



PROJECT EXECUTIVE SUMMARY
GEF COUNCIL SUBMISSION
FULL SIZED PROJECT

AGENCY'S PROJECT ID: 2277

GEFSEC PROJECT ID: 1319

COUNTRY: China

PROJECT TITLE: Conservation and Sustainable
Utilization of Wild Relatives of Crops

GEF AGENCY: UNDP

OTHER EXECUTING AGENCY(IES):

DURATION: 6 years

GEF FOCAL AREA: Biodiversity

GEF OPERATIONAL PROGRAM: OP13

GEF STRATEGIC PRIORITY: BD2

Pipeline Entry Date: 27 Feb. 2002

ESTIMATED STARTING DATE: March 2006

IA FEE: US\$725,040

FINANCING PLAN (US\$)	
GEF PROJECT/COMPONENT	
Project	7,850,000
PDF A	-
PDF B	206,000
PDF C	-
<i>Sub-Total GEF</i>	8,056,000
<i>Co-FINANCING*</i>	
UNDP	650,000
Government (MoA)	5,982,000
Local government	6,210,000
Other	
<i>Sub-Total Co-financing:</i>	12,842,000
<i>Total Project Financing:</i>	20,898,000
FINANCING FOR ASSOCIATED ACTIVITIES IF ANY:	
LEVERAGED RESOURCES IF ANY:	

CONTRIBUTION TO KEY INDICATORS OF THE BUSINESS PLAN:

Conservation of wild relatives of key food crops (rice, wheat and soybean) mainstreamed into the agricultural production landscape in eight provinces in China. Sustainable incentive systems for conservation of wild relatives mainstreamed into the national policy and regulatory environment in China.

RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT(S):

WU Jinkang

Date: 23 August 2005

Operational Focal Point, China

IFI Division IV, International Department

Approved on behalf of the *United Nations Development Programme*. This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for work program inclusion.

Y. Glemarec

Yannick Glemarec

Deputy Executive Coordinator

Date: 29 September 2005

Project Contact Person

Joseph D'Cruz, Regional Technical Advisor

Tel: +66-2-288 2726

Email: joseph.dacruz@undp.org

PROJECT SUMMARY

PROJECT RATIONALE, OBJECTIVE, OUTCOMES, AND OUTPUTS/ACTIVITIES.

Rationale

1. China is one of the 15 so-called “megadiverse” countries due to its immense variety of ecosystems and the species diversity they contain. However, notwithstanding its status with regard to overall biodiversity, in terms of agricultural diversity, the global significance of China is yet greater. It is one of Vavilov’s seven “independent” centres of crop origin, and Vavilov himself described it as the earliest and largest centre of origin. A large number of crop species trace their origin to central and eastern China, and the number of wild relatives is correspondingly large. It has been estimated, for example, that of about 1200 crop species harvested worldwide, 600 are found in China, and of those up to half originated in China. Rice, wheat and soybean are the three most widely cultivated crops, not only in China, but also around the World. Wild relatives of all these three crops can be found in China with extensive distribution, large areas and high diversity.
2. Although the MoA has accorded high priority to conservation of wild relatives, and over the last three years has undertaken substantial conservation efforts through construction of physical barriers, it is recognized that such an approach is not sustainable, and although plans remain to construct additional barriers, the need for an alternative, more sustainable and participatory approach has been acknowledged. The MoA is therefore intent on mainstreaming conservation of wild relatives into administration of agricultural lands, as is indicated by the establishment of specialized conservation units at central, provincial, and increasingly at county level.
3. However several barriers remain to effective mainstreaming, and overcoming these barriers is extremely urgent, given the severity of threats to wild relatives in many locations. These are:
4. Commitment to conservation at the central and local level remains incomplete. Although administratively there is a clear commitment to conservation of wild relatives at the central level in MoA, similar commitment is less clear at the local level, or among other central government agencies.
5. Conservation of wild relatives is viewed as a financial cost, with no opportunity for financial gain. There are few, if any opportunities for direct financial benefits from conservation and sustainable management of populations of wild relatives. Consequently, conservation initiatives serve as a drain on the scarce financial resources of Agricultural Bureaux and other local government agencies. Without a sustainable mechanism to provide financial or other benefits from conservation of wild relatives, efforts to build commitment for conservation will be ineffective.
6. A complex and incomplete legal framework prevents effective enforcement of regulations. Even if commitment can be built and a sustainable financing mechanism established, it is still necessary to have an effective legislative framework in order to

implement conservation activities

7. This project will overcome these barriers, while at the same time addressing threats to wild relatives and their underlying causes. Threats include:
 - Land conversion
 - Agricultural practices
 - Intensification of land use
 - Spread of invasive species.
 - Pollution
 - Impact of genetically modified crops
8. The underlying causes of these threats include:
 - Local government favours short-term economic development measures.
 - Institutional constraints to implementation of conservation regulations
 - The agricultural extension system is based on promotion of new cultivars and new techniques
 - The status of populations of wild relatives is obscure
9. The project will work at eight sites across China: Jinghong City, Yunnan Province (rice), Danzhou City, Hainan Province (rice), Zhaoping County, Guangxi Autonomous Region (rice), Tongbai County, Henan Province (soybean), Bayan County, Heilongjiang Province (soybean), Longjing City, Jilin Province (soybean), Yanchi County, Ningxia Hui Autonomous Region (wheat), and Wulumuqi County, Xinjiang Autonomous Region (wheat)
10. The project will generate lessons and experience required to develop a truly national system of conservation of wild relatives. Wild relatives are typically found adjacent to agricultural land, in relatively small areas that are viewed by central and local stakeholders as an integral part of the agricultural landscape. The project therefore seeks to work with stakeholders at two levels. At the central level, the project will build institutional and systemic capacity to mainstream conservation of wild relatives with agricultural development. Currently conservation efforts are compartmentalized, involving extraction of land from production, but this has failed to arrest rapid losses of wild relatives in the recent past. At the local level, the project will work with farmers in some of the most important sites for wild relative diversity, both to secure conservation on those sites directly, as well as to generate knowledge to guide and refine the mainstreaming process. In this regard, the project will also ensure that local knowledge regarding conservation and use of wild relatives is incorporated into conservation strategy.
11. For more information, see the detailed Situation Analysis (UNDP Project Document Section I: Part I), the detailed Strategy (Project Document Section I: Part II), and the Incremental Cost Analysis in the Project Document Section II: Part I

Project goal, objective, outcomes, and outputs/activities

12. The **Goal** of the project is to sustainably conserve wild relatives of crop plants in

China. As wild relatives of most crop plants tend to grow in small populations in ecological conditions that are closely associated with the agricultural systems that utilize crops derived from the wild relatives, the only viable approach to conservation of the wild relatives is to integrate their conservation into agricultural production systems. Consequently, the **Objective** of the project is *to mainstream conservation of wild relatives of crops in agricultural production landscapes in eight provinces of China*.

13. In order to achieve the project Objective, activities will be undertaken to secure five Outcomes that directly address barriers to mainstreaming and underlying causes of threats to wild relatives.

Outcome 1: Generation of sustainable financial or other incentives for conservation of wild relatives at the county level in eight provinces

14. Outputs under this Outcome will directly address the second barrier to mainstreaming described above (conservation of wild relatives is viewed as a financial cost, with no opportunity for financial gain). By establishing a basis for financial or other benefits from conservation of wild relatives, the Outcome will also address one underlying cause of threats to wild relatives, namely local government favouring short-term economic gains. Based on investigations conducted during the PDF-B process, key principles guiding the establishment of locally appropriate financing mechanisms include:

- Establishing a close relationship between research institutes and farmers.
- Enhancing production on higher yielding land.
- Building the capacity of farmers to assess their real needs for government technical support.

15. Outputs include:

- Output 1.1: Local stakeholders design a socially appropriate incentive system
- Output 1.2: Local authorities establish the administrative and regulatory structures necessary to implement the system
- Output 1.3: Appropriate methods to ensure equitable distribution of financial or other benefits are established with participation of farmers
- Output 1.4: The effectiveness of the incentive systems is assessed and lessons learned are used in preparing refinements
- Output 1.5: Experiences and lessons are learned from other countries

Outcome 2: The policy, legal and regulatory system supports conservation of wild relatives

16. Outputs under this Outcome directly address the third barrier to mainstreaming described above (a complex and incomplete legal framework prevents effective enforcement of regulations). Outputs include:

- Output 2.1: Preliminary analyses of legislative weaknesses undertaken during the preparatory phase are reviewed and proposals for policy and regulation improvement are prepared.

- Output 2.2: The Ministry of Agriculture drafts new or modified regulations or implementation rules to address identified shortcomings.
- Output 2.3: Reports received by the State Council on modification of legislation and consultation
- Output 2.4: The Ministry of Agriculture implements regulations necessary to operationalize the legal framework, including training of personnel in Agricultural Bureaux in technical and legal aspects of the regulations.

Outcome 3: Stakeholders at the central and local level have adequate capacity to conserve wild relatives

17. Outputs under this Outcome directly address the first barrier to mainstreaming described above (commitment to conservation at the central and local level remains incomplete). It will also help to overcome several underlying causes of threats to wild relatives, including the institutional constraints to effective conservation and the focus of local government on short-term economic gains. Outputs include:

- Output 3.1: Conservation organizations are established in every Country where wild relatives are located in the project sites
- Output 3.2: Training in conservation approaches is provided to staff of local conservation organizations
- Output 3.3: Training is provided to staff of agricultural extension services to enable them to take account of the need to conserve wild relatives in providing technical assistance to farmers
- Output 3.4: An educational campaign assists farmers in understanding the value of wild relatives and approaches to integrate conservation with production
- Output 3.5: An awareness and education campaign increases commitment among government officials at central and local levels
- Output 3.6: Inter-sectoral bodies promote coordination in conservation of wild relatives at central and local levels

Outcome 4: Accurate and timely information concerning the status of wild relatives is available and utilized

18. Outputs under this Outcome will support the other Outcomes by ensuring that accurate and relevant information supports conservation of wild relatives. The Outcome will therefore address the underlying cause of threats to wild relatives related to the unclear status of populations. Outputs include:

- Output 4.1: A central level monitoring system and some provincial level sub-systems are designed and implemented
- Output 4.2: The capacity of County Agricultural Bureaux to collect data required to monitor populations of wild relatives is developed.
- Output 4.3: Priorities for conservation are identified, based on information generated by the monitoring system
- Output 4.4: Opportunities for direct benefits from wild relatives are identified through evaluation of populations of wild relatives

Outcome 5: Lessons and experiences from target provinces create conditions for replication and expansion of conservation programmes

19. The project will generate a number of different models of incentive systems under Outcome 1, and these models may require further adaptation to be applicable in additional areas.

Output 5.1: Information exchanged and disseminated among sites and with farmers and Agricultural Bureaux from additional sites, including participatory evaluation of model systems

Output 5.2: Project results and lessons disseminated widely

Output 5.3: Conservation goals incorporated in policy and operational programmes

20. For more information, see the Logical Framework matrix in the UNDP Project Document Section II: Part II

Project strategy and approach

21. The project strategy is based on the development and implementation of incentive systems to engage farmers in conservation of wild relatives. The key Outcome is therefore Outcome 1, which will work at each of the eight project sites to develop locally relevant incentive systems, based on one or more instruments, such as access and benefit sharing, linkage of conservation to technical assistance, and credit benefits, that will be tested during the project. The incentive systems will be supported through local capacity development for conservation (Outcome 3), and the establishment of an enabling environment (Outcomes 2 and 4), while also creating conditions for replication to additional sites (Outcome 5). The project will also seek to scale-up mainstreaming towards the establishment of an effective system of conservation at a national level.

22. A unique challenge in conserving wild relatives is that, while their theoretical value is immense, through contributions to improved varieties of crops, their immediate direct value is nil. Consequently, approaches frequently used in GEF projects (such as commercialization of products and certification of production) hold little potential. However, conservation of wild relatives is very directly linked to the third objective of the CBD, so this project will contribute to access and benefit sharing through access agreements, participatory research and development, and sharing of benefits.

23. For additional information, refer to UNDP Project Document Section I: Part II]

KEY INDICATORS, ASSUMPTIONS, AND RISKS

Indicators

24. At the level of the project Objective, the indicators are:

1. In all target sites, the area occupied by wild relatives shows no decline at the mid-point and end of the project, compared with the area in 2005
2. At all target sites, at the mid-point and end of the project, no land on which populations of wild relatives occur has been taken out of agricultural production

25. For each of the Outcomes, the indicators are:

Outcome 1:

- 1.1. At the end of the project, farmers at the target sites in eight provinces with wild relatives growing on their land, report that they are receiving financial or other benefits for conserving wild relatives

1.2. At the mid-point of the project, the proportion of financial incentives paid to farmers at each site that originates from government or project funds is less than 40%; at the end of the project it is 0%^{1/}

Outcome 2:

2.1. At the end of the project, all identified legislative shortcomings have been resolved, or the process has been initiated.

2.2. At the end of the project, staff of provincial Departments of Agriculture and County Agricultural Bureaux report no cases where implementation of conservation activities was prevented due to regulatory shortcomings

Outcome 3:

3.1. At the end of the project, threat reduction assessment at each target site indicates a reduction in threats of at least 80%. At the mid-point of the project, this figure is 30%.

3.2. At the end of the project, 75% of farmers at the project sites are actively conserving wild relatives. At the mid-point of the project, this figure is 40%

Outcome 4:

4.1. Within 2 years of the start of implementation, local and central level policy makers are able to describe the status of populations of wild relatives

4.2. By the end of the project, conservation work plans of the MoA are based on information generated by the information management system

Outcome 5:

5.1. By the end of the project, parallel initiatives have been initiated in at least 50 additional sites.

5.2. By the end of the project, MoA and concerned agencies have integrated lessons from the project into agricultural development policy

26. For more information, see the Logical Framework in the UNDP Project Document Section II: Part II

Assumptions

27. The assumptions associated with these indicators are:

- No external impacts affect persistence of wild relatives on target sites.
- Threats to populations of wild relatives are not so severe that emergency measures need to be undertaken.
- Funds for farmers generated through incentive systems are not diverted to other uses.
- Government funds will support direct conservation payments initially, and will continue to form part of the incentive systems.
- All administrative organizations are willing to assign priority to removing constraints.
- Legal modifications can be achieved sufficiently quickly to permit improved enforcement.
- Improvements in capacity can be achieved in time to generate measurable reductions in threats.
- Increased awareness leads to more effective conservation.
- Training of County Agricultural Bureaux staff is effective, and Country Agricultural Bureaux undertake surveys as part of their standard procedures.

- Data generation and analysis occurs promptly.
- Project outcomes are achieved and result in demand from other sites.
- Inter-agency coordination is effective.

Risks

28. Of all the assumptions, the ones that would have the greatest impact on achieving the project objective are those related to the establishment and operation of effective incentive systems. The risks associated with these assumptions are considered low to moderate, due to the government's commitment to contribute direct subsidies where necessary. The strategy for managing these risks is mitigation, through incorporating lessons from similar programmes, and ensuring mobilization of strong technical support in the early stages of the project. The active role of influential departments in the Ministry of Agriculture will also contribute to mitigation.
29. Other potentially significant assumptions relate to the enabling environment, and the required regulatory modifications. The risk associated with failure of these assumptions is mitigated by utilizing rules and regulations to address gaps in the legal framework, as these instruments are flexible and can be developed rapidly.
30. The remaining assumptions are unlikely to have a major impact on the project objective, or are assessed to be low, and can therefore be tolerated.

COUNTRY OWNERSHIP

COUNTRY ELIGIBILITY

31. China ratified the CBD on 5th January 1993, and is eligible for technical support from UNDP.

COUNTRY DRIVENNESS

32. Since the 1950s, the Chinese government has supported concerted efforts to collect and conserve both cultivated crops and their wild relatives. Two long-term gene banks and 20 mid-term gene banks were constructed to store the collected germplasm. Recent inventories indicate that 355,000 accessions have been safely conserved in the form of seedlots in the gene banks. Moreover, in order to conserve perennial plants and vegetative reproduction plants, 32 ex-situ conservation gardens have been constructed, which now accommodate 32,000 accessions.
33. Only in recent years have these admirable ex situ conservation efforts been supplemented with initiatives to promote in-situ conservation. However, in recent years Chinese central and local governments have invested several millions of RMB to support in-situ conservation of wild rice and wild soybean.
34. The Ministry of Agriculture developed a strategic plan for conservation of wild relatives of crop species in . This strategic plan called, first, for efforts to focus on wild relatives of important food species such as rice, soybean, and wheat.
35. Other significant indicators of country drivenness include:

- The *China Biodiversity Conservation Action Plan*, BCAP, in which Objective 4 is to conserve genetic resources related to crops and domestic livestock, with a focus on in-situ;
- The *China Agriculture Biodiversity Action Plan*, which includes five major objectives, one of which is to strengthen the in-situ conservation of key ecological systems and species and to establish a network of nature reserves and protected sites;
- The *Regulation on the Protection of Wild Plants*, issued by the State Council in 1996, to guide the conservation of and research into wild species, focusing on the wild relatives of productive species. Article V states that the government encourages and supports scientific research on wild plants, and supports *in-situ* and *ex-situ* conservation.
- The *China Agricultural Agenda 21* (1999) identified 20 important in-situ conservation sites for wild relatives of rice, soybean and wheat, located across China, and representing a wide range of climatic, topographic, and socio-economic conditions.

PROGRAM AND POLICY CONFORMITY

FIT TO GEF OPERATIONAL PROGRAM AND STRATEGIC PRIORITY

36. The project fully meets GEF eligibility criteria under GEF Operational Programme 13 “Agrobiodiversity”. The project targets the conservation and sustainable use of wild relatives of globally significant crop species, and serves to integrate conservation of wild relatives into agricultural development in China. The project will also contribute to GEF goals in the area of land degradation, and to the special priority on adaptation.
37. The project follows closely the guidance provided by the GEF Council with regards to Strategic Priorities, and is based on the lessons learnt under the second operational phase of the GEF. The project corresponds to Biodiversity Strategic Priority 2, ‘mainstreaming biodiversity into production landscapes and sectors’. Wild relatives are typically found adjacent to agricultural land, in relatively small areas that are viewed by central and local stakeholders as an integral part of the agricultural landscape. The project therefore seeks to work with stakeholders at two levels. At the central level, the project will build institutional and systemic capacity to mainstream conservation of wild relatives with agricultural development. Currently this mainstreaming does not exist, which has resulted in rapid losses of wild relatives in the recent past. At the local level, the project will work with farmers in some of the most important sites for wild relative diversity, both to secure conservation on those sites directly, as well as to generate knowledge to guide and refine the mainstreaming process.

SUSTAINABILITY (INCLUDING FINANCIAL SUSTAINABILITY)

38. Expansion of the Executive Summary, Section Program & Policy Conformity, Sustainability (including financial sustainability). Describe the proposed approach, within and/or outside the project, to address factors that influence continuation of project benefits after completion of project implementation, covering: environmental, social, institutional and financial sustainability. Effective mainstreaming implies that

conservation benefits are ecologically sustainable. Modifications and improvements to the legislative framework, to be secured under Outcome 2 are obviously sustainable. Therefore, the two aspects of sustainability that require special attention are:

- a) Institutional sustainability. The project will, in most cases, build the capacity of existing institutions. The main exception to this is the creation of conservation units within Agricultural Bureaux at the County level, but the establishments of such units would occur anyway under the baseline scenario, with the project simply accelerating the process to ensure that such units are established before more populations of wild relatives are lost. As integral governmental units, future staffing and budgetary provisions for conservation units are the responsibility of the government, and the government has already made such provisions when it established the policy of creating conservation units.
- b) Financial sustainability. The key element of financial sustainability (other than institutional budgetary considerations discussed above) is the systems of financial and other incentives established in each of the eight provinces. It is anticipated that the mechanisms to be developed in different provinces will incorporate one or more of the following elements:
 - Linkage of conservation to provision of technical services.
 - Commercialization of products.
 - Use of credit mechanisms.
 - Access and benefit sharing.

39. As the conservers and providers of genetic resources, farmers may enter into agreements with breeders and seed companies regarding access to genetic resources of wild relatives, and sharing of benefits arising from their use. Lessons and experiences from the provinces involved in the project will contribute to the development of a national system for China, thus assuring sustainability.

40. For more information, see the UNDP project document, Section I : Part II.

REPLICABILITY

41. The project has been prepared and will be implemented within the context of MoA's Strategy for Conservation of Wild Relatives. As the project is based within this overall strategy, MoA will expand activities to other categories of wild relatives as lessons emerge. The inclusion of eight provinces, and the project strategy involving the development of sustainable models of sustainable financing and incentive systems will thus yield lessons that will be widely applicable across China. The development of sustainable financing and incentive systems, especially those based on access and benefit sharing, directly contributes to an obligation under the CBD, so the project will yield experiences and lessons that will allow the expansion of such systems to a national level.

42. Some Outcomes (Outcome 2 and Outcome 4) are relevant at the central level. Modification and improvement of the legal framework for conservation of wild relatives will obviously benefit conservation action in all provinces and autonomous

- regions, not only those directly involved in the project. Similarly, the monitoring system to be developed under Outcome 4 will quickly move to a national scale, thus facilitating replication.
43. The project also includes a specific Outcome (Outcome 5) promoting dissemination of lessons learned and supporting adoption in additional provinces. Activities contributing to this Outcome will include training, workshops and study tours, allowing farmers and officials in other locations where conservation of wild relatives is a priority to learn from the experiences of the project.
44. For more information, see the UNDP project document, Section I : Part II.

STAKEHOLDER INVOLVEMENT

45. Key stakeholders are the following:
1. **The Ministry of Agriculture (MOA)**

46. The Ministry of Agriculture is responsible for monitoring and administrating the wild relatives of crops except those in forests and precious wild trees all over the country. The Wild Plant Conservation Leading Group and the Wild Plant Examining and Approval Expert Committee were set up by MOA in 2002. Meanwhile, an administrative office was also established to be responsible for the daily work on the conservation of wild relatives of crops.

47. Under MOA, the Research and Monitoring Institute for Environmental Protection has established a monitoring network consisted with a main station at the national level and more than 700 sub-stations all over China for agricultural environment monitoring in different regions. The network also involves part of research in respect of wild relatives conservation.

48. At the provincial level, the Department of Agriculture in each province (Autonomous Region or Cities) has an environmental protection agency at present. At least 23 provinces (autonomous regions or cities) have already set up the relevant wild relatives conservation leading groups and administrative offices whose responsibility is to conserve wild relatives of crops in their own land area. However, their work on the conservation of wild relatives of crops should be accordance with MOA's objectives. Similarly, the Agricultural Bureau in each county also assigns a group of persons or some persons specifically to be responsible for the environmental protection and wild relatives conservation under the guidance from MOA or the provincial agricultural department. At the same time, the sections and responsibilities at provincial level and county level government concerning wild relatives conservation are flexible according to the actual situation of each region.
 2. **State Forestry Administration (SFA)**

49. The State Forestry Administration is responsible for monitoring and management of wild plants in forests and precious wild trees outside the forests. The Forestry Department in each province has the protection division for wild animals and wild plants, which is responsible for the wild relatives conservation in forestry system. The

Forestry Bureau in each county generally has one section for wild animals protection and one section for wild plants conservation.

3. State Environmental Protection Administration

50. The State Environmental Protection Administration is responsible for the coordination at the national level for biological diversities and the conservation of all biological resources. It organizes different government agencies to make plans and programs of biodiversity conservation as well as supervise the implement of the plans and legislations.

4. National Development and Reform Commission

51. Responsibilities of the National Development and Reform Commission involves arranging and programming of national funded projects concerning wild relatives conservation, participating in formulating of ecological construction programs along with harmonizing ecological constructions.

5. Ministry of Land and Resources

52. The Ministry of Land and Resources is responsible for programming, managing, protecting and reasonable utilization of the land resources.

6. Ministry of Science and Technology

53. The Ministry of Science and Technology is responsible for examining and approving critical technological projects such as conservation and sustainable utilization of wild crops.

7. National Management Office for Rural Development and Poverty Reduction

54. This management office is supervised directly by the state council. It's main responsibility is to find ways to make rural areas in China develop with the objectives of the central government and reduce the number of poor people. The relevant departments and bureaus are also established in provinces (autonomous regions or cities) and in poor counties. The three levels of management agencies for rural development and poverty reduction also play important roles in the conservation of wild relatives of crops by improving the living standards in rural areas.

8. China Wild Plant Conservation Association (CWPCA)

55. CWPCA is a non-governmental association which liaises with and organizes relevant stakeholders concerning issues such as wild relatives conservation, breeding, etc.

9. Chinese Academy of Sciences (CAS) and Chinese Academy of Agricultural Sciences (CAAS)

56. The CAS and the CAAS are institutions which are doing scientific research on wild relatives conservation and innovative utilization. They are engaged in biodiversity surveys, documentation, inventories, evaluations, conservations and utilizations. They also provide technical supports for local governments and farmers.

10. Farmers' Associations

57. In different rural areas, there are many different associations organized and consisted by farmers. For example, many villages or townships have established Farmers' Technical Associations, which organize their members to learn and exchange techniques from each other.

58. Some stakeholders at the national level will be included into the Central Steering Committee, responsible for making work plans, reviewing progress and supervising the project activities. SEPA will ensure the project activities to be accordance with the national priorities and coordinate among the government agencies; NDRC will make domestic plans related to biodiversity conservation; MOLR will cooperate to resolve the problems of land uses about the wild relatives habitats; MOST will be responsible for establishing research projects to give the project technical supports; The State Council Leading Group Office of Poverty Alleviation and Development will also provide advices from the experiences obtained during the work in rural areas. Some stakeholders such as CAAS, CWPCA etc. will give the project technical supports or participate in the project activities directly. And the other stakeholders at provincial and county level will take part in the project either by providing supports for the project management or carrying out the activities directly or indirectly.
59. For more information, see the UNDP project document, Section I : Part II.

MONITORING AND EVALUATION

60. Within three months of the project start up a Project Inception Workshop will be conducted with the full project team, relevant government counterparts, co-financing partners, the UNDP-CO and representation from the UNDP-GEF Regional Coordinating Unit. The Inception Workshop (IW) will provide an opportunity for all parties to better understand their roles, functions, and responsibilities within the project's decision-making structures, including reporting and communication lines, and conflict resolution mechanisms.
61. Monitoring and evaluating implementation progress will be based on the indicators provided in the Logical Framework in the UNDP Project Document Section II: Part II. In addition, the GEF Management Effectiveness Tracking Tool, which was applied to all four protected areas during the PDF-B will be re-assessed at the mid-point of the project and at the end.
62. The project team will be responsible for the preparation and submission of the **Progress Reports** as and when required that would be submitted to the Regional Coordinating Unit (UNDP-GEF, RBAP) and UNDP China. Once each year an **Annual Project Report (APR)/ Project Implementation Review (PIR) (AIP/PIR)** will be prepared using the prescribed format to inform the yearly Tripartite Project Review (TPR) meetings and report to GEF on project progress. The final APR/PIR will be regarded as the **Project Terminal Report** for consideration at the terminal tripartite meeting.
63. In accordance with UNDP/GEF M&E procedures, a **Mid-term Evaluation (MTE)** will be undertaken after 3 years to review progress and effectiveness of implementation. Findings of this review will be incorporated as recommendations and will be instrumental for bringing improvement in the overall project design for the remaining period of the project's term. In addition, within six month of completion of project activities an **independent final evaluation** will be conducted to

assess project achievement of objectives and impacts and document lessons learned.

64. For more details on the M&E plan, see the UNDP Project Document, Section I: Part III.

FINANCIAL MODALITY AND COST EFFECTIVENESS

FINANCIAL MODALITY

65. The total cost of the project is estimated to be US\$21,272,000. This includes US\$580,000 in baseline funding and US\$20,692,000 of agreed incremental costs. The low baseline reflects the fact that, until very recently, there were very few efforts aimed at conservation of wild relatives of crops. Of the agreed incremental costs, US\$7,850,000 (38% of the agreed incremental costs) are requested from the GEF, and the remainder (62%) constituting co-financing. Of the co-financing, US\$5,982,000 (46% of the co-financing, and 29% of the agreed incremental costs) will be supplied by the Government of China, and a further US\$6,210,000 (47% of the co-financing, and 30% of the agreed incremental costs) will be supplied by local governments. In the case of the local government co-financing, almost all is in kind, whereas the co-financing from the Government of China is mostly cash co-financing. This comes from existing and planned investments in capacity development and the establishment of a monitoring system, and in support to local incentive mechanisms at each site. The remainder of the co-financing is from UNDP.

66. For more information, see Section III of the UNDP project document

Table 1. Detailed description of estimated co-financing sources

Co-financing Sources				
Name of Co-financier (source)	Classification	Type	Amount (US\$)	Status*
Ministry of Agriculture	Government	In-cash	5,982,000	Confirmed
Local Governments	Government	In-cash & In-kind	6,210,000	Confirmed
UNDP	IA	In-cash	650,000	Confirmed
Sub-Total Co-financing			12,842,000	

COST EFFECTIVENESS

67. Mainstreaming conservation of wild relatives into the agricultural sector represents a far more cost effective approach than the current approach, which involves the establishment of small, unofficial protected areas from which agricultural production is excluded. Not only does this represent a cost in terms of lost agricultural production, but the cost of construction and maintenance of physical barriers is significant. By mainstreaming conservation, the recurrent costs will be virtually eliminated, with conservation supported by self-financing incentive systems that generate financial benefits for farmers who conserve.

INSTITUTIONAL COORDINATION AND SUPPORT

CORE COMMITMENTS AND LINKAGES

68. The project is closely integrated with UNDP's programme in China, and contributes to UNDP's leading role in China's MDG process and support to the national campaign on Xiao-Kang (All Round Well-Off Society). The project forms a key component of UNDP's involvement in the China Biodiversity Partnership Framework process, as a demonstration of mainstreaming biodiversity conservation in a critical production sector. The project also contributes to three objectives of the United Nations Development Assistance Framework, namely:

- Objective 3: Enhance food security and nutrition, especially at the household level
- Objective 9: Improve environmental management capacity, especially in the Western region
- Objective 11: Support the implementation of the consensus of the UN conventions and conferences by the Government and the civil society.

For additional information, see the UNDP project document Section I: Part I (Situation) and II (Strategy)]

CONSULTATION, COORDINATION AND COLLABORATION BETWEEN IAS, AND IAS AND EXAS

69. The project will work closely with the "China Biodiversity Partnership Framework" (CBPF), an UNDP/GEF led programme that seeks to (among other things), develop a critical mass of support and activities for successfully addressing the drivers of biodiversity loss in China; and provide a strong platform for interactions and communications between international organisations and central government policy-makers and technical experts. All GEF IA's and EA's are participating in this programme, and this project is considered an integral part of the CBPF.

PROJECT IMPLEMENTATION ARRANGEMENTS

70. The project will be implemented by the MOA. MOA will appoint a senior official as National Project Director (NPD). A project management office (PMO), under the supervision of the NPD, will be established. A CTA – full time for the first year and then with short-term inputs - will support the NPD and PMO.

71. A Project Steering Committee, composed of the MOA (Chair), NPD, CPAD (The State Council Leading, Group Office of Poverty Alleviation and Development), NDRC (National Development and Reform Commission), MoF, MoLR (The Ministry of Land and Resources), MoST (The Ministry of Science the Technology, SFA (State Forestry Administration), SEPA (State Environmental Protection Administration), DRC (Development Research Center of the State Council) and UNDP will be established to review progress and recommend future activities,

- updating work-plan etc. Steering Committee Meetings will be held each year in Beijing.
72. The project will also benefit from the short-term inputs of national and international experts. Detailed ToR will be developed in response to needs during project implementation. The short-term consultants will contribute directly to individual project activities, and will undertake their work in China.
 73. The project will work closely with the “China Biodiversity Partnership Framework”, an UNDP/GEF led programme, under which this project is especially relevant to theme 4: “Protecting and sustainably utilising the biodiversity lying outside of protected areas”, and as the CBPF develops, its role in promoting coordination and synergies will be valuable in maximizing the impact of this project.
 74. Furthermore, the MoA is already undertaking several projects related to the goal of this project, with funding from the Government of China. Since these projects are managed by MoA, it will be a simple matter to coordinate activities. The managers of other MoA projects will be invited to participate in the Steering Committee of this project.
 75. For additional information, see the UNDP project document, especially Section I: Part III]

Annex A: Incremental Cost Analysis

A. PROJECT BACKGROUND

China is one of the megadiverse countries of the world. All main crop species have a large number of cultivars or strains, and most of them have wild forms or relatives that are specific to China and widely distributed all over the country. Rice, wheat, and soybean are the main crops feeding the world, and their wild relatives are important for having rich genetic diversity and providing them with valuable genes to improve their yield, quality, and resistance to pest and disease. If the wild relatives of these crops were extinct, it would be a disaster to the world and bring uncompensated loss to human being. Now wild species in China are in a seriously threatened state because of destruction of habitat, over-exploitation of biodiversity, and pollution. *In-situ* conservation of wild relatives of main crops is a priority and a new field in China at present.

Typically, the sites holding wild relatives of food crops are small and often fragmented covering several to hundreds of hectares. They lie close to household farms, farming Co-operatives, wasteland, rural enterprises, forests, villages and communication routes. *In-situ* conservation for them is significantly different from natural reserves and other ecological systems. Besides environmental and ecological elements, social, economic and cultural factors are important and have to be considered during *in-situ* conservation of wild relatives of crops. Farmers' participation and benefit sharing are also crucial to the success of *in-situ* conservation.

Biodiversity in China has been recognised to be abundant in ecosystem level, species level and genetic level. Wild relatives of main crops, fruits, vegetables, medicinal plants are widely distributed in China and most of them are significant for sustainable development in both China and the world. The existing resources of finance and techniques are not enough to carry out *in-situ* conservation to them.

Therefore, in 1999, *China Agricultural Agenda 21* identified 20 candidate *in-situ* conservation sites with wild relatives of rice, soybean and wheat. The sites are across China and represent most climates, topographies, economies and cultures. Eight of these sites have been selected to be included in the project, and comprehensive *in-situ* strategies and systems will be formulated as a model for other sites and for conservation of other wild relatives.

The objectives of the full project aim at supporting Chinese Government's plans and programmes to conserve wild relatives by mainstreaming conservation into agricultural landscapes 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 full project is to bring about best international practices to China for biodiversity conservation and sustainable use.

B. INCREMENTAL COST ASSESSMENT

Baseline

Rice, soybean and wheat have wild relatives in China. China is one of the places of origin for rice (*Oryza sativa*). Wheat is cultivated almost all over China, and China is the main region to sustain its wild relatives in the world. Soybean, *Glycine max*, which has about 20,000 cultivars or strains, originated and is widely distributed in China. In addition, wild soybean (*Glycine soja*) is widely distributed in China. Rice, wheat, and soybean are the main crops feeding the world, and their wild relatives are important for having rich genetic diversity and providing them with valuable genes to improve their yield, quality, and resistance to pest and disease. If the wild relatives of these crops were extinct, it would be a disaster to the world and bring uncompensated loss to human being. Now wild species in China are in a seriously threatened state because of destruction of habitat, over-exploitation of biodiversity, and pollution. Threats these wild relatives are complex, including the loss of land to expanding economic activities and

intensification of agricultural systems. However, behind these direct threats lies a range of root causes for why important sites are not protected from threats. These root causes include:

- Local government favours short-term economic development measures.
- Institutional constraints to implementation of conservation regulations
- The agricultural extension system is based on promotion of new cultivars and new techniques
- The status of populations of wild relatives is obscure

Since 1950s, Chinese government has been focused on collection and conservation of both cultivated crops and their wild relatives. Two long-term genebanks and 20 mid-term genebanks were constructed to store collected germplasm resources. Until recently, 355,000 accessions of plant seeds have been safely conserved in the genebanks. Moreover, in order to conserve perennial plants and vegetative reproduction plants, 32 *ex-situ* conservation gardens were constructed and conserved 32,000 accessions. However, due to the limited financial resources, *in-situ* conservation has been emphasised only in recent years. Chinese central government and local governments have invested several millions of RMB to do *in-situ* conservation of wild rice and wild soybean. As the development of China's economy, more investments will absolutely be used for *in-situ* conservation.

Although the need for mainstreaming conservation into agricultural landscapes and systems has been recognized, a number of barriers have prevented effective mainstreaming to date. These include:

- Commitment to conservation at the central and local level remains incomplete
- Conservation of wild relatives is viewed as a financial cost, with no opportunity for financial gain
- A complex and incomplete legal framework prevents effective enforcement of regulations

Global Environmental Objective

The global environmental objective is to sustainably conserve the genetic diversity of wild relatives of major global food crops in China. This will contribute to the first objective of the CBD, namely conservation of biodiversity. However, the project also represents a major contribution to the third objective of the CBD, namely fair and equitable sharing of benefits arising from use of genetic resources. This objective has proven difficult to implement, but lessons and experiences developed through the project, will allow China to develop a national system of access and benefit sharing, which in turn will contribute to the effective implementation of an international system.

Alternative

Under the GEF Alternative, conservation of wild relatives will be effectively mainstreamed into agricultural systems and landscapes in China. This will be achieved through a number of Outcomes, some of which address threats, underlying causes, and barriers to mainstreaming at a local level, and others at a national level, combined with measures that the Government of China has already planned or is already implementing. Such measures include:

- Poverty elimination programmes. These programmes, operating in all national poverty areas, provide support for economic development through the provision of subsidies and technical assistance. These have the effect of easing farmers' reliance on low productivity agricultural land, thus reducing pressure to maximise production on stressed agricultural systems.
- Capacity development. The Ministry of Agriculture supports the development of capacity to administer laws and policies at the local level. For example, local level conservation bodies within County and Township Agricultural Bureaux are being created and trained through the efforts of the Ministry.

- Research and development. State and central level research institutions work with Agricultural Bureaux, and especially with extension services to improve the standard of technical support provided to farmers. Such institutions are also involved in breeding programmes, developing improved varieties with higher yields.

Supporting these interventions, the Outcomes of the GEF-funded project are:

1. Generation of sustainable financial or other incentives for conservation of wild relatives at the county level in eight provinces

This Outcome will work with stakeholders at the Township, County and Provincial level to develop incentive systems that are locally ecologically and socio-economically appropriate. The systems will establish financial or other benefits for farmers who conserve wild relatives, thus integrating conservation with economic development.

2. The policy, legal and regulatory system supports conservation of wild relatives

This Outcome applies at the national level, where the existing body of policies, laws and regulations will be reviewed and modifications secured as required to support mainstreaming of conservation of wild relatives.

3. Stakeholders at the central and local level have adequate capacity to conserve wild relatives

This Outcome will work with local stakeholders by building their capacity to address threats and their underlying causes directly. Activities under this Outcome will therefore be determined on the basis of the detailed analyses of threats and underlying causes that were undertaken for each site during the project preparatory phase.

4. Accurate and timely information concerning the status of wild relatives is available and utilized

This Outcome applies at the national level, and will extend the current capacity of China's national germplasm conservation system to be able to monitor the status of populations of wild relatives as a basis for priority setting. The monitoring system itself will depend on increased capacity of local stakeholders, especially County Agricultural Bureaux, to generate the necessary information for monitoring.

5. Lessons and experiences from target provinces create conditions for replication and expansion of conservation programmes

The final Outcome will ensure that lessons and experiences gained through the project, especially in relation to Outcomes 1 and 3, are extended to other locations with populations of wild relatives in China.

Systems Boundary

The geographic system boundary includes the whole of China. However, while contributing to increased capacity to conserve wild relatives in all of China, the project will focus interventions over a number of much smaller geographic areas. Eight sites have been selected (see Map 4 in Annex 1) in which many of the project activities will be undertaken. Due to the structure of governance in China, these sites are defined by County boundaries. Within Counties, agricultural development processes in different townships tend to follow common lines, as the County Agricultural Bureau is the government agency having authority over management of agricultural systems. However, provincial-level agencies such as research institutes and seed companies will also be engaged, such that project benefits will also accrue at the provincial level.

In terms of the temporal system boundary, the project will run for a period of 6 years, at the end

of which time sustainable systems of conservation will have been demonstrated at all sites, and national capacity in terms of modifications to the regulatory framework and establishment of a national monitoring system will have been developed. The Goal of the project will be secured over a longer period, probably requiring an additional 5 years to achieve.

Thematically, the project addresses conservation of three major crop species. These species were selected both because of their national and global significance and because of the diversity of ecological and socio-economic conditions they encompass. In this way, the models developed through the project can be easily adapted and extended to a wide range of other crop species.

Summary of Costs

Incremental Cost Matrix

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
Domestic Benefits	<ul style="list-style-type: none"> Economic development of poor, remote farming communities constrained by lack of income opportunities Valuable arable land lost because of conservation approach involving taking land out of production in order to conserve. 	<ul style="list-style-type: none"> Mechanisms established to provide poor farmers with financial or other benefits from conservation of wild relatives Additional area of arable land maintained in production, contributing to domestic food security Experiences allow the development of a national system of access and benefit sharing which allows China to participate effectively in an international system The potential for future gains in crop productivity is maintained 	
Global Benefits	<ul style="list-style-type: none"> Loss of globally significant genetic resources in the form of wild relatives of major global food crops, as well as “minor” crops, fruit trees and other domesticated plant species continues. Efforts to conserve genetic resources by construction of physical barriers limits the areas and amount of genetic resources that can be conserved. Future global food security in the face of global environmental change is challenged due to loss of potentially valuable genes for maintaining production in more marginal environmental conditions. 	<ul style="list-style-type: none"> A system for sustainable conservation of globally significant genetic diversity is demonstrated for three major crops, allowing expansion to other crops, and removing barriers to widespread conservation of populations of wild relatives Future global food security improved through continued availability of genetic resources adapted to marginal environmental conditions, and therefore of significant value in adapting to global environmental change A system of monitoring for conservation demonstrated 	
Costs Outcome 1: Generation of sustainable financial and other incentives for	US\$100,000 (few cases of incentive systems being developed)	US\$9,100,000 (consisting of multi-stakeholder agreements at 8 sites, requiring substantial technical inputs and oversight)	US\$9,000,000, of which: GEF: US\$4,250,000 (for conservation of agrobiodiversity) MoA: US\$1,780,000

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
conservation of wild relatives at the county level in eight provinces			Local government (cash and in kind): US\$2,720,000 UNDP: US\$250,000
Outcome 2: The policy, legal and regulatory system supports conservation of wild relatives	US\$150,000 (consisting of regular MoA programmes to update and improve regulatory instruments, costed at US\$25,000/yr)	US\$ 1,350,000 (involving a multi-agency concerted effort to address all existing short-comings, and involving participation of the State Council, costed at US\$225,000/yr)	US\$1,200,000, of which: GEF: US\$900,000 (for policy reforms supporting conservation of agrobiodiversity) MoA: US\$200,000 UNDP: US\$100,000
Outcome 3: Stakeholders at the central and local level have adequate capacity to conserve wild relatives	US\$240,000 (consisting of regular MoA training of local staff, costed at US\$10,000 per site per year)	US\$3,300,000 (involving	US\$3,060,000, of which: GEF: US\$1,250,000 (for capacity building for conservation of agrobiodiversity) MoA: US\$618,000 Local government (in kind): US\$1,192,000
Outcome 4: Accurate and timely information concerning the status of wild relatives is available and utilized	US\$30,000 (virtually no efforts at monitoring)	US\$4,612,000 (involving a nationwide assessment of status, and establishment of monitoring system and associated capacity)	US\$4,582,000, of which: GEF: US\$270,000 (for monitoring of the status of globally significant agrobiodiversity) MoA: US\$2,014,000 Local government (in kind): US\$2,298,000
Outcome 5: Lessons and experiences from target provinces create conditions for replication and expansion of conservation programmes	US\$60,000 (Only initial efforts to develop a national system)	US\$2,910,000 (involving multi-stakeholder and multi-year learning through consultations, site visits, etc.)	US\$ 2,850,000, of which: GEF: US\$1,180,000 (for dissemination and replication of lessons related to conservation of globally significant agrobiodiversity) MoA: US\$1,370,000 UNDP: US\$300,000

Cost/Benefit	Baseline (B)	Alternative (A)	Increment (A-B)
Cost Totals	US\$580,000	US\$21,272,000	US\$20,692,000, of which: GEF: US\$7,850,000 MoA: US\$5,982,000 Local government: US\$6,210,000 UNDP: US\$650,000

Annex B: Project Logical Framework

Table 1: Objectively Verifiable Impact Indicators

Project Strategy	Objectively verifiable indicators				
Goal	The <u>Goal</u> of the project is to sustainably conserve wild relatives of crop plants in China				
	Indicator	<u>Baseline</u>	<u>Target</u>	Sources of verification	Risks and Assumptions
Objective of the project: To mainstream conservation of wild relatives of crop plants in agricultural production landscapes in eight provinces of China	1. In all target sites, the area occupied by wild relatives shows no decline at the mid-point and end of the project, compared with the area in 2005 2. At all target sites, at the mid-point and end of the project, no land on which populations of wild relatives occur has been taken out of agricultural production	1. Baseline values for each site are provided in Annex 2 2. At all sites no land has been taken out of agricultural production for the purposes of conservation	1. No decline from baseline values 2. At all sites no land has been taken out of agricultural production for the purposes of conservation	1. Annual or biennial field surveys 2. Field surveys, project reports	1. No external impacts affect persistence of wild relatives on target sites 2. Threats to populations of wild relatives are not so severe that emergency measures needs to be undertaken
Outcome 1: Generation of sustainable financial and other incentives for conservation of wild relatives at the county level in eight provinces	1. At the end of the project, farmers at the target sites in eight provinces with wild relatives growing on their land, report that they are receiving financial or other benefits for conserving wild relatives 2. At the mid-point of the project, the proportion of financial incentives paid to farmers at each site that originates from government or project funds is less than 40%; at the end of the project it is 0% ^{1/}	1. No farmers are receiving financial or other benefits 2. No farmers are receiving financial or other benefits	1. At each site, all farmers with wild relatives are receiving benefits 2. 40% at mid-point; 0% at end of project	1. Surveys and interviews of farmers 2. Project financial reports	1. Funds for farmers generated through incentive systems are not diverted to other uses 2. Fully sustainable sources for incentive system can be mobilized over 6 years, even if not possible in initial years
Outcome 2: The policy, legal and regulatory system supports conservation of wild relatives	1. At the end of the project, all identified legislative shortcomings have been resolved, or the process has been	1. Table x shows identified shortcomings	1. All shortcomings removed	1. Project reports and reports of State Council	1. All administrative organizations are willing to assign priority to removing constraints

	<p>initiated.</p> <p>2. At the end of the project, staff of provincial Departments of Agriculture and County Agricultural Bureaux report no cases where implementation of conservation activities was prevented due to legal or regulatory shortcomings</p>	<p>2. Staff at all sites report that enforcement of policies and regulations is prevented by legal and regulatory shortcomings</p>	<p>2. No incidents of enforcement of policies and regulations being prevented by legal and regulatory shortcomings are reported</p>	<p>2. Survey of, and interviews with staff of provincial Departments of Agriculture and County Agricultural Bureaux</p>	<p>2. Legal modifications can be achieved sufficiently quickly to permit improved enforcement</p>
<p>Outcome 3: Stakeholders at the central and local level have adequate capacity to conserve wild relatives</p>	<p>1. At the end of the project, threat reduction assessment at each target site indicates a reduction in threats of at least 80%. At the mid-point of the project, this figure is 30%.</p> <p>2. At the end of the project, 75% of farmers at the project sites are actively conserving wild relatives. At the mid-point of the project, this figure is 40%</p>	<p>1. Initial TRAs to be conducted within the first 6 months of the project will establish baseline value</p> <p>2. No farmers are actively conserving wild relatives</p>	<p>1. TRA index \geq 80% at each site; mid-term value \geq 30%</p> <p>2. 75% of farmers at each site have modified their farming methods to promote conservation</p>	<p>1. Threat reduction assessments</p> <p>2. Project reports; Surveys of, and interviews with farmers</p>	<p>1. Improvements in capacity can be achieved in time to generate measurable reductions in threats</p> <p>2. Increased awareness leads to more effective conservation</p>
<p>Outcome 4: Accurate and timely information concerning the status of wild relatives is available and utilized</p>	<p>1. Within 2 years of the start of implementation, local and central level policy makers are able to describe the status of populations of wild relatives</p> <p>2. By the end of the project, conservation work plans of the MoA are based on information generated by the information management system</p>	<p>1. No information on status of populations of wild relatives is available</p> <p>2. Conservation work plans of the MoA are based only on requests from County Agricultural Bureaux</p>	<p>1. Information is available for at least 1600 populations</p> <p>2. All decisions are based on priority setting determined by changes in status of populations of wild relatives</p>	<p>1. Examination of the information management system; project reports</p> <p>2. MoA reports</p>	<p>1. Training of County Agricultural Bureaux staff is effective, and Country Agricultural Bureaux undertake surveys as part of their standard procedures.</p> <p>2. Data generation and analysis occurs promptly</p>
<p>Outcome 5: Lessons and</p>	<p>1. By the end of the project,</p>	<p>1. No replication</p>	<p>1. 50 sites</p>	<p>1. MoA reports,</p>	<p>1. Project outcomes are</p>

experiences from target provinces create conditions for replication and expansion of conservation programmes	parallel initiatives have been initiated in at least 50 additional sites. 2. By the end of the project, MoA and concerned agencies have integrated lessons from the project into agricultural development policy	2. Agricultural development policy includes only general principles related to conservation	2. Lessons from the project effect policy changes to provide specific guidance on conservation measures	project reports 2. MoA, SEPA policy papers	achieved and result in demand from other sites 2. Inter-agency coordination is effective
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Note: 1/ Other than government funding for which guarantees of recurrent funding have been made

Annex C: Responses to Project Review

A) Convention Secretariat comments and IA/EXA Responses

See below ... incorporated into Annex C, Section C

B) STAP Expert Review and IA/ EXA Responses

STAP EXPERT REVIEW

STAP Roster Review – Conservation and Sustainable Utilization of Wild Relatives of Crops, China

Scientific and Technical Review of the Project Proposal

1. INTRODUCTION AND OVERVIEW

This Report follows the generic Terms of Reference (GTOR) for STAP reviews and the elaborations to the GTORs for the Biodiversity Focal Area prepared by the STAP Secretariat. This review focuses primarily on the requested GEF assistance component, which amounts to 38.2 % (US\$8.056 million) of total project costs including PDF-B, but notes that much of the co-financing (61.8%, most of which will come from China's MoA) is also supporting claimed global environmental benefits.¹ GEF financing is broadly to support the GEF focal area of biodiversity and Operational Program 13 (agricultural biodiversity) through addressing five planned Outcomes:

- (a) **Incentives** for conservation of wild relatives of major food crops (43.3% total main project costs; 47.2% contributed by GEF);
- (b) **Policy, legal and regulatory systems** for conservation (5.8% total costs; 75% GEF);
- (c) **Stakeholder capacity** to conserve wild relatives (14.7% total costs; 40.8% GEF)
- (d) **Information systems** on the status of wild relatives (22.9% total costs; 5.7% GEF);
- (e) Lessons for **replication** (13.7% total costs; 37.7% GEF).

There are few explicit developmental aspects to the project, other than the general assertion that wild relatives of rice, soybean and wheat are significant for sustainable development.² This aspect of the project will be elaborated below under Key Issues 'replicability' and 'sustainability'.

The GEF funding is therefore requested to provide a contribution to the project goal of conserving wild relatives of crop plants in China, and the delivery of the Project Objective of

¹ Throughout the proposal it is difficult to differentiate the components that have environmental benefit and those that have developmental benefit. This will be commented upon later.

² The ICM includes a number of claimed domestic benefits of the project under the project Alternative, including mechanisms to provide poor farmers with benefits from conservation of wild relatives of food crops and keeping a "potential for future gains in crop productivity". However, these benefits are not backed in the proposal with evidence for demand by local people – a prerequisite for locally sustainable development.

mainstreaming the conservation of wild relatives of crops in agricultural production landscapes in eight provinces of China. These are laudable aims in the context of near-term objectives of the Convention on Biological Diversity (CBD) and longer term aims of sustainable development. Total funding is requested in order of total expenditures for (1) incentives for conservation; (2) information systems; (3) stakeholder capacity; (4) replication; and (5) policy, legal and regulatory systems. Incremental GEF funding is requested in order of expenditures for (1) incentives for conservation; (2) stakeholder capacity; (3) replication; (4) policy, legal and regulatory systems; and (5) information systems. The importance accorded to incentive systems that will consist of multi-stakeholder agreements, substantial technical inputs and oversight will be commented upon below under Key Issue ‘scientific and technical soundness of the project’.

The version of the Brief (11 August 2005) provided to this reviewer is generally well-presented³ and follows GEF guidelines for project proposals. It is understood that a slightly later version has improved aspects of presentation, but has kept the scientific and technical justification for the project unchanged. A few technical and scientific matters related to the Logical Framework (Section II, Part II) and Incremental Cost Matrix (Section II, Part I) will be elaborated below.

2. KEY ISSUES

Scientific and technical soundness of the project

Agricultural biodiversity has assumed an important but arguably under-represented status in the GEF portfolio of projects. It has the potential not only to protect important but under-valued plant and animal species, but also to value the role of local people as guardians of a genetic heritage. The *People, Land Management and Environmental Change (PLEC)* project (UNU-UNEP-GEF, 1996-2002) showed conclusively, not least in China, that there is a huge biodiversity being protected in often isolated places by local people who are poor.⁴ For example, in Xishuangbanna villages of Yunnan Province upland rice varieties are being conserved by nearly all cultivators, but some varieties are disappearing because of external pressures driven partially by the economic poverty of local people. However, farmers have a large repository of knowledge on planting techniques, soil suitability and management of these rare varieties. Coupled with the cultural value of many plants, there is a good chance that the right policy environment will enable protection of much globally-important agricultural biodiversity.

Conserving the wild relatives of major food crops is an especial challenge. These are the plants that are generally not domesticated. They may be harvested from the wild for some local purposes but they are not actively managed by local people. As the project document elaborates, the habitats for these plants are under threat from agricultural expansion; the plants themselves have little or no current commercial use; and local people may not perceive the plants to be important. The question to be addressed by the project is how these wild relatives can be best conserved. The answer proposed is *in situ* conservation: a double strategy of (1) instituting

³ During the course of the review a number of typographical errors was noticed. These tended to be the kind not picked up by Spell Checkers. For example, in at least two places, the Output 3.1 title has ‘Country’ rather than ‘County’ (cf. p.4, ExecSum, p.21 ProjDoc)

⁴ See final published output of *PLEC*: Brookfield, H. et al. 2003. *Agrodiversity: Learning from Farmers Across the World*. United Nations University Press, Tokyo. ISBN 92-808-1087-1

incentive mechanisms and agreements to make it worthwhile for local people to look after the plants in the wild, and (2) searching for uses – genetically in improving crops, and commercially in direct productive purposes. How far is this proposed solution – and the problem-analysis that led to it - backed by sound scientific and technical information?

There is little scientific and technical rationale in the full project document to back the project approach. China is, indeed, one of the mega-diverse countries. It would have been good to give the supporting evidence, even from UNDP's own published sources.⁵ The importance of China as a repository of good practice in agricultural biodiversity, and specifically in the number and variety of wild relatives of major food plants, is also well-attested – but the specific evidence base is not cited.⁶ There is good information on p.5 of the ProDoc of the results of domestic surveys in China on wild rice species, and reasonable information on soybean and wheat, but there is no supporting citation.

Similarly, there are some good sources (some from China) to back the importance of targeting wild relatives of major food crops, with the view to improving genetic performance of commercial varieties.⁷ There are also good sources in the conservation literature to support strategies of agricultural biodiversity that are broadly similar to the proposal under review here,⁸ and particular approaches for important food crops such as rice.⁹

It is recommended that the ecological context be more fully supported by evidence from accepted sources that a project addressing biodiversity, agro-biodiversity and conservation of wild relatives of crop plants is needed, wanted and correctly situated. Some of the references used in this review may prove to be useful. This reviewer is surprised that there are no annexes to the project document where this baseline information and referenced evidence was obtained during the PDF-B phase.

Incentive systems for conservation and establishing close relationships with farmers feature prominently in the proposal especially in Outcome 1. Incentives may consist of many kinds, including direct payments, indirect payments for substitute activities, access to credit, provision

⁵ For example, Meeting of the Group of Like-Minded Megadiverse Countries (LMMC) – 17-21 January 2005, New Delhi, India - http://www.undp.org/biodiversity/events/Megadiverse_Meeting.html

⁶ See, for example, the PLEC database for China constructed during the UNU-UNEP-GEF project, 1996-2002: <http://www.unu.edu/env/plec/database.html> . A more populist article on the importance of agricultural biodiversity, with cross-references to work in China, appeared in *New Agriculturist*: <http://www.new-agri.co.uk/02-3/develop/dev04.html>

⁷ For example, a CGIAR paper on agricultural biotechnology and the poor in China, showing the potential for using wild relatives to increase food production: <http://www.cgiar.org/biotech/rep0100/Zhang.pdf>

⁸ See, for example, the paper by C.L.Long and colleagues from Yunnan published in *Biodiversity and Conservation* Volume 12, Issue 6, 1 June 2003, Pages 1145-1156. This suggests “in situ conservation of agrobiodiversity, including habitat protection of **wild** populations, maintenance of native species and varieties in traditional agroecosystems, and relevant environmental education.

⁹ Paper by L-Z Gao in *Genetic Resources and Crop Evolution*, Volume 50, Issue 1, February 2003, Pages 17-32. This supports a strategy of in-situ conservation along with other approaches such as ethnobotanical knowledge combined with local participation by farmers.

of technical services, infrastructure development (e.g. provision of markets), and even fines for non-compliance. The ProDoc refers to consideration of “several approachesduring the project preparatory process” but no analysis of what kind of incentive might best meet the situation environmentally and socio-economically in China for conserving wild relatives of plants is presented. In projects of a broadly similar kind, local level stakeholders usually always choose direct payments, but as the ProDoc reports results are often disappointing. It appears from Output 1.1 description that three possible incentive mechanisms are thought to be feasible¹⁰, and that the project will look for “locally appropriate financing mechanisms.” (p.17-18 ProDoc) Some recognition is needed that incentives can create perverse outcomes. It has been found in soil conservation, for example, that local people may become reliant on incentives for income. Local people have been known to destroy conservation infrastructure in order to encourage (in their view) projects to return with their incentive mechanisms! Understanding the costs and benefits involved in incentives, and the way that incentives may change behaviours, is absolutely essential. It is not clear from the ProDoc that the *processes*¹¹ of design of appropriate incentives (Output 1.3) and analysis/evaluation of experiences (Output 1.4) have been thought through.

Given the prominence of the development of incentive systems in the proposal, some reference in the ProDoc to the considerable research into conservation incentive systems should be made.¹² This should include a fuller description of the envisaged types of incentives as suggested during the project preparatory phase, as well as the advantages and disadvantages of each type. Some of this analysis will have to be undertaken during the full project, but explicit recognition that incentives mechanisms is a difficult topic, requiring innovative local solutions, is needed if only to counter the large local pressure that will come for direct cash payments for conservation.

A further area that could be addressed is the role of local knowledge.¹³ As shown in other projects^{14, 15} local people have a distinctive and crucial knowledge of their local flora and fauna. Wild relatives of food crops will certainly be known by many members of local communities.

¹⁰ There is some confusion in the ProDoc here (p.18). Under item (a) where *three* possible mechanisms are mentioned as feasible, *four* types of incentives are mentioned – “conservation related support”, “utilization of wild relatives”, “benefit compensation”, and a “good return system”.

¹¹ The ProDoc gives *justification* for Outputs 1.3 and 1.4, but not the *methods* by which appropriate incentive mechanisms will be designed and effectiveness evaluated [p.20]

¹² For example, *Incentives in Soil Conservation: From Theory to Practice* by David Sanders, Paul Huszar, Samran Sombatpanit, and Thomas Enters. Science Publishers NH. ISBN 1-57808-061-4; 1999; 402 Pages. Specific to biodiversity, reference should be made to CBD outputs on incentives, for example: *Biodiversity and Incentive Measures* <http://www.biodiv.org/programmes/socio-eco/incentives/incentives.asp>; also a thoughtful paper from France on how biodiversity conservation may be supported through contracts with farmers – see ‘Incentive policies to farmers for conserving biodiversity in forested areas in developing countries’ by Motte, Salles and Thomas www.bioecon.ucl.ac.uk/Montpellier/motte-salles.doc

¹³ Note that local knowledge, biodiversity and conservation were included together in the Millennium Ecosystem Assessment case studies – see, for example, <http://www.millenniumassessment.org/en/subglobal.sinai.aspx>

¹⁴ PLEC (UNU-GEF), for example, which worked in Yunnan, China.

¹⁵ A good example of the justification of including local knowledge is in the short paper at: <http://www.scidev.net/Opinions/index.cfm?fuseaction=readOpinions&itemid=216&language=1>

These plants may have cultural and social significance and other values that are unknown to the scientific community and local officials. It would be folly for the project to ignore local knowledge and not to use it in developing conservation and incentive systems. This aspect of the project should be strengthened ideally under Outcome 1, where local reviews are undertaken by anthropologists and rural sociologists of the extent and degree of local knowledge, especially on how wild relatives are managed in-situ – or indeed, whether they are managed.

Some of the above suggestions concern learning from experiences elsewhere in the rationale for in-situ conservation and the ecological context¹⁶, the design of the project components (especially incentive systems) and the development of stakeholder capacity to conserve wild relatives of food plants. The whole subject area of ethnobotany is very relevant to this project and Stephen Brush's new book serves as an excellent reference that links with attempts at in-situ conservation.¹⁷ This reviewer believes that these experiences should come in Outcome 1, rather than in Outcome 4 (specifically Output 4.5), so that project design may take account of best practice elsewhere. An enhanced review of types of incentives, establishment of monitoring systems, utilisation of wild relatives, and local participation in conservation is essential before a particular project approach is established in China.

Finally, in the context of the scientific and technical soundness of the project, the model of sustainable use of biological resources through incentive systems and stakeholder involvement needs to be developed into a workable framework for implementation in other parts of China. This is partly addressed below under 'replicability' and 'sustainability', but within the project there must be rigorous testing of the model. This reviewer would prefer to see an Output included under Outcome 5 (lessons and experiences) that incorporates a targeted research activity where prior to Output 5.1 (information exchanged) there is a participatory evaluation and model testing on a selection of sites where different incentive system models have been explored. Without a good body of data and evidence that a model actually works, plus an understanding of *why* and *how* it works (especially in meeting human developmental needs, and poverty alleviation), then there would seem to be little point in the current Outputs 5.1, 5.2 and 5.3. There is a danger that erroneous models may be promoted with concomitant likelihood of failure and disillusion.

Identification of the global environmental benefits and/or drawbacks of the project

Identifying the incremental benefits for OP13 conservation and sustainable use of biological diversity important to agriculture is somewhat problematic because many of the benefits will quite reasonably be domestic, and the global benefits will be almost impossible to quantify without a much longer project time horizon. There is little on claimed global benefits in either the text of the ProDoc or the ExecSum. The incremental cost analysis (ICA) and matrix (ICM)

¹⁶ This reviewer finds the paper by IPGRI on in-situ conservation thoughtful and useful in supporting the possible domestication of wild relatives – something not mentioned in the project document but which must be an important option if commercialisation of wild relatives is to be promoted sustainably. See <http://www.ipgri.cgiar.org/regions/apo/apoweb/insitu.htm>

¹⁷ Brush, S. B. 2004. *Farmers' Bounty. Locating Crop Diversity in the Contemporary World*. Yale University Press, New Haven, Connecticut 333 pp. ISBN 0-300-10049-3

are the main sources in the ProDoc for detail on how the project will achieve global environmental benefits.¹⁸

Global environmental benefits need to be built on top of the current baseline, and it is to the proposers advantage that the baseline be quite substantial so that project incremental activities are well rooted nationally in China (and even internationally). The ICA specifies and the ICM quantifies a baseline that is rather meagre (US\$580,000). The ICA does mention briefly that the Chinese Government has invested in ex-situ conservation in the past. This reviewer feels that this should legitimately be taken into the baseline, along with some components of international efforts that have focussed on wild relatives of major food crops (e.g. IRRI's work on germplasm of rice; IPGRI's studies of in-situ conservation; and so on). From this reviewer's limited knowledge of other agricultural biodiversity initiatives in China (including the GEF-funded project *PLEC* in Yunnan¹⁹), there are many initiatives and campaigns to promote the topic in the country.²⁰

The project alternative is specified at Goal level as being the more effective mainstreaming of conservation of wild relatives. However, at Outcome level, there is no detailed specification. The ICA list three measures that will be supported – poverty elimination, capacity development, research and development. These are not linked to Outcomes in the ICM, and the figures in the matrix are not supported by any clear achievements (preferably to indicator level in the logical framework) that show how global benefits are achieved with project expenditures under the increment. It is difficult also in the ICA and ICM to differentiate between environmental and developmental benefits. Under GEF rules only the first is eligible for GEF funding, but it is increasingly expected that the second will be supported strongly through co-financing from sources such as UNDP and the Chinese MoA. Poverty alleviation is, for example, a critical global developmental target under the MDGs, and should be clearly signposted and differentiated in the ICM.

This matrix does, therefore, need re-examination and the better assignment of baseline, increment and benefits.

¹⁸ There is only one very short paragraph on p.27 in the ProDoc, and nothing in the ExecSum, on this essential aspect of a GEF-financed project. In the ProDoc, this reviewer feels that there is little or no evidence to claim “global food security”. It would not be unreasonable for the project itself to use increases in food production consequent on commercialisation of wild relative crops as one indicator to monitor project success (cf Target indicator for Project Objective in Logical Framework). See Summary recommendations at the end of this review.

¹⁹ See also the initiatives of DIVERSITAS International - http://www.diversitas-international.org/national_china_scientific.html ; UNCBD case studies including China - <http://www.biodiv.org/programmes/areas/agro/cs.aspx> ; and China's own 1993 Biodiversity Action Plan in Agricultural Departments, which reportedly profiled agricultural biodiversity as an important topic for attention.

²⁰ One area where the baseline could be substantially increased is in Outcome 1, especially if lessons learned from international and national experiences are included here in order to develop sustainable incentive systems. Policy, legal and regulatory systems for conservation (Outcome 2) have been researched by IUCN, among others

How the project fits within the context of the goals of GEF

The project has excellent *potential* to support the goals of the GEF. However, the case is not made strongly enough to justify GEF funding.

The GEF Operational Strategy includes the securing of global environmental benefits through (amongst others): “(a) integration of the conservation and sustainable use of biodiversity within national and, as appropriate, sub-regional and regional sustainable development plans and policies; (b) helping to protect and sustainably manage ecosystems through targeted and cost-effective interventions.” The project proposal addresses these strategic considerations squarely through attempting to mainstream agricultural biodiversity issues centrally and locally in China (GEF-BD Strategic Priority 2), and through developing incentive mechanisms and communication structures to enable the better protection of wild relatives of important food crops. The project also accords well with CBD/COP guidance on ‘access and benefit sharing’ through proposing financial mechanism, and capacity-building through training and communication.

The proposal substantially supports the GEF Operational Program 13 *Conservation and Sustainable Use of Biological Diversity Important to Agriculture*. OP13 was designed by GEF to address the focal area of biodiversity. The project sensibly fits the overall program objectives 2 and 3: “the conservation and sustainable use of genetic resources of actual and potential value for food and agriculture”, and “the fair and equitable sharing of benefits arising out of the use of genetic resources.” It also addresses wider linked biodiversity-development issues admirably through proposing in-situ conservation measures for wild plants that have both fundamental genetic importance and a use potential for improving future crop production.

Nevertheless, the case is not made clearly in the ProDoc, partly because of the lack of specification of global environmental benefits. In addition to the already-recommended strengthening of the ProDoc near to page 27 on global benefits, cross-reference needs to be made under ‘Project Rational and Policy Conformity’ to:

- (1) The global benefits that will arise and how these will support GEF’s OS and OP13 – a paragraph on pp.14-15 would be appropriate; and
- (2) Project activities for monitoring key indicators of change in biodiversity by MoA and ecological monitoring organizations. An explicit monitoring component for both global and domestic benefits would assist this elaboration.²¹

Regional context

The importance of China to biodiversity and especially its marginal and mountainous areas is well attested. The ProDoc brings this out well in setting the ecological context.²² In addition, previous work in China in Yunnan Province brings out the exceptional role of minority peoples in protecting biodiversity, and using biodiversity to support their livelihoods. It is, therefore, very appropriate that China be used in regional context for this project. This reviewer would, however, have liked to see some linkage to nearby hotspots of biodiversity with similar climates, environments and ethnic backgrounds of local people. Montane Mainland South East Asia

²¹ This could be tied to the capacity-building measures of Output 4.2, and a monitoring component to Output 5.2.

²² Though this should be referenced and citations given to support the assertions.

(Northern Thailand, Laos, Cambodia and SW China), for example, has much to give and much to learn from this GEF project, and there should be substantial regional benefit accruing from this project.

Replicability and sustainability of the project

Replicability and sustainability are taken together in this review as they largely involve the same issues of scope for successful continuation of project approaches and ability to upscale to more communities and more situations.

The project is intended to be replicable and is set in the context of MoA's Strategy for Conservation of Wild Relatives. Replicability demands that not only is the science right (i.e. the model works) but also that there is a demonstrable demand from local people to become involved. Local participation and empowerment of local people are key factors in ensuring this last criterion. Gender issues play an especially important role in gathering of wild food crops and their commercialisation.

The Project proposal touches upon the role of participation, mainly in the context of stakeholder involvement (e.g. in barriers to mainstreaming). This issue is especially critical in China with its history as a centrally planned economy using communal labour. A legacy of former ways is the top-down, 'formal science' approach that is still widely used. The ProDoc acknowledges that biodiversity conservation and poverty alleviation efforts largely failed in the past, and the principal reason must be the lack of attention to local participation and views and to empowerment of weaker members of local society (women and ethnic minorities, for example). In order to strengthen the proposal, the issue of participation and empowerment should be addressed separately and explicitly. Unless this is done now, it will likely be lost in project implementation because the project will largely be driven by government bureaucrats and scientists (cf. list of stakeholders specified in Part III 'Management Arrangements', p.30+ ProDoc). It is recommended that under 'replicability and 'sustainability' the issues of empowerment of local people and participation be addressed, and that these be made a more prominent part of project methodology.²³

The proposal in both the ProDoc and ExecSum highlights the importance of institutional and financial sustainability. It is presumed that ecological sustainability will have been accommodated by successful conservation of wild relatives of food crops. Some good ideas are included especially under 'financial sustainability' including linkage of conservation to technical services and the use of credit mechanisms. However, this reviewer misses what might be called the 'bigger picture' of sustainability. It is recommended that questions such as:

1. What are the long-term vision and goals for the project and its partners?
2. What written commitments has the project obtained about continuation?
3. What contingency plans are there for key personnel and partnership changes?

be included in the ProDoc discussion on page 29. It is recognised that only some of the questions might be answerable at this stage. However, they do need to be posed, if only to highlight to the main local and national government stakeholders that incentives for

²³ The OECD has a useful website on *Empowerment, Participation and Gender* with links to reports from China. See: http://www.oecd.org/SiteMap/0,2681,en_2649_33979_1_1_1_1_37413,00.html

conservation need to be self-sustaining and that reliance upon external interventions should not be made. During the appraisal phase of the project and as part of initial project activities – and certainly as part of Output 5 – sustainability questions will need to be answered.

3. SECONDARY ISSUES

Linkages to other focal areas

The project is in focal area of biodiversity. Attention has already been drawn to the potential linkage with land degradation, especially through the higher productivity of existing crop land through genetic enhancement from wild relatives, and through the better protection of habitats where in-site conservation is carried out. This needs mention in the proDoc.

Linkages to other programmes and action plans at regional or sub-regional levels

The proposal has good national linkages through the management arrangements for the project. The only international agency involved appears to be UNDP itself. Consideration should be given to including some regional membership of steering committee maybe through an organisation such as ICIMOD, and some international membership through scientific organisations that have major interests in biodiversity (DIVERSITAS, Paris, for example).

Other beneficial or damaging environmental effects

The project is fundamentally ‘environmental’, seeking to build a sustainable basis for conserving and using wild relatives of food crops and protecting national biodiversity assets. No other beneficial or damaging environmental effects are noted.

Degree of involvement of stakeholders in the project

GEF attaches the greatest importance to stakeholder involvement. The proposed project is closely linked to relevant stakeholders at national level. The Ministry of Agriculture takes the lead in this project, having been assigned ‘agricultural biodiversity’ at State level. There may be some tension with Ministry of Forestry that has assigned to it issues such as ‘integrated ecosystem management’ (OP12 in GEF) and land degradation (OP15). However, MoF is included in the Steering Committee. The primary stakeholders in local communities are specifically identified as a target for benefits, while local and national government agencies are the main beneficiaries of capacity building. The project brings together the key agencies and stakeholders, although how far local people are truly built into the project (and what mechanisms there are for ensuring that the project addresses local needs) has been questioned above under ‘sustainability’.

Capacity-building aspects

Capacity building is included as an integral part of Outcome 3. This Outcome is directed at addressing the identified barrier to mainstreaming conservation that there is inadequate commitment to conservation at central and local levels. Through conservation organizations (Output 3.1), it is intended that County Agricultural Bureaux will have appropriate administrative structured built. Training of staff of local organizations (Output 3.2), extension

services (Output 3.3), farmers (Output 3.4), government officials (Output 3.5) and inter-agency planning bodies (Output 3.6) are all covered in the project.

Innovativeness of the project

The innovation of this project primarily arises from its focus on incentive systems for conservation of biodiversity. The proposal is considering a large number of possible types of incentives, and the project should contribute substantially to our understanding of the place and importance of incentives for local people to protect globally-significant biodiversity. Recommendations have been made above for strengthening some aspects of the project in order to build on the innovations promised by the project.

4. CONCLUSIONS AND SUMMARY RECOMMENDATIONS

The project rationale is soundly based on identified scientific criteria and needs. It is generally well written, contains sound argumentation and has objectives that are sensible. There is good evidence that the project offers possible long-term solutions for mainstreaming the conservation of wild relatives of major food crops into Chinese policy and practice. The project proposal does need some scientific and technical strengthening by reference to the considerable body of literature and experiences on other projects that have similarly dealt with complex conservation issues that cross between the natural and social sciences. The processes and methods towards delivering the promised Outcomes need closer attention. Suggestions for enhancing the proposal technically, for minimising the risk of failure of some of the interventions and for building wider replicability and sustainability are made below.

This STAP review commends the project to the GEF as an appropriate use of funds entrusted and an eminently suitable way to address pressing agricultural biodiversity issues in a key area of natural biodiversity.

Summary Recommendations on Points that Could be Strengthened

1. Scientific and technical soundness of the project. .

- The ecological context should be more fully supported by evidence from accepted sources that a project addressing biodiversity, agro-biodiversity and conservation of wild relatives of crop plants is needed, wanted and correctly situated. [ProDoc, pp.4-5]
- 'Local knowledge' aspects of the project need to be included and highlighted, ideally under Outcome 1.
- Some recognition needs to be recorded in the proposal that incentive mechanisms are complex, may have perverse outcomes, and need to have very careful evaluation. Reference to research on incentive mechanisms elsewhere would usefully support some elaboration of the types of mechanisms that were suggested during project preparation workshops [ProDoc, pp.19-20]
- The *processes* of design of appropriate incentives (Output 1.3) and analysis/evaluation of experiences (Output 1.4) need to be described [ProDoc, p.20].

- Promote and enhance Output 4.5 (experiences and lessons from other countries) to Outcome 1, so that learning from elsewhere on essential project components is built into the project approach in China.
- Consideration should be given to a new Output 5.1, where a participatory evaluation and model testing is undertaken on a selection of sites where different incentive system models have been explored. This is needed to give the evidence-base for the promotion activities in the old Outputs 5.1 to 5.3.

2. *Identification of the global environmental benefits.* The proposers are urged to strengthen and rationalise the link to global benefits rather more carefully and systematically:

- In the ProDoc (p.27) global level *environmental* and *developmental* benefits need more attention in view of the importance ascribed to this by GEF Council.^{24, 25}
- The evidence-base (even in outline terms) should be provided for claimed global benefits in the ProDoc and ExecSum.
- The ICA and OCM baseline should be revised and increased substantially to reflect the current situation in China and internationally on conservation of agricultural biodiversity. It is to the proposers advantage that the baseline be quite substantial so that project incremental activities are well rooted nationally in China and internationally.
- In the ICA and ICM attention needs to be paid to the specification of global benefits under the project alternative. There is no link, for example, between the text and the financial amounts under the Alternative. There is no differentiation between global environmental and developmental benefits, and who supports which type through co-financing mechanisms.

3. Fit within the context of the goals of GEF

- Additional specification is recommended on the global benefits that will arise and how these will support GEF's OS and OP13 – a paragraph on pp.14-15 would be appropriate
- Project activities for monitoring key indicators of change in biodiversity by MoA and ecological monitoring organizations should be introduced in Outcomes 4 and 5. An explicit monitoring component for both global and domestic benefits would assist the elaboration and support for the goals of the GEF

4. *Regional context and replicability of the project.* The proposers are asked to think about some linkage to nearby hotspots of biodiversity with similar climates, environments and ethnic backgrounds of local people.²⁶

²⁴ One short paragraph in the main project document (p.27) is unlikely to be acceptable to GEFSec, and certainly the contents fail to be convincing in terms of GEF eligible activities that by presumption must be seen as having potential global benefits.

²⁵ A good checklist of acceptable global environmental and associated developmental benefits that are eligible for GEF support is in paras 19 to 21 of OP13. In addition, the project should be able to make a claim to benefiting control of land degradation through reduction in exploitation of marginal areas where wild relatives of food crops are mainly located (para 22, OP13)

²⁶ Montane Mainland South East Asia is the obvious regional area that could both contribute to this project and learn from it. The GEF project executed by ICRAF *Alternatives to Slash and Burn* has, for example, looked very much at regional biodiversity issues here – see <http://www.worldagroforestry.org/sea/th/DT-Pub.htm>

5. Replicability and Sustainability of the project.

It is recommended that:

- under ‘replicability and ‘sustainability’ the issues of empowerment of local people and participation be addressed, and that these be made a more prominent part of project methodology The project should explicitly address key sustainability questions and not just assume that any level of ‘participation’ will ensure continuation.
- the ‘bigger picture’ of sustainability be included in the ProDoc discussion on page 29. Key questions should be posed such as: What are the long-term vision and goals for the project and its partners.

6. *Secondary Issues.* Some modifications and elaborations requested – see Section 3 above.

Professor Michael Stocking
STAP Roster Expert (Land Degradation & Agricultural Biodiversity)
University of East Anglia, Norwich UK
30th August 2005

RESPONSE TO STAP REVIEW

STAP COMMENT	RESPONSE
1. <i>Scientific and technical soundness of the project.</i> .	
<ul style="list-style-type: none">• The ecological context should be more fully supported by evidence from accepted sources that a project addressing biodiversity, agro-biodiversity and conservation of wild relatives of crop plants is needed, wanted and correctly situated. [ProDoc, pp.4-5]	The project document, not being an academic document, avoided citing scientific evidence, since this is not subject to review by the Council. However, some citations proposed by the reviewer have been added.
<ul style="list-style-type: none">• ‘Local knowledge’ aspects of the project need to be included and highlighted, ideally under Outcome 1.	Both the project document and the STAP reviewer in his review comments acknowledge that in the case of wild relatives, local knowledge is often absent. However, references to the importance of local knowledge, where it exists, have been added.
<ul style="list-style-type: none">• Some recognition needs to be recorded in the proposal that incentive mechanisms are complex, may have perverse outcomes, and need to have very careful evaluation. Reference to research on incentive mechanisms elsewhere would usefully support some elaboration of the types of mechanisms that were suggested during project preparation workshops [ProDoc, pp.19-20]	Text acknowledging these points has been added on pp. 19-20

<ul style="list-style-type: none"> The <i>processes</i> of design of appropriate incentives (Output 1.3) and analysis/evaluation of experiences (Output 1.4) need to be described [ProDoc, p.20]. 	<p>The design of incentive systems is actually in Output 1.1. Text has been added to Output 1.1 and 1.4 describing likely processes which, however, are subject to modification during project implementation, consistent with the principle of adaptive management</p>
<ul style="list-style-type: none"> Promote and enhance Output 4.5 (experiences and lessons from other countries) to Outcome 1, so that learning from elsewhere on essential project components is built into the project approach in China. 	<p>Moved</p>
<ul style="list-style-type: none"> Consideration should be given to a new Output 5.1, where a participatory evaluation and model testing is undertaken on a selection of sites where different incentive system models have been explored. This is needed to give the evidence-base for the promotion activities in the old Outputs 5.1 to 5.3. 	<p>Existing Output 5.1 (Information exchanged and disseminated among sites and with farmers and Agricultural Bureaux from additional sites) was intended to reflect a process of participatory evaluation and model testing. Therefore, rather than creating an additional Output covering such activities, the text of existing Output 5.1 has been amended to emphasize this point</p>
<p>2. <i>Identification of the global environmental benefits.</i> The proposers are urged to strengthen and rationalise the link to global benefits rather more carefully and systematically:</p>	<p>See below</p>
<ul style="list-style-type: none"> In the ProDoc (p.27) global level <i>environmental</i> and <i>developmental</i> benefits need more attention in view of the importance ascribed to this by GEF Council. 	<p>In the biodiversity focal area, sustainable conservation of globally significant biodiversity is considered to represent global environmental benefits. The developmental benefits are considered to be sustainable agricultural production, especially in the face of climate change, which will require the development of new agricultural varieties incorporating genes conferring adaptation to extreme conditions, such genes being likely to be found in populations of wild relatives</p>
<ul style="list-style-type: none"> The evidence-base (even in outline terms) should be provided for claimed global benefits in the ProDoc and ExecSum. 	<p>The global significance of rice, soy and wheat is well established. However, figures have been added in support of this.</p>
<ul style="list-style-type: none"> The ICA and OCM baseline should be revised and increased substantially to reflect the current situation in China and internationally on conservation of agricultural biodiversity. It is to the proposers advantage that the baseline be quite substantial so that project incremental activities are well rooted nationally in China and internationally. 	<p>The baseline figures were calculated on the basis of activities being undertaken (mainly within the MoA and related agencies) that contribute to the conservation of wild relatives. As a focus on conservation of wild relatives is a recent development in China, these figures are not currently very large. However, the paucity of the baseline does not reflect a lack of national commitment, rather the fact that activities in support of conservation of wild relatives are</p>

	still building up in China. It is argued that the elaboration of the GEF co-financed project at this stage represents an opportunity to ensure that conservation of wild relatives is effectively mainstreamed in agricultural development.
<ul style="list-style-type: none"> In the ICA and ICM attention needs to be paid to the specification of global benefits under the project alternative. There is no link, for example, between the text and the financial amounts under the Alternative. There is no differentiation between global environmental and developmental benefits, and who supports which type through co-financing mechanisms. 	Consistent with the concept of incremental costs, the financial figures in the ICM are intended to reflect the costs of global (GEF funds) and domestic (co-financing) benefits. However, this distinction has been clarified through the addition of text in the ICA and ICM emphasizing this point
3. Fit within the context of the goals of GEF	
<ul style="list-style-type: none"> Additional specification is recommended on the global benefits that will arise and how these will support GEF's OS and OP13 – a paragraph on pp.14-15 would be appropriate 	Additional text has been added to the existing paragraphs on pp.14-15, emphasizing the relevance to the OS and OP13.
<ul style="list-style-type: none"> Project activities for monitoring key indicators of change in biodiversity by MoA and ecological monitoring organizations should be introduced in Outcomes 4 and 5. An explicit monitoring component for both global and domestic benefits would assist the elaboration and support for the goals of the GEF 	Consistent with current GEF practice, actual project activities will be defined at the project's inception workshop. However, activities contributing to Outputs 4.1, 4.2, and 4.3 will certainly ensure that the indicators of global and local benefits (the two indicators at the level of Objective) will be covered
4. <i>Regional context and replicability of the project.</i> The proposers are asked to think about some linkage to nearby hotspots of biodiversity with similar climates environments and ethnic backgrounds of local people	As GEF Implementing Agency, UNDP is committed to building linkages to projects in other countries and regions. Two obvious examples are the Vietnam Agrobiodiversity project (under implementation) and Laos Agrobiodiversity project (under preparation). The Biodiversity 'Good Practices' project, soon to commence implementation, will provide a vehicle to facilitate linkage with these other countries and regions.
5. Replicability and Sustainability of the project.	
<i>It is recommended that:</i>	
<ul style="list-style-type: none"> Under 'replicability and 'sustainability' the issues of empowerment of local people and participation be addressed, and that these be made a more prominent part of project methodology The project should explicitly address key sustainability questions and not just 	The project document makes the point that sustainability is strongly related to the establishment of viable financial mechanisms. While the precise nature of these mechanisms will be location-specific, all will involve partnerships with local stakeholders, which will serve to empower those stakeholders. The assumption is not that 'participation' will ensure

assume that any level of ‘participation’ will ensure continuation.	continuation, but that the effectiveness of the mechanisms in ‘rewarding’ farmers for conserving wild relatives will ensure continuation.
<ul style="list-style-type: none"> The ‘bigger picture’ of sustainability be included in the ProDoc discussion on page 29. Key questions should be posed such as: What are the long-term vision and goals for the project and its partners. 	The long-term vision and goals are as reflected in the project goal, namely “to sustainably conserve wild relatives of crop plants in China”. This has been added on page 29.
6. <i>Secondary Issues.</i> Some modifications and elaborations requested:	See below
<u>Linkages to other focal areas</u> The project is in focal area of biodiversity. Attention has already been drawn to the potential linkage with land degradation, especially through the higher productivity of existing crop land through genetic enhancement from wild relatives, and through the better protection of habitats where in-site conservation is carried out. This needs mention in the proDoc.	<u>Reference to the linkage with the land degradation focal area (and adaptation to climate change) have been added to the project document</u>
<i>Linkages to other programmes and action plans at regional or sub-regional levels.</i> The proposal has good national linkages through the management arrangements for the project. The only international agency involved appears to be UNDP itself. Consideration should be given to including some regional membership of steering committee maybe through an organisation such as ICIMOD, and some international membership through scientific organisations that have major interests in biodiversity (DIVERSITAS, Paris, for example).	The text of the proposal does draw attention to several projects implemented by other international organizations, and it is intended that close links be established with these projects. Participation of international organizations in the project steering committee is a useful idea, and will be considered at the project inception meeting. The most obvious international organization to be engaged is IPGRI.

<p><u>Degree of involvement of stakeholders in the project</u> GEF attaches the greatest importance to stakeholder involvement. The proposed project is closely linked to relevant stakeholders at national level. The Ministry of Agriculture takes the lead in this project, having been assigned ‘agricultural biodiversity’ at State level. There may be some tension with Ministry of Forestry that has assigned to it issues such as ‘integrated ecosystem management’ (OP12 in GEF) and land degradation (OP15). However, MoF is included in the Steering Committee. The primary stakeholders in local communities are specifically identified as a target for benefits, while local and national government agencies are the main beneficiaries of capacity building. The project brings together the key agencies and stakeholders, although how far local people are truly built into the project (and what mechanisms there are for ensuring that the project addresses local needs) has been questioned above under ‘sustainability’.</p>	<p><u>Regarding the involvement of local stakeholders, please refer to the response under ‘sustainability’.</u> Concerning coordination at the national level, the project will be closely associated with the China Biodiversity Partnership Framework (CBPF), which is intended to promote cross-agency cooperation. Therefore, although there would be potential for tension with the MoF or others, implementation of the CBPF will avoid such a situation.</p>
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C) GEFSEC and other agencies’ Comments and IA/ EXA Responses

Comments	Responses
GEFSEC Comments	
1. It is suggested to fully involve local farmers in the monitoring process to ensure ownership.	Farmers will be involved in monitoring, as reflected in the changes to text in paragraph 112 of the Project Document. [Marked in RED]
2. [Establish] Links to the PRC/GEF Partnership program on Land Degradation, lead by ADB (under OP12).	Discussions with the ADB were held during project preparation. Stronger links will be established to the PRC/GEF Partnership programme on Land Degradation during implementation.
WB Comments	
1.Relationship to Country Biodiversity Partnership Framework. This project has been in the pipeline since February, 2002. Since then, UNDP and SEPA have initiated development of a Biodiversity Partnership Framework for China. It would be useful to have more explanation of how the project fits into that framework.	The document does emphasize links to the CBPF. However, as the CBPF is currently being formulated, it is not possible at this stage to be prescriptive in describing how the project will fit within the CBPF.

<p>2. Agricultural policies and incentives. Related to point 1 above and the fact that agriculture is a main driver of biodiversity loss, it would be useful to (a) understand better how this project will lead to deeper mainstreaming of biodiversity within agricultural landscapes, for example by influencing policies and incentives for land conversion, agricultural expansion; and (b) have indicators related to the policies it expects to influence and the directions of that influence.</p>	<p>The indicators described for Outcome 2 relate to changes in the policy environment. The changes effected as a result of activities generating Outcomes 1 to 5 will collectively result in deeper mainstreaming.</p>
<p>3. Global benefits. Given the very high commercial value of the species selected (rice, soybean, wheat) it would be useful to know what international efforts are already being taken to preserve genetic variability in these species e.g. through IPGRI and IRRI, and what added value in terms of global (rather than national) benefit is expected to accrue from preservation of wild relatives in fragmented habitats within China through the project.</p>	<p>Existing conservation programmes are <i>ex situ</i> in nature, and largely focus on cultivated varieties rather than wild relatives. They also suffer from two further weaknesses. Firstly, gene bank accessions represent only a sample of the entire genetic diversity of the wild species, and secondly these are genetically static. <i>In situ</i> methods allow conservation of the entire range of genetic diversity in a dynamic environment in which the species constantly evolve. In a time of global climate change, this is highly significant for future breeding.</p>
<p>4. Research. Much of the proposal focuses on research and assessments. How will they be fed into policy decisions and land management?</p>	<p>The project includes research and assessment components required to support mainstreaming. The knowledge generated will be used in activities supporting Outcomes 2 and 4.</p>
<p>5. Some of the indicators seem ambitious and costly (see for instance output 3). Why would local and central policy makers want or need to describe the status of populations of wild relatives? How will that translate to policy changes and action on the ground? Is the cost of all the indicator work justified?</p>	<p>Presumably this comment applies to Outcome 4, rather than Output 3. The point is that currently decisions about conservation are made without any knowledge of the actual situation. The Outcome indicator is designed to demonstrate not only that knowledge has been generated, but that it has reached the hands (and minds) of decision-makers. The cost of determining this is not considered onerous. The cost of collecting information on populations is potentially high, and is a part of the GoC's co-financing commitment.</p>
<p>6. Agrobiodiversity and tourism. Most changes in agricultural practices and use of different crop races are for higher yields. In that context, is agrobiodiversity ecotourism a realistic economic alternative and, if so, on what scale? Have feasibility studies demonstrated its potential? Have lessons from other agrotourism experiments in the region e.g. Thailand, been applied?</p>	<p>Nowhere does the document suggest agrotourism as a component of the project. It may be considered as an element of the financial incentive mechanisms for specific sites, in which case feasibility studies will be conducted and lessons from other agrotourism experiments (e.g. Thailand) will be applied.</p>
<p>7. Biodiversity impact. It would be useful to know the target area which will fall under new management for agrobiodiversity at the</p>	<p>These figures have been provided in Table 13a of the BD Tracking tool. The document is clear in stating that there were 20 candidate sites, from</p>

20 sites in eight provinces.	which the 8 project sites were selected.
8. Finally it would be useful to understand the linkages between this and other GEF crop-related projects in the region and mechanisms for disseminating best practice into GoC sponsored agricultural schemes throughout the country.	The mechanisms for dissemination within China are described in Outcome 5. The project will network with other GEF-funded crop-related projects where necessary, though few of these deal with wild relatives.
CBD Sec't Comments	
1. The Secretariat suggests that COP guidance, especially in the decisions related to agrobiodiversity is considered further.	The project addresses paragraph 10 of CoP Decision VII/3 in "mainstreaming of agricultural biodiversity in ... plans, programmes and strategies with the active participation of local and indigenous communities and the inclusion in the communities' plans, programmes and strategies on conservation, development and use of agricultural biodiversity". COP guidance will be considered further, particularly during the Inception Workshop.

List of acronyms

ABS	Access and Benefit Sharing
BCAP	Biodiversity Conservation Action Plan
CAAS	Chinese Academy of Agricultural Sciences
CBD	Convention on Biological Diversity
CPAD	The State Council Leading, Group Office of Poverty Alleviation and Development
DRC	Development Research Center of the State Council
MoA	Ministry of Agriculture
MoF	Ministry of Finance
MoLR	The Ministry of Land and Resources
MoST	The Ministry of Science the Technology
NDRC	National Development and Reform Commission
NPD	National Project Director
PMO	Project management office (PMO)
RMB	Renminbi (Chinese monetary unit, also known as Yuan, equivalent to US \$0.121)
SEPA	State Environmental Protection Agency
SFA	State Forest Authority