Better conditions in captivity, disease testing and disease investigation technology are urgently needed to improve the care of captive wildlife in China. Chinese zoos and captive breeding centres work with highly endangered native species yet, with a few exceptions, little is known about the health status or significant diseases of many of these species. There is little attention paid to behavioral enrichment programs in Chinese zoos and captive breeding centres.
5. **Activities**:
   - Develop a working group of Chinese and North American zoo keepers, veterinarians and disease specialists to plan a central animal husbandry and health centre in Beijing which would provide advice on animal care, housing, zoo design behavioral enrichment, and necessary diagnostic tests for wildlife diseases in captive propagation centres in China.
   - Establish, staff and equip the centre.
   - Train staff at the centre, and transfer the knowledge and technology to captive propagation centres outside Beijing, by a combination of visits of the staff to other zoos and captive breeding centres, and of training courses held at the Centre.
   - Use the facilities of the Centre to provide a diagnostic health service for zoos and captive breeding centres all over China.
6. **Outputs**:
   - Improved level of animal care and health in zoos and captive breeding centres in China.
7. **Timing**: Three years.

Project 15
(Objective 4, Action 2)

1. **Title**: Review of needs for conservation of breeds of domestic animals
2. **Participating Agencies**: Ministry of Agriculture, Chinese Academy of Agricultural Sciences (Institute of Animal Husbandry)
3. **Objectives**: To review needs for conservation of breeds of domestic animals and to prepare specific proposals to implement the high priority actions.
4. **Justification**: There has been a rapid loss worldwide in indigenous breeds of domestic animals, in particular livestock, as increasing ease of transport and the popularity of new livestock breeds has led to neglect of the indigenous breeds. Many of the indigenous breeds are adapted to local conditions or resistant to local diseases, and although they may not be missed initially, they constitute biodiversity resources of the greatest importance as potential for cross-breeding or in case the new breeds fail in some aspect or start to suffer loss of fertility from in-breeding depression. Although there is some good information available on crop plant genetic resources in China, there is considerably less on development of sensible proposals for action to conserve the genetic resources of livestock and other domestic animals.
5. **Activities**:
   - Review available information on breeds of domestic animals and identify gaps in the information that need to be filled.
   - Access threats to breeds and decide on priorities for action.
   - Prepare project proposals for genebanks and living collections of domesticated animals as appropriate, and make recommendations to the wild species conservation planners on the conservation planners on the conservation of

wild relatives of domestic species where appropriate.

6. **Outputs**:
   1. Plans for conservation of domestic animal genetic resources.
7. **Timing**: One year to eighteen months.

Project 16
(Objective 5, Action 2)

1. **Title**: Integration of sustainable selective logging with conservation of biodiversity.
2. **Participating Agencies**: Ministry of Forestry, Selected Forest Industry Bureau
3. **Objectives**: To develop a pilot scheme integrating sustainable selective logging with conservation of biodiversity.
4. **Justification**: One of the major threats to forest-based biodiversity is clear felling, followed (or not) by replanting of monoculture plantation forests. Timber units are depleting and in some cases exhausting their resources, and the system of labour recruitment exacerbates the situation, with constantly increasing labour forces attempting to make a living from a decreasing resource. One approach already suggested to solve this widespread problem when it threatens existing or proposed nature reserves is to find alterative employment for the timber unit work force, but this does not solve the problem of how to harvest timber and to maintain the biodiversity value of the forest. For example, the Changqing Forest Industry Bureau, on the western border of the Foping Nature Reserve in Shaanxi Province (one of the Giant Panda reserves) is about to clear fell the last remaining primary forest in one of its two forest farms. Attempts are being made under the Programme for the Protection of the Giant Panda and its Habitat to reallocate its work force at an estimated cost of US$10 million. Although this may be the only way to save the forest this action would set an expensive precedent for conservation. In case these funds cannot be raised, or else in another forestry concession, this project will seek to reduce the workforce and then allocate those that remain to a selective forestry operation that is more compatible with biodiversity conservation. As more than half the surviving giant pandas live outside nature reserves, it is important to find ways of combining commercial forestry with panda conservation.
5. **Activities**:
   - Enforce forestry laws with respect to cutting.
   - Negotiate a reduction of the work force in the Forest Industry Bureau and reform of the recruitment and employment policy to ensure that employee numbers do not grow beyond the capacity of the resource from which they are living.
   - Negotiate that the cost of any compensation to the timber unit for assets including land be considered as a cost on forestry and not on conservation.
   - Prepare a management plan for the area (Huayan and Maoping Forest Farms in the case of Changqing) and establish a regular six-monthly monitoring program.
   - Carry out necessary research on the effects of the various cutting regimes on biodiversity.
   - Train Forest Industry Bureau staff in biodiversity conservation issues.
   - Establish a tourism industry based on the easily observed giant pandas in the area
   - Establish a policing unit to ensure that the cutting regimes are adhered to.
6. **Outputs**: The results of a pilot scheme that could have wide application in forests elsewhere.
7. **Timing**: four years.

Project 17
(Objective 7, Action 3)

1. **Title**: Ecological studies of waterbirds and wetland habitats at Poyang Lake, Jiangxi Province and development of mitigation measures against impacts of hydrodevelopment projects
2. **Participating Agencies**: Ministry of Forestry, Jiangxi Forestry Bureau, various research institutes

3. **Objectives**:
   - Study the ecology of wintering waterbirds at Poyang Lake.
   - Assess probable impacts of hydro-development projects planned for the Yangtze and Poyang Lake basins.
   - Develop a mitigation plan to preserve biodiversity values of the lake, particularly its waterbirds.
   - Implement the initial measures of the plan.
4. **Justification**: Poyang Lake is the largest freshwater lake in China. It is fed from the south by five rivers, and empties to the north into the middle reaches of the Yangtze River. During the winter, water levels fall by as much as 13 meters, exposing vast mudflats and shallow wetlands that attract large concentrations of waterbirds. Because of the difference in flood periods for the five rivers that flow into the lake and for the Yangtze, water flows from the lake to the Yangtze, or in the reverse direction, according to the season.

Poyang Lake is one of the most important areas in Asia for wintering waterbirds, including 95% of the world's Siberian Cranes (*Grus leucogeranus*), 60% of the world's White-naped Cranes (*G. vipio*), 50% of the world's Swan Geese (*Cygnus cygnus*), and hundreds of thousands of herons, storks, spoonbills, swans, geese, ducks and other waterbirds. Only a small part (224 square kilometers) of the lake is protected as the Poyang Lake Nature Reserve, where hunting is partly controlled. For the vast majority of the wetland areas, located outside the nature reserve, little protection is afforded either birds or wetlands.

Difficulties of terrain and lack of funds have hindered waterfowl counts in the reserve, while other areas have seldom been surveyed. Counts in the reserve, while other areas have seldom been surveyed. Counts in the reserve indicate that Siberian and White-naped Cranes and other waterbirds move in and out of the reserve depending on water levels and human disturbance. During the drought conditions of winter 1992-93 few birds wintered in the reserve.

Hydrology and wetland ecology of Poyang Lake are vulnerable to impacts of development activities around the lake and in watersheds of the five rivers that feed the lake. Massive flood control projects have been proposed for the main lake, all of which would greatly damage the nature reserve. In addition, the Three Gorges Dam, if and when completed, will affect water flows, sedimentation and water quality, which in turn will affect the vegetation of the shallow wetlands on which cranes and other waterbirds depend. Investigation of waterbird and wetland ecology is urgently needed in order to prepare environmental impact assessments of the likely effects of the various hydrological projects, and to prepare mitigation measures to protect the waterbirds and their habitat.

5. **Activities**:
   - Collar ringing of waterbirds wintering in and around Poyang Lake in order to study the movements and ecology of selected species. Aerial surveys of waterbirds twice each winter.
   - Ecological studies of habitats heavily used by waterbirds, including vegetation, invertebrates and hydrology.
   - Review and assessment of currently available hydrologic data, and development of predictions of the impacts of changes in timing and volume of water flows and changes in sediment loads.
   - Development and approval of contingency plans to mitigate or reduce negative effects of regional hydro projects.
   - Beginning implementation of key mitigation measures, including, perhaps, expansion of nature reserves area, creation of other types of protective zones, construction of water gates for key wetlands within the Poyang Lake Nature Reserve, and establishment of a monitoring program at selected sites in the lake.
   - Ensure that throughout these activities the staff of the Poyang Lake Nature Reserve and the provincial Nature Reserve Management

Office receive on the job training in the methods and procedures used for research, planning and implementation of management measures.

6. **Outputs**:
   - Established monitoring system for ecology of waterbirds and wetlands in Poyang Lake.
   - Mitigation measures in operation, and a plan for further measures if necessary.
   - Staff trained in the research, planning and management methods used.
7. **Timing**: Four years.

Project 18
(Objective 7, Action 3)

1. **Title**: Establishment of Integrated Nature Reserve in the Sanjiang Plain, Heilongjiang Province.
2. **Participating Agencies**: Ministry of Agriculture, Ministry of Forestry, Sanjiang Plain Development Planning Office,
3. **Objectives**: Develop management plan for the proposed reserve in the Sanjiang Plain and a comprehensive plan for integration of wetland conservation with agricultural and other development activities.
4. **Justification**: Sanjiang is a low-lying alluvial plain bordered by three rivers (Wusuli, Heilongjiang and Songhua). The plain extends for about 4,000,000 hectares, half of which consist of wetlands including 190 smaller rivers and streams with large numbers of small lakes and frequent ridges of wooded ground. It is the largest wetland in China and is extremely important as nesting and wintering habitat for waterbirds. It is the main breeding area in China for the red-crowned crane (*Grus Japonensis*), Eastern white stork (*Ciconia boyciana*), and Whooping Swan (*Cygnus olor*). Brown bears (*Ursus arctos*) and seven species of state protected mammals also occur. Until forty years ago the basin was little affected by development but it is now undergoing massive agricultural reclamation. Aerial surveys for cranes in 1984 showed that more than 50% of the wetlands in the Qixing, Raoli, Wutong and Dulu river basins have been destroyed. To date only 16,000 hectares of wetlands have been protected, as the Honghe Nature Reserve. Continuing agricultural development in Sanjiang will benefit from protection of extensive wetland areas through their modifying effects on local climate and hydrological regimes, species diversity and benefits from reed-cutting and fishing.
5. **Activities**:
   - Assess current state of wetland resources by assembling available information and conducting aerial and ground surveys.
   - Assess and evaluate existing plans for agricultural and other development activities and their likely impact on wetland resources.
   - Develop conservation plans for the Sanjiang wetlands that balance hydrologic and biodiversity values with development plans through mitigation measures, buffer zones, regulations and protected zones..
   - Prepare management plans and establish Sanjiang Plain Nature Reserve.
   - Initiate programs for increasing public awareness of the importance of biodiversity conservation, and public participation in conservation planning and implementation.
   - Monitor wetland resources on regular basis by means of patrol records and surveys.
6. **Outputs**:
   - An integrated approach to conservation in the Sanjiang Plain.
   - A new nature reserve.
   - Better understanding of the importance of biodiversity conservation among the public, and public participation in management decisions.
7. **Timing**: Four years.

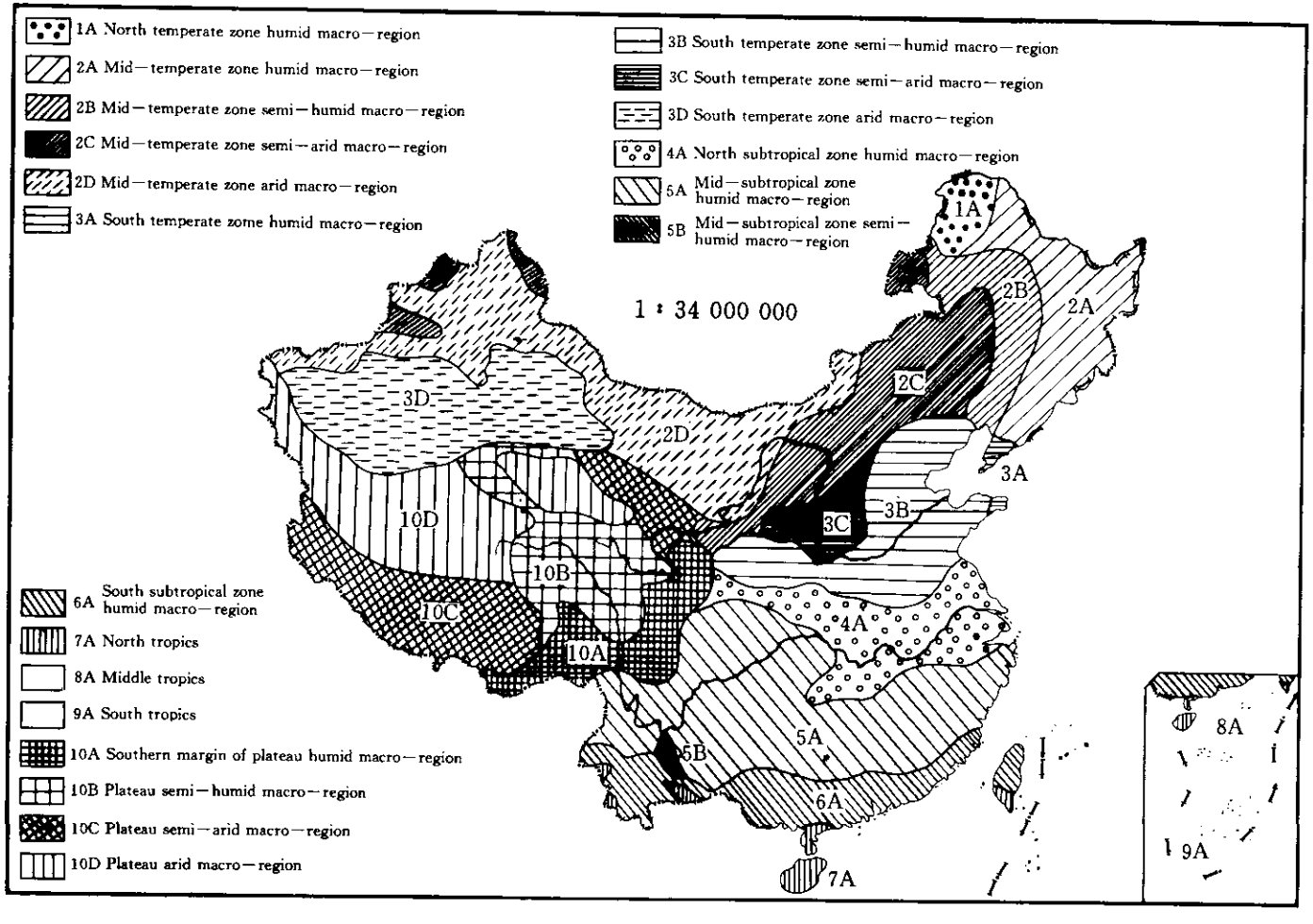

Figure A4.1 **CLIMATIC REGIONALIZATION MAP OF CHINA**
(From《ATLAS OF THE PEOPLE'S REPUBLIC OF CHINA》,1984)

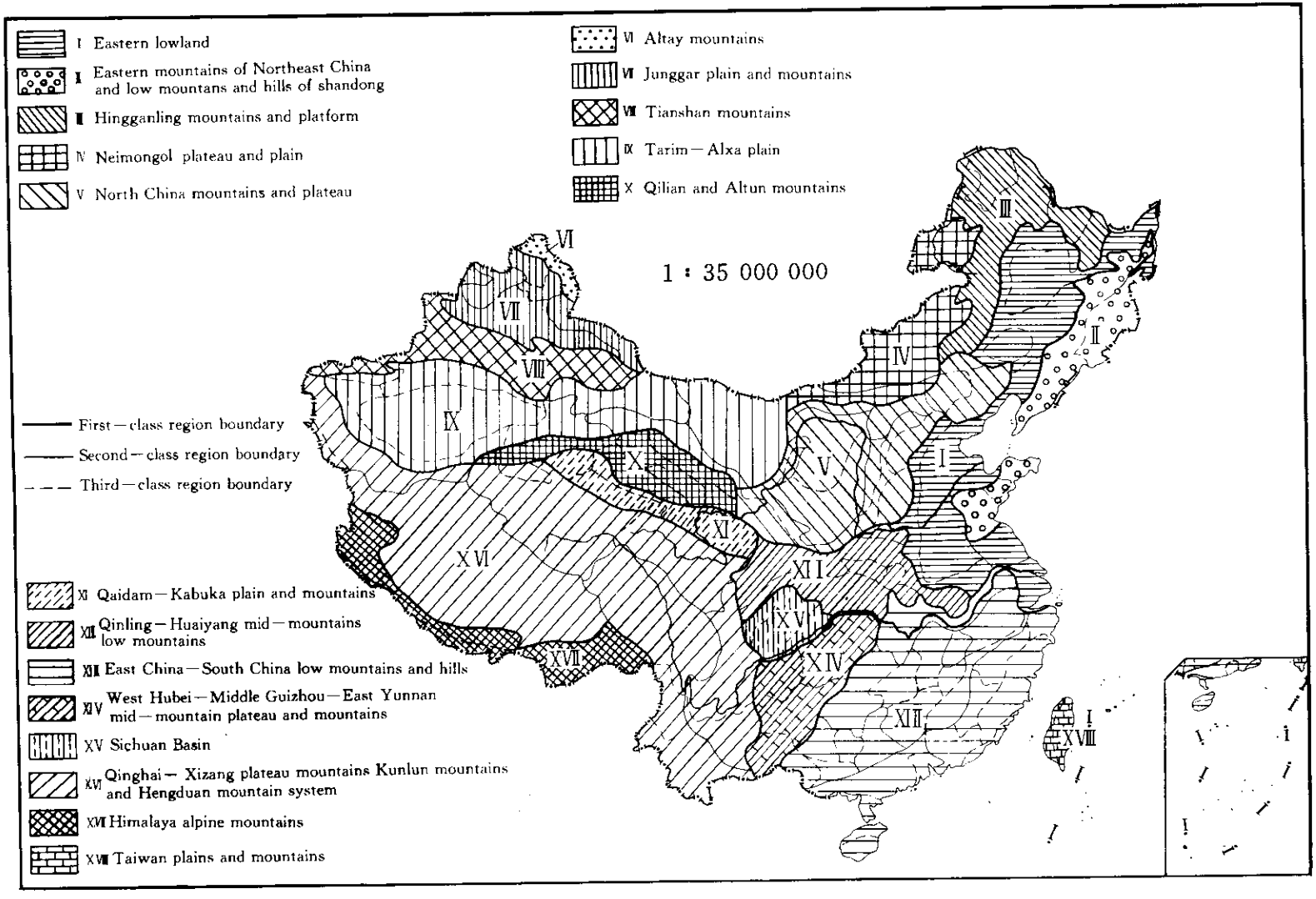

Figure A4.2 **LANDFORM REGIONALIZATION MAP OF CHINA**

(From《PHYSICAL ATLAS OF CHINA》, 1984)

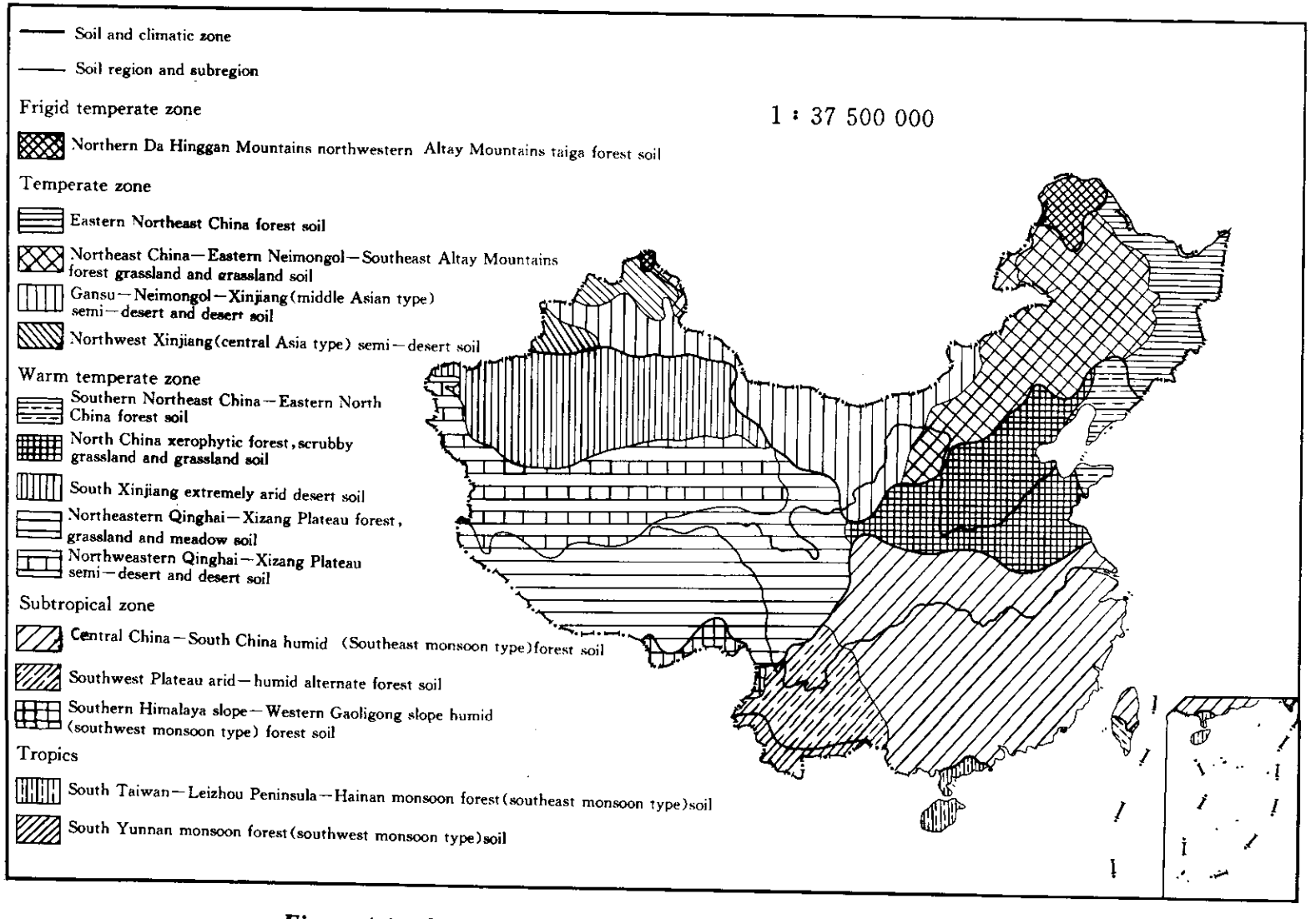

Figure A4.3 **SOIL REGIONALIZATION MAP OF CHINA**
(From《PHYSICAL ATLAS OF CHINA》, 1984)

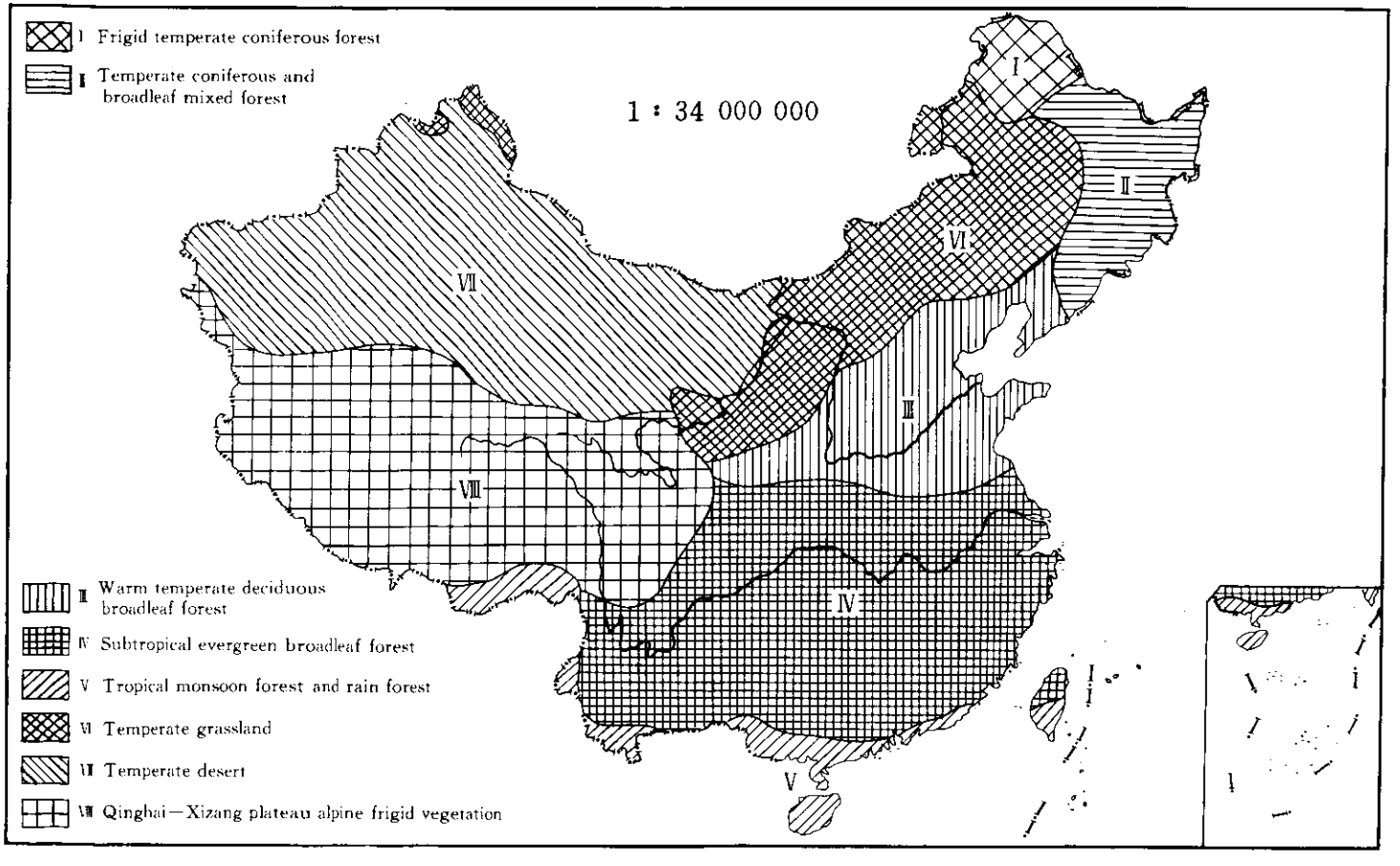

Figure A4.4 **VEGETATION REGIONALIZATION MAP OF CHINA**

(From《VEGETATION OF CHINA》,1980)

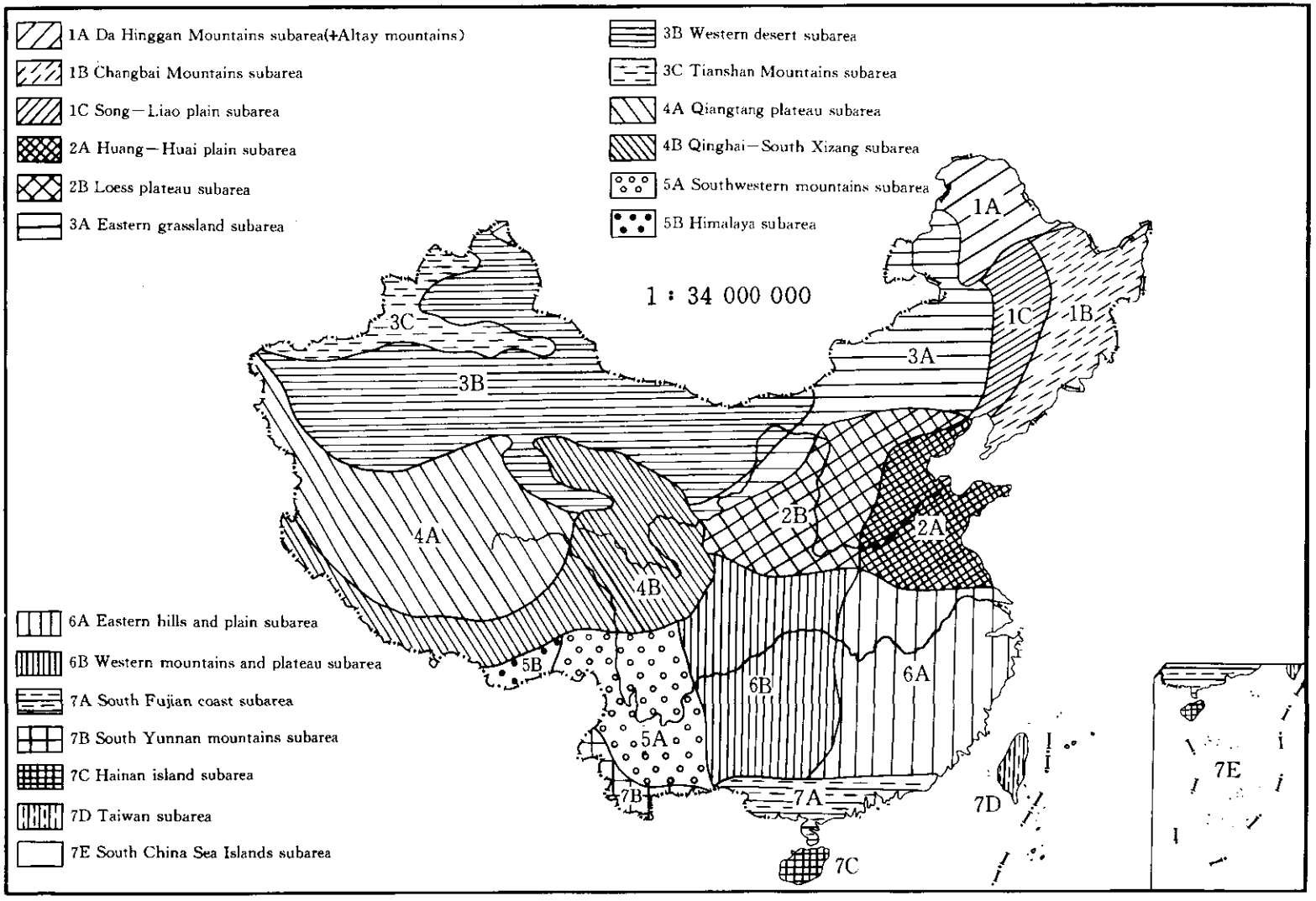

Figure A4.5 **ZOOGEOGRAPHICAL REGIONALIZATION MAP OF CHINA**

(From 《PHYSICAL GEOGRAPHY OF CHINA · ANIMAL GEOGRAPHY》,1979)

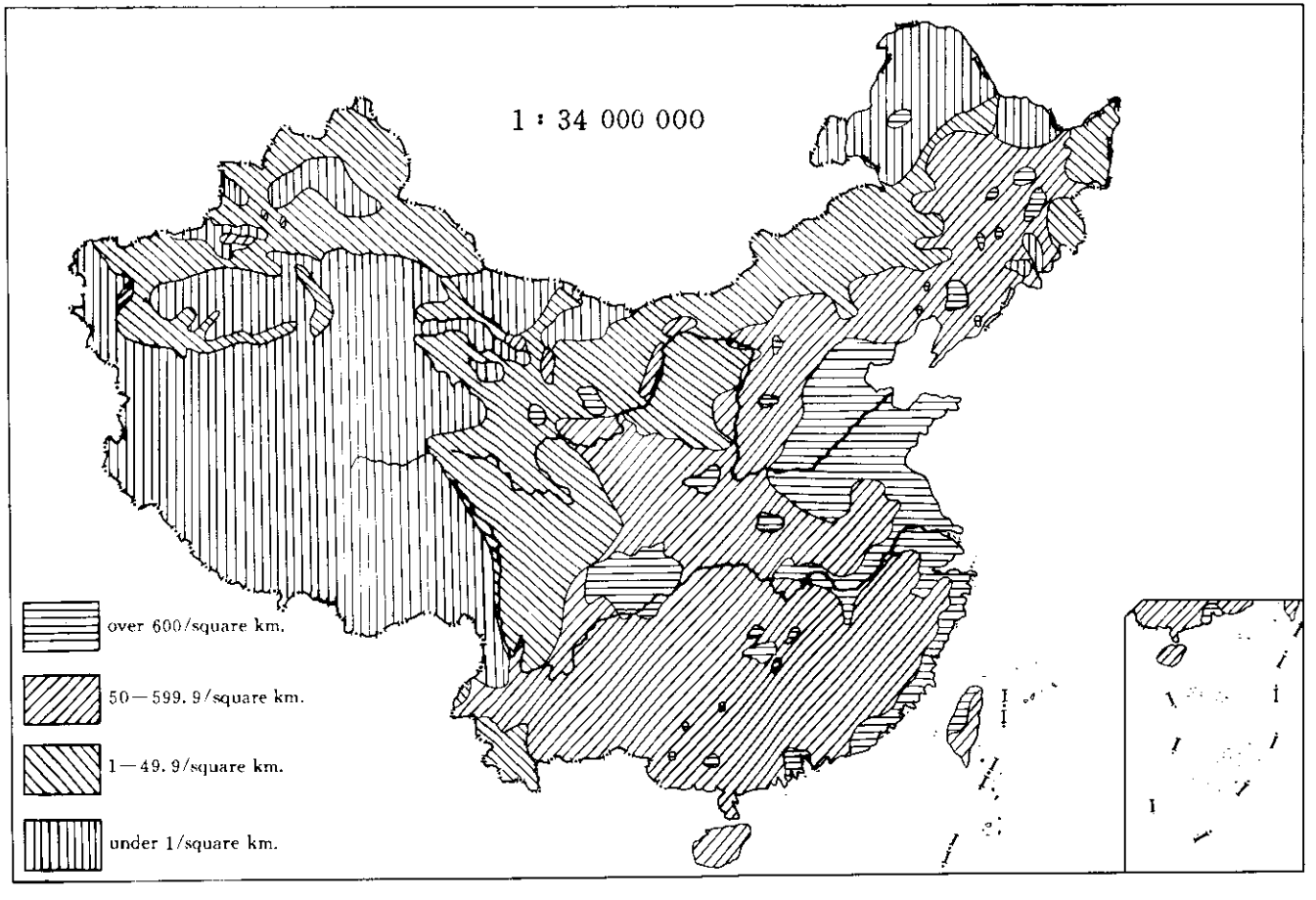

Figure A4.6 **POPULATION DENSITY MAP OF CHINA**
(From《THE POPULATION YEARBOOK OF CHINA》,1985)

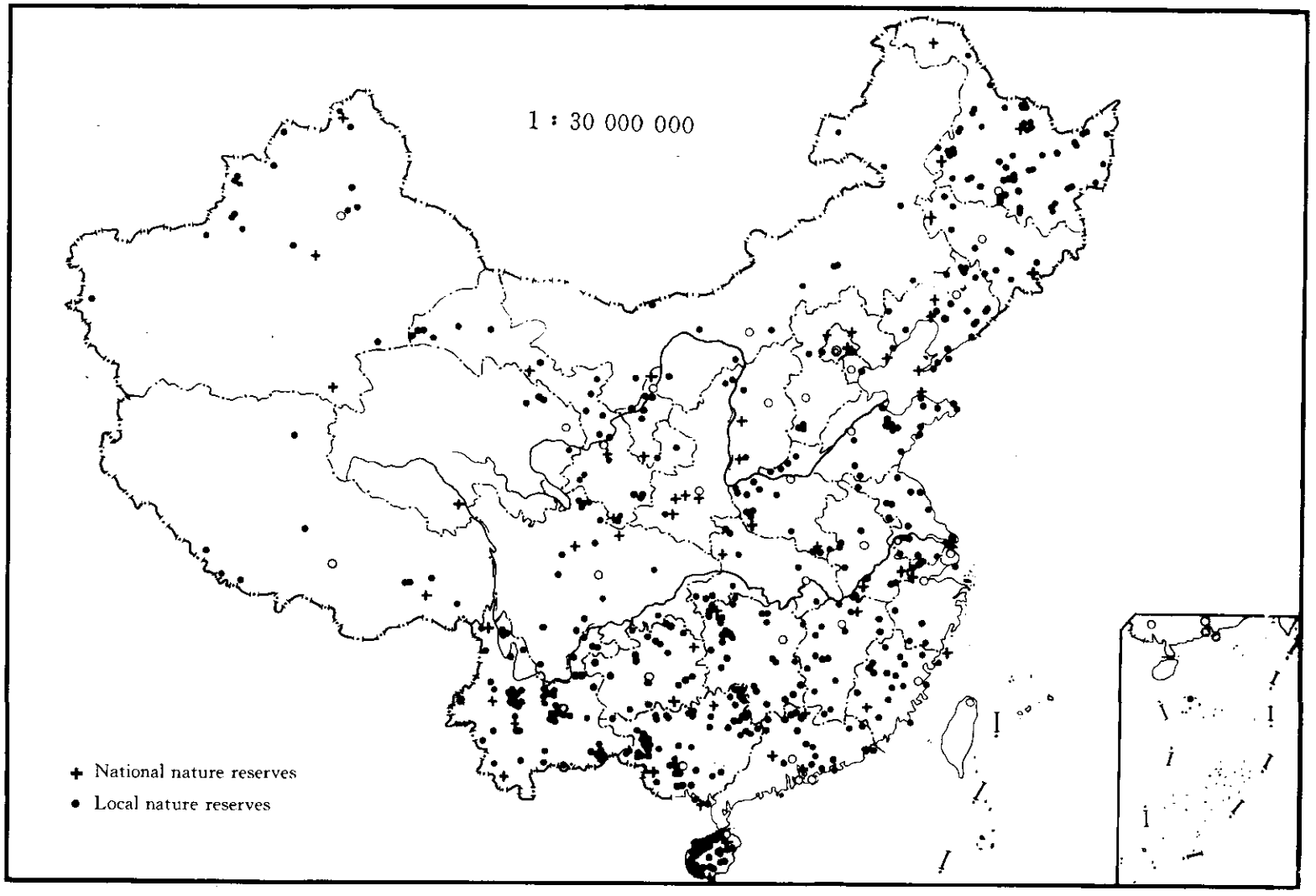

Figure A4.7 **SKETCH MAP OF NATURE RESERVES IN CHINA**

Annex 5
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Zhao Hong (Until May 1993)
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List of participants in first BAP Workshop (February 29, 1992)

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POSTSCRIPT

With the concern and support of the State Environmental Protection Commission, under the direction of the National Environmental Protection Agency and the assistance of other ministries and committees of China, and also with the joint effort of the national and international experts, compilation of the Biodiversity Action Plan for the People's Republic of China has been completed. Because of the successful leading of the group under President Xie Zhenhua, Head of NEPA, and also the close coordination of the expert advisory group and the secretariat, compilation of the Action Plan went off without a hitch.

Throughout the whole course of the compilation there was wide participation by a lot of experts from China and abroad. First, an outline and a schedule were proposed and discussed; then, separate drafts were rewritten by relevant committees and ministries; and finally, these separate drafts were combined into a single, consolidated draft after several workshops. Experts from China and abroad happily cooperated and worked hard all the time.

The present document was supplemented and revised by Mr. Tao Zhan, Mr. Ma Keping, Mr. Lee Talbot and Ms. Susan Shen. It was then confirmed and passed by Mr. Jin Jianming, leader of the national experts advisory group, and Mr. Lee Talbot, leader of the international experts advisory group. Mr. Xiong Sizheng has done a large amount of interpretation. The edit, proofread and check of Latin names was done by Mr. Jin Jianming, Mr. Wang Liqiang and Mr. Wang Jie.

Finally, we cordially appreciate all the people who have contributed to the compilation of this Action Plan. We also appreciate the subsidization of the Global Environmental Facility and the help of the World Bank, the United Nations Development Programme and other international organizations. We hope this Action Plan will play an important role in the course of China's performance of the "Biodiversity Convention."