

GEF Full Project Concept Paper

1. **Project title:** Conservation and sustainable utilisation of wild relatives of crops
2. **GEF Implementing Agency:** United Nations Development Programme
3. **Country or countries in which the project is being implemented:** China
4. **GEF Focal Area(s):** Biodiversity, with relevance to Land Degradation
5. **Operational Program/Short-term measure:** OP 13
6. **Country Drivenness (Project linkage to national priorities, action plans and programs):**
 1. Until recently, the over-riding objective of the agriculture sector in China was food security and food self-sufficiency. Recently, in line with the transition to the market-oriented economy and trade liberalisation, imports are increasing, even of staple crops. Present agricultural domestic policy focuses on increasing productivity, increasing the quality of agricultural products, and ecological protection.
 2. The conservation of wild relatives of food crops has been a priority in China since the 1950s. Until recently, the emphasis has been on research, surveys, collection, and on ex-situ conservation. However, in recent years, at a policy level, the focus has gradually shifted to include the *in-situ* conservation of wild relatives important to biodiversity. The following policy and planning documents prioritise in-situ conservation:
 - The *China Biodiversity Conservation Action Plan, BCAP* (Government of China, 1994). Objective 4 is to conserve the genetic resources related to crops and domestic livestock, with a focus on in-situ;
 - The first National Report to the CBD (GOC, 1997);
 - The *China Agriculture Biodiversity Action Plan* (Ministry of Agriculture, 1993). This lists five major objectives, of which one is to strengthen the in-situ conservation of key ecological systems and species and to establish a network of nature reserves and protected sites;
 - *China Agricultural Agenda 21* (MOA, 1999). Output 7.5 is the in-situ conservation of wild relatives of crops. This identifies 20 key sites for in-situ conservation, including the 15 proposed for consideration in the present project.
 3. In addition, the recently completed *Report of Survey on the Current Situation of Conservation and Sustainable Use of Agricultural Biodiversity in China* (report to MOA, 2000) describes the challenges to conserving crop genetic resources.
 4. In 1996, the State Council issued *Regulation on the Protection of Wild Plants* to guide the conservation of and research into wild species, focusing on the wild relatives of productive species. This regulation is the overall guidance document for conservation of wild relatives. Article V states that the government encourages and supports scientific research on wild plants, and supports in-situ and ex-situ conservation.
7. **Context**
 5. China is a mega-biodiversity country, with a vast diversity at the genetic, species and ecosystem levels. This diversity is also true with regards to biodiversity important to agriculture. Diverse physical conditions, diverse cultures, and the long history of cultivation and on-farm modification, have combined to yield a significant diversity in terms of cultivated species, farming systems, and wild relatives of cultivated species.
 6. There is an estimated 1200 cultivated crops¹ worldwide, of which approximately 600 are now grown in China. Of these, 289 are thought to have originated in China, or are known to have been grown in China for over 2000 years. Globally and in China three of the most important cultivated crops are rice, wheat and soybean.
 7. To feed growing populations, it is essential to maintain and increase production and productivity of these crops. Historically, maintaining and increasing production has often been accomplished through improving and modifying cultivated species by importing qualities/characteristics from wild relatives. This can

¹ Does not include wild relatives

increase resistance to drought, disease, cold, pests and saline soils. For example, in 1973, researchers hybridised cultivated rice with a wild relative found in Hainan. Rice originating from this hybrid now accounts for half of the rice grown in China. Between 1976 and 2000, a total of 350 billion kg of this hybrid rice has been grown in China.

8. Rice, soybean and wheat have wild relatives in China that may have the potential to contribute to future increases in production. Traditionally, sites with wild relatives of soybean, wheat and rice were common across large areas of China. Over the past decades, the number, the size and the quality of sites with wild relatives of these crops has declined significantly. The remaining areas containing important wild relatives are very small and very fragmented. If measures are not taken soon, many of the wild species and sub-species may disappear, along with their important characteristics.
9. With regards to rice, globally there are 22 species, of which 2 are cultivated and 20 wild. 3 of the wild species are found in China and are thought to have originated there. In general, wild rice is found in areas of high population density. Some rice is found in low-lying wetlands, others in hilly areas. Characteristics of wild rice species found in China include resistance to saline soils, capacity to flourish in poor soils, high efficiency of utilising nutrition from soil (nitrogen and phosphorus), resistance to cold and to high latitudes, resistance to drought, strong stalks, and the ability to prosper in shady areas. The wild rice areas are threatened by conversion (to forestry, agriculture and pisciculture), grazing by farm animals, tourism, construction and pollution. For example, wild rice which was previously found at 20 sites in Menghai county, Yunnan, is now found at only 9 sites.
10. With regards to wheat, there are 325 species/sub-species found in the world, of which 18 are cultivated (6 for human consumption, 12 for animal consumption). 160 wild species/sub-species are found in China, of which 46 are endemic. China is an important secondary gene centre for wheat. In China, wild wheat is often found in low population, arid areas. Characteristics of wild wheat found in China include good quality grass, resistance to disease, to drought and to desertification, to salinity and to cold, and high protein content. The wild wheat areas are threatened by desertification, encroaching sand, overgrazing, agricultural encroachment, tourism, mining and road construction.
11. With regards to soybean, there are 6 sub-genera globally. Two of these are found in China, one of which is wild, the other cultivated. The wild genus has three species found only in China. Characteristics of wild soybean found in China include protein richness, resistance to disease, ability to thrive at high altitudes (with combinations of low temperatures and high solar irradiation). There are many variations in leaf shape and colour, seed size, and flower colour. Wild soybean also has characteristics of drought and waterlogging tolerance. More importantly, Saponin and Oligosaccharides possessed by wild soybean are thought to be valuable for cancer treatment, and their concentration in wild soybean is 3-4 times higher than in cultivated soybean. The areas rich in wild soybean are threatened by farm animals grazing, agricultural encroachment, impurification from cultivated crops, pollution and desertification. For example, wild soybean which covered more than 100 ha in the Yellow River Delta in 1980 is now restricted to 30ha.
12. For all three crops, the direct threat is mostly due to the need to expand economic activities – to grow more food, to build roads etc. However, behind these direct threats lies a range of root causes to why important sites are not protected from threats. These root causes include:
 - Possible benefits of wild species are unknown. Low awareness, lack information, and lack of valuation mean that local people are unaware of crops, and unwilling to protect them;
 - Benefits of wild species would accrue to future generations or to distant people, and not to local people or government. If the local people and governments are not to benefit from conservation, they are unwilling to conserve;
 - Protected sites are not financed or well-managed. Where national and local governments have established sites, these are poorly funded and poorly protected;
 - The existence of financial and developmental incentives to convert wild-lands to production or industrial/urban areas. Linked to many of the above, the local people and governments can make a profit from activities that damage the site.
13. In addition, some sites are threatened by pollution and desertification. The root causes to pollution and desertification are broader and not specific to the loss of wild relatives. These processes have been well studied by the Chinese and large programmes are underway to address the root causes to desertification and pollution.

8. *Project Rationale and Objectives:*

14. The number and diversity of wild relatives of soybean, wheat and rice in China is declining. The wild relatives are now only found at a small number of geographically dispersed sites. These sites are threatened. Past efforts to conserve wild relatives have focussed on research, inventories, and ex-situ conservation. The government is also committed to in-situ conservation. However, existing resources, both financial and technical, at the site level and at the national level, are insufficient to ensure the *in-situ* conservation of these globally significant wild relatives of crops. The important gene pool found in these wild relatives is in danger of being lost forever.
15. The project's objective aims at supporting Chinese Government's plans and programmes to set up protected areas with an integrated and landscape approach and with participation from local communities and various stakeholders, so as to secure the wild relatives of soybean, wheat, and rice, including their natural habitats. In this regard, the project is to bring about best international practices to China for biodiversity conservation and sustainable use.

Baseline situation

16. Typically, the sites holding important wild relatives are very small. They are often fragmented. The sites typically lie close to household farms, farming cooperatives, wasteland, rural enterprises, forests, villages and communication routes.
17. In the baseline situation, the ongoing development process at sites across China continues. Unmanaged agricultural extension, un-controlled grazing, new roads and tourism facilities, mines, sources of pollution, and desertification all advance and damage sites with the wild relatives of wheat, rice and soybean. The wild relatives become increasingly contaminated by domesticated and semi-wild varieties, increasing the genetic erosion process. Slowly, these threats will degrade and destroy the last remaining deposits of these wild relatives. The result will be a loss for China and the world of this remaining genetic resource.
18. In the baseline, national activities continue to focus on research and inventories of the sites. Conservation efforts will focus on ex-situ conservation with only limited in-situ conservation. However, given lack of technical expertise, these are likely to focus on establishing small protected areas to 'fence-off' the wild species. The impact of these 'fenced-off' areas is likely to be limited by their small size and by the lack of resources to manage the protected area sites. This type of intervention proved to be only a superficial measure. For example, in Jiangsi province the local government built a fence to protect a wild rice-rich 6 hectare site, but due to limited resources and local support, the fence is now in bad condition. This infrastructure focused solution could not address the root causes of the system damage and thus did not have a big impact on the protection of the species. .
19. In order to strengthen the implementation of the 1996 Regulation on the Protection of Wild Plants, the Ministry of Agriculture plans to develop the detailed implementation measures for the wild plant protection related to agricultural bio-diversity. With the support of the Chinese Academy of Agricultural Science, the Ministry of Agriculture is establishing an inventory of some 200 key wild plants species related to agricultural biodiversity covered by the regulation based on previous survey and research results. The Ministry hopes to use this as an information base to help the stakeholders understand better the scope of the Regulation and raise awareness.
20. The baseline situation is a period of rapid change and challenge for China. China's anticipated accession to WTO is likely to have a major impact on farming communities. In response to these challenges, in the baseline situation, farmers are likely to focus on short-term economic security. In the period of adaptation to WTO, the loss of wild relative sites is likely to be accelerated, and the wild genes lost forever.
21. The baseline includes large programmes to fight land degradation and desertification. The anti-desertification programme targets large areas of China, with strict criteria choosing the sites to be targeted. In the baseline, the existence of wild relatives is not a criteria leading a site to be included in the national anti-desertification programme. Hence the sites containing wild relative threatened by desertification are unlikely to receive large-scale national support under the baseline.
22. China is also undergoing large programmes to limit air pollution. The, programme, largely command-and-control, focuses on sectors and localities. Again, strict criteria are used to select sites. The existence of wild

relatives is not a criteria leading a site to be included in the national air pollution control programme. If the sites rich with wild relative coincidentally lie close to a target of the national anti-pollution campaign, they will benefit and possibly be saved. However, in the baseline, most wild relative sites threatened by pollution will not be included.

Alternative

23. In the alternative, a series of sites that collectively hold wild relatives representing a majority of the diversity of wild soybean, wheat and rice found in China will be protected. The sites will be geographically distinct. The sites will be the home to many ethnic groups, and therefore home to cultural diversity and unique traditional agricultural systems. These sites include wild relatives covering the full range of important characteristics found in China.
24. Initially a list of 15 candidate sites will be considered. Annex 1 provides critical information on the candidate sites and Annex 2 a map. The selected sites² will form a network of resources, which collectively form a comprehensive genetic reserve of wild soybean, rice and wheat. A decision on the number of sites will be made during the PDF-B phase on the basis of selection criteria consistent with OP13. However, an indicative number of six sites (i.e., two sites per crop) is considered to be appropriate for project management.
25. In the GEF alternative, the present sources of the threats (e.g., farmers, factory owners, etc) will come to appreciate the value of the wild relatives - and will aim to become either preservers or sustainable users of the genetic resources. Where appropriate, they will have altered their development activities in order to no longer threaten the biodiversity. In addition, where possible, the local communities will be participating in schemes to manage the wild relatives, and will be well placed to benefit from their conservation. This will be backed up increased understanding of the sites and the genepool, increased ex-situ conservation of the species, improved monitoring of the status, and an alarm system. Instead of simply building up "fences" as practised in some of the areas, the GEF alternative approach will focus on increasing the commitment, incentive and local capacity to actively protect the species through community participation.
26. The sites will serve as a model for in-situ conservation of wild relatives. This model can be adapted to protect wild relatives of all crops and of all commercial species. This may also apply to livestock, forest and medicinal species. Potentially, the model could be replicated for protection of species such as *Sorghum propinquum*, *Calophoraceasinica*; *Citrus hongheensis*; *Malus sieversii*; *Litchi chinensis* var. *euspontanea*; *Cordyceps sinensis*; *Astragalus membranaceus*; *Gynostemma pentaphyllum* and *Rosaodorata*.
27. At the national level, an integrated, national approach to conserving the wild relatives of soybean, rice and wheat will have been formulated. This will provide the basis for a national strategy for in-situ protection of wild relatives. The traditional strengths in *ex-situ* conservation in mid and long-term storage centres will have been complemented by strengths in *in-situ* conservation. National level information management will have improved, and the national policy may be more adapted to conservation. Finally national level actors will have at their disposal an understanding and an array of tools to help local communities conserve agrobiodiversity.
28. For those sites threatened by pollution and desertification, as a result of support from this project, the sites will be included in ongoing national programmes addressing pollution and desertification.

Rationale for GEF Involvement

29. The sites contain globally significant agricultural biodiversity which is unique to China, yet of potential value to agricultural systems across the world. Without GEF support, in line with past happenings, the sites will either disappear or be significantly eroded. This process is happening very quickly. Some of the biodiversity will be lost before having the chance to document its existence. Others will exist only ex-situ.

² During the PDF stage, the 15 sites will be assessed, and only those meeting strict GEF criteria will be selected for inclusion in the full project.

30. Nationally, there is commitment to conserving these and similar sites. However, the resources (technical and financial) are lacking. GEF support can provide these resources and translate this national commitment into action. GEF can also leverage significant national support to conserving wild-relatives.

9. *Expected outcomes and activities of Full Project:*

Outcomes

At the local level

31. In the GEF alternative, at each site, a strategy to protect the wild relatives will have been developed and implemented. The strategy will integrate regulatory approaches with market-oriented mechanisms. It will integrate government and non-government actions. It will integrate protection with sustainable utilisation. The strategy will be based on the development and implementation of zones.

32. First there will be protection zones. No economic activities will be allowed. Farmers may be compensated by government schemes for not damaging the area and for protecting the area. Second there will be sustainable use zones. Wild relatives in these zones can be harvested sustainably. Incentives will be developed at each site in the form of an access and benefit sharing scheme. A framework through which local communities can benefit from the conservation and sustainable utilisation of the relatives will be developed. This may include sharing benefits with local government, national government, national institutes or companies, or international institutes or companies. Finally there will be economic development zones. The land surrounding sites with wild relatives will be open for development: production, tourism, etc.

33. For sites threatened by pollution and desertification additional measures will be taken. GEF support will help to ensure that the sites benefit from national programmes to combat desertification and pollution.

34. At the local level, a series of tools and mechanisms will be established at each site to ensure that the integrated zone scheme functions. This may include:

- Greater levels of awareness regarding agro-biodiversity and its value;
- Improved planning techniques;
- Improved practices in sectors previously threatening agro-biodiversity (eg agriculture and tourism);
- Participatory and consultative mechanisms to take decisions and plan resource use;
- Improved policy or regulatory framework at the local level, including possible financial incentives;
- Possible improved access and ownership rights over the wild relatives;
- Wild relative protection plans, including monitoring and alarm systems, at the local as well as at the national levels.

Possible performance indicators:

National level

- Better information dissemination on protection plans, approaches, and methods for wild relatives of soybean, wheat, and rice.

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Possible performance indicators:

Indicative Activities

Local level

- consultation workshops and associated training to strengthen integrated planning and management, with the adoption of an 'agricultural landscape' approach, including areas with wild varieties, farms, houses etc.;
- training on local-monitoring of biodiversity and ecosystems and development of early warning system;
- development and implementation of an integrated management plan for the area;
- review of existing land tenure system and proposals for reform;
- GIS and land analysis;
- awareness raising and educational programmes for local government and for local community;
- technical support to alter on-going practices (eg, tourism, or over-grazing) that threaten biodiversity;
- consultation workshops to technical support to develop community approaches to protecting biodiversity sites;
- establishment of protected areas, and capacity building to manage the protected areas;

- consultation and technical support to develop tools and mechanisms which can foster and regulate benefit- generation from genetic resources found locally.

National level

- development of necessary inter-agency coordination mechanism;
- awareness raising programmes for policy makers on the values and issues related to conservation of wild relatives;
- developing information management systems related to in-situ conservation of wild relatives;
- dissemination and replication of best practices;
- review of existing national legislation related to in-situ conservation of wild relatives, and recommendations for change
- review of national programme to combat desertification, and determination of a way for the wild wheat sites threatened by desertification to benefit from that programme;
- review of national efforts to combat pollution, and determination of a way for the wild relative sites threatened by pollution to benefit from those efforts.

10. Sustainability (financial, social, environmental) and replicability of the full project

35. A focus of this project is sustainable utilisation of biodiversity resources. At present, the species to be protected by the project are not being fully utilised, and so there is no incentive to protect them. However, many of the species to be protected in the proposed 15 sites are likely to have economic or agricultural value in the medium or long term. Part of the strategy of the project will be to develop an incentive framework whereby the preservers of the biodiversity are assured of gaining from any eventual utilisation of the biodiversity, and so have a strong incentive to protect it. In addition, a transition is expected from focusing on the ex situ research and conservation to in situ conservation with integrated approaches, including ways to address the shrinking and deteriorating habitat or natural environment of the species.
36. There are few models to conserving the wild relatives of crops in China, especially through sustainable utilisation. This project will develop the necessary models, which will be replicable across China to many other wild relatives of commercial and domesticated species. GOC will also ensure that lessons learnt at the sites are documented, adapted and disseminated in China. In addition, the sustainable utilisation approach may involve the development of incentive frameworks, including property rights and benefit sharing, which will be replicable in other parts of the world.

11. Country Eligibility:

37. China ratified the Convention on Biological Diversity on 5th January 1993. This project is in fully in line with GEF Operational Programme 13.

12. Stakeholders involved in project:

38. At the local level, the main stakeholders include:
- Farmers: change behaviour and development practice to prevent damage to facilities of the sites, and share benefits.
 - Communities/organisations (e.g., village communities): participate in management and maintaining of sites, and share benefits.
 - Enterprise owners (in particular those involved in tourism and polluting factories) and road-builders: comply with regulations for protection; share access and benefits.
 - Local government, notably the departments with responsibilities for agriculture and for planning: formulate and enforce regulations, take the lead to develop strategies and incentive framework for protection and sustainable utilisation.
39. At the provincial and national level, the stakeholders are:
- Ministry of Agriculture: MOA is responsible for national policies, strategies, and long-term planning regarding sustainable agricultural development, and in particular, for the management and conservation of agro-biological germplasm resources. At the provincial and county levels, the agricultural administrations of the local governments in selected sites share similar responsibilities.

- State Environment Protection Administration: SEPA is the lead agency and the Secretariat of the Chinese Co-ordination Group for the Fulfilment of the Convention on Biological Diversity, consisting of about 12 ministries, state bureaux, and institutions.
- Ministry of Finance: MOF is the national focal point and co-ordinator for GEF programmes in China.
- State Development and Planning Commission: SDPC is responsible for long-term macro-economic and social development planning, and is one of the main sponsors of the Administrative Centre for China's Agenda 21.
- Chinese Academy of Agricultural Sciences (CAAS) and Provincial Academies of Agricultural Sciences: The national CAAS with its research institutes and provincial academies provide scientific and socio-economic research and development support and analysis for sustainable agricultural development. For example, Professor Yuan Longping is an internationally renowned "Father of Hybrid Rice", and he is from the Hunan Academy of Agricultural Sciences (HAAS) in Hunan Province and the National Hybrid Rice Technology Research Centre.
- Ministry of Science and Technology: MOST is responsible for national policies, strategies, and long-term planning regarding scientific and technological development, and is one of the main sponsors of the Administrative Centre for China's Agenda 21.

13. Information on project proposer:

40. The project proponent is the Ministry of Agriculture. MOA has been actively involved in research and conservation of genetic resources since the 1950's. Since the 1970's, MOA has organised the collection of wild resources throughout most provinces of China. More than 370,000 accessions of over 1,600 species have been collected for ex-situ conservation.
41. MOA shares with the State Forestry Administration the responsibility for the implementation of the 1996 *Regulation on Conservation of Wild Plants*. MOA is responsible for agricultural species and plants, whereas the SFA is responsible for trees and forest species. Under MOA, the Chinese Academy for Agricultural Sciences, and its Institute for Crop Germplasm Resources, carry out research on crops and are responsible for collecting data and much ex-situ conservation.

14. Financing Plan of Full project

42. In addition to GOC financing of the baseline, GOC will provide support to the alternative. Notably GOC (national and local governments) will provide give more support to protected areas (actual levels will be determined during the PDF-B phase). The Government is already considering financing several wild rice sites (through protection and farmer compensation), but this programme could be expanded in partnership with GEF. The in-situ wild plant protection related to agro-biodiversity is one of the key areas for support in the Ministry of Agriculture's 10th Five year Plan on Agriculture and Rural Economic Development. This proposed project is within the thematic scope of this plan. Under this Plan, relevant developemnt projects will be formulated to be financed by the MOA's Basic Construction Funds. MOA will make efforts to integrate this proposed project within the programme to be supported by the Funds, which could serve as a strategic co-financing mechanism with GEF. The 1996 wild plant regulation allows for compensation to be given to farmers and communities that protect wild relatives. Possibly a new legislation will be developed to fine people who take plants, and to use the collected fines to finance compensation schemes.
43. GOC is also financing anti-desertification and anti-pollution programmes. GEF support will be used to incrementally focus these large programmes to areas rich in wild relatives. This would be an additional leveraging of GOC financing to the alternative.
44. GOC has committed itself to raising additional co-financing for the alternative at a ratio of at least 1:1 with GEF financing. In collaboration with UNDP, GOC will also seek co-financing from its relevant international partners. It is anticipated that the interventions designed under the Full Project may require financing of approximately \$6-8 million, with the possibility of \$3 million being requested from the GEF.

15. IA coordination and Linkages to GEF and IA programs and activities

45. The UNDP/GEF Strategy for Biodiversity in China has three components. The first component removes cross-cutting bottlenecks and barriers at the enabling level, with a focus on national capacity building. Building on this foundation, the second component will consist of strategic programme approaches conserving biodiversity in sub-sectors and in sub-regions. The third component consists of

projects addressing biodiversity hotspots and priorities best addressed through individual projects. The present project is central to this third component.

46. There are several ongoing and planned GEF projects in China aiming to strengthen *in-situ* conservation of biodiversity. These projects focus on forest, wetland and marine biodiversity. The sites targeted by these projects do not contain significant deposits of biodiversity important to agriculture. The present proposed project complements the ongoing and planned GEF projects.
47. The Government of China, with technical assistance from ADB, is preparing a partnership with GEF under OP12 to address land degradation issues in western China. This partnership will focus on policy and legislative changes and large-scale investments to rehabilitate degraded land. This programme is now in the early stages of development. The five sites with wild wheat reserves in the present project are located in western China, however the sites have not been identified for support under the OP12 programme. Accordingly there is no overlap between the present project and the OP 12. Nevertheless, in making the final selection of project sites, one criterion to be applied will be the need to avoid duplication with project sites receiving or proposed to receive GEF funding through the land degradation programmatic approach.
48. Government of China is also preparing a project to conserve biodiversity in Yunnan province, with support from ADB/GEF. There is also an ongoing World Bank/GEF programme in partnership with the State Forestry Administration of China (former Ministry of Forestry) on Nature Reserve Management to prepare and implement management plans in 5 priority protected areas, promote sustainable forestry and create a core protected areas of giant panda habitat. The projects focus on forest biodiversity and do not include sites with wild relatives of rice.
49. UNDP has just done a project, using its own resources, to build the capacity of Chinese agricultural researchers to develop new varieties of rice and apply them to poverty areas through a revolving fund mechanism. The experience will be beneficial to the agro-biodiversity project.

16. Proposed project development strategy

50. A PDF B will be requested. The following steps will lead to the development of the full project:
 - Secure PDF B support;
 - establish a national steering committee;
 - undertake a rapid survey of the 15 sites to verify their genetic importance and threat analysis;
 - select of sites;
 - establish local coordination committees at each site;
 - undertake economic and social survey of selected sites to determine details of the threats and the root causes to biodiversity loss;
 - undertake rapid survey of on-going farming systems around each site to determine possibilities of any important on-farm biodiversity;
 - survey the sites for possible biodiversity not directly related to agriculture;
 - prepare an outline integrated land development plan for each site;
 - prepare financial package including incremental cost analysis and identification of co-financing;
 - prepare GEF project brief.
51. The PDF B request will be submitted to GEF during summer 2001. PDF B activities will commence towards the end of 2001, and last for approximately 1 year. Full project should start up in early 2003.

17. Response to Reviews

52. Not applicable at this stage.

Annexes

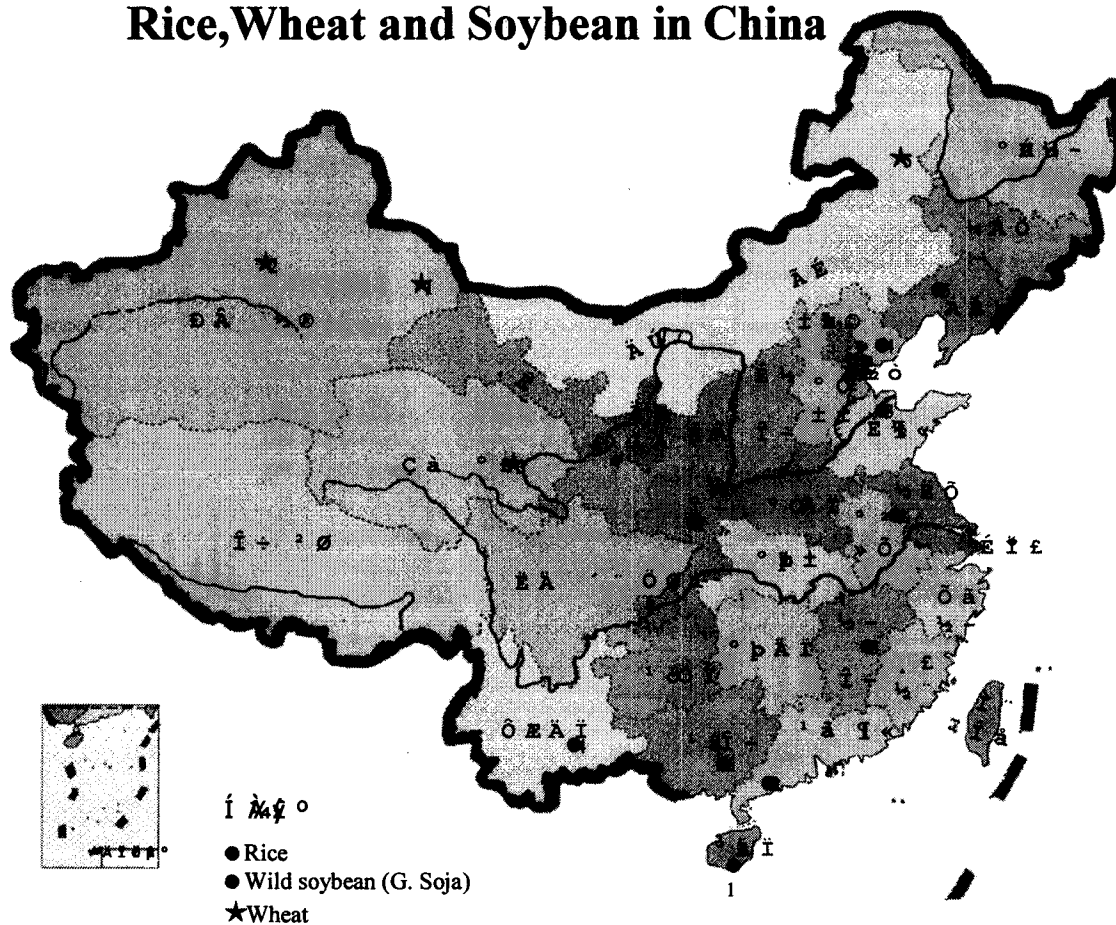
- 1 Critical information on candidate sites.
- 2 Map showing location of candidate sites across China.
3. UNDP-GEF's "Strategy for Biodiversity in China"

Annex 1: Candidate Site Information

Site name and location (province and county)	Total area (in hectares) to be address by the project	Area (in hectares) with wild crop relatives	Population in the area	Socio-economic characteristics: main economic activities, degree of poverty, ethnic minorities	Genus, species and subspecies present (the numbers, and where possible, all the names)	Main threats to wild relatives	Characteristics of the area (altitude, drought) or of the crop (leaf, flower) indicating valuable genetic resources
Wuhe County, Anhui Province	50	30	80,000	Planting crops, poor, only Han nationality	Glycine soja	Exploiting wild soybean fields	High protein content for commercial uses and the semi-wild characteristics valuable for evolutionary study
Kenli County, Shandong Province	50	35	60,000	Farming and feeding livestock, Rich, Only one nationality	Glycine soja	Grazing	Rich genetic diversity with different leaf types, seed coat colors etc. Waterlogging
Zhangwu County, Liaoning Province	30	20	40,000	Husbandry and farming, Rich, Han, Hui and Korea, Mong, Man nationalities	Glycine soja	Grazing and desertification	Drought tolerance, white flower type
Qianan City, Hebei Province	10	4	20,000	Farming and small industries, Rich, Han, Man and Hui nationalities	Glycine soja	Grazing and pollution	Drought tolerance, high protein and high oligose content
Zhengan County, Shaaxi Province	6	3	25,000	Farming and sheep feeding, Poor, Han and Qiang nationalities	Glycine soja	Grazing and land uses	High altitude and low temperature tolerance, green cotyledons
Yaxian County, Hainan Province	120	45	30,000	Crop and Fruit farming and Tourism	Three wild rice species: <i>Oryza rufipongon</i> , <i>O. officinalis</i> , <i>O. meyeriana</i>	Farming and tourism	Salt and drought tolerance
Gaozhou County, Guangdong Province	45	20	70,000	Crop and fruit farming, tourism and industries	One wild rice species: <i>Oryza rufipongon</i>	Land uses and pollution	High efficiency of nutrition uses
Dongxiang County,	30	13	50,000	Husbandry	One wild rice species:	Grazing	Cold tolerance

Jiangxi Province Jinghong City, Yunnan Province	40	25	20,000	Rubber tree and fruit cultivation and tourism	<i>Oryza rufipogon</i> One wild rice species: <i>O. meyeriana</i>	Tourism construction, trampling by rubber harvesting	Drought tolerance
Yongning County, Guangxi Province	70	35	30,000	Crop cultivating, husbandry and fishing	One wild rice species: <i>O. Officinali</i>	Fishing ponds are developed along wild rice living areas	Drought tolerance, disease and pest resistance
Baikong County, Xinjiang	100	60	15,000	Herding, Poor, Several minor nationalities	<i>Agropyron mongolicum, A. crisatum, A. Disertorum, A. michmoi</i>	Grazing and desertification	Good quality, disease resistance, drought tolerance, excellent protein quality
Wuloumoqi City, Xinjiang	40	30	40,000	Herd and tourism, Rich, Several minor nationalities	10 species of <i>Elymus</i> , 11 species of <i>Leymus</i> , 42 species of <i>Roegneria</i> and 1 species of <i>Agropyron</i>	Grazing and over trampling	Good quality for feeding, drought and cold tolerance, backing the move of sand dough
Xinghai County, Qinhai Province	30	20	15,000	Herding, Poor, several minor nationalities	10 species of <i>Elymus</i> , 26 species of <i>Roegneria</i>	Grazing and over trampling	Disease, pest and Drought resistance
Huaxian county, Shaanxi Province	3	2	25,000	Farming, herding and tourism	An unique species of <i>Psathyrostactys Huashanica</i> which is only distributed in China	Tourism	Salt and drought tolerance. It has already successfully hybridized with cultivated wheat
Xinbaer Huzuoqi, Inner Mongolia	30	20	15,000	Herding	1 species of <i>Elymus</i> with and 20 species of <i>Roegneria</i> with high degree diversity	Weather change and over grazing	Drought, cold and salt tolerance

In Situ Conservation of Wild Species of Rice, Wheat and Soybean in China



● Rice

1. Location: Ya County, Hainan Province Name: *Oryza rufipogon*, *Oryza officinalis*, *Oryza meyeriana*
2. Location: Gaozhou County, Guangdong Province Name: *Oryza rufipogon*
3. Location: Dongxiang County, Jiangxi Province Name: *Oryza rufipogon*
4. Location: Mengjiang County, Yunnan Province Name: *Oryza Meyeriana*
5. Location: Yongning County, Guangxi Autonomous Region Name: *Oryza officinalis*

● Wild soybean (G. Soja)

1. Zhen-an County, Shaanxi Province (' ú
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2. Wuhe County, Anhui Province
3. Kenli County, Shandong Province
4. Qianan County, Hebei Province
5. Zhangwu County, Liaoning Province

★Wheat

- 1 Balikong Hasake County, Xinjiang Autonomous Region
- 2 Wuloumoqi County, Xinjiang Autonomous Region
- 3 Xinghai County, Qinghai Province
- 4 Hua County, Shaanxi Province
- 5 Baerhuzuo County, Inner Mongolia

UNDP-GEF STRATEGY FOR BIODIVERSITY CONSERVATION IN CHINA

Introduction

China has achieved a rapid and widespread socio-economic development over the past two decades, due largely to a successful programme of financial, economic and administrative reforms. These successes have brought with them new challenges for the Chinese government and people. Notably the development gains have not been evenly distributed; many areas in the country remain economically and socially poor. Also, the economic development has had negative impacts on the environment, through increased pollution emissions and degradation of natural resources.

Accordingly, three main objectives of the government's development strategy are:

pushing ahead with economic and administrative reforms, notably in relation to entry into the World Trade Organisation;
poverty alleviation and helping the lesser developed regions to catch up, notably through the *Western Development Strategy* (WDS); and,
sustainable development and environmental protection.

In each of these areas the Chinese Government aims to benefit from strengthened cooperation with the international community. This cooperation is in the form of private sector investment, international donor resources, and meeting commitments to international agreements.

China is one of the richest countries on earth in terms of biological diversity. It is the home to a wealth of variety in genes, species and ecosystems, and to high levels of endemism. Much of this biodiversity lies in areas affected by poverty, and many of the provinces targeted for support under the WDS contain globally significant mountain, forest, wetland and dryland ecosystems. However, the biodiversity in China is under threat, from land-use changes, unsustainable exploitation, habitat fragmentation, pollution and climate change.

Biodiversity is the basis for sustaining all livelihoods and development, and its conservation is essential to long term sustainable development in China. Biodiversity is also a common resource for all mankind. As a signatory to the *United Nations Convention on Biological Diversity* (CBD), China is committed to take steps to conserve its biodiversity, and is doing so in cooperation with the international community.

In line with national priorities, the UNDAF for China has three goals for the period 2001-2005: reducing socio-economic disparities; supporting national reform and development; and assisting China to meet global challenges. In line with these goals, this *UNDP-GEF Strategy for Biodiversity Conservation* outlines how UNDP-GEF will work to conserve globally significant biodiversity in China, in complement to national and international efforts to alleviate poverty and promote sustainable development. The strategy builds on past experience with biodiversity conservation in China and in other parts of the world. Implementation of the strategy should also facilitate improved coordination within the biodiversity sector.

In November 2002 China is to host the triennial meeting of the GEF Assembly. This meeting will present an ideal opportunity for China to exhibit its achievements under GEF.

Institutional Setting

The State Development and Planning Committee (SDPC) takes the lead in preparing and implementing national development plans and strategies, often within the framework of an inter-ministerial Committee. The Ministry of Finance (MOF) plays a key role in planning the allocation of budgets, including most loans from the international donor community. MOF is also the GEF Operational Focal Point. The State Environment Protection Administration (SEPA) has overall responsibility for environmental protection, including biodiversity. SEPA takes the lead in integrating environment into national development plans, and in drafting most national plans with a focus on the environment. Recently, SEPA developed a programme of activities to ensure the environmental soundness of the WDS.

With regards to biodiversity, SEPA has responsibilities for establishing priorities, for coordinating activities, for education, for awareness raising, for policy development, for monitoring and inspection and for information management. On the ground, in addition to SEPA, many biodiversity related activities are implemented by 'production' agencies, notably the State Forestry Administration, the Ministry of Agriculture, the State Ocean Administration, and the Chinese Academy of Sciences.

Biodiversity cuts across all sectors, and coordination is essential if efforts to conserve it are to be successful. This coordination is essential between central and local government agencies; amongst government agencies responsible for planning, economic production and environment; and between the private and public sectors.

Previous Experience with Biodiversity Conservation in China

China was one of the first countries to ratify the CBD and has acted vigorously to meet its related commitments. The *National Biodiversity Action Plan* (NBAP) was approved by the State Council in 1994, and the first National Report to the CBD was submitted in 1997. National and local government agencies have made significant investments in biodiversity conservation. In addition, the government has mobilised international resources to conserving biodiversity.

At a global level, the Global Environment Facility (GEF) is the financial instrument for implementing the CBD. GEF, through its Implementing Agencies, can finance modifications or additions to ongoing development programmes and projects in order to protect globally important biodiversity. GEF has financed several projects in China. These were mainly been large-scale projects addressing biodiversity in and around forest and wetland protected areas, but there have also been smaller activities at the enabling level.

At the time of the drafting of the CBD, biodiversity was a relatively new field. Over the past ten years, China has gained significant experience in implementing the CBD and in implementing GEF projects. A broad body of expertise and knowledge has developed on how to conserve biodiversity. Likewise, UNDP/GEF has almost 10 years experience implementing biodiversity conservation projects, in China and across Asia and the world. Globally, there has been an impressive accumulation of experience related to biodiversity conservation, in governments, donors agencies, and NGOs in this short time. This experience provides a solid basis for the development of future projects. Formal and informal reviews of this experience have been undertaken, and a consensus is developing on a series of inter-related lessons³, including:

- Previous efforts to conserve biodiversity have concentrated in and around protected areas. This should remain an important part of conservation. However it is necessary to complement this by targeting the sustainable utilisation of biodiversity located in non-protected areas. This latter approach can be referred to as the production landscape approach;
- Many previous interventions have attempted to treat biodiversity as a separate sector, overlooking the fact that biodiversity cuts across and resides in all sectors. Weak coordination, particularly amongst government agencies, has led to poor priority setting, duplication, and inadequate cooperation at the project level. Also, mechanisms to integrate biodiversity conservation into all sectors of economic and social development have not been adequate;
- Previous efforts to conserve biodiversity have mostly adopted an enforcement approach. This remains important, but should be complemented by *incentive* approaches. Governments should construct financial and other incentives to conservation at the site level. One element of this is finding 'win-wins', whereby the entrepreneurial spirit is guided to projects which both make money *and* conserve biodiversity;
- Innovative tools, such as eco-labeling, land-use rights, green accounting, need to be developed;
- Most efforts to conserve biodiversity have concentrated at the site level. It has become increasingly obvious that these can only be successful if the enabling environment, at national and local levels, is strong and fully supportive;
- Coordination and synergy amongst biodiversity projects has been inadequate;

³ Much of this was drawn from the recently completed survey under *Capacity Development Initiative* (CDI) by GEF. The survey looked broadly at a global level and regional level, without focusing on depth into China.

- Previous efforts to conserve biodiversity have too often adopted a top-down approach, this should be complemented by bottoms-up and inclusive approaches.

To differing extents, these lessons all apply to China.

The UNDP-GEF Strategy

The Goal of the UNDP-GEF Strategy for biodiversity conservation is to conserve globally important biodiversity, in support of national development processes.

This Strategy is developed after almost one decade of global, national and local experience in implementing the Convention and GEF. Accordingly, the Strategy aims to build on the lessons learnt during that decade, taking account of their particular relevance in China. Notably, the Strategy aims to significantly upgrade national capacity to manage biodiversity conservation in a market-oriented, integrated and coordinated manner. It is hoped that this Strategy will provide guidance to the interventions of other donors.

UNDP efforts will focus efforts into three strategic components. The first component will focus on capacity development in the enabling environment. Capacity built under this component will lead, *inter alia*, to an improved setting of priorities, coordination and management of projects. Building on these foundations, the second component will consist of strategic programme approaches conserving biodiversity in sub-sectors and in sub-regions. To a large extent, these small programmes will replace previous projects, as they will provide a vehicle for integrated and coordinated measures to address causes of biodiversity loss. However, many threats to biodiversity will still be best addressed through individual projects. Hence the third component will consist of projects addressing biodiversity hotspots and priorities best addressed through individual projects.

These three components are further described below, followed by an indicative timetable for implementation of the Strategy, and a diagrammatic representation in the Annex.

Component 1 This component will be launched with an assessment of the capacity needs in China, funded through a GEF PDF process. The PDF/assessment, building on the findings of the global CDI, will determine to what extent the above-mentioned lessons learnt apply to China. The PDF/assessment will construct a conceptual model illustrating how capacity gaps in the enabling environment lead to biodiversity loss at the site level. The PDF/assessment will also detail out the activities needed to address the capacity gaps.

Even before undertaking the assessment, some information is known related to the capacity gaps. It is anticipated that the capacity building could focus in the following areas: planning, setting priorities and strategizing; developing and implementing biodiversity policy and legislation; integrating biodiversity in economic and development policy and programmes; coordination amongst government agencies; strengthening enforcement; building appropriate partnerships with NGOs and private sector; creating ways to make making biodiversity conservation financially profitable; raising awareness; and programme and project management.

Institutional fragmentation remains a barrier to effective conservation efforts in China. SEPA does have a mandate for coordination, although as a relatively junior agency it is not fully empowered to implement this mandate. Hence, where appropriate, work in this component will be with and through SEPA, empowering SEPA to coordinate more effectively. However, where appropriate, the capacity building will also focus directly on other agencies. Importantly, a significant part of this component will relate to strengthening and clarifying the linkages between agencies, and in developing partnerships between government and non-governmental sector (including private sector). Work in this component will include 'on-the-job' training, whereby development, management and monitoring of activities under Components 2 and 3 are supported under Component 1. Capacity built under this component should also lead to an improved setting of priorities and management of projects – including those funded by other donors.

A critical part of this component is capacity to plan biodiversity conservation, at the national, sub-national or thematic level. The China NBAP was finalised in 1994. Although the priority actions identified in the NBAP still apply, changing conditions and additional CBD guidance mean it is no longer fully relevant. In addition, global experience in NBAPs has led to the development of new international best practices and guidelines. Under

component 1, an assessment of the successes and failures of the NBAP - both as a process and as a product - will be undertaken. This may lead to GEF funding to rectify any capacity weaknesses or to prepare selective updates of the BAP. The possibility of sectoral and sub-national BAPs will also be explored.

Component 2 is the long-term component. This component is to consist of targeted programmes of intervention. Programmes differ from projects in that they are over a longer time scale, they include a diversity of activities at upstream and downstream levels, they involve many national and possibly international actors, and they are built around large-scale national initiatives. Through programmes, many of the lessons learnt listed earlier in this document can be comprehensively addressed.

Programmes offer an opportunity for an integrated and high-impact approach. However, in order to design and implement a programme, many conditions must be met. There is a need for a clear national strategy, for strong co-financing, strong national capacity (institutional and individual), and effective coordination mechanisms. Once these are developed (partly under component 1), the programme approach will become the principal mechanism for biodiversity conservation in China.

A typical programme under Component 2 would consist of a series of coordinated projects. They would address a range of issues from policy to field requirements. They would have an integrated coordination mechanism. It is possible that one step to launching each Programme would be development of mini-BAP, covering the theme or region of the Programme. In support of the western development initiative, an example would be an agro-biodiversity Programme, with a likely emphasis on sustained benefits.

Component 3 There is and always will be a need for targeted support to key biodiversity sites, often of an urgent and clearly defined nature. Many of these needs are already known (eg. through the NBAP and other planning mechanisms). This support can best be delivered through projects.

Initially, under this component, 2-3 project ideas will be selected and developed into projects, through the PDF A or B approach. These initial projects may be modest in size. They would be designed to support Component 1, by serving as “hands-on” examples of effective management of biodiversity conservation. SEPA will implement at least one but not all of these projects. For projects not implemented by SEPA, SEPA will have a role in overall coordination, in order to strengthen its mandate for coordination.

A possible example would be a project in support of SEPA’s programme of support to the western initiative. SEPA has already led the preparation of *National Conservation Guidelines*, issued recently by the State Council. In line with the guidelines, SEPA has designated a series of eco-protection zones in western China. One of these zones could be the focus of a targeted GEF project.

Once capacity has been strengthened through Component 1, it is envisaged that most GEF interventions will be through *Programmes* – see Component 2 above. However, even in the long term, the need for stand-alone targeted projects will remain, for example in protecting localised habitats, in MSPs, and in projects developed by the NGO community.