Terminal Evaluation

Conservation and Sustainable Utilization of Wild Relatives of Crops (CWRC)

China Ministry of Agriculture (MOA)
United Nations Development Programme (UNDP)
Global Environment Facility (GEF)

October 25, 2013

Prepared by:

Eugenia Katsigris, Parnon Group
Li Ninghui, Chinese Academy of Agricultural Sciences

Contents

Project Summary Table, Evaluation Timeline, and Evaluation Consultants iv
Acknowledgements v
Acronyms and Abbreviations viii

Executive Summary xi

PART I: PRELIMINARIES – PROJECT INTRODUCTION AND METHODOLOGY 1
1. Project Introduction 1
1.1 Background on Wild Relatives of Crops and Motivation for Project 1
1.2 Project Description 2
1.3 Project Timeline and History 6
1.4 Project Institutional Set Up 6
2. Methodology 8
2.1 Purpose of Terminal Evaluation 8
2.2 Focus of Terminal Evaluation and Content of Analysis 8
2.3 Method of Gathering and Analyzing Information and Data 9

PART II: BIG PICTURE - OVERALL IMPRESSION, IMPACT, AND MAJOR ISSUES 13
3. Overall Project Relevance 13
3.1 Relevance of Increasing Extent and Quality of WRC Conservation in China 13
3.2 Relevance of Mainstreaming-in-Agriculture Conservation Approach 14
4. Overall Impact and Quality of Project 16
4.1 Changes from the Baseline 16
4.2 Major Results, Impacts, and Overall Impression –Stakeholder Input 18
4.3 Objective-level Indicator Assessment 20
5. Potential Future Impact 20
5.1 Mainstreaming-in-Agriculture Conservation Approach versus Physical Isolation Approach 21
5.2 Vision of the Future and Government Plans 25

PART III: OUTCOMES – ACHIEVEMENT AND RELEVANCE 27
6. Outcome 1: Baseline Survey and Demonstration Sites 27
6.1 Baseline Survey 27
6.2 Incentive Mechanism Design and Participation 30
6.3 County, Township, and Village Policy Results 34
6.4 Conservation Results at Demo Sites 34
6.5 Livelihood Results at Demo Sites 39
6.6 Special Issues with Regard to Incentive Mechanism 44

6.7 Potential Impacts beyond Project: Alternative Livelihoods Approach 46
6.8 Outcome 1 Indicator Assessment 46

7. Outcome 5: Replication Sites, Publicity, and Dissemination 47
7.1 Overview of Replication Sites and their Conservation Results 48
7.2 Replication Site Incentive Mechanism and Livelihood Results 52
7.3 Publicity and Dissemination for WRC Conservation 53
7.4 Outcome 5 Indicator Assessment 55

8. Outcome 2: Policy 56
8.1 National-level Policy Work and Achievements 57
8.2 Provincial-level Policy Work and Achievements 60
8.3 Outcome 2 Indicator Assessment 61

9. Outcome 3: Training and Awareness 62
9.1 Farmers' Field School 63
9.2 Mindset Change: Awareness of Farmers and Officials 64
9.3 Village Influential Persons Campaign 66
9.4 Outcome 3 Indicator Assessment 68

10. Outcome 4: Monitoring and Alert System and WRC Utilization 68
10.1 Monitoring and Alert (M&A) System 69
10.2 Vehicles 72
10.3 Germplasm Research 73
10.4 Outcome 4 Indicator Analysis 75

PART IV: SUSTAINABILITY, COSTS, AND OTHER ASPECTS OF PROJECT 77
11. Sustainability 77
11.1 Overview of Sustainability of Project Results 77
11.2 Sustainability of Livelihood and Conservation Results at Project Sites 79
11.3 Sustainability of Baseline Survey and Monitoring System 80
11.4 Sustainability of Other Key Project Initiatives: Policy, Training, and Germplasm Work 82

12. Cost Efficiency and Other Expenditure Issues 83
12.1 Overall Cost Efficiency 83
12.2 Assessment of Expenditures by Outcome and Activity 85

13. Design, Implementation, M&E, and Other Issues **93**
13.1 Project Design 93
13.2 Project Implementation 96
13.3 Project Monitoring and Evaluation (M&E) 99
13.4 Other Issues (Women and ABS) 100

PART V: RECOMMENDATIONS, LESSONS LEARNED, AND NEXT STEPS **102**
14. Recommendations, Lessons Learned, and Next Steps **102**

ANNEXES:
Annex 1: Report on CWRC Terminal Evaluation Design **A1-1**
Annex 2: Demonstration Sites – Additional Findings from the Field **A2-1**

Terminal Evaluation

China MOA-UNDP-GEF Conservation and Sustainable Utilization of Wild Relatives of Crops (CWRC)

PROJECT SUMMARY TABLE

Project Title:	UNDP - GEF Conservation and Sustainable Utilization of Wild Relatives of Crops Project				
GEF Project ID:	53198		*at endorsement (US$)*	*at time of terminal evaluation (US$)*	*expected at completion (US$)*
UNDP Project ID:	2277	GEF financing:	8,056,000	7,595,682*	8,056,000
Country:	China	IA/EA own:	650,000 (in kind)	650,000 (in kind)**	650,000 (in kind)
Region:	15 provinces	Government (MOA):	5,982,000	6,561,000† (in kind, no justification provided)	6,561,000 (in kind, no justification provided)
Focal Area:	Biodiversity	Other (Local government):	6,210,000 (in kind)	8,116,000† (in kind) 21,116,000 (cash)	8,116,000 (in kind) undetermined (cash)
FA Objectives, (OP/SP):	More efficient management of natural resources and development of environmentally friendly behavior in order to ensure environmental sustainability	Total co-financing:	12,842,000	15,327,000 (in kind) 21,116,000 (cash)	15,327,000 (in kind) undetermined (cash)
Executing Agency:	Ministry of Agriculture	Total Project Cost:	20,898,000	44,038,682	Undetermined
Other Partners involved:	Chinese Academy of Agricultural Sciences (CAAS)	ProDoc Signature (date project began):		17 May 2007	
		(Operational) Closing Date:	Proposed: 31 Dec. 2013	Actual expected as of August 2013: 31 Dec. 2013	

*Based on July 31, 2013 CDR provided by UNDP China CO

**UNDP Co-financing based on synergies with other UNDP platform projects, particularly Sustainable Agro-biodiversity Management in the Mountains of Southern China

†Breakdown requested but not provided; at national level, no breakdown whatsoever; at provincial level, some breakdown provided by province and in some cases by site, but no differentiation among types of admin expenses provided.

Evaluation Timeline

Evaluation Timeframe: July 14 – October 27, 2013	
(i) Preparatory Desk Work: July 10 – 13, 2013 (ii) Mission: July 14 – August 3, 2013	(iii) Analysis and drafting: Aug. 4 – 23, 2013 (iv) Comments and revisions: Aug. 24 – Oct. 25, 2013
Date of Evaluation Report: Oct. 25, 2013	

Evaluation Team Members:
Ms. Eugenia Katsigris, Principal, Parnon Group
Dr. Li Ninghui, Professor and Chief Economist, Institute of Agricultural Economics and Development, China Academy of Agricultural Sciences (CAAS)

Acknowledgements

As will be explained in this report, the project achievements of Conservation and Sustainable Utilization of Wild Relatives of Crops (CWRC) are the fruits of impressive and coordinated efforts across 15 of China's provinces by stakeholders at China's central, provincial, municipal, county, township, and village levels. Similarly, the undertaking of the project's terminal evaluation greatly benefited from the support of individuals at all of these levels.

At the central level, in Beijing, we wish to thank the project management office (PMO), its leadership, the UNDP China Country Office, and the project's Chief Technical Advisor (CTA). Madame Wang Guilin, who led the project from its very early stages through to very notable achievements, led the PMO during the preparations for and during the first part of our evaluation mission. Mr. Wang Quanhui took up his post as Director of International Affairs of China's Rural Energy and Environment Agency during our mission and provided us with invaluable help and is providing the project with very capable and energetic leadership through its last five months. Ms. Jiewei Tang, his deputy, also provided very strong and appreciated support throughout. To the PMO's Mr. Song Dongfeng and Ms. Yu Xin, who provided fantastic levels of support throughout all of our travels and mission, both in organization of the mission, communications, and explanations, we extend a strong thanks. We also wish to express appreciation to Mr. Song for much additional support after the mission in providing requested information. In addition, we wish to thank Ms. Li Cheng Yu of the PMO who provided excellent logistical support, Ms. Yan Fang for her support in Beijing and Henan, and Mr. Zhu Hongyu for his support in Beijing.

At UNDP's China Country Office, we wish to extend our special thanks to Dr. Ma Chaode, Programme Manager responsible for the CWRC project, both for his guidance on our duties and also for his excellent content-related support during our trips to Henan and Ningxia. Ms. Zhao Xinhua, from her post in Beijing, provided us with much appreciated additional help and guidance, as well as prompt support for all of our information requests.

We also wish to express a special thanks to the project's Chief Technical Advisor, Professor Yang Qingwen. We really benefited from his expertise as one of the world's top experts in crop wild relatives, both on the road in Guangxi, Henan, and Ningxia, and in our marathon discussions with him in Beijing.

We further wish to extend a special thanks to the many organizations and individuals who hosted us and took the time to be interviewed by us for this work. In Guangxi Province, these

include Mr. Ling Naigui, Mr. Li Kedi, and Mr. He Jinfu, Director, Vice Director, and Section Chief, respectively, of the Guangxi Provincial Department of Agriculture's Agricultural Environmental Monitoring and Management Station, and Professor Chen Chengbin of the Rice Institute of Guangxi Academy of Agricultural Science, who serves as Guangxi Provincial Expert for the project. In Guangxi's Zhaoping County, we wish to express gratitude to Zhaoping Party Secretary Mr. Chen Youhui and Zhaoping Mayor Ms. Liu Qiumei for their hospitality and support. For his interviews and guidance, we wish to thank Mr. Qiu Cong, head of the Zhaoping County Agricultural Monitoring Station. We also appreciate the involvement of individuals from member organizations of Zhaoping County's CWRC Local Project Steering Committee. In Cangwu County, we wish to thank Mr. Liu, head of the Cangwu County Agricultural Monitoring Station. Finally, for their support in Guangxi, we wish to thank the several villagers who took the time to be interviewed by us at the demonstration site in Zhaoping County and the replication site in Cangwu County, as well as the township and village leadership who facilitated our visits to both of these sites.

In Henan Province, persons we would especially like to thank include Mr. Zheng Chunyu, Deputy Director of the Henan Department of Agriculture's Energy and Environmental Monitoring Station, and Professor Zhu Shixin, the project's Provincial Expert for Henan, who is Professor of Plant Classification at Zhengzhou University. From Tongbai County Henan, we wish to thank Tongbai Mayor Mr. Zhang Rongyin, for his hospitality and input. We further wish to thank Mr. Gao Ting, Director of the Tongbai County Agriculture Bureau, and Mr. Liu Heqing, Director of the Tongbai Rural Energy Office, for their in-depth guidance and help in understanding Tongbai's demonstration and replication sites. We further appreciate the input of individuals from member organizations of the CWRC Local Project Steering Committee in Tongbai. We also wish to thank the villagers who took the time to be interviewed by us at Tongbai's demonstration site and in the corresponding township seat, as well as at the county's replication site. Finally, we wish to thank the township and village leadership of these two sites who facilitated our visits.

In Ningxia Autonomous Region, we wish to thank Mr. Ma Xinming, Vice Head of the Ningxia Agricultural and Pastoral Department, for his hospitality and guidance. We further wish to express our appreciation to Mr. Chen Tianyun, Director of the Ningxia Agricultural Environmental Protection Station, and to Professor Li Jining, the project's Provincial Expert for Ningxia and Professor at Ningxia University for their in-depth interviews and support. In Yanchi County, we wish to extend a special thanks to Mr. He Jianjun, formerly with the Agricultural Environmental Station of the Yanchi County Agricultural Bureau, for an impressive introduction to project achievements in Yanchi. We also wish to thank representatives from members of the county's CWRC Local Project Steering Committee who provided their input in individual interviews to us. Finally, we would like to thank the villagers from the Yanchi demonstration site who took the time to be interviewed by us, as well as township and village leadership who supported our visit to the site.

From other provinces, we also have a number of individuals to thank. These include, in particular, the team from Xinjiang who came to Beijing to meet with us due to difficulties in

our visiting Xinjiang as originally planned. These are Mr. Qin Xiaohui, Director of the Xinjiang Department of Agriculture's Agricultural Resource and Environmental Monitoring Station, and Dr. Zhou Guiling, the project's Provincial Expert for Xinjiang and Professor at Xinjiang University. They also include Mr. He Jinling, Anhui Provincial Expert for the project and Professor at Anhui Agricultural University, and Mr. Liu Shengxiang, Hubei Provincial Expert for the project and Professor at Central China Normal University, both of whom came to Beijing to meet with us regarding the project's baseline survey. We also wish to thank the other provincial experts who took the time to fill in our survey questionnaire and data request after completion of our mission.

Back in Beijing, we wish to thank all those who provided support, particularly through their presentations and in-depth consultations. These include Mr. Li Bo, Director, Division of Agro-Resources and Environment, Department of Science, Technology, and Education, Ministry of Agriculture; Prof. Wang Xiudong of the Chinese Academy of Agricultural Sciences, regarding his independent study of the project's socio-economic impacts; Dr. Li Shuhua (Beijing Research Center for Information Technology) and Dr. Fang Wei (Chinese Academy of Agricultural Sciences), regarding the project's monitoring and alert system; Dr. Zhang Guoliang (Chinese Academy of Agricultural Sciences) regarding his design of the project's baseline survey as well as his invasive alien species (IAS) work for the project's policy component; and Professors Sun Chuanqing and Dong Yingshan (China Agricultural University), Professor Ni Zhongfu (China Agricultural University), and Professor Wang Yumin (Jilin Academy of Agricultural Sciences), for their presentations and input on their germplasm work for the project on wild rice, wild wheat, and wild soybean, respectively. Further, we would like to thank Mr. Shi Shangbai for the consultation regarding the project's Farmer's Field School and Ms. Zhou Hong regarding the consultation on the project's cooperation with the Village Influential Person Campaign. We wish also to thank members of the project's national-level Project Steering Committee for speaking with us and for the insights and perspectives they offered. These include: Mr. Wang Jie, Department of National Conservation of Biodiversity, Ministry of Environmental Protection; Ms. Feng Zhaohui, Women's Development Department, All China Women's Federation; and Mr. Zhang Liang, National Poverty Alleviation Office. Finally, we wish to extend a very special thanks to Ms. Ma Hong of China Central Television (CCTV) for her great support in Henan and Ningxia and for her interview regarding the CCTV publicity aspects of the project.

Lastly, for their help through telephone interviews, we wish to thank Mr. Ma Xiaochen of CICETE; Mr. Qin Wenbin, who served as one of the designers of the incentive mechanisms; and Mr. Zheng Diansheng, director of the China Wild Relatives of Crops Association, who also provided the project consultation on incentive mechanism design. In addition, we wish to thank Mr. Guo Yinfeng, now Programme Specialist for Partnerships in Environmental Management for the Seas of East Asia (PEMSEA) and formerly UNDP Programme Manager responsible for CWRC, prior to the Mid-Term Evaluation.

We greatly appreciate the strong effort of these individuals and all others involved to ensure we had the fullest view possible of this complex and geographically diverse project.

Acronyms and Abbreviations

AB – agricultural bureau: County-level government organization responsible for agriculture.
ABS – access benefit sharing: An approach whereby those conserving genetic resources receive a share in economic benefit derived by others who develop applications of the resources.
ACWF- All China Women's Federation
Baseline Survey: A methodology designed and applied by the project for measuring conservation results at "mainstreaming-in-agriculture" approach WRC conservation sites. Follow-up surveys are sometimes loosely referred to as "baseline surveys" as well, though, strictly speaking, are "follow-up surveys" to be compared to the baseline year survey.
CAAS – Chinese Academy of Agricultural Sciences: An institute from which many of the project's advisors and subcontractors were drawn. Also, the home of the Institute of Crop Sciences, which is the operator of the project's M&A system.
CAGR – compound annual growth rate
CCTV- China Central Television: Predominant state television broadcaster in China. CCTV has a network of 22 channels.
CDR – Combined Delivery Report. Official project expenditure data from UNDP can be obtained through such reports.
CICETE – China International Center for Economic and Technical Exchange: Center under China's Ministry of Commerce. CICETE is UNDP's main partner for handling financial management of bilaterally funded projects. MOF is now responsible for financial management of all GEF projects in China. For the project under evaluation, after some delays, an exception was made to allow financial management to be carried out by CICETE.
CO – County Office: A term used to refer to UNDP's local offices at the country level.
CTA – Chief Technical Advisor: A key leadership role in implementation of UNDP-GEF projects.
CWR – Crop Wild Relatives: Wild plants genetically related to plants with economic value, such as crops, but themselves lacking direct economic value. Also referred to as WRC.
CWRC – *Conservation and Sustainable Utilization of Wild Relatives of Crops*: The UNDP-GEF project for which this document serves as the final evaluation report.
DoA – Department of Agriculture: Provincial-level government organization responsible for agriculture.
EIA – environmental impact assessment
EoP – end of project
EU – European Union
FA – Focal Area: Sectoral area of focus for GEF work.
FAO- United Nations Food and Agriculture Organization
FFS- Farmers' Field School: A participatory approach to training farmers that encourages active learning in the classroom.
GEF- Global Environment Facility
GIZ: A German federal enterprise that supports the German Government in achieving its objectives in the field of international cooperation for sustainable development.

HH – household
IAS – invasive alien species: Non-native species that adversely affect the habitats they invade.
Livelihoods Approach: This is a term newly used by the authors of this report to describe an approach to WRC conservation. The approach emphasizes support for alternative or improved livelihoods of local people as a means to achieve conservation of WRCs at a site in their village. One stakeholder recommended that the approach as it has evolved by end of project could be termed: "Changing agricultural style for conservation purposes."
LPMO – local project management office: PMOs set up at the provincial and county levels. Salaries of staff for LPMOs were not paid by the project's GEF funds.
LPSC – local project steering committee: Refers to steering committees set up for advising and overseeing the project at the provincial and county levels. Membership is cross-departmental and appears to be similar to membership of local leading groups for WRC conservation.
LWRC –local leading group for WRC conservation: Refers to leading groups set up at the provincial and county levels to promote the cause of WRC conservation. Membership is cross-departmental and appears to be similar to membership of the local project steering committees.
M&A System – Monitoring and Alert System: The system developed by the project to allow decision makers and other relevant parties to view annual survey results of multiple WRC conservation sites and be alerted to problems at specific sites.
M&E – Monitoring and Evaluation: M&E refers to monitoring and evaluation of the whole project, while the baseline survey and M&A system referenced above are specific to monitoring of conservation results.
Mainstreaming-in-Agriculture Approach or MiA Approach: The WRC conservation approach promoted by the project whereby agriculture will be integrated with WRC conservation within conservation sites. According to the original definition envisioned, no land in the conservation site is taken out of agriculture. As the project was implemented, however, the definition of this approach evolved.
Mainstreaming (general definition): Mainstreaming refers to making something the prevailing thought, activity, or trend. In the project, this term is sometimes used to mean the strengthening of WRC conservation through improved policy, awareness, and capacity, regardless of conservation approach. There has been some confusion as the project also tries to promote the "mainstreaming-in-agriculture" approach, which is much more specific than "mainstreaming WRCs in general."
MOA - China's Ministry of Agriculture
MOST – China's Ministry of Science and Technology
mu: Chinese measure of land area equal to 1/15 of a hectare. Also abbreviated "m." in some tables.
NDRC - China's National Development and Reform Commission
NPAO- China's National Poverty Alleviation Office
NPC – National People's Congress: China's highest legislative body.
NPD – National Project Director: For UNDP-GEF projects, the government appointed head of the project. In the case of this project, the position is held at the Director General level within MOA.

NTFPs – non-timber forest products
OP - Operational Program: During GEF 3 and prior to 2007, GEF provided grants to eligible activities under a framework of 15 operational programs (OPs). Five of these were in biodiversity, including "Conservation and Sustainable Use of Biological Diversity Important to Agriculture," the operational program relevant to this project. Since that time (and for GEF 4 and GEF 5), the operational program framework has been superseded by the GEF Focal Area Strategies.
Open-Style Approach: This is an alternative terminology used to describe the mainstreaming-in-agriculture approach to WRC conservation. The TE team found this was the most common way that persons at the provincial, county, and even central levels described the approach of the project's conservation sites. It provides a simple contrast between physical isolation sites, which have a fence, and project sites, which do not. The terminology itself, however, does not make reference to integration with agriculture. Although this integration is assumed to be understood, the TE team did find that some sites did not integrate agriculture with conservation within the conservation site. Thus, in terms of activities within the conservation site in such cases, the open-style approach was equivalent to the physical isolation approach, but with an "invisible fence" instead of a real one.
PDF – Project Development Funds: Former framework through which GEF disbursed project preparatory funds. PDF A grants were relatively small (e.g. USD25,000), while PDF B and PDF C grants were larger (in the hundreds of thousands of USD).
Physical Isolation Approach: This terminology refers to China's main approach prior to the project for conserving WRCs. The approach entails erection of a physical barrier around the core and buffer areas. We estimate that at the start of the project China had about 50 physical isolation wild agricultural plant conservation sites and now has about 170 such sites.
PMO - Project Management Office: Generally, refers to the team working to run the project, including staff paid with GEF project funds and leadership staff whose salaries are paid by MOA. May also at times include the CTA.
pop. - population
ProDoc – Project Document.
PSC – Project Steering Committee: High-level committee with membership drawn from relevant government departments. Responsible for oversight of project.
RMB – Renminbi: Chinese currency. Also referred to as Chinese yuan.
RNPCI – rural net per capita income
SEA – strategic environmental assessment
TE – terminal evaluation
TE Team – Terminal Evaluation Team: In this case, the team consists of one international consultant and one domestic consultant.
TRA – threat reduction assessment: Method developed by a US researcher to assess reduction of threats at biodiversity conservation sites and used in this project.
UNDP – United Nations Development Programme.
WRC – Wild Relatives of Crops: Wild plants genetically related to plants with economic value, such as crops, but themselves lacking direct economic value. Also referred to as CWR.

Executive Summary

1. Project Background and Description; Evaluation Methodology

- WRC background: Wild relatives of crops (WRCs) are wild plants genetically related to economically important domesticated plants, but lack direct economic value themselves. *In situ* conservation of WRCs (in their natural habitat), while more expensive, offers benefits over *ex situ* conservation, such as greater variation and continued evolution.
- WRCs in China: China is one of world's seven major historical centers of plant domestication, which are believed to present the greatest diversity of WRCs. Ten-plus years ago, China began *in situ* conservation of WRCs and other wild agricultural plants using physical barriers and now has 170 such sites. These sites require taking farmer land out of production, initial investment for enclosure and watch station, and funds for ongoing upkeep and staff salaries. "Mainstreaming-in-agriculture" (MiA) WRC conservation sites integrate agriculture into site and have no barrier. Prior to project, China had no "MiA" WRC (or other wild agricultural plant) conservation sites.
- Project: CWRC is an MOA, UNDP, and GEF project focused on conserving WRCs in China. Stated project goal is to "sustainably conserve wild relatives of crop plants in China." Stated project objective is: "to mainstream conservation of wild relatives of crops in agricultural production landscapes in eight provinces in China."
- Issues of project scope: TE team finds some project activities and outcomes fit with objective, focusing on "mainstreaming-in-agriculture approach" conservation, but others are more broad, supporting WRC conservation more generally. Confusion in use of term "mainstreaming" has resulted. Lesson learned is to have clear objective that encompasses all outcomes. Possible alternative objective: "Increase the extent and quality of WRC conservation results in China via widespread adoption of the 'MiA' conservation approach and via general advances in WRC conservation policy and capacity."
- Outcomes: Project has five outcomes: (1) Outcome 1 aims to demonstrate MiA approach WRC conservation at eight sites (one in each of eight provinces, three for wild rice, three for wild soybean, and two for wild wheat). Main activities are design and implementation of incentive mechanisms, which focus on investing in alternative livelihoods of local people (both public goods, like roads, and private goods, like greenhouses), and design and implementation of baseline and follow-up surveys to measure conservation results. (2) Outcome 2 aims to promote legal and regulatory environment that is more conducive to WRCs through policy-related initiatives. (3) Outcome 3 aims to build capacity for conserving WRCs, both through "MiA" approach and more generally and focuses on training. (4) Outcome 4 aims to promote timely information from monitoring of WRCs and eventual utilization of WRCs. It includes a monitoring and alert system and germplasm research. (5) Outcome 5 aims to disseminate "mainstreaming-in-agriculture" conservation of WRCs and publicize WRC conservation generally. It replicates the "mainstreaming-in-agriculture" approach of WRC (and other wild plant) conservation at 64 sites across 15 provinces and supports publicity of WRCs through broadcast media and publications.

- Project timeline and funds: CWRC has six year duration: fully launched with inception workshop in Dec. 2007, will close in Dec. 2013. GEF implementation funds are USD7,850,000. PDF B application submitted end of 2003 for USD206,000. Two major delays: (1) Project document not signed until May 2007. (2) Full launch/inception workshop should have occurred within three months of signing, but took seven, because PMO anxious to maintain CICETE as financial manager, despite rules requiring MOF to play role. Since inception workshop/full launch, project has achieved good timeliness.
- Institutional set-up: MOA is executing agency and oversees PMO, which manages project; part-time CTA provides guidance to PMO. UNDP is GEF implementing agency, providing oversight. Institutional set-up transverses 15 provinces and multiple levels of government and community. PSC, with members from range of government agencies, meets once a year and additionally as needed. China's systems of agro-ecology and environment stations at the provincial and county levels have been instrumental to implementation and have been strengthened during the life of the project. These stations serve as "local PMOs," but do not receive GEF funding for salaries. A few years ago, China set up national level station to match local system; and PMO is based in its offices. PMO manages multiple projects. At both provincial and county levels, WRC Leading Groups and local PSCs have been set up and proven effective in channeling multi-sector support for livelihoods at project sites. At county level, county leadership is generally involved in promoting project's demo sites among different organizations.
- Purpose of Evaluation: TE purpose is threefold: (1) transparency for accountability, (2) lessons learned to benefit future projects, (3) sustainability and next steps to ensure ongoing benefits from project results after closure.
- Focus of Evaluation: TE puts greatest focus at outcome level. Outcomes provide gauge of meaningful impacts being achieved, rather than simple completion of activities. TE first covers "big picture" view of relevance, changes to the baseline, results, and potential impacts on future. Next, it covers findings regarding each of CWRC's five outcomes. Strong emphasis is put on justifying conclusions with evidence from field visits and interviews. TE also covers sustainability, cost effectiveness and expenditure analysis, design, implementation, monitoring and evaluation, special topics (women and ABS), and recommendations, lessons learned, and next steps.
- Evaluation methodology: Key methods of gathering information are: (a) face-to-face interviews, of which 52 were conducted, (b) review of project documents, (c) review of project expenditure data, and (d) review of baseline and follow up survey documents from project's 8 demo and 64 replication sites. TE team visited 3 project demo sites and 2 replication sites and met with stakeholders at the central, provincial, county, and township and village levels. Lessons learned with regard to evaluation methodology include:
    - Take advantage of time in car for formal interviews when large distances involved.
    - One-on-one meetings more effective than large groups for gathering targeted input.
    - Future evaluations may include persons not directly involved in implementation for outside perspective.
    - Villager interviews present greatest methodological challenge. Ensure there is sufficient time and randomness in selection and privacy for discussion.

2. Big Picture

- Overall project relevance: Project's broader goal of improving WRC conservation generally in China is highly relevant to world and China, in light of both continuing biodiversity losses and potential value of WRCs to food security. *In situ* conservation brings special benefits. Relevance of narrower project goal of promoting "mainstreaming-in-agriculture" approach to conservation presents some question marks. Project has added very significant number of 72 "MiA" sites to China's 170 physical isolation sites, with the former having added relevance for livelihoods. Yet, project document implied need for "mainstreaming-in-agriculture" sites to supersede physical isolation sites not widely held. So far, there are no plans for additional "MiA" sites, while government plans for 15-20 new physical isolation sites per year are to continue. Some stakeholders believe a mix of approaches is relevant for China depending on location. One key stakeholder suggests barriers should continue at all sites, but that training can be added. Following terminal evaluation mission, PMO is working to increase relevance of "MiA" approach through guidelines, analytic comparison to physical isolation approach, and incorporation of "MiA" into discussion agenda for formulation of WRC aspects of next five-year plan.
- Reasons future of "MiA" WRC conservation approach in China is in limbo:
    - Concern about high cost of livelihood measures.
    - Difficulty in channeling cross-departmental resources needed for "mainstreaming-in-agriculture" approach once project is over.
    - Concern that approach requires too much organizational effort and skill.
- Key changes from baseline (before full project launch in Dec. 2007 versus Aug. 2013):
    - Previously no "MiA" WRC or other wild agricultural plant conservation sites in China; now 72 such sites
    - Previously about 50 WRC or other wild agricultural plant physical isolation sites; now 170 (not due to project)
    - Previously little knowledge of "mainstreaming-in-agriculture" approach in China's agricultural bureaucracy; now officials at all levels of agro-resource station system in key provinces highly aware, as are many experts. Impressive change of mindset of villagers at project sites.
    - Livelihood improvements (not verified in socio-economic data, but strongly suggested in some villager interviews)
- Overall impressions and reasons for success: Stakeholders very positive about project; everyone, at all levels is working hard for project and enthusiasm levels are higher than is typically seen. Reasons suggested by stakeholders for project success: (1) thorough planning and scientific approach; (2) professional and experienced PMO and talented leader; (3) relevance and meaning of the project; (4) strong stakeholder collaboration; and (5) grassroots focus. Most significant impacts named by stakeholders: (1) mindset change (of both officials and farmers), (2) introduction of new WRC conservation method, and (3) livelihood results.
- Potential future impact and need for comparison work: Extremely likely 72 project sites will be included in national plan for follow-up monitoring (eligible for 50,000 RMB per

year); less clear whether future "mainstreaming-in-agriculture" style sites will be established.[1] To assist decision-makers, project or other proponents should systematically collect more information on the two approaches (including cost and efficacy in different sorts of conservation situations) and develop method of assessing options for future sites to be developed. Systematic review may include questionnaires on all sites for experts and agro-ecological officials in target provinces. Cost-benefit comparison critical. Anecdotal discussions with the provinces indicate problems with a number of physical isolation sites. Following submission of draft version of this report, PMO relayed strong intention of MOA and National Rural Energy and Environmental Protection Agency to conduct review and comparison of two conservation methods as well as develop methodology for assessing conservation options at new sites. PMO also indicated these organizations have intention to promote MiA approach nationwide based on results of review and comparison.

- Future need to coordinate departments: To address concerns that Agro-Resource Division of MOA would be unable to leverage resources of other departments for "mainstreaming-in-agriculture" style sites, MOA's vice minister-led cross-departmental Leaders Small Group for Conservation of Wild Agricultural Plants should be leveraged. Perhaps even a cross-ministry group at the central level could be established.
- Issue of integration with agriculture: Integration with agriculture has turned out to be less of a clear priority in design of sites than expected. In many cases, no agricultural activities are taking place in site after conservation. Definition of "integration with agriculture" needs to be clarified, perhaps as: "integration with agriculture whenever possible/practical and desired by local people, but in all cases emphasizing the enhancement of livelihoods of local people living near the conservation site." Lack of agriculture in conservation sites may be acceptable if (a) voluntary or (b) absolutely necessary. Yet, guidelines should be developed to ensure one of these is the case and that absence of agriculture in site is not instead due to overzealous implementation or lack of understanding of the potential for WRCs to co-exist with agricultural activities.
- Fence of the heart: When there are no agricultural activities in site, is scenario essentially physical isolation with an "invisible fence" or "fence of the heart?" If so, is invisible fence preferable to physical one? Due to psychological factors and perhaps occasional access to resources, such as non-timber forest products, it may be.
- Visions of future and Government plans: There is a chance that "MiA" approach will be referenced in next five-year plan (2016-2020). As plan is likely soon to be under formulation, project and other proponents should push for this. Indeed, National Rural Energy and Environment Administration (which is home to the PMO) plans to put discussion of MiA on the agenda of the upcoming experts meeting on wild agricultural plants in the next five-year plan. Currently, under influence of project, MOA said to be considering training budget for physical isolation sites. Provinces indicate they have no

[1] After submission of draft version of this report, PMO and relevant MOA division assured TE team that without a doubt the 72 project sites will be included in the national plan (eligible for 50,000 RMB per year per site), although this issue is currently under review by MOA. Earlier request to include these sites in plan was rejected by MOA's Planning Department due to fact that UNDP-GEF project was still ongoing at the time.

new "MiA approach" sites planned, but do have new physical isolation sites planned, since their plans depend on direction from MOA.

Outcome 1: Baseline Survey and Demonstration Sites

- Centerpiece of project: Outcome 1, with its demo sites, along with Outcome 5's replication sites, may be considered centerpiece of CWRC. When co-financing is considered, demo and replication sites together, along with their design and monitoring, have received vast majority of total investment in project.
- Baseline survey design: Baseline survey was designed to monitor conservation results at project sites. It includes indices in the areas of resources, environment (human and natural factors), and socio-economic aspects. Resource indices include distribution area, population density, abundance of target species, and growth status. The last of these is visual, which may be problematic if person conducting survey changes. Invasive Alien Species (IAS) are not included in environmental factors. They should be added, as they are considered second biggest threat after humans to WRCs in China. Variation among species may need to be considered in design. Non-point pollution also needs to be accommodated. TRA is a separate index that measures reduction in threats to site over time as a percentage of total threats at baseline.
- Baseline survey socio-economic indices: TE team recommends that socio-economic indicators be improved both in design and collection methodology from focus solely on net per capita income growth at sites. Given growth in incomes across China as well as inflation, simple increases in net per capita income do not evidence positive impact of project. Further, farmers may not be clear on their net per capita income. Changes in agricultural income, obtained with a more effective methodology, and changes due directly to project, may be more effective indices. A method is also needed to subtract out impacts of inflation and overall income growth. A method of comparing to similar villages may also be considered.
- Baseline survey results: Baseline survey (at least resource portion) appears to have been carried out consistently at demo and now replication sites. Yet, PMO did not maintain organized set of data from surveys, apparently due to lack of timely submission by subcontractor and due to complex format of submissions. Recommend future PMOs keep complete set of survey data on hand and collate in easy-to-review fashion. As component of contract management, recommend greater emphasis on ensuring sub-contractors submit in an organized and complete fashion the data they are paid to collect. PMO for this project (which is a multi-project PMO) has indicated plans to follow up more closely with sub-contractors in future and require data be submitted in organized fashion.
- Baseline survey impact beyond project: One official indicated this type of assessment method had never before been prepared for MOA's conservation sites and there are plans to make it the methodology for all MOA sites in the future. Guangxi Province over past year has already extended the approach to its five physical isolation sites.
- Incentive mechanism design – demo sites: TE Team finds livelihoods support at most sites include public goods component (usually road and/or irrigation facilities). Private or small group goods component (examples include greenhouses, saplings, animal pens, and

drinking water storage) is at minimum provided to those who had private or collective land use rights within conservation site. TE team believes sustainability of public goods generally strongest; if cost-benefit warrants, emphasis of public goods recommended. Benefits from some private goods may be susceptible to swings in commodity prices. Typical size of natural villages associated with conservation sites is 50 to 100 year-round households. Henan and Jilin demo present special cases. In Henan, we found only 6 of original 46 households still live in village – rest had been encouraged to move to township. In Jilin, all households have out-migrated to South Korea for work, while renting their land to others.

- Incentive mechanism investment – demo sites: GEF funding for each of the 8 demo villages averaged USD117,000. Planned total investment (including GEF funds) per site ranged from 2.3 to 3.6 million RMB. In all cases for which we have data, realized investment exceeded planned, ranging from 4.6 to 27 million RMB. Difference in large part due to additional types of livelihood support not included in original plan. For example, at Ningxia site, sheep pens were added.
- Participation in and satisfaction with incentive mechanism: Demo villagers in Ningxia and Guangxi clearly confirmed to TE team their participation in incentive mechanism design, strong satisfaction with livelihood support, and willingness to conserve WRCs. Henan demo villagers indicated willingness to conserve; some also indicated participation.
- County policy and villager agreements: For each of demo sites, relevant county has issued policy or guidance statement; and township and village villager agreements have been revised to reflect WRC conservation. This was confirmed for 3 demo counties visited.
- Conservation results at demo sites: Conservation results at demo sites have been positive. This is one of the most important achievements of the project. Area under conservation of each of 3 demo sites visited was not reduced, aside from minor adjustments at one site at initiation. At each site, provincial experts who guided us told us improvements in amount of conserved plants (in both density and spread) were visibly obvious to them. Data from baseline survey and TRA back up view that, in most cases, not only has there not been deterioration, but there has also been improvement.
- Livelihood results at demo sites: Field visits presented extremely positive impression of livelihood results at some demo sites (Guangxi and Ningxia), both in terms of what villagers told us and the new infrastructure we saw. Some villagers mentioned significant improvements in certain aspects of their agricultural productivity. Most Henan villagers we spoke with did not indicate income benefits. Yet, these may be realized after five or so years, when pepper trees planted as part of project mature. Looking beyond findings from field visits for more comprehensive quantitative results, available socio-economic data is weak and does not render solid quantitative evidence of project-generated improvement in income, except for one site (Yunnan). The project does provide average annual net per capita income at each demo site and shows growth at each site over the life of the project. Yet, given the great growth in incomes and price indices overall across China during the project's duration, it is difficult to draw conclusions from this data. Further, TE team found that an additional socio-economic study commissioned by the project also did not provide the desired insights. Thus, TE team compared demo site

average rural per capita income growth to growth in the relevant county's average rural net per capita income. TE team recognizes this comparison is far from ideal, but maintains it provides more insights than no comparison at all and is preferable to mere provision of annual income data on a site by site basis. Comparison, while crude, gives a ballpark impression of how demo site growth rates compare to other locales in their respective counties. The comparison shows that, aside from standout growth for the Yunnan site, net per capita incomes indicated for other demo sites did not grow faster than county rural averages, but also did not grow more slowly, implying that at least these villages did not lose ground due to restrictions in conservation areas. Future socio-economic efforts may combine some case study villager interviews with improved method of assessing net per capita agricultural income changes and changes due to specific project initiatives, with inflation and overall income growth subtracted out. Comparison with similar villages may also be considered.

- Key issues with regard to incentive mechanism: If the "mainstreaming-in-agriculture" approach is to be pursued at new sites in the future, the following issues should be raised as a group and direct, transparent discussions and analysis encouraged:
    - *Integration with agriculture*: Discussion and analysis should consider what type of integration with agriculture is feasible, what types of restrictions are truly necessary, and means to ensure that overzealous restrictions do not prevent integration when it would be feasible.
    - *Equity*: The substantial resources channeled to demo (and later replication) villages raise question of equity vis-à-vis other villages, particularly when conservation site villages are able to "jump the queue" in receiving funding for special projects, such as roads. It may make sense to channel the more substantial livelihood support to those villages that represent dual opportunity of conservation and poverty alleviation. The equity issue makes it even more important for decision-makers and their advisors to consider costs and benefits of "MiA" approach as discussed in next item below.
    - *Efficiency of multiple investments channeled to one village and cost benefit analysis*: The questions of "What is enough?" and "When do returns begin to diminish?" need to be asked. Cost-benefit analysis, while difficult, needs to be conducted at some level, both to justify "MiA" approach and to determine how much support for one demo site is reasonable.
    - *Sustainability of livelihood investments*: If conservation is to be sustainable, livelihood results will need to be sustainable or at least serve as a bridge to other activities that are sustainable. In order to choose the MiA approach over the physical isolation approach, policy makers will need to have some confidence that the first is sustainable and that follow up investments, if needed, can be arranged and are affordable. Further, to choose among livelihood support options, they will then need to have an idea of which types of livelihood investments are more sustainable. They will need to compare both public and private goods and also assess which type of private goods offer more potential for sustainability. For both of these needs (justifying the MiA approach and then determining best livelihood

support options), follow-up monitoring of livelihood and conservation results at the project's sites in future years will be helpful.

  - *Measuring impact and returns of alternative livelihood support:* New socio-economic monitoring system to be developed may have a greater focus on agricultural income, case study interviews, income due to project, and means to subtract out effects of inflation and overall income growth (or compare to similar villages).

- Potential impacts beyond Project – alternative livelihoods approach: For people in the agro-conservation field, project approach of using alternative livelihoods to promote conservation is completely new. From case of Ningxia, we see project may have lessons for other types of conservation, such as grassland recovery. For those with experience in poverty alleviation, what's new about project is not support of alternative livelihoods in general, but that project integrates resources from across government departments for a more effective result than the standard piece-meal approach.

Outcome 5: Replication Sites, Publicity, and Dissemination

- Impressive scale – 64 sites: Outcome 5, with its 64 "MiA-style" replication sites, is truly impressive. GEF investment in each is very small (about USD15,000). Yet, with 64 sites, total is over USD900,000. Government co-financing levels less on average per site than for demo sites, but because of large number of sites, an impressive amount of funding has been mobilized. Total investment in Outcome 5 exceeds that of all other outcomes.
- Plants conserved and definition of WRC: Of 64 replication sites, at least 39 of target conserved plants are WRCs based on a definition of WRC as wild plant without direct economic value, but related to plant with such value. Of the others, significant portion are wild Chinese medicinal plants with direct economic value and no domesticated relative. This creates confusion regarding the definition of WRCs and project scope. While it is clear these medicinal plants are a part of the broader category of "wild agricultural plants" under MOA's purview, stakeholders offered conflicting views as to whether they could be classified as WRCs. Further, text in the project document strongly implies such plants are not WRCs.[2] We recommend for purposes of transparency and clarity that project management acknowledge expansion of scope and offer clear definitions and explanations for inclusion of wild plants of direct economic value.
- Scale of investment in replication sites: For six provinces for which we had investment data disaggregated by site, typical total realized investment levels are 1 to 2 million RMB

[2] The project document (page 5) states the following regarding WRCs: "This means that, unlike traditional varieties, and unlike most specifically targeted species in natural systems (for example, mahogany), which have existing or potential commercial value, there is little or no possibility of generating financial incentives for conservation of wild relatives through sustainable management and harvesting of their products. For example, efforts to produce bean curd from wild soybean in Anhui Province, China, have not yet generated a commercial product." The PMO and relevant MOA division had lively conversations with the TE team on the issue of scope of WRCs. In the end, the parties "agreed to disagree." The PMO and MOA call for a broader definition of WRCs. They emphasize MOA's purview over all "wild agricultural plants," including Chinese medicinal plants. They also point to a scholarly publication *Crops and their Wild Relatives in China*. The TE team attaches importance to the definition of WRCs in the project document, the emphasis of the project on finding a means to protect species without direct economic value, and feedback from other knowledgeable project stakeholders indicating a definition of WRCs corresponding to that implied in the project document.

or less.[3] This is similar to what we have heard about scale of up-front investment for some physical isolation sites. The replication site data includes "management costs" (fixed costs of government personnel and offices), which would not normally be included in comparisons.

- Replication site conservation results: Despite low GEF investment per site (USD15,000), it appears many replication sites are doing well. Of 37 sites for which we had data, none saw a reduction in their composite resource index over the first year of monitoring and 20 saw increases. All but two sites had fairly substantial reduction in threats during the first year, as evidenced by TRA results.
- Replication site incentive mechanism and livelihood results: While we had just a few interviews at replication sites, relatively positive impressions were conveyed. The alternative livelihood investments had been made, villagers were beginning to be aware of conservation issues, and livelihood benefits looked likely or had already occurred.
- Publicity and dissemination of WRC conservation: TE team was favorably impressed with TV publicity for project. Viewership of centrally broadcast series on WRCs was high (estimated at 50 million) and response (over 300 letters received by the CTA as a result of TV series) impressive. Based on lessons learned from previous project, PMO decided to bring contractor on very early with good results. This work supports the broader project objective of promoting WRCs more generally.
- Other publicity and dissemination: PMO is in midst of preparing two books, one on WRC policy and one on the "MiA" approach. In Sept. 2013 (after submission of the draft version of this report), they held a major conference including representatives from all of China's provinces. TE Team recommends closing work also address key issues raised in this report. Guidelines for "MiA" approach should be developed and disseminated in a publication. Also, work should be done to add more clarity for policy makers on the five incentive mechanism issues raised above (under Outcome 1). After submission of the draft TE report, the PMO conveyed its intention to facilitate deliberation on key issues raised in the draft report and develop MiA guidelines and a method for assessing conservation options (i.e. physical isolation versus MiA) at new sites. The PMO plans to include both the MiA guidelines and the conservation approach assessment methodology in the second book they are preparing. The TE team applauds the PMO for this adaptive management and timely action taken in the closing months of the project.

Outcome 2: Policy

- Prior to project start: According to project document, significant regulatory support for WRCs existed prior to project start. As such, Outcome 2 targets improvements.
- Achievements and lack of enforceability: Outcome resulted in overview report of all policies potentially related to agro-biodiversity; study and draft MOA-level management

[3] While budget data was provided for most of the 15 provinces, only six of the provinces provided investment figures on a site by site basis. The rest of the provinces aggregated this data for all sites, so we do not know how the investment was distributed among the individual sites of those provinces. Thus, we feel most confident in looking only at the six provinces for which we have individual site investment levels to get a perspective on the range of typical investment levels per site.

guidelines on IAS, as well as list of key IAS species issued by MOA; and three MOA-issued management guidelines related to wild agricultural plants (a category encompassing WRCs). It also resulted in five provincial department of agriculture issued guidelines related to WRCs. Both the MOA guidelines and the provincial department of agriculture guidelines lack enforceability. TE Team believes project should have pursued issuance of regulation at an enforceable level (i.e. central government or provincial government). Yet, while lacking enforceability, the guidelines achieved by the project are considered compulsory and can have some positive impact, such as playing a role in the stoppage of oil drilling near the Ningxia demo site. Further, project has provided input for WRC-related additions to *Seed Law* which, if accepted, will have enforceability. Xinjiang and Guangxi drafted WRC-related guidelines now under review by provincial governments, which, if accepted, will have enforceability. These initiatives for enforceable regulations are believed to have good potential (e.g. 50 percent chance of approval of changes to *Seed Law*), but expected to take a long time to realize.

- Lack of focus: Enforceable policy achievements are difficult. Yet, TE team believes project did not focus its efforts and resources well enough to ensure best chance possible of making and maximizing a policy impact related to WRCs. Outcome 2 suffered from "scope creep" and lack of strategic foresight. Overview report, while contributing to field of agro-biodiversity generally, was too broad and lacks substantive connection to policy work eventually undertaken. (On this point, there has been some lively debate. PMO makes the point that the project is China's first agro-biodiversity related GEF project, so it is reasonable to cover all policies related in any way to any type of agro-biodiversity. TE team prefers that all initiatives show clear connection to project objectives and targeted outcomes.) IAS, while important, is also, to some extent, out of scope. (On this point, there has also been some lively debate, as IAS is an important threat to WRCs.) TE team does acknowledge the threat IAS poses to WRCs, but believes policies to directly protect WRCs should have been the priority focus of policy work. At minimum, WRC focused policy work should have been undertaken concurrently with these other efforts. Yet, WRC policy work was not undertaken until middle of fifth year of project.
- Contradiction to "mainstreaming-in-agriculture" approach: One of MOA-issued management guidelines drafted with project support disallows entry by anyone into conservation sites without a special permit and does not provide means by which farmers can apply for permit. Project supported policy should at minimum be compatible with "MiA" approach, as it is major focus of the project. In response to draft TE report, PMO has raised the policy for discussion at its closing project seminar in Yunnan Province (Sept. 2013) and revisions to the guidelines have been recommended to MOA.
- Recommendation for future projects: Future projects should focus policy work early and strategically. They should aim high for regulations or guidelines to be issued at levels of central or provincial governments that will enable enforceability. Activities should be focused on generating excellent draft policies (perhaps even competing drafts for discussion) and building momentum and consensus among key decision-makers and other relevant stakeholders.

Outcome 3: Training and Awareness

- Scope: Outcome 3 addresses both capacity building related to MiA approach and capacity building to support WRC conservation in general. Main activities include Farmers' Field School (FFS) in project villages; incorporation of WRC curriculum into schools near demo sites; training for local officials from demo provinces, counties, townships, and villages; and Village Head Campaign for leading villagers across China.
- FFS: FFS effective in bringing new production skills to farmers, thus contributing to livelihoods. FFS promotes active learning in the classroom. While not new to China, most previous efforts covered only a single topic. CWRC, building on GIZ experience, introduced participatory methods of determining curriculum and offered classes on multiple subjects, which farmers find attractive. A large MOA program covering all of China's 2,000-plus counties will incorporate this training approach, due in part to CWRC and the GIZ project.
- Mindset change: Stakeholders indicate one of the most impressive achievements of project is to have changed the mindset of farmers and officials. Mindset change of farmers (who are now enthusiastic about conserving WRCs at project sites) is said to be very difficult. Evidence of farmer mindset change includes the reporting by farmers of incidences (e.g. fish pond digging and oil well drilling) in or near conservation areas. Reason for success in farmer mindset change said to be integration of many aspects of project (training, discussions between villagers and officials, etc.), with incentive mechanism being particularly important. Most villagers we interviewed knew about the need to conserve WRCs and some were clear on the potential future value of WRCs. Project WRC curriculum and awards for students in demo areas reflect strategy that students will influence parents and also enhance sustainability of WRC conservation in the future. Project also achieved impressive level of mindset change regarding "mainstreaming-in-agriculture" style conservation among involved officials. During mission, we repeatedly heard from local officials that they had never thought of this approach before, but were now convinced of its value. Project had many training meetings which, along with direct involvement in incentive mechanism, are said to have played strong role in mindset change of officials. Project also had a number of study tours, but officials did not raise these as having had an impact.
- Village Head Campaign: Village Head Campaign is large campaign under MOA for raising awareness and knowledge base of leading persons in villages, including village party secretary or chief, college students that will return to village, and households with large-scale agricultural activities. CWRC developed environmental curriculum for Campaign, about one-quarter of which addresses WRCs. Campaign trains 7,000 villagers per year and plans to expand to 10,000 per year and operate through 2020. Campaign will continue to include project's environmental curriculum on a more compressed basis through 2020. This is positive achievement of project, in terms of broad publicity for WRC conservation, though focus on WRCs is limited and investment (USD336,000) high.

Outcome 4: Monitoring and Alert (M&A) System and WRC Utilization

- Scope: Scope of Outcome 4 is broader than indicated by its original description. It includes development of a software-based M&A system, provision of vehicles to provincial agro-ecology stations, and support of research to identify superior germplasm from project demo sites.
- M&A System: TE Team has positive impression of design of M&A system, but some concerns about use. The system allows county users to input data and central users to upload data via mailed in CD and then view data for all sites. Online access, with confidential information on site locale and plant type deleted, is possible. Central system (installed on only one computer in the whole nation) does include baseline survey data for 8 demo sites and 64 replication sites, as well more limited data for 1,600 sites at which wild agricultural plants have been found to occur in China. Originally, it was intended that provincial agro-ecology stations have access to online system to view all sites in their provinces. Yet, we found only one provincial station has access to system. Further, because only 8 sites are entered into online system, appeal to users is limited. TE team strongly recommends that the issues of limited number of sites and limited user-ship, both related to approval within MOA, be addressed during last five months of project. Sites in the online system should be extended to include the 64 replication sites and, if possible, China's 170 physical isolation sites. Open discussion should be held among stakeholders and experts regarding confidentiality requirements, how these can be achieved, and whether the online system (which can control access levels) can be opened up to more users, including experts. Results beyond project include: M&A system now being used by another GEF project. Also, since implementing this project, sub-contractor has gotten more projects in designing agricultural M&A systems.
- Vehicles: Project purchased nine vehicles for provincial agro-ecology stations. Six went to demo site provinces and three to replication site provinces. Total investment was US340,000 or US38,000 per vehicle. Stakeholders offer justification in that stations lack vehicles and must travel large distances over poor roads to conduct monitoring and liaison work. This is especially true in large provinces like Xinjiang. Average cost of about US20,000 per vehicle is thought to be more reasonable.
- Germplasm research: This research is first step in long process to develop improved grain varieties using plants from project demo sites. New improved wheat and soybean based on demo sites may take ten or more years to develop, while new improved rice may take about five years. Sub-contractors are top in their fields. Two have not used *in situ* WRC before and commented on advantage of wider variation in gene pool. TE team unclear as to whether such work could have been funded (or largely co-financed) by Chinese Government, but results are highly relevant to project. Soybean work identified higher protein levels than previous work with *ex situ* samples. Researchers plan to continue the work with germplasm from project sites, likely using Chinese Government grants.

Sustainability of Project Results

- Sustainability of livelihood and conservation results: Stakeholders had mixed views on sustainability of livelihood (and therefore conservation) results. Villagers expressed

confidence that incomes would continue to improve. Other stakeholders indicate overall trends of increasing incomes in China and out-migration/urbanization further strengthen potential for sustainability. Yet, many other stakeholders feel that "keeping an eye on" project villages and availability of follow up resources will be important, though levels of future investment will be less than start-up investments. TE team believes public good investments (roads, irrigation system) present most sustainable results, while some private good assistance (especially with commodity crops), may represent less sustainable impacts on livelihoods. Yet, cost-benefits also need to be considered. Sustainability of livelihood results at all 72 project sites should be monitored and lessons learned used in adjusting the guidelines for future "MiA" style sites. One idea for ensuring sustainability is to secure same annual follow-up funding per site (50,000 RMB) as allocated to physical isolation sites and pool this money for project villages that, in any one year, are in need of additional livelihood support. (Indeed, it has been indicated that the annual 50,000 RMB allocation is extremely likely to be made on a site-by-site basis to each of the 72 sites after project close.) Some stakeholders suggest "software" (e.g. training) may be more suitable follow-up investment than additional "hardware."

- Sustainability of concept and mindset associated with mainstreaming approach through establishment of additional sites: There is a risk that the "MiA" approach to WRC conservation will be forgotten or at least not extended to additional sites in the future. Stakeholders offered several reasons they believe it will be difficult to achieve additional "MiA" sites in China. Thus, it's critical for project team in closing months to focus on developing guidelines for "MiA" approach and on preparing comparison to the physical isolation approach (including cost comparison), so policy makers have tools with which to make decisions. We understand that, since submission of the draft version of this report, the team has indeed been giving attention to these areas. In addition, mechanism for cross-department cooperation within MOA on "MiA" style WRC conservation projects should be pursued.
- Sustainability of baseline survey and monitoring system: TE team found that no follow up funds or specific plans for annual follow-up to baseline survey have been specified. Yet, probability is extremely high that MOA will adopt 72 project sites as part of its national set of sites, so that some funding will be provided. Due to approval issues, no specific plans for including additional sites into the online monitoring system and expanding user-ship (especially to the provincial agro-stations) was indicated. These measures are critical to ensuring sustainability of the system and it is recommended they (and the approval required) become a focus of the project in its closing months.
- Sustainability of policy work: Central and provincial level policy achievements to date are considered to be long lasting, though lacking in enforcement mechanisms. Legislation under consideration (such as revisions to the *Seed Law* to accommodate wild agricultural plants) should continue to be promoted to the extent possible. County level policy achievements are considered sustainable and enforceable. "MiA" approach has not been incorporated into China's Five-Year Plan, which still emphasizes physical isolation for WRC conservation. Work should be done to ensure upcoming drafting process for next five-year plan includes copious debate on "MiA" approach, hopefully leading to its

incorporation into the 13th Five-Year Plan (2016-2020). National Rural Energy and Agro-Environment Administration has indicated its plans to put the "MiA" approach prominently on the agenda for discussions associated with the five-year plan drafting process.

- Germplasm work: Germplasm work is likely to be sustainable, as China attaches much importance to food security, annually funding much work in this area. The three involved research groups are already conducting follow up work with funding from other sources.

Cost Efficiency and Expenditures

- Overall cost efficiency and co-financing: Cost efficiency in use of GEF funds at conservation and replication sites is impressive. Co-financing of incentive mechanisms at these 72 sites is estimated to be about 2.7 times total GEF funding for project as a whole and about 11.5 times GEF investment in incentive mechanisms at sites. All other Government co-financing (aside from USD43,000 for training) is in-kind administrative support at local or central level. TE team did not find much government co-financing of other project activities. FFS benefited strongly from GIZ project under UNDP-implemented platform *EU China Biodiversity Partnership*, so that funding of that project is leveraged in CWRC via FFS synergy. Only 23.3 percent of total GEF funding for CWRC was invested directly in project conservation sites via livelihood investments. Even if we include all indicated GEF spending for Farmers Field School (FFS) training (whether for training on-site or design of training) in the total investment made directly in project conservation sites, the share of total GEF funding rises only to 24.2 percent.[4] This seems low, given that actual activities at demo and replication sites are core strength of the project, implying low cost efficiency. Thus, we see two competing factors in assessing cost efficiency: low proportion GEF investment in core strength of project, but very high leverage of co-financing in that same area.
- Expenditure data: TE Team found PMO provided co-financing data and activity-by-activity GEF expenditure data weak. For future projects, recommend record-keeping be strengthened and effective ways of summarizing data be developed to aid relevant stakeholders in tracking project spending and project co-financing. UNDP expenditure data from CDRs is considered reliable, but lacks co-financing information or information on specific activities on which funds are spent. TE Team has used PMO GEF activity-by-activity expenditure data for rough analysis, but finds that data is about USD500,000 short of official UNDP totals. (Discrepancy may be due to differences in end dates between the data sources.) TE Team did find PMO sub-contract expenditure data to be orderly and well presented.
- Cost effectiveness of open-style approach: Preliminary findings suggest, if designed properly, "MiA" approach may be cost competitive to physical isolation approach.

[4] The point intended here is that we should pay attention and try and get a greater proportion of funds spent directly on activities at site as compared to funds spent on consultants doing design work and reports, etc. in support of eventual activities to be conducted at the sites. Or, at least, preferred proportions and justifications should be discussed. In this analysis, funds spent on sub-contracts for consultants carrying out activities such as "design of incentive mechanisms" are not considered the same as "money spent directly in the conservation site via livelihood investments."

Typical total investment in replication sites is on the order of up-front investment in some physical isolation sites. Follow-up investment for "MiA" sites may be less. Much more work is needed to make a solid comparison.

- Expenditures to date and timeliness: Total GEF expenditures as of July 31, 2013 were USD7,389,693 out of USD7,850,000 planned. Annual total disbursements imply project has proceeded at a reasonable and smooth pace.
- Outcome 1 expenditures: Project spent GEF funds of USD941,280 on alternative livelihood incentive mechanism at the eight demo sites (averaging USD117,000 per site) and GEF funds of USD882,800 on these at most of the 64 replication sites (averaging USD15,000 per site). This is deemed highly cost efficient. Total sub-contracts for Beijing-based designers of incentive mechanism was USD350,000 (all GEF funds), which, at almost 20 percent of total GEF funds invested in incentive mechanisms, seems high. Yet, overall results of incentive mechanisms are strong. TE team has institutional concerns about composition of sub-contractor teams, which should not overlap with advisors or staff of PMO. Recommend future projects draw clear lines on this issue and rules be clarified and amended if needed to prohibit overlap not only with persons designated in sub-contractor proposals but with any persons who eventually conduct work and receive payment as part of sub-contractor team. Final audit may wish to look into concerns raised in main text of this report (mentioned under Outcome 1, Outcome 2, and Outcome 3 expenditures).
- Study tour and conference expenditures: Total GEF spending on study tours was USD223,183. Total spending on workshops and conferences was US708,921. Workshops received positive review from stakeholders, while little mention was made of study tours.
- Outcome 2 expenditures: Because of lack of focus early in project, cost efficiency of this outcome seems low. Also, items such as USD81,119 for expenditures at China Rural Culture Festival seem out of place.
- Outcome 3 expenditures: FFS gives good impression of cost efficiency. Expenditures for Village Head Campaign at USD336,031 seem high, especially since WRC is only one quarter of environmental curriculum introduced, yet reach of initiative is wide.
- Outcome 4 expenditures: M&A system design (USD65,000) and three germplasm studies (USD459,700) appear to be reasonable value for funds spent, though TE team believes government co-financing might have been leveraged for the latter, given large, ongoing investments in such research by the Government. Vehicles expenditures averaging USD38,000 per vehicle are much higher than expected.
- Outcome 5 expenditures: Replication site investment (officially included under Outcome 1) considered extremely cost effective due to large proportion of co-financing. Results of four film sub-contracts (totaling USD239,800) considered strong, particularly three-part WRC series broadcast on prime time with estimated audience of 50 million.
- Management costs: In official reporting, project management costs are spread across four of project's outcomes, with largest concentration in Outcome 3. For future projects, TE team believes it critical to have reporting structure that separates out management costs. While PMO expenditure data may be incomplete, it shows USD1,013,844 in management costs, which is 13.7 of total project expenditures to date (using UNDP official figure).

This is higher than GEF required maximum level of ten percent when project was initiated. We note that CTA costs are included in the computation of management costs. Indeed, these costs and were not fully disaggregated from other PMO staff costs, so could not be separated out. Yet, TE team understands CTA function to be largely project management in nature. The project PMO is different than most PMOs in that staff work on multiple projects. This may increase efficiency when workloads are variable and also allow them to support new projects under development. Yet, for transparency, the PMO should provide clear information on whose salary is being paid by which projects and justification via some estimates of each staff member's time input into each project.

Design, Implementation, M&E, and Other Issues

- Design: Project design is attractive, with five outcomes working together in integrated fashion to promote WRC conservation. Yet, design also has several issues: (1) confusion over scope of project objective and use of the term "mainstreaming" (lesson is to pursue precision in scope of project objective); (2) definition of mainstreaming conservation into agriculture (many sites have little if no agricultural activity; recommendation is to add further clarification based on experience); (3) confusion regarding WRC definition and species scope of project (recommendation, for purposes of transparency and knowledge-building of stakeholders, is to provide greater clarity on these); (4) emphasis on financial mechanism in project design, but virtual absence in implementation (in future, concepts should be developed in more detail at project preparatory stage; innovative concepts may wish to include contingency plans in design); (5) design of policy outcome (more focused design may have helped to keep outcome on track; distinction of enforceable policy should be clearly made); and (6) lack of separation of project management from project outcomes in budget.
- Project preparatory work : In future, greater attention should be given to design of project preparatory activities to ensure that these answer critical questions related to design, such as type of mechanism and level of policy to be pursued. PDF B work for the project appears to have focused on site selection, with not enough attention to other critical design issues, such as the incentive mechanism.
- Project institutional arrangements: Project's institutional arrangements are strong. PSC, while meeting only once annually (or additionally as needed), has strong members with full project longevity who contributed substantively to content of project. PMO is professional and experienced, with talented leadership, all of which contributed strongly to success of project. Project has had three CTAs, the current one a very capable Chinese national with strong expertise in WRCs. Vice NPD of project assigned by Implementing Partner (IP) has purview closely tied to project, which is important in facilitating project impact on policy and planning. UNDP played positive role in macro-guidance on project direction and sustainability, as well as leveraging other projects, in particular encouraging cooperation with GIZ project under UNDP *EU-China Biodiversity Programme* platform. Local PMOs and local leading groups were an effective methodology, with latter providing effective way to harness support of other departments for incentive mechanism.

- Implementation: While there were substantial delays before start-up, once project was fully initiated with inception workshop, implementation has been timely. Effective implementation strategies to be learned from include the mobilizing of government departments at different levels and responsible for different sectors. In convincing other departments, one important strategy at the provincial level is to emphasize a well-known and critical issue – in this case food security. At the county level, having the county party secretary or mayor involved in the local leading group provides good leverage for inter-departmental cooperation. Project made decision very early not to pursue a financial mechanism, although this is strongly emphasized in the project document. Based on interviews, one area that warranted more attention than received is ecological compensation for WRC conservation. This effort might have been conducted alongside project activities and may be an area for a smaller, future effort, perhaps during the last months of the project.
- Project M&E: Project document contains detailed M&E plan with budget of USD251,000 Project has completed most of the standard M&E work; and PIRs include detailed assessment of project indicators. Project has also supported development of a baseline survey system for assessing conservation sites. This is considered a real strength of project, though it is recommended PMO have a more systematic way of keeping on top of results from subcontractors. Indicators in project logical framework present issues of ambiguity and have been interpreted differently in some cases than the TE Team would interpret them. Also, some indicators seem too easy (and possibly not dependent on project achievements) and others too difficult. Developing an indicator system is an extremely challenging job. In the future, we recommend individuals from PMO and perhaps CTA work closely together, step-by-step, including vigorous debate in the process, to come up with a set of indicators, each of which presents reasonable challenge and is expressed without ambiguity.
- Post-project monitoring: TE Team strongly recommends follow-up monitoring some years after project close to assess: (1) whether project will truly have broader impact beyond its own demonstration and replication sites via the establishment of additional "MiA" style WRC conservation sites in China; and (2) whether livelihood results and associated conservation results of project's "MiA" style sites will be sustainable.
- Women: Women play an important role in conservation at the project's sites, particularly because, due to greater out-migration by men, they play a greater role overall in agriculture than do men. Project targeted 50 percent of village trainees to be women and achieved level of 52 percent. Twenty percent of management trainees were women. Project cooperated with local branches of ACWF in delivering some of the training.
- ABS: Project devoted significant attention to ABS, the mechanism by which those who conserve WRCs are able to get benefits from future economic results associated with the WRCs they conserve. ABS was found to be infeasible in China in the short term, but project is credited with strongly raising awareness of the concept among concerned stakeholders. Project did coordinate a "Materials Transfer Agreement" between germplasm researchers and villagers, but due to issues of land ownership in China it is not

clear whether agreement can be implemented. One germplasm researcher indicated his group plans to provide share of any profits from site germplasm to relevant farmers.

Recommendations, Lessons Learned, and Next Steps

Many recommendations, lessons, and next steps are incorporated into the executive summary above. For a full summary list of recommendations, lessons, and next steps, please see Chapter 14 (Part V) towards the end of the main text of this evaluation.

Ratings

Overall project ratings are given in Exhibit ES-1 and outcome-by outcome ratings are given in Exhibit ES-2.

Exhibit ES-1: Overall Project Ratings

Evaluation Ratings:			
1. Monitoring and Evaluation	***rating***	**2. IA& EA Execution**	***rating***
M&E design at entry	S	Quality of UNDP Implementation	HS
M&E Plan Implementation	S	Quality of Execution - Executing Agency	HS
Overall quality of M&E	S	Overall quality of Implementation / Execution	HS
3. Assessment of Outcomes	**rating**	**4. Sustainability**	**rating**
Relevance	S	Financial resources	ML
Effectiveness	HS	Socio-political	L
Efficiency	S	Institutional framework and governance	L-*
Overall Project Outcome Rating	S	Environmental	ML
		Overall likelihood of sustainability	ML

Exhibit ES-1: Ratings by Outcome

Indicator	Outcome 1	Outcome 2	Outcome 3	Outcome 4	Outcome 5
Relevance	S	S	S	HS	S
Effectiveness	HS	MS	HS	S	HS
Efficiency	HS	MS	S	S	HS

**Note on institutional sustainability rating*: Based on input from MOA and PMO following review of draft version of this report, TE team has raised "Institutional Framework and Governance Sustainability" rating from ML (moderately likely) to L- (likely minus). The reasoning for raising rating is that, during the course of the project and perhaps due in part to the project, the government organizational structure relevant to WRC conservation was substantially strengthened. A national-level "Rural Energy and Agro-Environment Agency" was established to oversee the system of provincial and county level rural environmental monitoring stations. The handful of provinces without such stations established them, so that all provinces now have these. And, according to the PMO, while about one fifth of counties had such stations at project start, now almost all counties in China have them.

Yet, despite these impressive achievements in setting up a government organizational structure for protection of the agro-environment, TE team found that institutionalization of the MiA approach in particular is weak. We note the nature of the institutional sustainability rating is described in GEF guidelines for terminal evaluations via the following questions[5]: "Do the legal frameworks, policies,

[5] *Guidelines for GEF Agencies in Conducting Terminal Evaluations*, GEF Evaluation Office, 2008.

and governance structures and processes within which the project operates pose risks that may jeopardize sustainability of project benefits? Are requisite systems for accountability and transparency, and required technical know-how, in place?" As described in discussions of sustainability elsewhere in this document, the MiA approach is not included in policies and plans and may be at some risk of not being replicated at new sites beyond the project's 72 sites. Yet, as noted above and later in this document, following review of the draft version of this report, the PMO has indicated that guidelines for the MiA approach will be developed and methods for determining preferred WRC conservation approach (i.e. physical isolation versus MiA approach) at new sites will be developed. Further, the MiA approach will be put on the agenda for discussion in preparation of China's next five-year plan. We see these as very positive albeit incomplete developments not only for institutionalizing agro-environmental protection in general, but also for potentially institutionalizing the MiA approach.

PART I: PRELIMINARIES – PROJECT INTRODUCTION AND METHODOLOGY

1. Project Introduction

1.1 Background on Wild Relatives of Crops and Motivation for Project

Crop wild relatives (CWR) (or wild relatives of crops (WRC)) are species that are genetically related to crops or other domesticated plants, such as forages or medicinal herbs, but that are undomesticated themselves. That is, CWRs are wild plants related to economically important species, but lacking direct economic value themselves. Locating and preserving CWRs is basic to plant breeding. In the case of food crops, wild relatives are thought to be vital to food security. Although generally not edible themselves, wild relatives of food crops may present certain desirable characteristics, such as salt resistance, high protein content, or resistance to drought or disease. The value of CWRs for non-food domesticated plants, such as forages or medicinal herbs, will also be through the presentation of desirable genetic traits. Although *ex situ* conservation (e.g. germplasm bank) of CWRs is being carried out and is cheaper and less complex than *in situ* conservation, *in situ* conservation presents important advantages. *In situ* CWR species can continue to evolve in changing environments, provide us with useful information about these species in their natural environments, and, in the case of CWRs that reproduce by vegetation, provide a more efficient means of conservation

China is an important world center of biodiversity generally and in terms of wild relatives in particular. It is considered one of the world's seven Vavilov Centers, which are believed to be the world's original major centers of plant domestication and to thus present the greatest diversity of crop wild relatives. Starting ten-plus years ago, China began carrying out *in situ* conservation of CWRs and other wild agricultural plants through use of a single methodology: "physical isolation." This approach consists of setting up a fence or wall around the protected area. Because CWR protected areas in China are generally located very near to or within rural settlements, sustainability of such conservation sites presents certain challenges. In particular, setting up a physical isolation site may require taking land contracted to certain farmers out of production. In addition to investment for the fencing enclosure and a small watch station, physical isolation requires funds for ongoing upkeep and staff salaries.

At the start of the project under evaluation, China's agricultural system had already set up tens of physical isolation sites, but had no experience with "mainstreaming-in-agriculture" style conservation. In this approach, no barriers are used and an attempt is made to integrate the conservation of wild relatives (or other wild agricultural plants) with agriculture in and around the conservation area. The "MiA" approach is believed to have advantages in terms of sustainability, livelihoods, and, relatedly, the goodwill of local people towards the conservation site.

Further, while China by the time of the start of the project had begun to make progress in setting up conservation sites, surveys of wild relatives in various provinces was showing alarmingly rapid deterioration of CWR resources. Thus, despite progress in setting up some conservation sites, it was believed that a more comprehensively supportive environment for the conservation of wild relatives was needed.

1.2 Project Description

With these issues in mind, China's Ministry of Agriculture (MOA), in cooperation with the United Nations Development Programme (UNDP) and support from the Global Environment Facility (GEF), developed a project focused on the conservation of wild relatives in China. The project's stated goal (longer-term, higher-level objective to which the project along with others will contribute) and objective (intended project impact, which answers the question of why we are doing the project) are given below:

Goal: Sustainably conserve wild relatives of crop plants in China.

Objective: To mainstream conservation of wild relatives of crops in agricultural production landscapes in eight provinces in China.

The project objective above, then, focuses on introducing and then widely promoting the "mainstreaming-in-agriculture" approach to WRC conservation in eight provinces in China. Yet, we did find some confusion regarding the scope of the project, as not all outcomes and outputs are focused on promoting the "mainstreaming-in-agriculture" approach (which is characterized by the absence of physical barriers and by integration with agriculture) to WRC conservation. Indeed, we found in the end that the term "mainstreaming" was being used in two different ways with regard to the project, which caused some confusion in the assessment of project indicators. In addition to the "mainstreaming-in-agriculture" style of conservation, "mainstreaming" was being used much more generally to refer to strengthening the environment for WRC conservation in China, regardless of the conservation approach used. Thus, we would strongly recommend that this dual or broader scope of the project be recognized in project descriptions and that special care be taken in describing and assessing indicators to distinguish whether it is the "mainstreaming approach" (no fence and integration with agriculture) or "mainstreaming/strengthening WRC protection" (in general, regardless of conservation approach) that is relevant in each case. In our view, then, the scope of the project's objective is as given below:

Scope of project's objective as interpreted by evaluators: Introduce and achieve widespread adoption of the "mainstreaming-in-agriculture" approach of WRC conservation in China. At the same time, strengthen the environment for WRC conservation more generally (regardless of conservation approach) via advances in the areas of policy, awareness, training, monitoring, etc.

At the same time, we note that it is generally recommended that GEF projects avoid multiple objectives. When the objectives are multiple, it is suggested they be reformulated into a single objective, so that perhaps something like the following would be appropriate:

Possible reformulated objective: Increase the extent and quality of WRC conservation results in China via widespread adoption of the "MiA" conservation approach and via general advances in WRC conservation policy and capacity."

The project has five outcomes. These are described in turn below and summarized in Exhibit 1-1, which features the major activity areas for each outcome. Exhibit 1 also indicates: (a) whether each outcome fits in the more narrowly or more broadly described scope of the project (as discussed above) and, as a preview of budgetary matters, indicates (b) GEF expenditures up to July 31, 2013 for each outcome. In the text below, we show the official outcome description in underlined text, while in Exhibit 1-1 we offer our abbreviated interpretation of the actual targeted outcome in bold text.

Outcome 1: Generation of sustainable financial or other incentives for conservation of wild relatives at the county level in eight provinces: Outcome 1 focuses on establishing and demonstrating "MiA" style conservation areas at eight sites, each of which consists of a conservation site and natural village in one of the eight pilot provinces.[6] The focus is on WRCs of the major food grains of rice, soybean, and wheat, with the eight sites including three wild rice sites (Hainan, Yunnan, and Guangxi), three wild soybean sites (Henan, Jilin, and Heilongjiang), and two wild wheat sites (Ningxia and Xinjiang). The strategy adopted is that of developing mechanisms to incentivize farmers to conserve. These "incentive mechanisms" are focused on improving farmer livelihoods through support of alternative livelihoods or improvement of existing livelihoods. Support generally consists of investment in public goods, such as roads and irrigation infrastructure, as well as individual or small group support, such as investment in greenhouses, sheds for animals, improved varieties of crops, or micro-credit interest reduction. These two types of support are combined with training (a part of Outcome 3 activities) that is focused on livelihoods, but that also aims to raise villager awareness of WRCs. The "incentive mechanism" as defined by the project also includes (i) local county WRC policies and (ii) revisions to township and village agreements with villagers. As part of Outcome 1, major efforts were also expended in developing survey criteria that could measure conservation results, reduction in threats to the conserved WRCs, and livelihood results. Baseline and follow up surveys were carried out.

Outcome 2: The policy, legal, and regulatory system supports conservation of wild relatives. Outcome 2 focuses on improving the policy environment for WRCs at the national level. We found this outcome did not specifically address the "MiA" approach to conservation, but rather sought to support WRC conservation more generally with WRC-related policy

[6] In China, a "natural village" consists of a settlement of physically close homes, as compared to an "administrative village," which is generally larger and may consist of a small group of natural villages.

initiatives. While not a part of the original project design, much more limited efforts were also undertaken to support WRC-related policy initiatives in certain provinces.

Outcome 3: Stakeholders at the central and local level have adequate capacity to conserve wild relatives. Outcome 3 focuses on training and education. A big part of Outcome 3 is the farmer livelihood training, which is coordinated with the livelihood investment support at project sites. This type of training can clearly be said to support the objective of introducing and expanding the "MiA" approach to conservation. At the same time, other parts of this Outcome fit with the broader scope of the project we reference above. These parts have supported more general training and education to advance the conservation of WRCs in China more generally.

Outcome 4: Accurate and timely information concerning the status of wild relatives is available and utilized. Outcome 4 supports the development of a monitoring and alert system that at first targeted the "MiA" style conservation sites, but that has been expanded (in its offline version) more broadly to all of China's WRC (and other wild agricultural plant) conservation sites, regardless of conservation approach. Thus, this part of the Outcome supports both of the two aspects of our recommended revised scope description. The Outcome also supports the purchase of SUVs for several provincial-level monitoring organizations (the agricultural environment and resource stations under the provincial departments of agriculture), so that they can better do their jobs, which involve oversight of both "MiA" style and "physical isolation" sites, and thus supports the broader objective of the project. Finally, Outcome 4 has a major activity supporting research to identify superior genes in germplasm from the thee wild rice, three wild soybean, and two wild wheat sites of the project. This activity does not seem to fit very clearly with the rest of Outcome 4, but as it promotes the eventual utilization of the WRCs at the demonstration sites, it does fit with the project overall.

Outcome 5: Lessons and experiences from target provinces create conditions for replication and expansion of conservation programmes. Activities for this outcome fit into two categories. The first category is the project's impressive number of 64 replication sites, which are located in 15 different provinces, including the original eight demonstration provinces and seven other provinces. The species included in this group are much broader than the wild rice, wild soybean, and wild wheat of the demonstration sites. In a number of cases, the species may not be considered a "WRC" strictly speaking. It may be a wild agricultural plant with economic value itself, rather than a relative of a plant with economic value. The work at the 64 sites clearly supports the project objective of promoting the "MiA" style of conservation through replication. In addition, as the second category of work for Outcome 5, the project has produced and is still producing a number of promotional materials. While some of these will focus on the "MiA" approach, these materials as a group may be seen as promoting WRCs more generally, regardless of conservation approach and thus in line with a broader scope description for the project. Perhaps most notable among this category is the promotional work contracted to a CCTV-related company, which resulted in a three-part

series aired on a major CCTV station prime time, as well as shorter clips focusing on single sites and aired locally in the respective counties and provinces of the sites.

Exhibit 1-1: Project Outcomes and Major Activities

Note: Shortened descriptions of outcomes (in bold) are our own, representing our abbreviated interpretation of actual targeted outcomes; exact project document wording of targeted outcomes offered in text above

Outcome and Activities	Scope of Objective/ GEF Expenditures*
Outcome 1: Demonstration of MiA-style WRC conservation at eight sites (one in each of eight provinces, three for wild rice, three for wild soybean, and two for wild wheat) -Design of baseline survey; conducting of baseline and follow up surveys at all sites -Design of incentive mechanism for alternative livelihoods at each site -Investment in alternative livelihood incentive mechanism at each site -County WRC policy; revised township and village villager agreements	Focused on "MiA" style conservation of WRCs/ US3,421,281
Outcome 2: Promote legal, policy, and regulatory environment that is more conducive to conservation of WRCs -Study of all laws relating to agro-biodiversity -Study and draft policy on invasive alien species -Draft revisions to two laws to incorporate wild agricultural plant-related content (includes recommended revisions to *Seed Law*) -Preparation of three policy guidelines on wild agricultural plants -Support for provincial WRC-related policies	Addresses promotion of WRC conservation more generally/ USD675,551
Outcome 3: Build capacity at central and local level for conserving WRCs -Training of farmers in alternative livelihoods and WRC conservation -Training of school children on WRCs -Training of government officials at all levels on WRC conservation -Support for general environmental curriculum, including WRC conservation, in major educational program for current and future village leaders	Includes activities focused on "MiA" style conservation of WRCs and activities promoting WRC conservation more generally USD1,734,221
Outcome 4: Promote timely information from monitoring of WRCs and eventual utilization of WRCs -Develop monitoring and alert system -Vehicle support for provincial monitoring and conservation organization -Germplasm research to identify superior genes of WRCs from project demonstration sites	Tied both to support of "MiA" style conservation sites as well as supporting WRC conservation more generally USD948,132
Outcome 5: Dissemination of "MiA" style conservation and publicity for WRC conservation -Development of 64 "MiA" style WRC (or other wild agricultural plant) conservation sites across the eight demonstration provinces and seven other provinces; many different varieties of WRCs and non-WRCs (that are economically valuable as wild plants) included. -Project website, brochures, and books -CCTV prime time series on WRCs; short video clips on specific demonstration sites broadcast locally	Strong support for promoting "MiA" style conservation, as well as publicity for WRCs more generally USD659,612
Total GEF Expenditures to date* (subtracting loss of USD49,115)	**USD7,389,682**

*Expenditures are expenditures to date and are based on UNDP CDRs as of July 31, 2013

1.3 Project Timeline and History

Exhibit 1-2 below shows the timeline for some of the project's major events, with red ellipses indicating delays. The application for project preparatory work was submitted to the GEF towards the end of 2003, requesting $206,000 in project development funds to be used over an 18 month period. After PDF B approval, the project was given to the current PMO for PDF work. At that time, PMO leadership felt the project could not be implemented at six sites with only $2 million in GEF funding and over a period of five years. The request was eventually revised to be for close to USD 8 million in GEF funding over a period of six years and coving eight demonstration sites.

After approval of the PDF, the project suffered two substantial delays. First, the project document was not signed until May of 2007 (following GEF endorsement in June 2006), almost three and half years later, instead of the 18 or so months expected. In addition, according to UNDP rules, the Project Inception Workshop should have been launched within three months of project document signing, which would have meant by August 2007. In the end, the Inception Workshop did not occur until Dec. 2007. It was explained to us that there were some changes in China's rules for financial management, which would have meant that the Ministry of Finance or subsidiary organization would manage the project's funds. The PMO, however, preferred to work with CICETE, under Ministry of Commerce, as it had in past projects. In the end, it was agreed that the project's financial management could be handled by CICETE, but the process resulted in substantial delay. The mid-term evaluation was also delayed about six months from the midpoint of actual implementation of the project (assuming actual implementation began with the Inception Workshop), but weather conditions for field visits may have been a consideration. Finally, the project's end date was extended by several months until Dec. 2013, so that the full time between full kick-off of implementation (i.e. Inception Workshop) and closure was the originally targeted length of six years. More findings on implementation will be discussed later in this report.

While regrettable, particularly in a project hoping to promote urgent conservation needs of rapidly diminishing resources, the project's delays are not out of the ordinary. They are considered acceptable, though not "good" in terms of timeliness as compared to similar projects in China. Importantly, however, once implementation began with full force in December 2007, the project has kept up a very timely pace and is scheduled for timely closure six years from the true launching of implementation with the Inception Workshop. The TE Team applauds the project on this achievement.

Exhibit 1-2: Project Timeline

PDF B submitted	ProDoc Submitted	Implementation begun/inception workshop	Mid-term review	Terminal evaluation	Expected project close
Dec. 2003	May 2007	Dec. 2007	July 2011	July/Aug 2013	Dec. 2013

1.4 Project Institutional Set Up

The project's institutional setup transverses 15 provinces and multiple levels of government and community. In Beijing, project execution is led by the PMO under the direction of the

project implementing partner, the Ministry of Agriculture (MOA). UNDP, as the GEF implementing agency, provides oversight, guidance, and backstopping as needed. The National Project Director is a Deputy Director General of the Science, Technology, and Education Department of the MOA, while the Deputy National Project Director, who appears to be more actively involved with the project, is the Director of the Department's Division of Agro-Resources and Environment. Other MOA officials are much more actively involved in the day-to-day leadership of the PMO; and the project CTA, although not full-time, provides guidance and technical expertise to the project. The Project Steering Committee (PSC) meets once a year or (additionally) as needed for special decisions. It is made up of officials from a range of relevant government agencies.

As of a year or two ago, MOA has set-up a national-level Rural Energy and Agro-environment Agency to match up with the nation-wide system of such stations at the provincial and county levels. Most of the provincial and some of the county stations appear to have existed for a much longer period of time, though the provincial and county level system is also said to have been extended and completed during the lifetime of the project. So, now, the PMO is housed in the offices of the national-level station. The PMO is a bit different than other PMOs we have seen in that it manages multiple projects. Thus, staff are not completely dedicated to the project, though some appear to spend a large part of their time on it. In addition to the forgoing institutional set-up, the project works with a number of experts and partners in Beijing, as relevant to various outcomes of the project.

The project achieves its targets in the provinces through a strong network of the provincial and county agro-resource and environment stations, which are administratively under provincial departments of agriculture and county bureaus of agriculture, respectively. Personnel from these stations are said to make up "local PMOs," though they do not receive basic salary support from GEF funding.[7] A provincial expert in each of the demonstration and replication provinces provides technical guidance and conducts the baseline and follow-up surveys of the demonstration and replication sites. At both the provincial and county levels, WRC Leading Groups and Local Project Steering Committees (LPSCs) are formed to provide multi-sector support for the project. This support is important as the project has achieved a lot of its success in the livelihoods area by leveraging co-financing resources from areas not under the purview of the network of agro-resource and environmental protection stations. Funding for roads, irrigation works, livestock pens, etc., for example, all fall under the purview of other departments, bureaus, divisions, or organizations. At the county level, top county leadership is generally involved in promoting the project's demonstration sites among these different organizations. Further, the counties garner the support of the township and village leadership for implementation. At the village level, the project has sought to involve villagers closely in the design of the "incentive mechanism" that will promote local alternative livelihoods as well as involve them in "keeping an eye out" for their conservation area. These multi-tiered provincial-county-township-village networks have been critical to

[7] We found that salaries in some cases have been considered in part as government co-financing for the project.

achievement of results at the project's eight demonstration sites and at its more recently established 64 replication sites.

2. Methodology

2.1 Purpose of Terminal Evaluation

The Terminal Evaluation Team (TE Team) developed its methodology and approach based on careful consideration of the purpose of the terminal evaluation. The purpose of the evaluation we see as three-fold:

(1) Transparency for accountability: The evaluation's purpose in this regard is to provide accountability for funds spent. Namely, it is to let all know (a) what was achieved and (b) the strengths and shortcomings of the project; and (c) to give an assessment of whether funds were well-spent.

(2) Lessons learned to benefit future projects: The evaluation's purpose in this regard is to provide insights for the (a) design and content, (b) implementation, (c) monitoring, etc. of future projects and initiatives based on what we learned from the strengths and weaknesses of this project.

(3) Sustainability and next steps to ensure ongoing benefits from the project results after closure: The evaluation's purpose in this regard is to recommend: (a) actions to be taken by project team as project is wrapped up to ensure that positive project results are maintained and leveraged; (b) actions that can be taken by MOA and local agricultural departments beyond the life of the project to ensure sustainability; and (c) actions that can be taken by MOA and local departments beyond the life of the project to build further on project achievements so that project results are leveraged to even greater achievements.

2.2 Focus of Terminal Evaluation and Content of Analysis

Based on GEF and UNDP terminal evaluation guidelines, the greatest emphasis in this evaluation is placed at the outcome level. Outcomes (third in the logframe hierarchy of goal-> objective->outcomes->outputs->activities) are considered the most meaningful level of analysis for evaluations taking place at project close. If designed properly, outcomes and their indicators provide a gauge of meaningful impacts being achieved, rather than simple completion of activities, which may be the case at the output level. At the same time, outcomes tend to be more achievable by end of project in some cases (depending on design) than objectives. Objectives may require a longer period of time before they are realized and thus may require some forecasting at project close in order to assess. Goals are broader and even longer term, with the project considered only one of many contributing factors.

We begin our analysis with a focus on relevance and results, before moving on to other key topics, such as sustainability, cost effectiveness, and design. Despite a greater focus on

"outcomes" overall, we first begin the relevance and results analysis with the "big picture" view (Part II). We ask how the project overall is relevant to China and the localities, what the most important impacts of the project are, how China has changed since project baseline, whether the project has gained a place for "MiA" style WRC conservation in China beyond the project sites, and how stakeholders believe the future may turn out differently due to the impacts of the project. We then move to focusing on the each of the project's five outcomes in turn (Part III). We look at relevance and results and put strong emphasis on providing evidence and specific findings, rather than presenting unsubstantiated generalities. The reader may note, for example, that we often refer to specific input from various stakeholders in the field. We do so in recognition that evidence is a core feature of UNDP-GEF evaluation methodology. Following our review of results from the five project outcomes, we examine a number of key aspects of the project in Part IV. These include issues of sustainability and cost effectiveness of project expenditures, as well as review of other aspects of the project budget to provide more insight into how funds were spent. They also include issues of design, implementation, and monitoring and evaluation. We have chosen to present design and implementation after examining project results because we find that examination of results is often a key means of identifying issues in design and implementation. Finally, we close the report by looking at recommendations, lessons learned, and next steps (Part V).

2.3 Methods of Gathering and Analyzing Information and Data

Our key methods of gathering information for this report have been (a) face-to-face interviews with stakeholders, (b) review of project documents, (c) review of project expenditure data, and (d) review of baseline and follow up survey documents from the project's eight demonstration and 64 replication sites. Altogether, we conducted over 50 face-to-face interviews in Beijing and in three provinces, visiting three demonstration and two replication sites. Based on the above-described purposes of the terminal evaluation, as well as special terminal evaluation content recommended by GEF and UNDP guidelines, we first devised a terminal evaluation report outline, which is included in our *Report on CWRC Terminal Evaluation Design* (see Annex 1). Then, based on that outline, we prepared a master interview template (also available in Annex 1), as well as a more specific interview guide for interviews with villagers (available in Annex 1) and, on a case-by-case basis, guides for interviews with other stakeholders. We further prepared a written questionnaire for counties, villages, and villagers, but in the end found that, due to a tight travel schedule, we could not field these questionnaires in an effective way. Exhibit 2-1 below provides a list, by type of organization, of our face-to-face interviews. Annex 1 includes more details on our itinerary both in Beijing and in the provinces. It also includes a list of documents reviewed before, during, and after the mission. Finally, to facilitate collection and analysis of project expenditure data and of baseline and follow up survey data from the project demonstration and replication sites, we prepared templates, which are also included in Annex 1.

As the face-to-face interviews were the methodology on which we spent the most time and put the greater emphasis, here we provide some further elaboration of our approach and issues encountered. Because the project sites are often remote, as we began our travels to the

Exhibit 2-1: Stakeholder Consultations Conducted

I. FACE-TO-FACE INTERVIEWS WITH BEIJING-BASED PERSONS AND ENTITIES	
PMO/Project Management	**UNDP and MOA**
Former head of PMO	UNDP Programme Manager responsible for project
Chief Technical Officer of Project	Director of Agro-Resources and Env't, MOA
Consultants to Project – Outcomes 1,2, and 5	**Consultants to Project – Outcomes 3 and 4**
Designer of baseline survey	Farmer Field School consultant
Incentive mechanism design consultants	Partner: Village Influential Persons Campaign
Evaluator of socio-economic results at sites	M&A system designer and operator
Invasive alien species researcher/ policy drafter	Superior germplasm identifiers (3 parties)
CCTV-affiliated film company	
Project Steering Committee Members	
All China Women's Federation (ACWF)	Ministry of Environmental Protection (Dept. of National Conservation of Biodiversity)
National Poverty Alleviation Office	
II. FACE-TO-FACE INTERVIEWS WITH PROVINCIAL ENTITIES AND EXPERTS	
Provincial Agro-Resource and Environment Stations (under Provincial Depts. Agriculture)	**Project Provincial Experts**
Guangxi Agro-Resource Station Chief	Guangxi Provincial Expert
Guangxi Agro-Resource Station Vice Chief	Henan Provincial Expert
Henan Agro-Resource Station Vice Chief	Ningxia Provincial Expert
Ningxia Agro-Resource Station Chief	Xinjiang Provincial Expert (in Beijing)
Xinjiang Agro-Resource Station Chief (in Beijing)	Hubei Provincial Expert (in Beijing with others)
	Anhui Provincial Expert (in Beijing with others)
III. FACE-TO-FACE INTERVIEWS WITH COUNTY ENTITIES	
County Agro-Resource and Environment Stations (under County Agriculture Bureau)	**Staff of County Local Project Steering Committee Members**
Zhaoping, Guangxi Agro-Resource Station Chief	Zhaoping, Guangxi: Large group meeting with staff of LPSC members
Tongbai, Henan Agro-Resource Station Chief	Tongbai, Henan: Medium-sized meeting with staff of LPSC members
Yanchi, Ningxia past Agro-Resource Station Chief	Yanchi, Ningxia: 5 individual meetings with staff of LPSC members
Cangwu, Guangxi Agro-Resource Station Chief	
IV. FACE-TO-FACE VILLAGER INTERVIEWS	
Zhaoping, Guangxi site: 5 villager interviews (including party secretary)	Tongbai, Henan site: 1 random villager interview Township near Tongbai site: 3 villager interviews
Cangwu, Guangxi site: 2 random villager interviews	Tongbai, Henan replication site: 1 villager interview
Yanchi, Ningxia site: 4 villager interviews (including natural village chief), 1 of which random	
TOTAL NUMBER OF FACE-TO-FACE INTERVIEWS OF EACH TYPE	
Face-to-face interviews with Beijing organizations: 16 Interviews with provincial organizations and experts: 9 (11 if include meetings combined with others) Interviews with county organizations: 11 Villager interviews: 16 **Total Face-to-Face Interviews: 52**	

Note: In addition, we conducted telephone interviews with 4 villagers from the Henan demo site, with CICETE, with two team members from a contractor involved in incentive mechanism design, and with former UNDP programme manager responsible for project prior to mid-term review.

provinces, we found that time allotted for meetings was too limited to achieve our hoped for information acquisition targets. In the end, we found that because provincial and county resource and environment station officials, as well as provincial experts, were travelling with

us to the sites, we could utilize time in the car together to conduct interviews. Thus, a great proportion of our interviews on the road were literally conducted on the road and this may be a lesson learned for future evaluations in which long distances cut into times at project sites.

In addition, we also found that the most effective interviews for gathering the information sought in our interview templates were those in which only one or a few people besides ourselves were present. Larger group meetings presented less of an opportunity for us to keep the discussion focused on information needs for the evaluation. Further, long presentations did not allow us to have much leeway into focusing the discussion as needed. The best example of this may have been our experiences in each of the three counties meeting with staff of the county WRC leading group member organizations, which were also the member organizations of the local project steering committees (LPSCs). In Zhaoping, Guangxi, at our first such meeting, there were perhaps 50 persons present; and we found it hard to direct the conversation. In Tongbai, Henan, we limited the group to a much smaller number, but participants were somewhat reticent. Finally, in Yanchi, Ningxia, we met with personnel from leading group member organizations one-by-one and found this to be much more effective.

At nights and after the mission, we drafted detailed meeting notes from each interview, organizing these according to the draft terminal evaluation report outline we had prepared. Then, when all the interviews were completed, we collated the parts of various interviews corresponding to each of the main topics and sub-topics in our terminal evaluation report outline. These topically-organized aggregations of stakeholder input, along with data and information gathered from documents, supplied copious content for our further analysis to support drafting of this report

Our methodology clearly has limitations. CWRC is a complex project and it would be very difficult to thoroughly examine all aspects and all financial and conservation data involved. By focusing on stakeholder interviews and focusing on the project's outcome level, we take what may be considered a somewhat higher level and impact level view of the project, at the expense of not being able to check on the details of all implemented activities, such as specific conferences or study tours. Further, we note that almost all of our interviewees were directly involved in the project and many are also directly involved in MOA's nationwide agricultural resource and environmental station system. For this reason, interviewees were less likely to comment on the shortcomings of the project and more likely to emphasize its strengths. In addition, almost all interviews were conducted in the presence of the PMO (who provided impressive assistance with all aspects of our meetings). This also may have contributed to biasing the interviews to a focus on the positive, while overlooking the negative. Finally, we felt particularly strongly about interview limitations in our efforts to interview villagers. It was difficult to randomly select villagers given our timescale or even to get the access to villagers we had expected in some cases. At the same time, we feel we did achieve some level of random selection and, based on fairly detailed discussions, developed

confidence in our villager interviews at some sites.[8] Further, we note that even well-organized academic village surveys in China may require the support and facilitation of village leadership.

[8] The following passage, taken from our notes from villager interviews at the demonstration site in Guangxi, offers some insights in this regard: "Villagers were asked by village leaders to come to the training building (built with funds from a physical isolation project) for the interviews. Interviews were conducted one-on-one, but with lots of people around assisting and listening. Because the interviewees were selected by village leaders and assisted in their responses by others at times, we must be aware that there is probably some bias in the results. If there were villagers disgruntled about the project, it is unlikely we would have had the chance to talk to them. At the same time, interviews were extensive enough to give more than a surface impression and thus some level of confidence in our findings. Also, unexpected answers from Villager 2 made it clear that his interview, for one, was not pre-prepared. Interestingly, while we were interviewing Villager 2 we noticed one individual prodding him with answers such as 'rice production has doubled' (which is unlikely, based on other information we gathered)."

PART II: BIG PICTURE – OVERALL RELEVANCE, IMPACT AND QUALITY, AND POTETIAL FUTURE IMPACT

3. Overall Project Relevance

As explained in Section 1.2 (Project Description), the project seeks both to achieve widespread adoption of the "MiA" style of WRC conservation in China and to strengthen the environment of WRC conservation more generally (regardless of conservation approach). Thus, in assessing project relevance, we look both at the broader scope of increasing the extent and quality of WRC conservation results in China and the more narrow scope of integrating WRC conservation into agriculture via the "mainstreaming" approach. In our assessment of project relevance, we scan across five levels: global, national, provincial, county, and village. A very brief summary of conclusions is offered in Exhibit 3-1 below.

3.1 Relevance of Increasing the Extent and Quality of WRC Conservation in China

The evaluation team finds the broader project objective, which we define as "increasing the extent and quality of WRC conservation in China," to be highly relevant to the world and to China, as well as relevant to the conservation situation on the ground in China's provinces. We therefore applaud MOA, UNDP, and GEF for undertaking such a substantial project with the purpose of improving China's WRC conservation. Globally, biodiversity losses and the need for improved conservation are widely recognized. More specifically, threats to WRCs and the potential value of WRCs to world food security are recognized and have stimulated WRC surveys and conservation area establishment around the globe. Further, as WRCs tend to have adapted to more extreme conditions than cultivated crops, the prospects of global climate change make their genetic characteristics potentially even more valuable. *In situ* conservation of WRCs, as explained earlier, has substantial benefits that cannot be achieved via germplasm storage. Finally, as outlined in the Project Document and Mid-Term Review, the project is highly relevant to the Convention on Biodiversity and to UNDP and GEF strategic objectives.

On a national level, the broader project objective is highly relevant to China, both in terms of the situation of WRCs on the ground and in terms of the objectives of policy makers. Despite China's establishment to date of about 170 physical isolation sites for the conservation of WRCs and other wild plants found in agricultural areas, the threats faced by China's remaining WRCs are concerning. During our consultations, a project expert presented us with the case of Guangxi Province, which serves as an excellent example of the urgency facing China's WRCs. Guangxi did a survey of its WRCs in 1978-1980, at which time there were over 1,000 WRC sites, mostly wild rice. Thirty years later, in a follow up survey (c. 2009), an

astounding drop in both the number of sites (70 to 80 percent reduction) and the resources at remaining sites (80 percent reduction) was found.

Food security and other policy objectives also make the project highly relevant. Both policy makers and the public in China attach much importance to food security. People at all levels, including many villagers, know about Yuan Longping's contribution to food security in developing hybrid rice. Most are responsive to the idea of food security as justification for WRC conservation. China's policy and plans reflect the importance the nation attaches to WRCs and other wild agricultural plants. China's current five-year plan (2011-2015) calls for the establishment of 15-20 WRC conservation sites per year and targets investment on the scale of hundreds of millions of RMB over the five year period.[9] Further, one stakeholder who was responsible for China's negotiations for the Convention on Biodiversity for over ten years, stated to us that the project is extremely significant for China, because the nation attaches a lot of importance not only to biodiversity generally, but also to agricultural biodiversity. Indeed, the project's relevance is also evidenced by *China's Biodiversity Strategic Action Plan*, which includes priority for *in situ* conservation of agricultural genetic resources.

3.2 Relevance of Mainstreaming-in-Agriculture Conservation Approach

The "MiA" WRC conservation model developed under the project presents a complex picture to our relevance analysis. On the one hand, the project has led to the establishment of 72 "MiA" style WRC (or other wild agricultural plant) conservation sites, which will now co-exist alongside China's 170 physical isolation WRC (or other wild agricultural plant) conservation sites. In some ways, the fact that these sites have been successful to date, given the need outlined above for increased WRC conservation, implies relevance. Further, an "MiA" style conservation site might be recognized as having a higher level of relevance than a physical isolation site, because it is relevant not only to conservation, but also to livelihoods.

At the same time, however, the evaluation team found that the need, as implied in the project document, for "MiA" style WRC conservation to supersede physical isolation style WRC conservation due to its superiority to the latter, is not a view widely held among stakeholders. Indeed, the future of "MiA" style conservation in China beyond the existing 72 sites is far from certain. So far, there are no plans for additional "MiA" style conservation sites, while an additional 15-20 physical isolation sites are targeted annually over the next few years. Still, most stakeholders did confirm the relevance of the "MiA" style of conservation, stating that WRC conservation style in China should be chosen based on the local conditions at each specific site. In general, they believe places with higher population density or places in which the conservation site is near to a village will require physical isolation. They point out that the project's relevance is that it has given China a second choice in how to carry out WRC conservation. Another set of stakeholders were enthusiastic about "MiA" style conservation as the key mode for the future, suggesting it promises greater sustainability. Yet, they did

[9] Realization of this full investment level may be unlikely and will depend on Government revenues.

concede that policy had not yet gotten fully behind the "MiA" style of conservation and that this would take time.

One key expert, in contrast to the foregoing positions, pointed out his belief that most new sites in China will require fences in the short to medium-term. In his opinion, most sites tend to be in more populous areas or closer to villages. He suggested that the project sites represent the exception rather than the rule in their remoteness and appropriateness to fenceless conservation. Yet, he believes the new fenced in sites may be able to borrow lessons learned from the project regarding training in order to increase sustainability.

Given that the project has introduced effective "MiA" style conservation on a large scale to China and caught the attention and admiration of many in the process, we do deem the "MiA" approach aspect of the project relevant. Yet, at the same time, we recognize there to be some confusion as to whether "MiA" style conservation of WRCs represents a practical future path for China. Thus, the conclusion at this point regarding the relevance of the project's focus on "MiA" style conservation must be: "relevant with some question marks."

As will be discussed, many issues have arisen with the implementation of "MiA" style conservation that may affect its relevance going forward. For one, the integration of agriculture within the project's conservation sites has turned out to be less of a clear priority for their design than anticipated. Second, there is some concern about the high costs of livelihood measures. Third, there is concern that a lack of coordinated action, once the project is over, will make it hard to channel the cross-departmental resources necessary to the success of "MiA" style conservation. These findings actually imply additional relevance in that, through implementation, the project has highlighted key challenges and issues with the methodology that need to be addressed if the approach is to continue to be utilized going forward.

As further evidence of the relevance of the approach, we did find stakeholders at all levels offered positive assessments of relevance. Given that WRCs are a public good, the greatest relevance expressed at the national level was that of introducing a brand new approach to conserving WRCs. We also note China's central level policy of *Harmonious Society Construction*, which fits better with a fenceless, livelihoods-integrated approach to conservation. At the provincial and county levels, officials expressed belief that the integration with livelihoods makes the approach more relevant – particularly in less well off areas where there is a need to improve livelihoods regardless of WRC issues. Further, some local officials found that the integration of WRC conservation with livelihoods provided benefits relevant to their other priorities. In Ningxia, for example, the livelihoods approach has provided a successful model for achieving a grazing ban, something that is being pursued in other parts of the province suffering from overgrazing, and has also provided soil conservation benefits. In Xinjiang, the approach is said to fit well with the policy of helping nomadic herdsman settle in a fixed location. Finally, many villagers told us they find the project's "mainstreaming-in-agriculture" conservation "very important" (and therefore very relevant) to their families due to the positive livelihood impacts.

Exhibit 3-1: Overall Relevance Assessment

Scope of Objective	Relevance Assessment
Promote WRC conservation generally	Highly relevant: food security and biodiversity protection
Promote "mainstreaming-in-agriculture" style WRC conservation specifically	Relevant for creating 72 or over ¼ of China's current WRC (or other wild agricultural plant) conservation sites and improving livelihoods; relevant in introducing new WRC conservation method, highlighting strengths and weaknesses; question mark regarding relevance for future sites.

4. Overall Impact and Quality of Project

In this section we first present our overall view of changes from the baseline since the project was initiated and assess which changes were indeed due to the project. We then delve into stakeholder feedback on the major impacts and results of the project, as well as their overall impression of the quality of the project. We close the section with a brief assessment of the current status of the objective-level indicators of the project's logical framework.

4.1 Changes from the Baseline

A big picture overview of changes from the baseline makes it clear that CWRC has been an effective project. It has made things happen and effected changes from the baseline in ways that are meaningful, desirable, and quite substantial. We outline what we deem to be some of the most important changes from the baseline in Exhibits 4-1 and 4-2 below, also commenting on whether changes to the baseline were due to the project. Of all the changes to the baseline, we believe that three are the most significant (see Exhibit 4-1). The first of these is the establishment of 72 "MiA" style conservation sites. These include eight demonstration sites that were set up mostly in 2008 and 2009 and thus already have a number of years of experience. The other sites are the project's 64 replication sites, set up over the past couple of years. Conservation results from the eight demonstration sites all show positive trends of improvement in conservation indicators; and replication sites for which there are two years of data also show a positive trend. Another of the three most significant changes to the baseline is changes to mindsets and knowledge of persons at all levels, from the central and provincial governments, down to the counties, townships, and villages. We heard from many people that a change in mindset (particularly that of villagers, but also all across the chain of command) is what they find most impressive about this project. Finally, although it is difficult to ascertain how much of increased net per capita income at project sites is due to the project, livelihood improvements are the third of our top pick significant changes from the baseline. Other significant changes from the baseline in areas such as training, policy, and assessing conservation results are shown in Exhibit 4-2 and discussed more fully in Part III, which looks into project outcomes in detail.

Exhibit 4-1: WRC Conservation in China: Changes from Baseline during Project, including Changes Due to the Project and Changes Due to other Causes
Part A: Our Selection of Most Significant Changes

Item	December 2007	July 2013	Due to Project?
actual conservation			
"MiA" style WRC conservation sites	No sites	72 sites: Of these, 8 demos all exhibit good conservation results; most of the 64 replication sites appear to be off to a good start	Yes: 100%
"physical isolation" WRC conservation sites (*included for comparison*)	≈50 sites (very rough estimate) (*included for comparison*)	170 sites (*included for comparison*)	No; 0% (*included for comparison*)
mindset/awareness of persons directly involved in WRC conservation			
mindset of provincial and county WRC conservation officials/ experts	Most had not heard of "MiA" style conservation and some were skeptical	Most in 15 project provinces and the many project counties are enthusiastic about "MiA" style conservation and know how to do it	Yes: 100%
mindset of villagers	Considered to have difficult to change mindsets	Villagers in most of eight demonstration villages have good awareness and positive view of WRC conservation; replication site villager mindset change still in process	Yes: 100%
villager livelihoods			
real income of villagers living near project sites	Baseline	Strong evidence of improvement in incomes due to project at some sites. Though hard to measure, many villagers consulted believe project has had positive impact on livelihoods	Yes, in part. China's development and inflation also play role.

Exhibit 4-2: WRC Conservation in China: Changes from the Baseline during Project
Part B: Other Changes

Item	December 2007	July 2013	Due to Project?
farmer training			
participatory farmer training	Farmer Field School exists in China to address single topics; classroom experience participatory	Farmer Field School begins to develop multi-topic curriculum based on villager requests and thus receives greater interest from farmers	In part, building on GIZ project
methods for assessing and accessing WRC conservation results			
assessing WRC conservation results	No standard methodology	Baseline survey methodology exists; used for all 72 project sites; said to be used for physical isolation sites in some places	Yes 100%
accessing WRC conservation results	No unified national system	National monitoring and alert system developed; use of online system negligible, but central	Yes 100%

		system (on single computer) has incorporated many sites	
awareness of general citizenry (not directly involved in WRC conservation)			
television broadcast activity	No major WRC program broadcast on primetime TV in China	*Seed Wars*, series about WRC and featuring project sites broadcast on prime time TV in China in three consecutive episodes; estimated audience: 50 million	Yes 100%
influential villagers across China	No outreach to influential villagers across China on WRC	Environmental curriculum including WRCs incorporated into Village Influential persons curriculum through 2020; 10,000 persons to be trained annually	Yes 100%
utilization of WRC and sharing of benefits with those who conserve			
germplasm work	Limited WRC germplasm work in China to date that is tied to specific conservation sites	Superior traits of WRCs at project's 8 conservation sites identified with conservation site of origin noted	Yes 100%
ABS knowledge	Experts and officials involved in WRC conservation in China know little about ABS concepts	Some experts and officials involved in WRC in China have become very aware of ABS, though they still see it as impractical and years away	Yes, mostly due to project
policy at different levels			
Village, township, county WRC-related policies and agreements	No known special regulations or agreements on WRCs in project villages, townships or counties	For all demonstration villages, townships, and counties (and for many of the replication site counterparts): county has issued WRC policy; and township and village agreements with villagers have been modified to reference WRCs	Yes 100%
Provincial WRC-related policies	Many provinces do not have comprehensive WRC policies	Five provinces have newly issued WRC or wild agricultural plant management guidelines	Yes, mostly due to project
National WRC-related policies	China has policy for wild agricultural plants, but no IAS policy; WRCs not mentioned in China's *Seed Law*	China has newly issued IAS list and three newly issued WRC management guidelines. *Seed Law* revisions to include WRC currently under consideration.	Yes, mostly due to project

4.2 Major Results, Impacts and Overall Impressions - Stakeholder Input

Before getting into the details of individual outcomes of the project, we asked stakeholders about overall impressions, most important impacts or results, and overall strengths of the project. In terms of overall impression of the project, the response was overwhelmingly positive. One contractor noted that she had worked with over a hundred projects in her career, but that this one was truly one of the best. PSC members offered comments such as "marvelous," "a big and historically significant step in the whole course of conservation in China," and "really good." One stakeholder suggested the project had had a significant

impact even though spending not much money, while another noted the strength of the project is evidenced by the great magnitude of resources that the government has put into the project. The evaluators note our impression that everyone involved in the project at all levels appears to be working hard, not always the case in such projects. Interestingly, in more than one case, we learned that the project had resulted in significant job promotions at the local level. We were told this was a result both of good project design and of people working hard. Finally, we note an extremely high level of enthusiasm among involved stakeholders at all levels, a point also raised by a stakeholder who has been exposed to many international cooperation projects.

Asked why they believe the project had been a success, stakeholders raised some other reasons in addition to hard work and enthusiasm. One suggested that the thorough planning and scientific approach (particularly with regard to the incentive mechanism) was the reason and another similarly noted the step-by-step approach taken. Others noted the professional and experienced PMO and, in particular, the team leader, as well as the meaning or relevance of the project. Strong collaboration among stakeholders and the strong relationships established were also noted. Finally, a stakeholder exposed to previous GEF projects noted that, compared to earlier projects, this one gets down to the grassroots and "lands" on the ground, cooperating with local people, rather than "floating around" at higher levels as do projects that are focused on regulation and training only.

When asked about the project's most significant impacts or results, mindset change (both of officials and farmers), introduction of a new conservation method, and livelihood results were most often mentioned. Many believed the mindset change of farmers – getting farmers to attach importance to conservation through the incentive mechanism – was critical to the success achieved so far with conservation efforts. Further, stakeholders talked extensively about how the project had introduced a new conservation method (the "mainstreaming-in-agriculture" approach) to China and how this had changed the thinking of officials at various levels. A national-level stakeholder emphasized that the project represents the first time MOA has adopted mainstreaming-in-agriculture, an approach they had never thought of before. The result, according to the stakeholder, is that now this approach will be one of the methods MOA applies to WRC conservation in the future.

At the provincial and county level, experts and officials talked about their own change of mindset and that of their colleagues. One very enthusiastic provincial expert told us that he had never thought of the "MiA" conservation approach before the project, but that the project had a big impact on his thinking and that he is now a fan of it. While his province does not have additional "MiA" style sites planned at this time, he vowed he would promote its inclusion for new sites through the province's expert biodiversity policy committee on which he serves. Provincial level agro-resource station officials also noted that they had not known about the approach prior to the project. Finally, the project was also complimented for its role in cultivating professionals at the local level and introducing them for the first time to the results-oriented approach of international projects.

4.3 Objective -level Indicator Assessment

Performance on the project's official objective-level indicators is negatively impacted by the absence of the "MiA" conservation approach in the strategies and plans of the government at various levels. Below in Exhibit 4-3, we give our brief assessment of the status of these indicators. It is important to note the two different uses of the term "mainstreaming" with regard to this project. For the objective-level indicators (noted below), we find the term "mainstream" clearly used in some cases to indicate use of the "MiA" conservation approach in which agricultural is meant to be integrated into conservation sites, where in others it is merely used as a verb that means "to incorporate" WRC conservation more generally.

Exhibit 4-3: Objective-level Indicator Assessment

Objective-level indicator	Status as of July 2013 and relevant comments
1. Long-term strategies to mainstream conservation of WRCs in agricultural production landscapes are in place in MOA and within DoA, AB and LGWRC in the eight provinces	MOA, DoA, and AB long-term strategies do not yet reference "MiA" style conservation as referenced here. Target not yet met, but may be in future. MOA indicates possibility of including "MiA" style conservation in future plans.
2. MOA, DoA and Agricultural Bureaus in the eight focal provinces are using data from an annually updated WRC monitoring system to guide work plans and strategies for effective WRC conservation.	WRC monitoring system has been developed and is being updated with data from eight sites. However, it is not being used by the DOA (which do not have access) nor the ABs (which enter data but do not really make use of the system) to guide work plans and strategies. We did not detect that MOA is making substantial use of the system at this point, but it may be. So, target not met, but some of pre-conditions, such as system being in place, have been achieved.
3. Populations of WRCs in the 8 focal provinces have not declined (measured in area, density and health) compared to the project baseline.	Target met. Baseline survey and follow up survey data show improvement in these resource indices at each of the eight demonstration sites.
4. The project establishes an approach that can be mainstreamed, which creates sustainable incentives for farmers (both men and women) to adopt livelihood practices that work to conserve WRC at the project site.	Project has established such an approach. We do have concerns as to whether the approach can be incorporated into standard procedure as it has not been so far and there are concerns about costs and harnessing resources across departments. Target partially met.
5. All eight focal provinces establish long-term WRC conservation mechanisms, work plans and funding to mainstream conservation of WRCs in agricultural production landscapes.	The provinces have not adopted long-term work plans and funding for "MiA" style conservation projects. Target not met. However, existing "MiA" sites extremely likely to be incorporated into national plan and get funding allocations once project is over.

5. Potential Future Impact

In this section, we provide input on the potential future impact of the project and associated issues. Typically, objective-level impacts of UNDP-GEF projects may not be fully met at project close, but we look for evidence that these impacts will be met in the future and also consider whether follow up evaluation some years after project close would be of interest. In

looking at the project's relevance and objective-level indicators, we have already touched on the fact that, despite the establishment of 72 "MiA" style conservation sites, this conservation approach has not yet been adopted in China's official plans and strategies, while the physical isolation approach has. It appears extremely likely that the 72 existing sites will be included (with follow up funding of 50,000 RMB per year per site) in the national plan after close of project, but it is less clear whether future, newly established sites will adopt "MiA" style conservation. In this section, in order to provide more background related to this issue, we first review input from stakeholders on physical isolation versus "MiA" style conservation. We then touch on stakeholders' visions of the future (as impacted by the project) and discuss what we learned about the national level five-year plan and the provincial plans, with regard to WRC conservation.

5.1 Mainstreaming-in-Agriculture Approach versus Physical Isolation Approach

In this sub-section we offer a comparison of the two main approaches to WRC conservation in China, the physical isolation approach, which existed prior to the project and will continue to be utilized at new sites, and the "mainstreaming-in-agriculture" approach, which has been used to establish 72 sites under the project, but has not at this point been incorporated into plans for future sites. This discussion is based on stakeholder input during terminal evaluation consultations. During these discussions, several suggested to us that in the future, China will make decisions on whether to use physical isolation or mainstreaming-in-agriculture in WRC conservation based on the situation of each individual site. To better equip decision makers, however, we believe it critical that information on the two approaches (including costs and efficacy in different sorts of conservation situations) be collected in systematic fashion and that a method of assessing options for future sites be developed. After submission of the draft

Exhibit 5-1: Number of WRC Conservation Sites of Each Type in Interviewed Provinces and Feedback on Issues Sometimes Encountered with Physical Isolation Approach

Province or Country	Physical Isolation Sites	Mainstreaming Approach Sites	Issues Mentioned with Physical Isolation Sites (Anecdotal Only)
China Overall	170	72	Competing species in some cases grew quickly once grazing was stopped and soil hardened; handled by weeding.
Guangxi	5	6	Follow up costs an issue; natural conflict between farmer and method – in some cases farmers even damaged fences.
Henan	10-20	6	Some local villagers not happy with approach; may have sprayed herbicide on one site. Lack of follow-up funding may lead to disrepair.
Ningxia	5	5	Some sites lacked follow up funding and fell into disrepair - poor results ensued
Xinjiang	7 or 8	7	NA

TE report, the PMO indicated in its feedback that MOA and its National Rural Energy and Environmental Protection Agency have decided to follow up on the report's recommendations and conduct a review and comparison of the two conservation approaches, as well as develop a methodology for assessing the preferred option at future sites.

As with the nation as a whole, we found that the project provinces we consulted now, thanks to the project, have a mix of physical isolation and "MiA" style WRC conservation sites. Exhibit 5-1 shows the number of sites of each type as mentioned in interviews. As at the national level, the numbers show the project has had a big impact on the overall situation of WRC conservation styles within the interviewed provinces.

Experience with and rationale for each approach: We spoke with officials and experts at various levels about experience to date with the two types of sites and about the pros and cons of each approach. At the national level, we were introduced to the rationale for China's having established so many physical isolation sites over the past ten years. Rapid development, resulting high pressure on the land, the location of sites on the edge of farming areas, and the lack of recognition of WRCs by local people were all given as reasons. It was further mentioned that for small areas (perhaps due to low costs and more limited interference with farmer land) physical isolation is a convenient approach. Some unanticipated results in a few cases included weeds growing fast and competing with protected species, once the fence was up and grazing stopped. Overall, the impression given at the national level is that these sites have all been successful, with weeding used to resolve the aforementioned problem.

From provincial and county-level consultations, we got the impression of more significant problems with some, though certainly not all, physical isolation sites. Unfortunately, no systematic review has been undertaken; and this is something we believe the project should strongly consider, perhaps through a questionnaire for experts and agro-ecological station officials in its target provinces. In Ningxia, for example, we were told of a physical isolation site that was able to cooperate with a local forestry company thereby obtaining management free of charge and how this site did better than others that lacked follow up funding and fell in disrepair. In both Henan and Guangxi, we heard that farmers are not always happy with physical isolation sites and heard anecdotal stories involving herbicide sprayed into one site and fences damaged at another. Lack of follow up funding for sites was also mentioned as an issue in these provinces. Exhibit 5-1 also includes a summary of issues mentioned with regard to physical isolation sites on a province-by-province basis.

Stakeholders were mixed in their views of the pros and cons of the two approaches. Some asserted they find the "mainstreaming-in-agriculture" approach to be superior because it has less of a negative impact on agriculture and because it enhances livelihoods and therefore has more potential for sustainability. Others emphasized the need to make decisions of approach on a case by case basis, depending on the local situation and particularly human population density (with physical isolation the appropriate choice for more populated areas), and mentioned the lack of follow up costs for the "MiA" approach. One key stakeholder told us he feels the time is ripe now for pursuing the "MiA" approach for a portion of China's WRC

sites. He explained that nowadays the educational level of rural people is much higher than before. Previously, most rural people did not even finish primary school, while now most are completing middle school. With higher educational levels, he believes they will have the ability to grasp the concept of conservation and make the "MiA" approach operable. One top expert spoke of the very great effort expended in implementing the mainstreaming approach, suggesting it may not be practical going forward to take this approach for all sites. The need to coordinate other government departments to implement and fund livelihood efforts is also seen by some as a barrier to continued use of the "MiA" approach at new sites. The officials in the MOA system responsible for agro-resource conservation may not be able to convince departments responsible for other relevant areas, such as animal husbandry or agricultural product processing, to support the effort. Indeed, the TE Team believes there is a need to involve the relevant MOA Vice Minister in mobilizing MOA's existing cross-departmental Agricultural Wild Plant Conservation Leaders' Small Group to promote future "MiA" style conservation efforts. Representatives from the Ministry of Transport and Ministry of Water Resources may also be asked to join this team, as public good livelihood investments often include road and water works. Another issue raised is the difficulty in calculating costs for an "MiA" site as compared to the relative ease of cost estimation for physical isolation sites.

Cost comparison: During our consultations, we asked several persons to compare the costs of physical isolation to those of the "mainstreaming-in-agriculture" approach. Most pointed out the difficulty in such a comparison, particularly when the mainstreaming approach provides added livelihood benefits that the physical isolation approach does not. Some indicated to us that physical isolation is more expensive, particularly if follow up costs (maintenance and salaries for guard) are included, while others believe physical isolation costs are less. Some mentioned that physical isolation site follow up costs also include annual compensation for those who gave up their land. A few stakeholders made the very good point that a big factor in costs for physical isolation is the area of the site. Since larger sites will require much more fencing, the costs are much higher. One very preliminary conclusion may be that very large sites are cost-wise more suitable to the "mainstreaming-in-agriculture" approach, while smaller sites might be candidates for physical isolation.

Despite the difficulties, we recommend that some work on cost and benefit comparison of the two approaches, based on data from sites implemented to date, be carried out in support of future decision making. We understand from feedback after submission of the draft TE report that this recommendation is likely to be adopted. Anecdotally, a provincial official from Ningxia gave us a rough estimate of 2 million RMB for upfront costs for a new physical isolation site, as compared to 1 million RMB minimum (but with no upper limit) for "MiA" style sites. Another stakeholder offered a figure of 1.4 million RMB for a Ningxia physical isolation site established eight or nine years ago. (Prices in China have risen substantially over the intervening period.) A figure of 1.87 million RMB up-front costs for a 200 mu physical isolation site was mentioned by a Guangxi stakeholder. In Sections 6 and 7 (covering Outcomes 1 and 5), we will provide more data on the investment in the project's demonstration and replication sites. There is quite a range in total investment levels from highs in the several millions of RMB to lows of about 500,000 RMB. A typical figure seems

to be about 1 to 2 million RMB, yet we note that these figures include estimates of co-financing costs in the area of government staff salaries and office space and thus may be somewhat inflated. It is interesting to note, albeit with rough figures, that the upfront investment of a physical isolation site may be similar to that of an "MiA" style site, which for the same cost offers the added benefit of livelihood enhancement. At the same time, we recognize a more thorough analysis will need to look at long-term conservation results and more deeply examine socioeconomic benefits. For the physical isolation sites, MOA provides sites a follow-up budget of 50,000 RMB per year for monitoring and upkeep. Yet, we did hear in one province an estimate in the hundreds of thousands RMB for annual upkeep (including fencing upkeep, rental/compensation for land, and salaries) and in others about problems with lack of funds for upkeep.

True mainstreaming-in-agriculture versus "fence of the heart": One issue that arose during our mission and relates to the future impact of the project is that agricultural activities were in a number of project sites completely or almost completely abandoned, sometimes by mandate and sometimes by choice. This situation raises the question of the differences in the two conservation approaches. If there is no agriculture being carried out in the conservation area, does the site become more like a physical isolation site, just in this case with an invisible fence? And, if so, is the invisible fence preferable to the physical one? At the Xinjiang and Ningxia demonstration sites, we found that grazing (the main activity prior to conservation) is now forbidden and that there are no agricultural or animal husbandry activities in the conservation areas. In Guangxi, we were told that farmers would be allowed to carry out dry-land crop activities in the buffer but not core area and that farmers had abandoned these activities by choice as their livelihoods improved. They were no longer allowed to cut trees in the buffer area, but possibly may be involved in some gum rosin tapping there.

To us, the definition of what is allowed and is not allowed within sites and the definition of China's "MiA" approach seem a little fuzzy and in need of clarification. For example, we were told the mainstreaming sites are no longer divided into "core" versus "buffer" area, but at the same time, that agriculture would not be allowed in the core area of some sites. We were told that the mainstreaming approach as adopted in this project has a policy of allowing agriculture in the buffer area if it does not threaten the protected species. Based on the findings, we might define the "MiA" approach as it has evolved through the project as "integration with agriculture whenever possible/practical and desired by local people, but in all cases emphasizing the enhancement of livelihoods of local people living near the conservation site." Another possible description of the approach as it has evolved is "harmonious relationship between people and environment and between agriculture and conservation."

We did not discuss the "invisible fence" concept (i.e. "MiA" approach but no agriculture inside) much in our consultations, though one stakeholder suggested we call this the "fence of the heart." Posing the question of whether a physical fence or "fence of the heart" is better, some suggested that a fence may be needed to help farmers know where the conserved plants

are. Another view we suggest, however, is that, psychologically, the absence of a fence may have more potential to achieve farmers' buy-in to conservation and thus achieve better results, if indeed we believe a mindset/livelihoods approach can be sustainable. In support of this view, if there are concerns about recognizing boundaries, simple markers can be used.

5.2 Visions of the Future and Government Plans

In this sub-section, we look at stakeholder visions of the future as well as national and provincial level plans. The purpose of doing so is to gauge whether from today's vantage point it seems the project will be impacting the future situation in the way intended. The task of projecting future impact is always challenging; and the evaluators find it particularly so in the case of the CWRC project. It does seem extremely likely to us that the Government will include the 72 sites developed under the project in its national system for monitoring and maintaining existing sites. In this way, the sites will each get the 50,000 RMB per year allocated from the national government and hopefully any additional support they need from the provinces. Yet, the evaluators do not have a clear picture at all as to whether a substantial proportion of China's new WRC conservation sites in the future will adopt the "MiA" approach. Cleary, mindsets have been changed and officials have a much better understanding of the approach. As project close draws near, however, there is a lack of clarity on whether the "MiA" approach will be implementable without the project (due to the need for many departments to cooperate) and, if so, whether a significant proportion of sites would be conserved under this approach. In feedback to the draft version of this report, the PMO indicated that MOA has decided to conduct a comparison of the two conservation approaches and, based on results, potentially promote the "MiA" approach starting in 2014. This is a positive development compared to feedback received during the mission and the TE team applauds progress made by the project in this regard over the past couple of months.

Below, we provide input from the national level and from some of the provinces that offers insights on vision of the future and plans at the time of the mission.

National level: One key national-level stakeholder told us that in the future, the conservation approach for WRC sites will be determined on a site-by-site basis, with physical isolation appropriate to more densely populated locales. This stakeholder believes it likely that a significant proportion of future sites will be "MiA" style sites and noted that sites with larger areas are relatively more suited to the approach. The current five-year plan (2011-2015) calls for 15 to 20 new physical isolation sites per year and the figure for new WRC sites may increase to 20 to 30 sites per year. When the plan was drafted, the project was not very advanced. According to this stakeholder, it is likely that the next five-year plan (for 2016-2020) will make reference to the "MiA" approach. If there is no follow-on project to CWRC, it will become the responsibility of MOA's Division of Agro-Resources and Environment to organize other departments to carry out the "MiA" approach. This will be challenging due to the different priorities of these other departments.

Another important Beijing-based stakeholder suggests that, decades from now, China may adopt a one hundred percent "MiA" approach for its WRC sites. Yet, he feels, for the time being, that physical isolation sites, integrated with the type of training we have seen in this project, will be most appropriate and that 15-20 years from now most of China's sites will be of this nature. At present, the central government is strongly considering allocating some level of training budget to physical isolation sites; and this is a result of project influence.

Provincial level: Provincial level experts indicated their positive view of the "MiA" approach and a preference for a future in which at least a portion of new sites use this approach. Yet, most suggested their future direction will come from Beijing, though a few suggested the potential for provincial initiative in this regard. In the case of Guangxi, for example, there are no specific plans to implement new "MiA" style sites in the future. Yet, there is one case years ago in which the province had taken the initiative to set up its own conservation site and there is the possibility (depending on finances) that "provincial-level" sites will be set up in the future. If so, these (according to one source) would surely include some "MiA" approach sites. Guangxi is in the midst of preparing its interdepartmental *Guangxi Biodiversity Strategy and Work Plan*. While this document is unlikely to indicate specific sites, an expert involved suggests he will strongly recommend inclusion of the "MiA" approach in the document and that it is likely the document will recommend that the two approaches be considered and one chosen based on situation at each site. Two key stakeholders in Guangxi did predict more and more use of the "MiA" style of conservation in the future.

Views from Ningxia and Henan were also obtained in the field. A Ningxia stakeholder suggested that conservation approach will be related to human population density, with more densely populated areas more appropriate to physical isolation. Interestingly, a Henan stakeholder offered a somewhat contrary view, noting that physical isolation is very effective in natural forest areas, but where there are villages and more people, the province hopes to use the "MiA" approach. Regarding provincial level sites, another Ningxia stakeholder indicated his province (located in China's less developed Northwest) is unlikely to implement provincial level WRC conservation sites, due to lack of funds. The Henan stakeholder also indicates that central level funding will be the biggest factor in determining whether Henan will establish more "MiA" approach sites. If more "MiA" approach initiatives are implemented at new sites, the provincial officials will encourage county and township governments to use leverage (funding from other sectoral areas) in implementing such projects.

PART III: OUTCOMES – ACHIEVEMENT AND RELEVANCE

6. Outcome 1: Baseline Survey and Demonstration Sites

Outcome 1, with its demonstration sites, along with Outcome 5's replication sites, may be considered the centerpiece of CWRC. The stated target of Outcome 1 is: "Generation of sustainable financial or other incentives for conservation of wild relatives at the county level in eight provinces." We have described this Outcome as: "Demonstration of 'mainstreaming in agriculture' style WRC conservation at eight sites (one in each of eight provinces, three for wild rice, three for wild soybean, and two for wild wheat)." The GEF expenditures to date for Outcome 1 have been over $3.4 million. When co-financing is considered, the demonstration sites and replication sites together, along with their design and monitoring, have received the vast majority of total investment in this project.

Outcome 1 consists of two major parts, the "Baseline Survey" and the "Incentive Mechanisms" at project sites. The first includes both the development of a method for measuring conservation results and its annual implementation at all sites. It also includes a method for measuring socio-economic results. The incentive mechanism refers to a multi-faceted approach used to achieve "mainstreaming-in-agriculture" style conservation in the village associated with the conservation site. The approach includes policies and agreements at county, township, and village levels and the design and implementation of support for alternative and enhanced livelihoods of local people. The focus of the livelihoods support is decided with strong participation of involved villagers and may consist of public goods (roads, irrigation, etc.) and private goods (e.g. support for greenhouses, animal pens, etc.). Investment from both GEF funds and local government make the livelihood initiatives possible. Farmer training in alternative livelihoods is also considered important to the success of the incentive mechanism. Training, however, is a part of Outcome 3 and thus will be discussed in Section 9.

In this section, we first review the design and results of the baseline survey. We then look at various aspects of the incentive mechanism in turn. These include: Design and participation, local policy and agreements, conservation results of the demos, livelihood results of the demos, special issues, and potential impacts beyond the project. Annex 2 provides some additional information on the situation at specific demonstration sites, based on our visits to three provinces and our discussion with representatives from a fourth province (Xinjiang) in Beijing.

6.1 Baseline Survey

The baseline survey was designed by a team based at CAAS. Fifteen provincial experts, one for each of the eight demonstration site provinces and one for each of the seven provinces that have only replication sites, were responsible for conducting the survey at each site on an annual basis once the incentive mechanism had been set up. We note that the project team

generally refers to all of this work as the "baseline survey." Strictly speaking, though, the baseline survey is the survey conducted in the first year, while in subsequent years, the survey may be referred to as "follow-up to the baseline survey." In addition to the baseline survey, the CAAS team also designed a "Threat Reduction Assessment" (TRA) index drawing from the methodology of a US expert. Here, we will consider the TRA a part of the baseline and follow-up surveys, though strictly speaking it is a separate item.

Design of the baseline survey: The CAAS team retained to design the baseline survey prepared a relatively complete methodology. The methodology includes a number of individual indices which are also integrated into composite indices for each of (1) resources (showing progress or lack thereof in conservation of the target WRC species), (2) environment – human factors, (3) environment - natural factors, and (4) socio-economic aspects. The environment category has two composite indices, one for natural factors and one for other factors. Resource indices include distribution area, population density, abundance of target species (as compared to other species in the site), and growth status. The last of these is determined visually; and some users have offered feedback that this is problematic if there is a change in the person conducting the survey. The four resource factors are integrated into a composite resource factor based on weighting agreed upon by experts.

The environment indices may include some overlap in purpose with the TRA, though this was not discussed in detail. One issue that was raised with regard to the environmental indices is that there is not an index for invasive alien species (IAS) even though we have been told that, after humans, IAS are the second greatest threat to WRCs in China. Concern was expressed that adding a new index would not allow comparison between prior years and subsequent years. If IAS is really such a major issue, however, computation of a separate IAS index or a composite index with and without IAS may be in order.

For socio-economic evaluation, a government questionnaire and a villager questionnaire were prepared. Local county agro-resource stations are responsible for collecting the socio-economic data. The designers of the survey told us the socio-economic questionnaires have a total of 49 questions and that 100 households are surveyed at each site. It appears, however, that there have been some issues with the collection and analysis of this data. The key socio-economic index provided by all sites is annual net per capita income. We understand that collection of this index has been problematic, as villagers are not really that clear on their net per capita income. Further, in terms of analysis, the meaningfulness of growth in net per capita income for one village alone is hard to assess. Incomes across China have risen substantially since the demo baseline year of 2008. Also, there has been significant inflation during the period. We recommend that future implementers of projects of this sort think carefully about how socio-economic data can provide really useful information with regard to project impacts. Perhaps some combination of a focus on agricultural incomes and on income gains and losses due to specific project activities, combined with consideration of the effects of inflation and overall expected income growth without project, would be more effective. Comparison with similar villages may be an additional item to consider.

Feedback on the baseline survey methodology was relatively positive, but with some suggestions for improvement. Some experts implementing the methodology feel that the survey is good at reflecting the health and growth of the WRCs. They mention also that there was at least one workshop to provide feedback. Those with feedback mentioned, as we do above, the need to include IAS and the problem with visual ratings. Further, the issue of variation among species conserved was raised; and it was suggested that the current criteria are not suitable to all plants. In terms of pollutants, it was suggested the methodology needs to encompass non-point pollution, such as agricultural run-off, which is the most serious issue at some sites.

Because it is expected China will continue to follow up with the baseline survey at project sites annually (and even extend the methodology to other sites), we believe it is important to revisit the design of the baseline survey from the perspective of end users of the data collected. Our impression is that much attention is being paid by "users" to the resource indices and TRA, but perhaps not to the other indices, aside from net per capita income. If the socio-economic survey is to be continued, a more effective approach is needed, both to get more accurate income information, perhaps focused on agriculture, and to be able to draw meaningful conclusions via comparisons or other methods. Further, it should also be confirmed that the environmental indices are helpful to end users of the data.

Results of baseline survey: During the terminal evaluation, the TE team found that the PMO did not have the complete sets of baseline survey data from the sites. When this section was initially drafted, the reports provided for the demo and replication sites included coverage of only a very limited set of baseline indicators; and full results on even those indicators were not available. It was indicated that the lack of data was due to delayed submission by subcontractors as well as complexity of the data submitted. Since submission of the initial draft evaluation, a more complete set of indicators has been provided. Yet, we believe for future projects, as a component of contract management, great emphasis should be put on making sure sub-contractors submit in an organized and complete fashion the data they are paid to collect. Further, in future conservation projects, the relevant PMO should consider collating key data from all sites in an easy to review fashion (or having a subcontractor do so), so as to keep itself well-informed and to be able to easily inform others of the status of this extremely key aspect of project results. Finally, we found inconsistencies between the baseline data in PMO-provided provincial reports and the presentations made to us during our visits to project sites and believe it important that such issues are followed up on.

From our discussions with experts of various provinces, we found that at least the resource aspect of the survey appears to have been carried out annually according to schedule. Further, the PMO told us that the baseline survey has been carried out annually at all eight demonstration sites since 2008 and the TRA since 2009. Assessment at the replication sites has been carried out since 2011 in most cases. The experts retained appear to have strong backgrounds, most with specific expertise in areas of biology, such as plant classification. While group trainings with the experts were held, it seems the designer of the survey did not

have the opportunity to check out the results of the surveys for further exchange or revision as expected.

Baseline survey's results beyond project: While a number of problems have been pointed out with the baseline survey, in general it is considered a strong positive achievement, particularly in terms of the resource indices. We heard from one government official that this type of assessment system had never before been prepared for MOA's conservation sites and that it is planned to make the project's baseline survey the methodology for all MOA sites in the future. In Guangxi Province, we learned that the methodology has already been used over the past year to measure results at the province's five physical isolation sites, so that all eleven of the province's wild agricultural plant conservation sites (including its six project sites) are using the methodology.

6.2 Incentive Mechanism Design and Participation

Overview of sites and incentive mechanism design: Incentive mechanisms for each of the eight demonstration sites were designed and launched early in the life of the project. We found that the livelihood incentives provided to most of the demonstration sites include a strong public goods component, such as a paved road and/or irrigation facilities. All demos also provided private or small group goods, at minimum to those who had private or collective use rights land in the conservation area. In Guangxi, for example, we were told that there were extra benefits in the form of private good support for those who had land in the conservation area and that clear rules on such benefits were posted in the village.

Exhibits 6-1A and 6-1B below offer an overview of the basic mechanics of the demonstration sites. As we visited the Guangxi, Henan, and Ningxia demo sites and spoke face-to-face with implementers of the Xinjiang demo site, we have the most information about those locations. Some details from these sites will be offered as supporting evidence in our discussion of conservation and livelihood results. More details of what we learned about each of these four sites are also given in Annex 2.

In some cases, we found confusion regarding total area of the conservation site, particularly in the case of the wild rice (see Exhibit 6-1A). The wild rice sites tend to have a smaller core area, where the rice grows, surrounded by a larger buffer where forest resources are important to ensure water resource conservation for the wild rice. The wild soybean and wild wheat sites tend to be somewhat larger and have no distinction between core and buffer, with the expectation that the target species will grow throughout the whole site.

The typical size of the villages associated with the sites are 50 to 100 households, including only those that are in the village year-round, though there is some variation beyond this range (see Exhibit 6-1A). The households are associated with the natural village nearest the conservation site and at least a portion of them have either private use or collective use rights land in the conservation site. The number of households refers to year-round households and

not the total official number of households, which may include many that out-migrate and no longer live in the village. The Henan and Jilin sites present special cases in terms of households. At the Henan site, we learned that only about six of the original 46 households at project initiation remained at the site, with the rest having been strongly encouraged to move to the township. In the case of Jilin, all households are said to have out-migrated to South Korea for work, while renting their land to others.

Exhibit 6-1A: Demonstration Site Incentive Mechanisms -Alternative Livelihoods

County or Site No./ Province	WRC / site area	Households */ Population	GEF investment (actual)	Planned/ actual total investment	Alternative livelihoods: Public Goods	Alternative livelihoods: Private or small group goods
Zhaoping, Guangxi	Wild rice/ 500 mu total (20 mu core)	104 HH / 1,146 pop.	720,000 RMB	3.20/ 7.56 million RMB	-road -dam -irrigation works	-biogas digesters -gem polishing machines
Wenchang, Hainan	Wild rice/ 150 mu total	<50 HH/ 1,072 pop.	NA	NA	-canal	-biogas digesters -high quality rice
Jinghong, Yunnan	Wild rice/ 33 mu total	NA / 206 pop.	NA	NA	NA	-pine saplings -pigs
Tongbai, Henan	Wild soybean/ 1,239 mu total	46 HH before; now 6 HH / 3,632 pop.	750,000 RMB planned	2.33 million RMB planned/NA	-road -bridge -irrigation	-greenhouses -pepper tree saplings
Longjing, Jilin	Wild soybean/ 900 mu total	NA / 2,077 pop.	850,000 RMB	3.62/ 7.75 million RMB	-irrigation	-drinking water storage -cattle base (fencing and barn)
Baiyan, Heilongjiang	Wild soybean/ 449 mu total	NA/ 1,535 pop.	830,000 RMB	3.53/ 5.00 million RMB	-road	-greenhouse -willow saplings -micro-credit interest payment
Yanchi, Ningxia	Wild wheat/ 2,475 mu total	56 HH/ 487 pop.	890,000 RMB	2.59 / 4.55 million RMB	-wells, irrigation pipe system -transformer -road	-greenhouses -rainwater storage -sheep pens -biogas -support of feed co. -micro-credit interest support
#001, Xinjiang	Wild wheat/ 227 mu	386 HH/ 1,069 pop	640,00 RMB	NA/ 27 million RMB	-none mentioned	-livestock -animal sheds -embroidery machines -permanent homes

*Households (HH) are long-term/year-round households, while population may be official population including those who are no longer living/working in the village.

Cost effectiveness will be discussed later in this report, but in order to facilitate an overview, Exhibit 6-1A offers preliminary information on investment levels in livelihood support. GEF funding for each demonstration village was in the range of US100,000 or around 700,00 RMB at the time. Planned total investment (including GEF funds) ranged from around 2.3 million RMB to 3.6 million RMB. In all cases for which we have data, actual investment substantially exceeded planned investment, ranging from a total of 4.6 million to 27 million RMB per site. The difference in planned and actual investment was in large part due to the addition of types of livelihood support not included in the original incentive plan. For example, in Yanchi, Ningxia, support for animal pens was added to the site, with funding completely from the local government. The totals also include amounts allocated to management costs and the baseline and follow up surveys, though the majority of funds address livelihood initiatives.

While livelihood support provided by public goods had a fairly narrow range (i.e. mostly roads and irrigation support), the range of types of private goods supported was broader (see Exhibit 6-1A). Support for greenhouses, saplings, animal pens, drinking water storage, and biogas were some of the more typical private goods. Less common were gem polishing machines and embroidery machines. Interest support for repayment of micro-credit loans was provided at many of the sites, but made up only a small part of the each site's overall investment. The TE Team believes inclusion of long-term public goods, such as roads and irrigation, is a very positive aspect of incentive mechanism design, as it provides strong potential for sustainability of investment. The sustainability of the private goods may vary, depending on the associated income generating activity. For example, we found that the gem polishing machines had already become obsolete and were no longer generating income at the time of the TE. The animal pens in Yanchi, in contrast, will probably have a long life, particularly because the area breeds a unique type of sheep.

In Part II of this report, we discussed the issue of whether the project's "MiA" style WRC conservation sites were truly integrating conservation with agriculture in the sites. Exhibit 6-1B provides relevant information in a systematic way, though we have limited information for the sites we neither visited nor discussed in-depth. For the four sites we know most about, we find that there is significant economic activity that has been disallowed in the conservation area after it has been set up. Also, for at least three of the four sites, no or hardly any economic activity is occurring (within the site) following conservation. At the Guangxi demo site, farmers can no longer have rice paddy near the site, as it might interfere with the wild rice, though they are permitted to have dry-land crops nearby. They have also been asked to no longer cut trees in the buffer area. Farmers, we are told, voluntarily abandoned the idea of nearby dry-land crops; and there is thus no longer much if any economic activity in the conservation area. At the Xinjiang and Ningxia demo sites, the conservation areas were formerly active grazing grounds, but that is now forbidden; and there is no economic activity within the sites. At the Henan demo site, it seems crops have been curtailed, though pepper trees encouraged and a reduced number of poplar trees allowed in the conservation area. The Jilin, Heilongjiang, and Yunnan demo sites, however, do appear to have more economic

activity, particularly in the buffer areas. The TE Team believes this issue of lack of agriculture in the conservation sites in a number of cases raises the need to refine the guidelines and concept of "MiA" style WRC conservation as it has evolved in the Chinese context. Lack of agriculture in the conservation sites may be acceptable if it is voluntary or absolutely necessary. Yet, guidelines should be developed to ensure that indeed one of these is the case and that the absence of agriculture in the site is not instead due to overzealous implementation or lack of understanding of the potential for WRCs to co-exist with agricultural activities.

Exhibit 6-1B: Demonstration Site Incentive Mechanisms - Agricultural Activities in Conservation Area

Province/ County	WRC/ Area	Agriculture/ animal husbandry related activities in site before conservation	Agriculture/animal husbandry related activities in site after conservation: (i) disallowed, (ii) allowed, (iii) actual
Zhaoping, Guangxi	Wild rice/ 500 mu total (20 mu core)	Rice paddy, dry-land crops, and tree cutting in buffer; diverting water from core	(i) No tree cutting in buffer allowed; water diversion from core stopped; no rice paddy allowed (ii) dry-land crops said to be allowed in buffer, but no longer pursued; (iii) no activities, aside from possibly limited gum rosin tapping in buffer
Wenchang, Hainan	Wild rice/ 150 mu total	NA	NA
Jinghong, Yunnan	Wild rice/ 33 mu total	NA	(i) "economic trees", such as rubber, not allowed in buffer; (iii) pine and Australian Nut trees in buffer
Tongbai, Henan	Wild soybean/ 1,239 mu total	Dryland crops, poplar trees, grazing	(i) no crops, reduction of poplar trees, no grazing, (ii) pepper trees and reduced amount of poplar trees allowed, (iii) actual same as allowed
Longjing, Jilin	Wild soybean/ 900 mu total	NA	(iii) maize in the buffer area, but not the core
Baiyan, Heilongjiang	Wild soybean/ 449 mu total	NA	(iii) maize and rice in buffer area, poplar and willow in buffer and core
Yanchi, Ningxia	Wild wheat/ 2,475 mu total	Sheep grazing and some dryland crops	(i) no grazing allowed, crops discouraged, (ii) possibly crops, but not confirmed, (iii) no actual activity
#001, Xinjiang	Wild wheat/ 227 mu	Grazing	(i) no grazing allowed, (ii) none known, (iii) no actual activity

Participation in and satisfaction with incentive mechanism: The project put a high priority, during incentive mechanism design, on getting strong input from local villagers with regard to the nature of livelihood support. During our field visits to Guangxi and Ningxia, the team received clear input from villagers confirming their participation. We also received this confirmation from Henan villagers during follow-up phone consultations. Other stakeholders in the project offered anecdotes and confirmed the participatory approach was taken at various sites. We were told that the project adopted a strategy of "expert guided decision-making of rural people" for design of the incentive mechanism and that six to seven meetings

were held at each site for this purpose. Sometimes, it was noted, impractical ideas were suggested by villagers and these had to be rejected. Further, at some sites, such as the Guangxi demo site, it was difficult for villagers to reach agreement and eventually each household sent one villager to discussion meetings. In the case of Xinjiang, we were told that the experts and the county, township, and village all discussed the matter. Lots of opinions were expressed and the majority opinion was taken as the plan.

In Ningxia and Guangxi, we found that demo site villagers were satisfied with the livelihood support and willing to conserve on that basis. A woman villager in Ningxia explained to us that she has no negative opinion on the restriction on grazing in the conservation area, because of the project benefits.

During our demo villager interviews in Henan (or later phone calls to such persons), villagers indicated willingness to conserve and satisfaction with the road provided. Yet, most Henan demo villager interviewees do not believe they experienced income benefits due to the project, though one mentioned the possibility that project pepper trees in the future may yield positive income benefits. Since most of the Henan villagers had moved out of the village, they were less concerned with impacts of the project than were villagers at other sites.

6.3 County, Township, and Village Policy Results

For each of the sites we visited and for the Xinjiang site, we learned that, as part of the project's incentive mechanism, a county WRC policy or guidance statement had been issued and township and village villager agreements had been revised to include WRC content. We were told that generally, the villager agreements were not contractual in that they did not require the villagers to conserve in exchange for alternative livelihood support, but instead focused on WRC conservation. At one site (Tongbhai, Henan), however, we were told the agreement raised the livelihood mechanisms as well, noting that villagers will receive alternative livelihood help and will in return protect the wild soybean.

Specific examples of local policy or guidance statements issued and villager agreements modified include the following: In Dec. 2009, Yanchi County (Ningxia demo site) issued *Decisions about Strengthening Work for Protection of WRC*. Also, the Township and Village Agreements with the people were modified to include addition of a special article on WRC wheat. In addition to the policy, the county developed strategies and detailed work plans regarding WRC conservation. Tongbai County in Henan issued a notice on management methods for WRC. Zhaoping County in Guangxi issued a notice for conservation in 2006, prior to the project, but followed up with a second notice in 2009. We believe county WRC documents and villager agreement revisions issued after the project began may in most cases be considered direct results of the project.

6.4 Conservation Results at Demo Sites

The TE Team believes that conservation results at the demo sites have been positive and that this is one of the most important achievements of the project. The area under conservation at

each of the three demo sites we visited has not been reduced, aside from some minor adjustments at one site at project initiation. Further, at each of these three demo sites, provincial experts who guided us told us that improvement in the amount of conserved plants (in both density and spread and, in some cases, variety) was visibly obvious to them. Also, at two of these demo sites, villagers mentioned their impression that the status of the conserved plants had improved since conservation began. Finally, data from the baseline survey and TRA back up the view that, in most cases, not only has there not been deterioration, but there has also been improvement.

Guangxi demo site conservation results – site visit: At the Guangxi demo site, the experts indicated to us that improvements are visually obvious. Of the 15 designated sample areas (which are fixed in area and returned to each time there is a survey), only one has not improved; and its deterioration is thought to be due either to a wild boar or lack of protection from the sun. The visual improvements noted by the experts include more populations of wild rice (populations defined as groups that are separated spatially), more variety in the wild rice plants (as evidenced by variety in leaf type), individual populations (groups) covering a larger area, and density within individual populations going up. The experts further explained that the biggest threats to the wild rice at this site have been logging in the surrounding forest areas (which would reduce water resources) and diversion of water from the area for rice paddy elsewhere. Prior to establishment of the site, in the buffer, there was logging of pine for fuel and also some plans for planting of eucalyptus, which were cancelled. Water resources from the dam supported by the project mean the local people do not need to divert water; and the biogas digesters also supported by the project mean that they do not need to cut down trees for fuel. Further, villagers have stopped planting rice paddy in the buffer area as required.

Henan demo site conservation results – site visit: During the visit to the wild soybean conservation site in Tongbai, Henan, the experts noted that the wild soybean had spread to the road area, where it hadn't been before. We also observed that there had been selective logging of poplar trees to ensure there was not too much shade for the wild soybean. We did not view the pepper trees, as it was indicated these were too far away. Pepper trees were chosen as they could both serve as trellises for the wild soybean, which is a climbing plant and requires a trellis to grow upwards, and also enhance livelihoods. Yet, we later heard from a former villager that the pepper trees had not done well due to flooding.

Ningxia demo site conservation results – site visit: The expert for Ningxia told us they have seen very good results for the first of three wild wheat species being conserved at the site, having seen roughly a 30 percent improvement in both density and richness. Grazing was previously a serious threat. The local special sheep variety, Tanyang Sheep, require 17 mu per sheep, but were at a density of 2 to 3 mu per sheep prior to the project. The natural village chief told us the villagers are taking good care of the site and won't allow anyone else to graze there. The sheep are now kept in sheep sheds supported by co-financing to the project. The village chief told us there is now a fine of 500 to 1,000 RMB for violating the

grazing ban. During the field visit, we were told that threat reduction at the Ningxia site (according to the TRA index) between 2008 and 2012 was 67 percent.

Data from baseline surveys, follow-up surveys, and TRA: Data collected from the baseline and follow-up surveys, as well as the TRA, though incomplete at the time this analysis was conducted, appear to confirm the improvements in the conservation situation as related above. Below, we include the data of interest we were able to obtain. In general, resource indices show some improvement, though not as marked as we had expected from our discussions during site visits. The TRA, in contrast, shows extremely marked improvement and the reaching of the target in most cases.

Exhibits 6-2 and 6-3 show demo site results between 2008 and 2012 for the composite resource index. The composite index is made up of the sum of four factors:

- 0.4 x index for distribution area (determined by walking around the CWR growing area with GPS and calculating area)
- 0.4 x index for population density (computed by [(total number of individual plants)/(area of reserve)]x100)
- 0.1 x index for abundance of target species (computed by [(total individual number of target species)/(total individual number of all plants)] x 100)
- 0.1 x index for growth status (determined by visual measurement)

The composite resource index increased at least to some extent for the six demo sites for which we had 2008 to 2012 data at the time of analysis, though there were ups and down for some.

Exhibit 6-2: Demo Site Conservation Results: Baseline Survey Composite Resource Index

Province/ County	2008	2009	2010	2011	2012
Guangxi	94	105	102	102	105
Hainan	NA	NA	NA	NA	NA
Yunnan	NA	NA	NA	NA	NA
Henan	97	67	99	107	107
Jilin	97	102	107	107	107
Heilongjiang	94	105	108	108	110
Ningxia	100	105	102	105	105
Xinjiang*	94	107	104	104	104

*First species of four (wheat grass)

In Exhibits 6-4, 6-5, and 6-6, we look at the density and richness indices for the Guangxi, Henan, and Xinjiang, the only demo sites for which we have this data on an annual basis. We do not have normalized data for Xinjiang. Also, Xinjiang provides data for four different wild wheat species at its site. Thus, we provide at separate graph for the Xinjiang site. Interestingly, results show somewhat opposite trends for the Guangxi and Henan demo sites.

The Guangxi site has shown some improvement in density and some deterioration in richness, while the Henan site has shown a reduction in density and an increase in richness. The Xinjiang site data for density and richness shows substantial ups and downs and limited improvement overall, with the greatest improvement seen in Species 1.

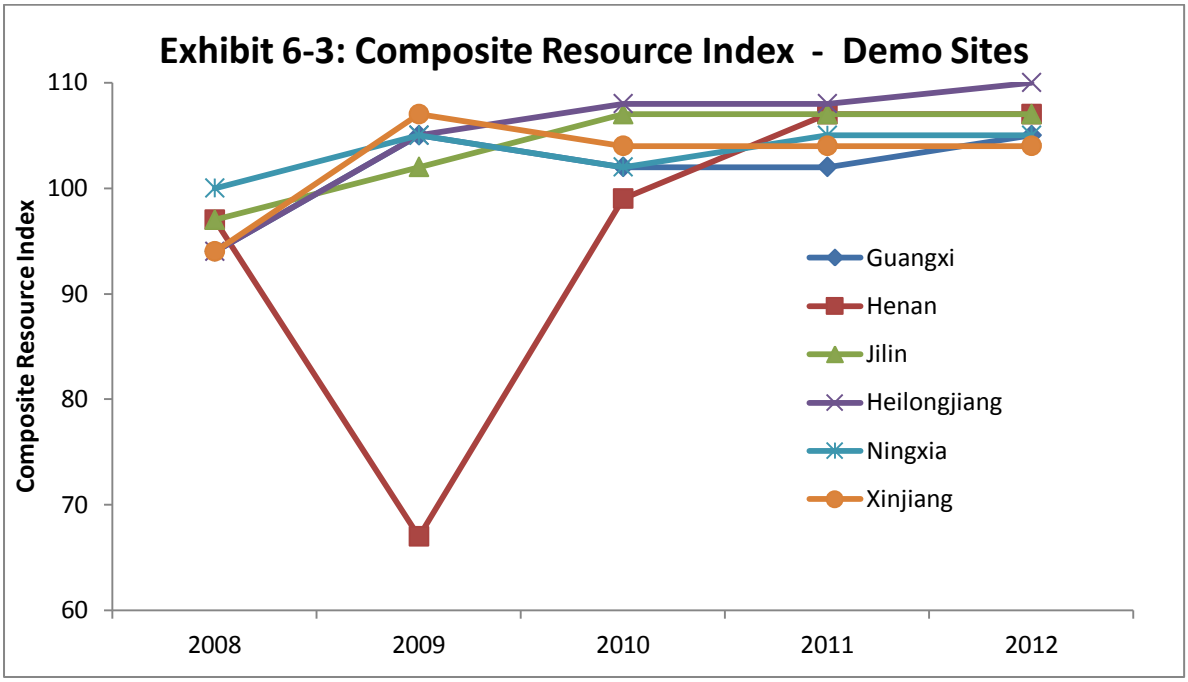


Exhibit 6-4: Density Index for Select Demo Sites

(as compared to baseline year)

Province/ County	2008	2009	2010	2011	2012
Guangxi	100	120	120	120	120
Henan	100	40	70	70	70

Exhibit 6-5: Richness Index for Select Demo Sites

(as compared to baseline year)

Province/ County	2008	2009	2010	2011	2012
Guangxi	100	70	40	70	70
Henan	100	70	120	120	120

The project team indicates that ups and downs in indices may be due to extreme weather events such as droughts and floods. Further, different results for density and richness may be understood as follows: For density going up and richness dropping, all plants in conservation site may be increasing, with some increasing faster than target species. For richness increasing, but density dropping, all plants in conservation site may be reduced in total amount due to extreme events, but with target species having held out better than others.

Exhibit 6-8 and 6-9 show results for the Threat Reduction Assessment (TRA) Index. As mentioned, these results show clear progress. Data was available for six of the eight demo

sites at the time this analysis was conducted. Of these, all sites except Ningxia and Xinjiang met the target of an 80 percent or more reduction in threats. Xinjiang met this target in 2013. Ningxia achieved a reduction of 67 percent in 2012.

Exhibit 6-6: Density and Richness Indices for Select Demo Sites

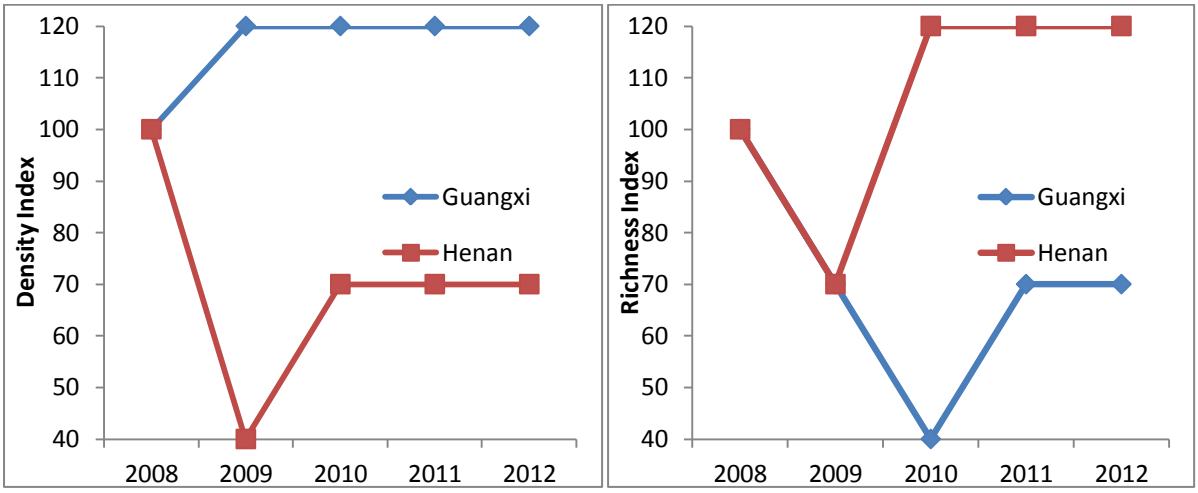


Exhibit 6-7: Xinjiang Demo Site Density and Richness Results (4 Species at One Site)

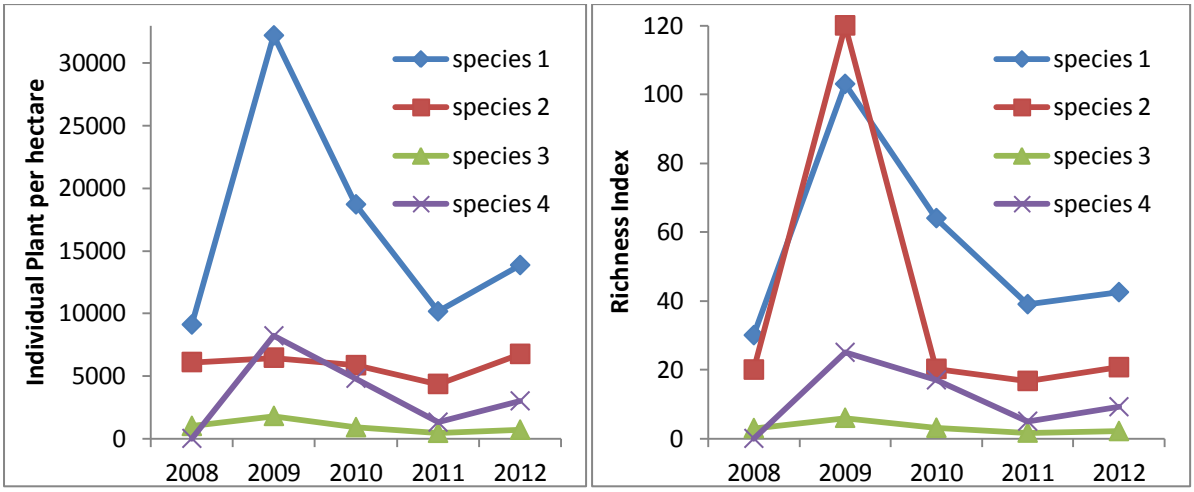
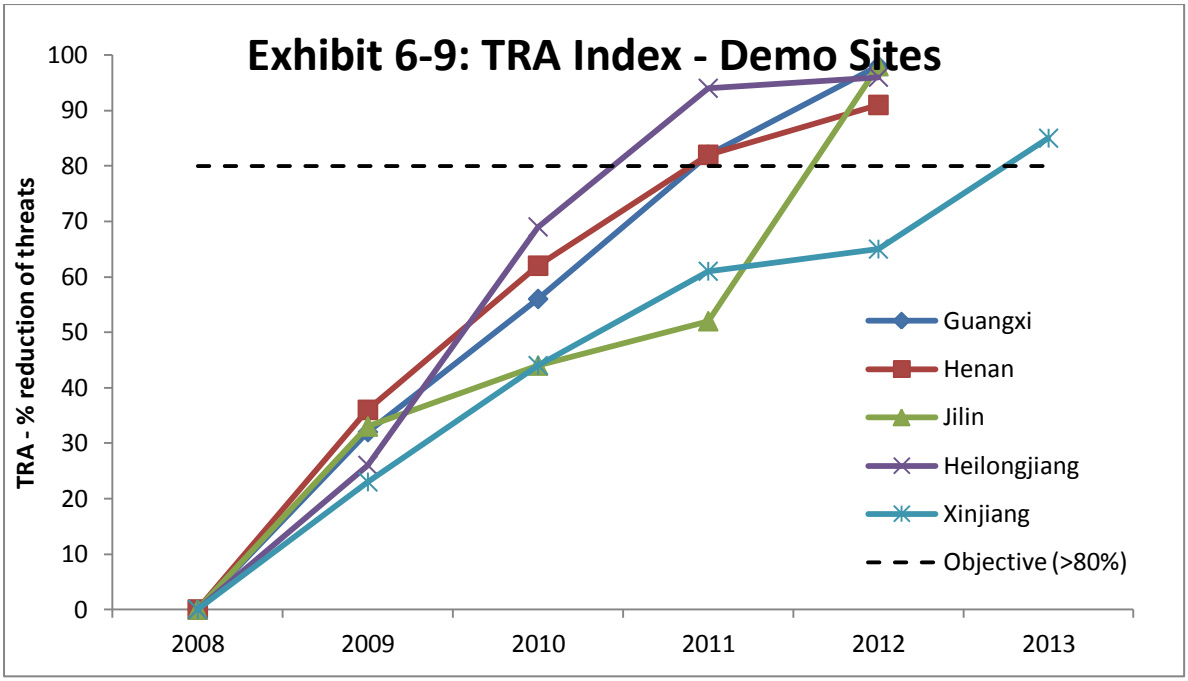


Exhibit 6-8: Demo Site Conservation Results: TRA Index

Province/ County	2008	2009	2010	2011	2012	2013
Guangxi	0%	32%	56%	82%	98%	NA
Hainan	NA	NA	NA	NA	NA	NA
Yunnan	NA	NA	NA	NA	NA	NA
Henan	0%	36%	62%	82%	91%	NA
Jilin	0%	33%	44%	52%	98%	NA
Heilongjiang	0%	26%	69%	94%	96%	NA
Ningxia	0%	NA	NA	NA	67%	NA
Xinjiang*	0%	23%	44%	61%	65%	85%

Note: Target is that by end of project, all sites reach threat reduction of 80%.



6.5 Livelihood Results of Demo Sites

Field visits presented an extremely positive impression of livelihood results at some demo sites (Guangxi and Ningxia, but not Henan), both in terms of what the villagers told us and in terms of the new infrastructure we saw. Some villagers, in particular, mentioned significant improvements in certain aspects of their agricultural productivity. In Henan, as indicated, most villagers do not believe the project resulted in positive impacts on their income, though do see the road constructed as positive. Income benefits as pointed out by one Henan stakeholder may occur in the future, when pepper trees supported by project are mature.

While interviews provide a positive impression of livelihood results at some demo sites, the TE Team finds that the limitations of available data render a solid quantitative assessment impossible at this point. In this section, we first present net per capita income data obtained via the baseline and follow up surveys, discuss the issues associated with this data, and also comment on results of a separate socio-economic assessment commissioned by the project. Then, we move to a focus on findings from our interviews. Overall, our conclusion is that agricultural incomes have not suffered due to restrictions on activities in the conservation areas and likely have improved significantly among some households at some sites due to alternative livelihood support. Further, regardless of whether there has been meaningful improvement in incomes due to the project, the public goods provided offer the villagers long-term potential for enhancement to their incomes.

After submission of the draft version of this TE report, the PMO raised concerns about our comparison of demo site income growth with growth in rural net per capita income averages in each site's respective county. They expressed a preference for focusing on the income growth rates at each demo site alone. The TE team fully recognizes that the comparison with county average rural net per capita income growth rates is far from ideal. Yet, we believe it is

preferable to provide some very rough basis of comparison rather than to provide no comparison at all. Because of the strong growth in incomes and prices in China during the period of project implementation, it is difficult to draw any conclusions from looking at income growth rates at individual sites in isolation. Thus, while recognizing the weaknesses of the county comparison approach, we have chosen to leave this information in the report. We further note that the comparisons made are not of absolute income levels, but instead of growth rates and of changes in proportion of demo site income to county income over time.

Quantitative results: Exhibit 6-10 shows annual rural net per capita income at demo sites between 2008 and 2012, as provided in baseline and follow-up survey results. Compound annual growth rates (CAGR) for the period are also shown in the far right of the table. For comparison, the table also gives county rural net per capita income for available years (generally 2008 to 2011), ratio between village rural net per capita income and county rural net per capita income for available years, and CAGRs for both the village and county for the period 2008 to 2011. We note that this comparison is far from ideal in that it gives us a view of relative changes in overall income, but not of impact of the project on agricultural income, a focus on which may have offered more insights. Further, issues of data collection methodology in the demo villages may also impact the validity of the comparison. Finally, as implied above, comparison of rural net per capita income growth in a single village to the growth of the rural figure for the county as a whole is a relatively weak approach. If comparison is to be made, comparing the demo site village to similar villages may be preferable. Yet, as the counties are the only basis of comparison available to the TE team at this time, we believe it is preferable to use this comparison to get a rough view of where demo site income growth stands, rather than offer no comparison at all.

Four-year CAGRs (2008 – 2012) for seven of the eight demo sites fall in the range of 5 percent to 14 percent, which seems like a typical range in China given the economic growth and inflation the nation has seen during the period. The Yunnan site stands out both because of its extremely low base (980 RMB in 2008) and because its CAGR at 48 percent is way out of the range of the others. While we did not visit the Yunnan site, we did hear from the PMO that the economic changes in the village have been literally transformative, so much so that local women in the area are now attracted to marrying into the village.

Looking at changes over time in the ratio of demo site rural net per capita income to county rural net per capita income also confirms the Yunnan site as the standout, rising from 32 percent to 74 percent of the county average between 2008 and 2012. Of the seven other demo sites, six have either at most maintained or even decreased a little their ratio to county net per capita rural income.

Comparing 2008-2011 CAGRs of the sites to their respective counties similarly shows Yunnan as the standout (52 percent CAGR compared to 18 percent for the county), while most other sites have a CAGR either the same or a bit lower than county equivalents. Jilin is the exception, but, as we understand most of the village is out-migrating to South Korea for

work and has higher rural net per capita income than the prefectural average, this cannot be clearly linked with the project's incentive mechanism.

Exhibit 6-10: Rural Net Per Capita Income (RNPCI) at Demo Sites 2008 – 2012 (in RMB); ***Results imply no major change in income beyond the expected for most sites, but are not specific enough to measure project impact; methodology needs to be improved. Yunnan is the exception, with obvious project impact, even on overall income. TE team acknowledges weakness of comparing demo site rural income growth to average county rural income growth, but, given the absence of good data on villages similar to demo sites or on township rural per capita income averages, believes providing this very rough comparison is preferable to providing no comparison at all.***

Province/ County	2008	2009	2010	2011	2012	CAGR 2008 – 2011	CAGR 2008 – 2012
Guangxi site	1,862	2,124	2,390	2,670	2,750	13%	10%
County Avg. (Guangxi site)	3,212	3,488	3,964	4,646		13%	
Site RNPCI/County RNPCI	58%	61%	60%	57%			
Hainan site	4,798	5,130	5,570	6,460	6,805	10%	9%
Avg. for county (Hanian site)	5,220	5,643	6,124	7,248		12%	
Site RNPCI/County RNPCI	92%	91%	91%	89%			
Yunnan	980	1,300	2,520	3,450	4,680	52%	48%
Avg. for county (Yunnan site)	3,103	3,611	4,218	5,036	6,397	18%	20%
Site RNPCI/County RNPCI	32%	36%	60%	69%	74%		
Henan site	1,980	2,200	2,322	2,456	2,460	7%	5%
Avg. for county (Henan site)	3,158	3,447	3,857	4,750		15%	
Site RNPCI/County RNPCI	63%	64%	60%	51%			
Jilin site	5,567	7,530	8,054	8,550	9,200	15%	13%
Avg. for prefecture* (Jilin site)	4,392	4,735	5,416	6,250		13%	
Site RNPCI/Prefecture RNPCI	127%	159%	148%	137%			
Heilongjiang	3,800	3,910	4,700	5,600	6,500	14%	14%
Avg. for province* (HLJ site)	4,856	5,207	6,211	7,591		16%	
Site RNPCI/Provincial RNPCI	78%	76%	76%	74%			
Ningxia	2,300	2,760	3,160	3,439	3,810	14%	13%
Avg. for county (Ningxia site)	2,577	2,914	3,669	4096		17%	
Site RNPCI/County RNPCI	89%	95%	86%	84%			
Xinjiang*	5,347	5,478	6,106.9	7,565	9,047	12%	14%
Avg. for province (Xinjiang site)	3,503	3,883	4,643	5,442		16%	
Site RNPCI/Provincial RNPCI	153%	141%	132%	139%			

Note: Source of comparison data is provincial statistical yearbooks.

*No data available in *Jilin Yearbook* on demo site's county, so we have used the prefectural data. *Heilongjiang Yearbook* does not provide county data, so we have used the provincial average for comparison. Xinjiang has had administrative changes, so that we cannot use time series data for the county; instead, we use the province for comparison.

The results do suggest that the demo sites, which have had land taken out of certain agricultural uses, have probably not lost ground economically vis-à-vis general trends in their area. Finally, we do acknowledge that this method is crude. One interviewee put it well when he told us that he believed income growth at the demo site in his province may not stand out

compared to all other villages, but did stand out as compared to other villages with very similar situations.

The quality of the demo site rural net per capita income data is of concern. The TE Team understands the methodology of the survey was to ask villagers their net per capita income even though the villagers may have not been too clear on how to compute this. A preferable methodology may have been to focus on net agricultural income and include a number of questions to help arrive at that figure. Also, efforts may be made to determine the specific impact (both positive and negative) of project activities on income. Rural net per capita agricultural income data for the township as a whole or for neighboring or similar villages might also be gathered for comparison. Still, the net per capita agricultural income approach presents substantial challenges and, as we found at the Guangxi site, it may be important to distinguish between those who had land in the protected area and those who did not (perhaps 20 out of 100 households in that case). Further, a household case study methodology as we present in Exhibits 6-11 and 6-12 below may be an important supplementary approach for illuminating the real situation.

The TE Team also reviewed the socio-economic assessment of a project sub-contractor who conducted his own site visits to a sub-set of the demo villages. This work included comparison to nearby village and township numbers, such as we mention above. The TE team believes this methodology of comparison to other similar villages or the township as a whole is useful. We did not find, however, that the results of this study showed conclusive evidence that the demo villages were growing incomes faster than neighboring villages or their township as a whole. The results did suggest at minimum, however, that demo villages had not lost ground economically due to giving up agricultural activities in the protected area.

Livelihood results – Guangxi demo villager interviews: The TE Team interviewed five villagers from Guangxi; and, overall, they gave a clear impression that the project has either positively enhanced their income or at minimum had no negative impact. We summarize the comments of four of these villagers in Exhibit 6-11. These results strengthen our impression of positive livelihood impacts overall for the project.

Exhibit 6-11: Guangxi Demo Villager Input on Livelihood Impacts of Project

Guangxi Demo Villager 1
Positive impacts to her livelihood: *Watermelon* – Now they have a road to transport the product, so she grows more watermelon than before. *Rice* – With irrigation, production has increased from 700 to 800 jin per mu to 1,000 jin per mu. *Gem polisher* – Earned an additional 10,000 yuan per year at first, but can no longer compete in market. Overall view of impacts: *Family* – Project is important to her family; no negative impacts on family. *Village as a whole* – Project important to village because of road, pump, and protected area.
Guangxi Demo Villager 2
Impacts on livelihood: *Watermelon* – Watermelon income has increased substantially due to project. *Rice paddy out of production* – Family gave up 0.8 mu of rice paddy near conservation area; not a significant matter to Villager 2 as he out-migrates for work. It's a lot of work to farm the land. No negative impacts on family.
Guangxi Demo Villager 3
Impact on family: Project had no impact on family, as they have no land in protected area. Impact on village: Project had positive impact on village due to road and water works.
Guangxi Demo Villager 4
Impact on family: *Biogas/tree cutting restrictions*: Impact of tree cutting restrictions not serious because he has biogas now and does not need as much wood. *Road/watermelon*: Road important to him as has increased price they can get for watermelon. So, he has increased watermelon area from 2 mu to 4 mu.

Livelihood results – Henan demo villager interviews: At the Henan site, we learned from county officials that the road has been important to villagers for getting product to market. Yet, perhaps because 40 out of 46 demo site families have moved to the township, we did not obtain strong evidence from villager interviews that the project has had positive livelihood impacts. We interviewed a total of seven Henan villagers (four in person and four by telephone, with an overlap of one person.) Only one felt the project had had a positive impact on his income, though another noted the project-supported pepper trees after a period of some years may bring a higher income than the peanuts and other crops that had to be discontinued in the conservation area. Of the villagers we interviewed, only one still lives in the village. Some of the others have left agriculture completely (e.g. renting out their land, conducting business full-time in the township, etc.), while others travel back to the village to carry out more limited agricultural activities than in the past, combining this with work in the township.

Livelihood results – Ningxia demo villager interviews: We spoke with four villagers in Ningxia. Each indicated that the project had clearly had positive impacts on his or her family. Key comments made by these villagers in this regard are offered below in Exhibit 6-12.

Comments from the Yanchi, Ningxia Agricultural Bureau and the Ningxia Provincial Expert added further confirmation of livelihood results. We were told that the sheep in the village are getting larger, with average weight having risen from 15 kg to 20 kg. This is attributed to the project. We were also told that the demo village was poor with a relatively low level of

agricultural production prior to the project. Because the area is really cold in winter, the sheep sheds provide some warmth to help the animals survive the winter. Further, in the past, there was no irrigation in the village. We were told that villagers would plant and if there was rain they'd get crops and if not, nothing. Now irrigation ensures the crops will grow well. Altogether the village has 20,000 mu of grasslands, so that the protected area of 2,000-plus mu is a relatively small part of the total. While grazing is now forbidden, it is possible villagers will be asked to have their sheep graze a little in the future to ensure the robustness of the wild wheat, which actually responds positively to limited grazing. We were also told that, due to positive project results, some people who had left the village wished to return.

Exhibit 6-12: Ningxia Demo Villager Input on Livelihood Impacts of Project

Ningxia Demo Villager 1
Positive impact on family: Project has made family richer by supporting greenhouse construction and cash crops, such as watermelon. Family per capita income has grown. Impact on village: Restrictions on grazing have had no negative impact on sheep.
Ningxia Demo Villager 2
Positive impact on family: Project is important because it reduces the sand and dust in the wind and keeps the air cleaner. Every household has gotten a water collector, which they use for drinking and washing. Before, they had to buy water from far away. Now they also have drip irrigation from well water. Corn production per mu has increased substantially. Now, the family no longer plants on bare lands. They are now getting better results with their sheep than before.
Ningxia Demo Villager 3
Positive impacts on family: Before project had 50-60 sheep. Now they have 100 -- all from natural growth of herd over period of project. Now 10 mu of corn is irrigated and this has increased productivity by 50%.
Ningxia Demo Villager 4
Positive impacts on family: Project important to family because it has provided water storage in their yard and a sheep shed. They also have 6 mu of irrigated land now via the project wells.

6.6 Special Issues with regard to Incentive Mechanism

Our discussions with stakeholders and our own analysis highlight some key issues with regard to the livelihood support aspect of the incentive mechanism. Some issues have been mentioned already or will be discussed in subsequent sections. Yet, it is important to raise these issues as a group and encourage direct, transparent discussions on and analysis of them if the "MiA" or "livelihoods" approach to WRC conservation is to be pursued at new sites in the future.

Key issues are discussed below. We understand that following submission of the draft version of this report the PMO has decided to deliberate key issues raised in the report and hope that the issues below are included in these deliberations.

1. Integration of agriculture within conservation site: As mentioned, we found that economic activities within a number of conservation sites were completely or almost completely stopped with the initiation of the project. If this is to be the scenario at future sites, it would be best if it occurs either due to the preference of local people (e.g. livelihoods improve on other land, so marginal or remote land no longer of interest) or because it is absolutely necessary to protect the target species. Discussion on and analysis of this issue

should consider what type of integration with agriculture is feasible, what type of restrictions are truly necessary, and means to ensure that overzealous restrictions do not prevent integration when it would be feasible.

2. Equity: The substantial resources channeled to demo (and later replication) villages raise the question of equity vis-à-vis other villages. We were often told that the demo (or replication) villages were able to "jump to the front of the line" in funding for support, whether for public goods (such as a road) or private/small group goods (such as animal pens). One county-level stakeholder from Ningxia in mentioning that the demo site had "jumped the queue" for its livestock pens, suggested that it makes most sent to choose a poor village for such conservation-related prioritization. As such, the village becomes not only a good example of conservation, but also a model for poverty alleviation. At present, some WRC "MiA" style conservation demo (and replication) villages are relatively poor and others are not. It may make sense to channel the more substantial livelihood support into those villages that represent the dual opportunity of conservation and poverty alleviation. Different stakeholders had different responses to this question about equity. One pointed out that every plan will have pros and cons. Another pointed out that the channeling of substantial resources to a single village in an integrated fashion is a good demonstration of how integrated development is more effective than piecemeal, single initiative approaches. The equity issue, we believe, will make it even more important for decision-makers and their advisors to consider costs and benefits of the approach as discussed in the next item below.

3. Efficiency of multiple investments channeled to one village and cost-benefit analysis: Related to the equity issue above, another important issue is the efficiency of channeling multiple investments to one village in terms of achieving conservation and livelihoods results. Some villages garnered much more investment than initially planned, after "extra-budgetary" public or private good initiatives were added to the demo. The questions of "What is enough?" and "When do returns begin to diminish?" need to be asked. Cost-benefit analysis, while difficult, needs to be conducted at some level. Cost-benefit analysis is necessary both to justify the "MiA" approach and to determine how much support for one demo site is reasonable. Many stakeholders emphasized to us the difficulty in doing any kind of cost-benefit analysis of the "MiA" approach and any kind of comparison to the physical isolation approach. Yet, we would urge that some basic, overall analysis is needed to justify decision-making on type of approach and to address the challenge of choosing the appropriate scale of investment in the case of "MiA" approach sites.

4. Sustainability of livelihood investments: If conservation is to be sustainable, livelihood results will need to be sustainable or at least serve as a bridge to other activities that are sustainable. We discuss sustainability in more detail in Part IV of this report. For now, we include it here to emphasize that discussion and analysis of the "MiA" approach should also touch on sustainability. In order to choose the "MiA" approach over the physical isolation approach, policy makers will need to have some confidence that the first is sustainable and that follow up investments, if needed, can be arranged and are affordable. Further, to choose among livelihood support options, they will then need to have an idea of which types of

livelihood investments are more sustainable. They will need to compare both public and private goods and also assess which type of private goods offer more potential for sustainability. For both of these needs (justifying the "MiA" approach and then determining best livelihood support options), follow-up monitoring of livelihood and conservation results at the project's sites in future years will be helpful.

5. Measuring impact and returns of alternative livelihood support: As has been discussed in this section, measuring livelihood results of "MiA" style conservation is very difficult. Yet, it is important to have a system that is considered effective; and this is something that the project lacks to date. The system to be developed may have a greater focus on agricultural income, case study interviews, specific income impacts of the project, and, possibly, comparison to similar or neighboring villages or to the situation of rural people in the demo township as a whole.

6.7 Potential Impacts beyond Project- Alternative Livelihood Approach

Stakeholders consulted about the project were very complementary about its alternative livelihood approach. For people in the agro-conservation field, the approach of using alternative livelihoods to promote conservation was indeed completely new. From the case of Ningxia, we see the project may have lessons learned for other types of conservation, such as grassland recovery. In Ningxia, we learned that grazing bans instituted for more general grassland recovery (and not CWR conservation) at other sites had not had very good results, because alternative livelihoods had not been incorporated and thus there was no good means of enforcement. The TE team got the impression that the project had offered Ningxia new insights on how to make the grazing bans successful via integration with livelihood support.

For those with experience in poverty alleviation, what's new about the project is not the support of alternative livelihoods in general, but that the project integrates resources from across government departments for a more effective result than the standard piece-meal approach. One stakeholder explained that the project's livelihood work is very well designed in that problems are anticipated and dealt with before they occur. Another described the project's approach to livelihoods as very "scientific" and attributed the project's success, in part, to this characteristic.

6. 8 Outcome 1 Indicator Assessment

Below in Exhibit 6-13, we offer assessment and comments on the status of Outcome 1 indicators as of the TE mission. While we do not have access to the data necessary to confirm achievement of targets, field visits and other project achievements suggest that Outcome 1 indicator targets have largely been met.

Exhibit 6-13: Outcome 1 Indicator Assessment

Outcome 1 Indicator	Status as of July 2013 and relevant comments
1. At EoP, over 75% of farmers (men and women) at each project site have started to take initiatives to change their livelihood practices to effectively reduce negative impacts on WRC, when compared with project baseline.	Findings from our field visits indicate that a significant proportion of farmers who had land in the conservation areas have made changes in their economic activity, which has reduced negative impacts on the WRC. These findings strongly suggest the target has been met.
2. Land users who have changed their livelihood activities and reduced negative impacts on WRC have improved levels of income/food production and increased understanding of/ support for WRC conservation, when compared with project baseline.	While socio-economic data (aside from the Yunnan data) does not confirm meaningful improvements in income/food production, village interviews strongly suggest improvements in some cases. Increased understanding was strongly evident in most villager interviews. Targets for this outcome (30% have improved income/food production and 75% confirm better WRC conservation) likely met.
3. Approaches and lessons learned from the project sites have been used by DoA and LGWRC within the eight provinces to establish long-term initiatives creating incentives for conservation of WRC in counties where significant WRC are found.	This indicator has been met if we consider the replication sites of the project sufficient. If we hope for replication beyond the project at additional counties in the eight provinces, it has not been met. The provinces have not incorporated the "MiA" approach into their long-term plans.

7. Outcome 5: Replication Sites, Publicity, and Dissemination

Outcome 5, with its 64 replication sites instituting "MiA" style conservation is truly an impressive part of the project. Because of the close link in methodology between these replication sites and the eight demonstration sites of Outcome 1, we include this section directly following the review of Outcome 1, and before addressing the project's other outcomes. The stated target of Outcome 5 is "Lessons and experiences from target provinces create conditions for replication and expansion of conservation programs." We have described this outcome as "dissemination of 'MiA' style conservation and publicity for WRC conservation." The first part of Outcome 5, the replication sites, directly addresses the more narrow focus of the project (the "MiA" approach). The second part, including broadcast of WRC television programs and production of brochures, books, and project website, supports both the broader objective of WRC conservation more generally, regardless of conservation methodology, as well as disseminating information on the "MiA" approach. Official GEF expenditures as of July 31, 2013, for Outcome 5 have been about $660,000. Yet, real GEF expenditures have been more, as some part of replication expenses have been channeled through Outcome 1. Although GEF investment in each replication site is very small (typically only USD15,000 per site), with 64 sites, the total is well over USD900,000. Finally, although government co-financing levels are less on average per site than for the demonstration sites, because of the very large number of sites, an impressive amount of funding has been mobilized. Thus, total investment in Outcome 5 exceeds that of all other outcomes.

In this section, we first provide an overview of achievements with regard to the replication sites. We look at the protected plant types and discuss the issue of scope extending beyond

WRCs. We further look at total investment amounts for each site, a useful reference, as we consider the costs of the "MiA" approach of WRC conservation. We also look at replication site conservation results to date, based on both data and site visits. While only a couple of years of data exist, given the large number of sites, trends are of interest. We then review findings on incentive mechanisms at the replication sites in the provinces, particularly the two we visited during the mission, one in Guangxi and one in Henan. After concluding the discussion on the replication sites, we review achievements related to the other part of Outcome 5 – publicity for WRC conservation – discussing the experience with the television broadcasts and other promotional initiatives. We close with a brief assessment of the indicators associated with Outcome 5.

7.1 Overview of Replication Sites and their Conservation Results

Plants conserved: Exhibit 7-1 below lists the target plants conserved at each of the 64 replication sites spread across fifteen Chinese provinces, as well as the conservation area. In most cases, conservation work and associated incentive mechanism design and implementation was begun in 2010 or 2011. Of the 64 sites, we find that at least 39 target plants that are clearly considered WRCs based on the definition of a WRC being a plant without direct economic value or application, but related to a crop or other plant with economic use. Of the other 25, we understand at least ten to be wild Chinese medicinal plants that have economic value in their wild form and that are primarily obtained in the wild, rather than cultivated. The remaining 15 we are less certain about, but the majority likely are wild plants with direct value as Chinese medicinals, while perhaps some have direct value as forage or are true WRCs.

We applaud the project on the impressive achievement of extending activities to conserve WRCs via the "MiA" approach at so many additional sites. The application of the "MiA" conservation approach to non-WRCs (by our definition) is also valuable. Given the project's title and focus on WRCs, however, the inclusion of wild agricultural plants of direct economic value without cultivated counterparts does create some confusion regarding WRC definition and project scope. Given that at least 60 percent of such a large number of replication sites are WRCs by the stricter definition, we can feel assured that the project did not leave its original scope behind. At the same time, it would be best if project management can acknowledge this expansion of scope and offer clear definitions and explanations of the inclusion of wild plants of direct economic value, without cultivated counterparts.

In our discussion with stakeholders, we learned that one of the reasons for this expansion of scope is that the project wished to strengthen the potential for direct utilization of the conserved plants, which had not been possible for the wild rice, wild soybean, and wild wheat of the demo sites. We also learned that China has a list of wild plants that are endangered and that this is the list that was used in determining potential candidates for replication site conservation. (In a few cases, plants included on provincial lists, but not on the national list, were chosen.) One official explained to us that MOA is also looking at the potential to

cultivate some of the wild varieties (that are not relatives but have economic value in the wild) in the process of conserving them.

Exhibit 7-1: The 64 Project Replication Sites – Target Species and Area

Guangxi	Henan	Ningxia	Xinjiang	Hainan
Wild rice 16 mu	W. soybean 50 mu	*Facai*,*Gancao**552m	Wild wheat 350 mu	Wild tea 36 mu
Wild rice 4 mu	W. kiwi 300 mu	*Shadongqi** 566 mu	Ephedra* 500 mu	Wild kiwi 10 m
Wild rice 300 mu	W. kiwi 220 mu	Wolfberry* 150 mu	*Gancao** 500 mu	
W. litchi 1000m	W. kiwi 220 mu	Ephedra* 784 mu	*Ranzicao** 500 mu	
	Gynostemma* 26mu		Wild apple 1000 mu	
			*Luobuma** 225 mu	
Yunnan	**Jilin**	**Heilongjiang**	**Anhui**	**Hubei**
Wild rice 18 mu	W. soybean 560 mu	W. soybean 171 mu	*Mingdangcan*†150m	Wild lotus 3,085mu
Wild rice 25 mu	W. soybean 315 mu	W. soybean 213 mu	*Jinjiemai*† 70 mu	Wild lotus 30 mu
Wild rice 30 mu	W. soybean 450 mu	W. soybean 242 mu	*Jinjiemai*† 150 mu	Wild kiwi 500 mu
Wild tea 30 mu	Wild kiwi 10 mu	*Ciwujia*† 214 mu	Wkiwi,*Huilan*†150m	W. buckwheat250m
	Dragonblueflower†15m	*Ciwujia*† 128	‘’ ‘’,’’,w.tea† 150m	*Bajiaolian*† 350 mu
	Ciwujia† 130 mu	*Wuweizi*† 240	*Huilan*,Emmen†240m	
Gansu	**Hebei**	**Inner Mongolia**	**Hunan**	**Tianjin**
W. peach 120 mu	Wild walnut 20 mu	Sand reed† 255 mu	Wild lotus 56 mu	W. soybean 315 m
Wild kiwi 495mu	Wild kiwi 500 mu	Sand reed† 405 mu	Wild kiwi 30 mu	Wild kiwi 405 m
Yangmao†1500m	*Nanxing*† 100 mu	Sand reed† 300 mu	W. buckwheat 48mu	
			Wild orchid 32 mu	
			Gynostemma*180mu	

Following submission of the draft version of this report, the PMO and relevant MOA division had lively debates with the TE team regarding the scope of the definition of WRCs. In the end, the two sides agreed to disagree, with the TE team maintaining its recommendation that the definition of WRCs and the scope of the project be clarified as explained above. The PMO and MOA point out that the purview of the MOA division in protecting wild plants includes wild Chinese medicinal plants. They also note that the book *Crops and their Wild Relatives in China* (中国作物及其野生近缘植物) by Dong Yushen and Liu Xu includes Chinese medicinal plants. Based on this book, they argue for a wider definition of “crops” in Chinese. The TE team notes that a wider definition of crops (that includes wild medicinal plants) does not necessarily call for a wider definition of WRCs. We further note that the project document implies a more narrow definition of WRCs as wild plants related to plants with economic value but not having direct economic value themselves. A passage from the project document (page 5) makes this more narrow definition clear: "This means that, unlike traditional varieties, and unlike most specifically targeted species in natural systems (for example, mahogany), which have existing or potential commercial value, there is little or no possibility of generating financial incentives for conservation of wild relatives through sustainable management and harvesting of their products. For example, efforts to produce bean curd from wild soybean in Anhui Province, China, have not yet generated a commercial product." Finally, we also note that in interviews during the terminal evaluation mission other very knowledgeable project stakeholders maintained a definition of WRCs that did not include Chinese medicinal plants with direct economic value.

Scale of financing at replication sites: Of the 15 provinces with replication sites, six submitted breakdowns of total planned and realized investment by site. Exhibit 7-2 displays this information to give an overview of the magnitude of planned and actual investment per site. For each site, the GEF investment is roughly US15,000 or roughly 90,000 RMB. One stakeholder told us that the co-financing requirement at these sites is that GEF funds are leveraged by six times. Most of the other 9 provinces did provide investment data as well, but this was not broken down by site, but rather aggregated for each province. Thus, in efforts to get a perspective on typical investment levels per site, the TE team felt most confident in only considering those provinces for which individual site investment levels were available.

Overall, the typical investment level per site at the replication sites (for the six provinces for which we have data), though often far exceeding targeted amounts, is lower than the average per site levels of the project's eight demonstration sites. Total investment at most sites for which we have information are in the range of 1 or 2 million RMB or less. Thus, per the discussion in Part II on cost comparisons, we can see these levels come close to what we learned about typical levels of up-front investment for certain physical isolation sites. In regard to this comparison, it should also be noted that the replication site figures include management costs (e.g. government staffing and office costs) in their calculation, which would not be the case for the Government's future non-GEF activities, as staff salaries and offices are considered fixed costs.

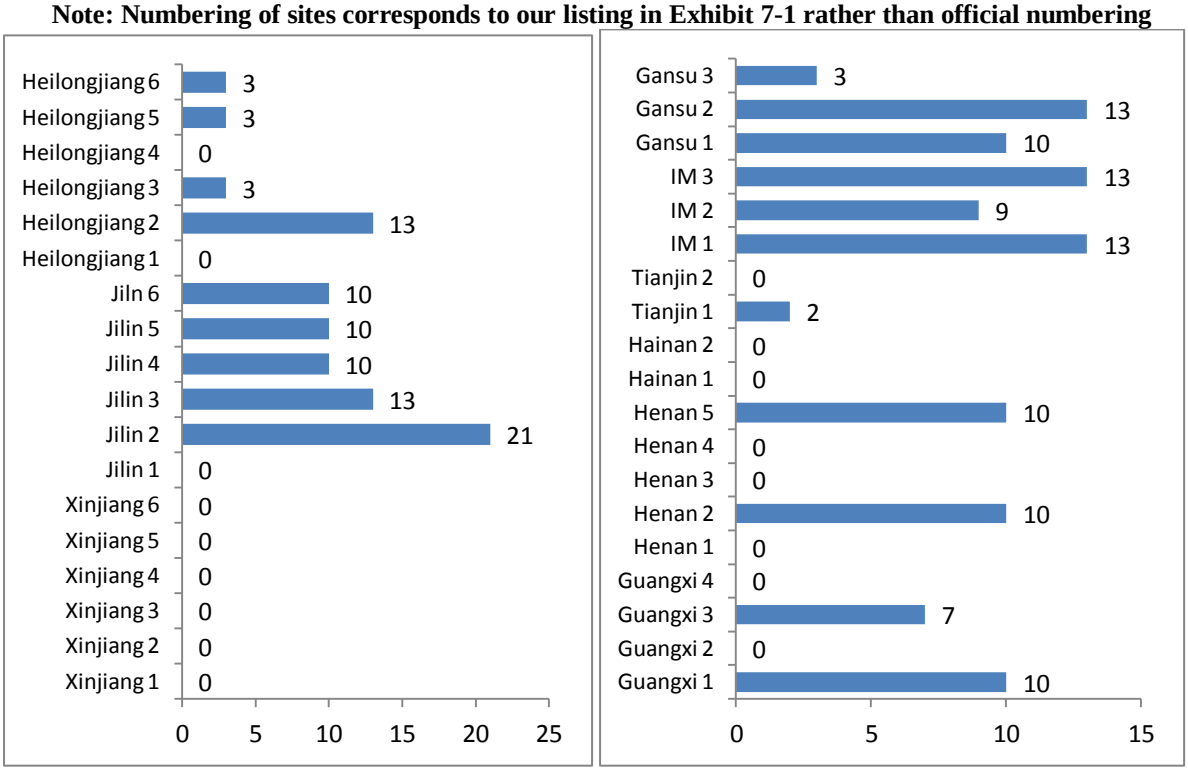
Exhibit 7-2: Total Investment in Replication Sites in Six Provinces (units: RMB)

Note: GEF Investment included in totals, generally about US15,000 or 90,000 RMB per site

Guangxi			**Ningxia**			**Gansu**		
Species	Planned	Actual	Species	Planned	Actual	Species	Planned	Actual
Wild rice 1	460,000	750,000	*Facai,Gancao*	1.4 M	1.7M	W. peach	420,000	908,000
Wild rice 2	400,000	2.1 M	*Shadongqi*	700,000	1.6M	W. kiwi	390,000	790,000
Wild rice 3	660,000	1.5 M	Wolfberry	250,000	1.1M	*Yangmao*	310,000	610,000
Wild litchi	320,000	580,000	Ephedra	280,000	1.3M			
Jilin			**Heilongjiang**			**Hubei**		
Species	Planned	Actual	Species	Planned	Actual	Species	Planned	Actual
W. soybean 1	730,000	1.2 M	W. soybean 1	350,000	3.5 M	W. lotus 1	430,000	630,000
W. soybean 2	720,000	1.2 M	W. soybean 2	390,000	1.3 M	W. lotus 2	300,000	480,000
W. soybean 3	290,000	610,000	W. soybean 3	1.5 M	2.4 M	Wild kiwi	350,000	620,000
Wild kiwi	800,00	1.2 M	*Ciwujia* 1	940,000	2.0 M	w.buckwht	420,000	620,00
Dragonblueflwr	1.5M	1.9M	*Ciwujia* 2	390,000	430,000	*Bajiaolian*	370,000	570,000
Ciwujia	550,000	550,000	*Wuweizi*	440,000	660,000			

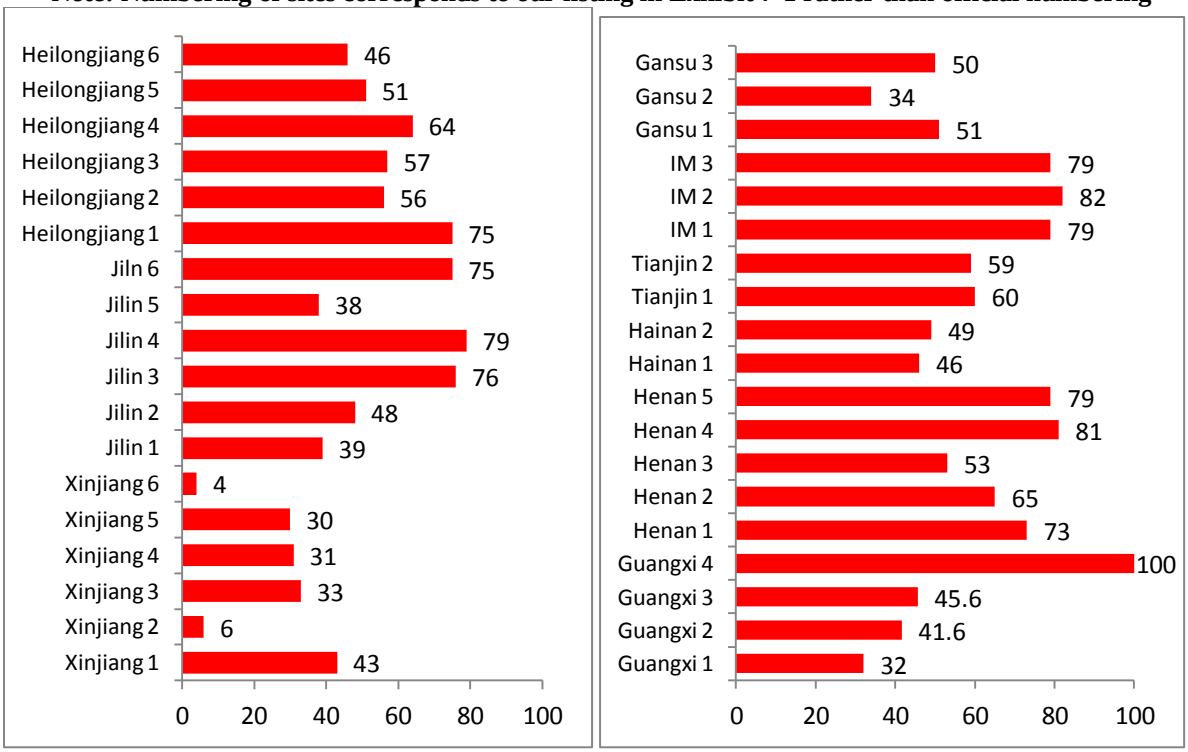
Conservation results at replication sites: Despite the low investment of GEF funds (typically USD15,000 per site), it appears many replication sites are doing well. While our access to data at the time of analysis for this section was limited, we were able to aggregate in one chart changes in the composite resource index from the first to second year of measurement for replication sites in nine provinces (see Exhibit 7-3). Of the 37 sites included, no sites saw a reduction in this index and 20 sites saw increases over the one year period.

Exhibit 7-3: Change in Replication Site Composite Resource Index = (Year 2 Index – Year 1 Index) for Nine Provinces for which Data was Available at Time of Analysis
Note: Numbering of sites corresponds to our listing in Exhibit 7-1 rather than official numbering



Note: Guangxi provided the composite resource index for three years, but here we show only the difference between year two and year one.

Exhibit 7-4: Year 2 Replication Site Threat Reduction as Compared to Year 1
for Nine Provinces for which Data Available at Time of Analysis (Year 1 considered baseline year)
Note: Numbering of sites corresponds to our listing in Exhibit 7-1 rather than official numbering



Note: A few provinces did provide two years of site threat reduction data from the baseline of Year 1, but for uniformity we here present only the reduction indicated after the first year (so, their Year 2 indicator).

Findings from the TRA (threat reduction assessment) in the second year of implementation for these 37 sites are also positive. From Exhibit 7-4, which displays there results, it can be seen that all but two of the sites had fairly substantial reduction in threats during the first year of operation.

Further information on conservation results at replication sites was obtained via interviews with provincial experts and site visits. Highlights of this information are aggregated in Exhibit 7-5. Of the four provinces covered, only Hubei reports mixed results. Findings for the other three provinces imply a picture of conservation improvements at all replication sites that were discussed.

Exhibit 7-5: Conservation Results at Replication Sites as Conveyed by Experts and Ascertained during Site Visits

Anhui Sites
Six replication sites: Provincial expert reports obvious improvements from year 1 to year 3 at all six Anhui sites.
Hubei Sites
Five replication sites: From year 1 to year 3, three sites better with obvious improvement; two are worse with obvious deterioration. Successful sites in mountain areas; deteriorating sites are in flat and wetland areas. Compensation rather than alternative livelihoods was to be supplied but fell short.
Guangxi – Field Visit to One Replication Site
Replication Site Visit: Guangxi expert indicated obvious improvement to the site, with wild rice clearly more robust than on last visit. Interviewed villager also believes there are improvements.
Henan Sites and Replication Site Visit
Five replication sites: Provincial Expert indicates results show improvement at all sites, but results for woody plants (the three kiwi sites, which grow in the high mountains) are less obvious as it takes longer for these to thrive. Other two sites are in hilly areas. Replication site visit: Provincial expert indicated gynostemma's situation had clearly improved since she began assessing the site. We saw it interspersed with the crops and growing in certain locations.

7.2 Replication Site Incentive Mechanism and Livelihood Results

In this sub-section, we present our findings from field visits to two replication sites, one in Guangxi (wild rice) and one in Henan (Chinese medicinal tea, gynostemma). The visits were brief with only enough time to talk to one or two villagers. Yet, we did have relatively positive impressions at both sites, supporting an overall positive impression of results to date at the replication sites. The alternative livelihood investments had been made, villagers were beginning to be aware of conservation issues, and livelihood benefits looked likely or had already occurred.

Guangxi replication site visit: The Guangxi replication site we visited gave a positive impression of the incentive mechanism, though villagers seemed less clear about the project than at the Guangxi demo site. The conservation site is a narrow strip of land that runs between the mountains for two or three kilometers with clumps of wild rice. Buffer area consists of neighboring hills. Logging in the buffer area, which would affect water supply and also crush the wild rice stalks as the logs are moved, is the main threat. Planned planting of eucalyptus trees in the buffer area was also a problem; and pine was planted instead. There

were no crops in the conservation area before the project. The natural village has 40 households all of which are said to have land in the conservation area. The incentive mechanism includes an improved dam and irrigation works, which have facilitated conversion of dry crop fields to rice paddy. Higher income per mu is expected as a result. The mechanism also includes a road, but the road is not paved. Two villagers were briefly interviewed, both confirming expectation of positive results. The first mentioned her family's conversion of 1.5 mu of dry land to rice paddy, which has increased income from 200 to 300 yuan per mu to 1,000 yuan per mu. The project has had no negative impacts on her family and is considered meaningful to them. The second villager believes that the new road will bring improvements to their livelihoods as they will be able to get higher prices for their products. According to this second villager, the new restrictions on logging in the conservation area are not considered limiting, since the area is far away from the village.

Henan replication site visit: The Henan replication site is quite different than other sites we visited, since the conserved species itself, gynostemma, is expected to bring villagers substantial income benefits. Gynostemma, strictly speaking, is not a WRC, but an economically valuable wild plant that is a herbal medicinal. The village previously had over 300 mu of gynostemma, but didn't realize its value and unfortunately cleared the land. They still have 26 mu of gynostemma left, which is mixed with their dry-land crops on sloping land. There is not much conflict between the crops and the gyostemma, since the latter tends to grow around the gullies, so this is one case where we found conservation very closely integrated with agriculture. The gynostemma is used for tea and the leaves can be picked without destroying the stem and roots. The incentive mechanism is a road and a bridge. The gynostemma is expected to yield 4,000 RMB per mu per year (with two harvests per year), as compared to previous income of 300 to 400 RMB from the same land for the dry-land crops only. Close to 40 of the village's 53 households have land in the protected area. The villager we interviewed confirmed that the family earned about 4,000 RMB from 1 mu (and two harvests) of gynostemma last year and was positive about the future and the project.

7.3 Publicity and Dissemination for WRC Conservation

TV Publicity: The evaluation team was favorably impressed with what we learned about the TV publicity for the project. Viewership was high, the TV programs and shorter clips were well done, and the response (over 300 letters received by the CTA as a result of the TV programs) was impressive. Based on lessons learned from a previous project, the PMO decided to bring the contractor on very early in the project; and this appears to be a very positive lesson learned. They chose a contractor affiliated with CCTV 4, which is an international channel broadcast in 170 countries and appealing to overseas Chinese. CCTV has broad content and is news focused – dealing with a range of topics related to China. In particular, they have a program called *Discovery* on which it was decided the long program on WRCs would be aired. The broad appeal of the channel is also a positive lesson learned for publicity efforts that seek to reach a larger segment of the public.

Three contracts were issued to the CCTV affiliated company:

1. The first contract, issued in 2008 for about US70,000, was to include two film clips of local sites. The contractor was so enthusiastic about the content and so impressed with the project that she ended up doing 16 clips. The clips were played in the provinces in which the respective demo site featured is located. They are roughly eight minutes each.

2. The second contract, issued in 2009, was for a 120 minute series in three parts that was broadcast during three consecutive evenings towards the end of 2009. The contract value was around US120,000. The series was filmed in ten provinces and did include some content from other projects. The series was broadcast during prime time and is believed to have had a viewership each night of 50 million or more. It was shown on the show *Discovery*, which is one of the top 30 programs in China. The team travelled for over 50 days to get the project done. As mentioned, the CTA received over 300 letters after the program was broadcast, mostly from people who believe they have WRCs locally and wanted to ask about them.

3. The third contract was begun in 2010 and 2011. It is a smaller project (contract value of about USD35,000), the purpose of which is to film during the mid-term review (2011) and terminal evaluation (2013).

Overall, the TE Team believes the television publicity has had a positive impact in terms of the broader objective of promoting WRCs generally. The PMO for its part did a good job of designing the work and engaging a talented contractor. In particular, the TE team believes the viewership and letters evidence the likely strong impact of the second contract described above in bringing the ideas of WRC conservation to the wider public. The first contract is also believed to have had a positive impact on a local and regional level. In counties in which the demo sites are located, the clips were played many times. They were also played at the provincial level in the respective province of the demo site featured. The team is less clear regarding the third subcontract, which is still ongoing. In general, the evaluation as central subject matter does not seem optimal for a publicity feature. Perhaps the purpose of this last sub-contract should be clarified to focus on project achievements, rather than the evaluations. Coordinating timing of the filming with evaluation trips then could be a matter of convenience and leveraging resources rather than of content.

Other publicity and dissemination: The TE Team understands that the PMO is in the midst of preparing two books regarding WRCs. One is more general, promoting the overall cause of WRCs, and addresses policy. The other is more specific, with focus on the "MiA" WRC conservation method. The TE team recommends that, for some of its closing work in dissemination, the PMO consider addressing some of the key issues raised in this report. We understand that, in response to the draft TE report, the PMO is planning to facilitate deliberation of these issues in the closing months of the project and applaud this action. In particular, because some key stakeholders have voiced it may be difficult for "MiA" style conservation projects to be implemented without the project or the project team, the TE team recommends guidelines for the approach should be prepared and a publication on the topic

developed. We understand that, also in response to the draft TE report, the PMO is planning on drafting such guidelines for inclusion in the second book and applaud this action. In addition, as the future of "MiA" style WRC conservation in China is not yet assured for additional sites and there are many outstanding issues, we recommend that work be done to add more clarity on the identified issues and offer policy makers concrete analysis to assist their decision-making. The specific work to be carried out in this regard may include: (1) an analytic review comparing the complete group of physical isolation and "MiA" style WRC conservation sites to date (including cost comparison), (2) addressing the issue of integration with agriculture in the "MiA" approach, (3) analysis of issues equity, (4) assessment of efficacy of channeling multiple investments to one site and cost-benefit analysis, and (5) analysis of sustainability of livelihood investments. In addition to plans to facilitate deliberation on key issues, we understand that the PMO will carry out comparison of the two conservation approaches (physical isolation and MiA) and include findings in the second book.

7. 4 Outcome 5 Indicator Assessment

Below in Exhibit 7-6, we offer assessment and comments on the status of Outcome 5 indicators as of the TE mission. Strong results with regard to all three indicators have been achieved. For the first indicator in particular, we recommend the project, in its remaining months of dissemination work, focus strongly on providing practical guidelines and strong analytic assessment of identified issues associated with "MiA" style conservation. This work will be important in ensuring that the conservation approach is applied at additional future sites beyond those of the project and is done so effectively.

Exhibit 7-6: Outcome 5 Indicator Assessment

Outcome 5 Indicator	Status as of July 2013 and relevant comments
1. By EoP, guidelines on the design and implementation of incentive based WRC conservation and initiatives and lessons learned documents/media have been produced for: (A) MOA decision makers, DoA, AB, and LGWRC; (B) Local community groups / farmers and the wider public	Television media work of the project very successful in addressing Group B. TE Team recommends project focus in current dissemination work for Group A on (1) developing strong guidelines for "MiA" approach and (2) addressing key issues associated with the approach and highlighted in this report. If this is done, indicator likely to be met by EOP.
2. By EoP, DoA, AB and LGWRC in the 8 core provinces have used skills and lessons learned under the project to develop WRC conservation initiatives/strategies in all counties where significant WRC are found.	The 8 core provinces have all developed two to six replication sites that use the "MiA" approach. We cannot be clear these cover all counties where significant WRC are found and thus that the indicator has been fully met, but the accomplishment is substantial.
3. By EoP, MOA is using the improved skills and regulatory environment for WRC to implement initiatives/strategies which mainstream WRC conservation in agricultural production landscapes in at least 50 additional replication sites.	Project has 64 replication sites using the "MiA" approach to WRC conservation. Of the 64 sites, 39 are confirmed to protect WRCs according to a strict definition, while the others are protecting other "wild agricultural plants." Indicator largely met.

8. Outcome 2: Policy

The stated target of Outcome 2 is: "The policy, legal, and regulatory system supports conservation of wild relatives of crops." As indicated in the project document, there was already significant support in the policy environment for WRCs at project start, so that our description of the outcome is slightly different: "Promote legal, policy, and regulatory environment that is *more conducive* to conservation of WRCs." GEF expenditures for Outcome 2 as of end of July 2013 were USD675,551. Yet, a look at expenditures shows that a number of items not directly related to policy, including non-policy-focused workshops and PMO/CTA salaries were included in Outcome 2 expenditures, so that the full amount spent on policy-related activities was substantially less.

The impression of the TE Team is that, while achievements in the policy area are generally difficult, the project did not focus its efforts and resources well enough to ensure it had the best chance possible of making and maximizing an impact related to WRCs. This may be partly due to design and partly due to implementation. In general, we detect "scope creep" in this outcome and lack of strategic foresight. This raises the question of whether (a) resources during the first years of the project were not as narrowly focused on WRC-supportive policy changes as they could have been, perhaps having a negative impact on overall results, or if, instead, (b) the project design allocated more funds to the area than was needed. As for the former, we were told several times that WRC is too narrow of an area on which to focus for policy results and that this was the reason for the broadening. We were also told that this project is China's first GEF project in agro-biodiversity and this is justification for focusing on agro-biodiversity more generally. Yet, for a project to be coherent and have all of its outcomes contributing clearly to the project objective, activities need to be clearly linked to the objective and targeted outcomes. Further, the project document did emphasize that policy work would clearly support the effort of WRC conservation and did not mention a purpose of supporting agro-biodiversity more generally.

In addition to the foregoing concerns, we detected in one of the brief management guidelines issued and drafted with support of the project a direct contradiction to "MiA" style conservation. The guideline disallows entry by anyone into the conservation sites without a special permit and does not provide a means by which farmers can apply for a permit. Project supported policy should at minimum be compatible with the "MiA" style approach, as it is the major focus of the project. In light of the great effort expended in developing 72 "MiA" style sites, the project furthermore might have considered pushing for issuance of a management guideline specifically addressing the "MiA" conservation approach.

Below, we cover national-level WRC-related policy work and achievements, the main focus of Outcome 2. We also address provincial level policy, which was a small budget item added after inception, but which has had some results. County-level policy and township and village level villager agreements were financed under Outcome 1 and were thus covered in Section 6.

8.1 National-level Policy Work and Achievements

WRC-specific or wild agricultural plant-specific policies: The project document indicates that, prior to the project, MOA had already prepared detailed regulations concerning the conservation of WRCs and, more generally, wild agricultural plants in China, thus establishing their legal status. The document further states that what is needed are (1) revisions and additions to address inconsistencies and (2) regulations and implementing rules to ensure enforcement. In Exhibit 8-1 below, we list the key wild agricultural plant-specific (or potentially specific) laws, regulations, and management measures issued before the project (as indicated in the project document) and the actual wild agricultural plant-specific and non-agricultural plant specific policy achievements of the project. We note that three levels of policy may be considered at the national level. The highest are the laws, which much be approved by the National People's Congress (China's highest legislative body). The second level are regulations, which are approved at the level of the State Council (China's Cabinet) and can be signed by the Premier. At the bottom level are ministry-issued guidelines and notices, which generally lack teeth for enforcement, but do provide guidance to those involved.

Exhibit 8-1: Agricultural Wild Plant-related National Level Policy Environment: Policy Existing at Project Start and New Policy or Changes Enacted by Project End

Policy Existing Prior to Dec. 2007	New Policy or Changes Enacted between Dec. 2007 and July 2013
Laws *(NPC Approval)*	
1. *Seed Law*	1. *Seed Law* under revision: recommendations for addition of an agricultural wild plant-related article has been proposed by the project.
Regulations *(State Council Approval)*	
1. *Regulations for Wild Plant Protection*	NA
Agricultural Wild Plant-Specific Management Guidelines, Standards, Technical Procedures (*Issued at Ministry Level -- MOA*)	
1. "Management Approach for Agricultural Wild Plants" 2. "Management Approach for Crop Germplasm Resources" 3. "Implementation Approach for Safety of Agricultural Genetic Engineering"	4. "Technical Management Standards for *in situ* Conservation of Agricultural Wild Plants" (issued by MOA) 5. "Norms for Approval of Use and Import and Export of Agricultural Wild Plants" (issued by MOA) 6. "Technical Procedures for Monitoring and Alert of *in situ* Conservation Sites of Agricultural Wild Plants" (issued by MOA)
Guidelines Related to WRCs (*Issued or to be Issued at Ministry Level -- MOA*)	
NA	7. "Management Measures for Invasive Alien Species" (drafted but not yet adopted by MOA; expected issuance: Oct. 2013) 8. "List of Invasive Alien Species" (adopted by MOA in March 2013)

While the project has not yet achieved changes at the level of Chinese national-level laws, it has provided some input for addition to a relevant law that is now under consideration for revision. The PMO understands that there is a good chance (e.g. 50 percent) this input may be

incorporated into the law, although it may take some time. The project activities have also resulted in issuance by MOA of three "management guidelines" at the central level that are specific to wild agricultural plants. Such guidelines issued at the level of MOA do not have the force of law or regulations (i.e. no penalties for noncompliance). Yet, the PMO has suggested to us that these guidelines are still compulsory and have played a positive role, as in the case when a local PMO was able to stop oil drilling near the Ningxia demo site.

The project team reviewed the three management guidelines issued by MOA and supported by the project to ascertain their content. These guidelines are not focused on WRCs specifically, but address the broader category of agricultural wild plants. Regarding the first of the guidelines, "Technical Management Standards for *in situ* Conservation of Agricultural Wild Plants," we were particularly surprised to see an included article which, as mentioned above, completely contradicts the essence of "MiA" style protection. Article 8.1 of the standards includes a statement that "No one may enter the agricultural wild plant conservation area without a permit." It later offers guidance on how scientific and technical personnel may apply for a permit, but makes no mention of how farmers can do this. Strictly speaking, then, it would be against these guidelines for anyone to carry out agricultural activities in the conservation sites, with no option for obtaining permission. The TE team was pleased to hear that following submission of the draft version of this report, the PMO raised the issue at its closing project seminar in Yunnan Province (Sept. 2013); and revisions to the guideline have now been proposed to MOA. Other aspects of this guideline include recommended staffing, reporting, and work responsibilities related to wild agricultural plant conservation areas. The second guideline, "Norms for Approval of Use and Import and Export of Agricultural Wild Plants," as the name implies, includes some administrative procedures for applying for permission to import or export agricultural wild plants. It also includes procedures that a company should follow if it wishes to make use of these plants. The third set of guidelines, "Technical Procedures for Monitoring and Alert of *in situ* Conservation Sites of Agricultural Wild Plants," appears to be based largely, with some additions, on the baseline survey design work conducted and financed through Outcome 1 of this project.

The contract for drafting the three guidelines was not issued until June 2012, in the middle of the fifth year of a six-year project. The contract, issued to a company, had a value of USD27,000. The project CTA and former head of the PMO are the first two among a list of five drafters included in two of the management guidelines. When we asked the responsible project manager from the company about his team's role in the drafting, he told us they did not draft the three guidelines, but only provided some assistance in editing. Total aggregate length of the three policies is 15 pages, or 20 pages if including annexes.

Invasive alien species work: In addition to the policy work described above and directly related to wild agricultural plants (of which WRC is a sub-set), the project supported significant work on invasive alien species (IAS). We were concerned about the relevance of this work and were told that IAS are the number two threat, after humans, to WRCs in China. This is a very important point, but we also note that the scope of human threats is broad and

challenging. In our field trips, we did not encounter any invasive alien species issues. The Henan expert mentioned that at one of the replication sites there is an IAS issue, but that it is limited enough that the survey team pulls the IAS out of the ground when it conducts its annual survey with no need for any additional intervention. Yet, we did learn anecdotally of IAS-related problems for WRCs in other locations. In our meeting with the Hubei provincial expert, he mentioned IAS as causing very serious problems at one physical isolation site at which he has worked. Further, the IAS contractor pointed out that conserved WRCs may face an even greater threat from IAS than agricultural crops, as the conservation areas in most cases are not interfered with by humans. We were told that wild rice is particularly susceptible to IASs, with Apple Smail and Water Hyacinth being two key problem species. The Xinjiang expert mentioned that IAS threaten the Xinjiang Wild Apple at one of their replication sites.

The IAS work, with a contract amount of USD70,000, resulted in a study, draft management measures for IAS, and a list of 52 priority IAS types. The last two of these are included in Exhibit 8-1 and are something that China had not had before. The list has been officially issued by MOA, while the management measures are still under consideration.

Our assessment is that the IAS study and policy drafting represents a valuable achievement for China, but should not have taken precedence over more focused work in support of agricultural wild plant-specific regulatory content. Ideally, perhaps, the project would have been able to take on both lines of work simultaneously or cooperated with another project that undertook the IAS work. The IAS study was entitled *Assessment of Damage of Invasive Alien Species to Agricultural Biodiversity, and Policies, Legislation, and Guidance Associated with Pest Management in China*. The materials associated with the project's IAS work that we reviewed did not adopt a special wild agricultural plant angle to the analysis and instead were geared towards IAS more generally. We do understand that the draft guidelines mention the potential benefit to agricultural wild plants, though have no special articles regarding them. One thing we did learn about the IAS work that was encouraging is that IAS information materials had been distributed at project sites, helping farmers to recognize and eradicate IAS, and encouraging them to call the IAS Center at CAAS to notify them of any IAS seen. The institute has received many calls and if they get one about IAS in a conservation area, they will notify the local county agriculture department, which will get them removed, generally by paying farmers a small fee to do so. IAS is an urgent issue in China. Asked to forecast the future, the contractor believes that in five, ten, or fifteen years the situation of IAS in China will be even worse, despite measures taken.

Policy gap analysis: As its earliest major activity related to Outcome 2, the project commissioned a general agro-biodiversity law and policy study that has been called a gap analysis. The expenditures on this work were USD75,000; and it occurred in 2008 and 2009. The title of the report is *Impact Assessment Report of Agricultural Laws and Policy on Agro-Biodiversity*. We heard that there were a number of reports and assume the one we were shown was the synthesis report. The TE Team questions the scope of this work, as it seems much broader than the WRC focus of the project. The report covers a wide range of laws and

policies and even has a section on endangered animals. The explanation offered that WRC is too narrow an area in which to have policy impact may have some validity. Yet, when we look at the final policy efforts the project attempted to achieve (revision of *Seed Law* to include an article on WRCs, revision of the *Agriculture Law* to do the same, and three guideline documents focused on conservation of agricultural wild plants), we see a disconnect from this study. A review of the study reveals that its wide range of content does *not* take a special WRC angle (e.g. looking at a range of laws, but from the perspective of enhancing agricultural wild plant conservation). In response to the TE teams questioning of the scope of this work, the PMO makes the point that the project is China's first GEF agro-biodiversity related project, so that it is reasonable to cover all policy related to agro-biodiversity. The TE team holds a different view, preferring that all initiatives show clear connection to project objectives and targeted outcomes.

Timeline: Our assessment is that valuable time was lost as Outcome 2 suffered from scope creep. It seems the project did not get focused on its original objective of strengthening the legal environment for WRCs until year five of a six-year project. The simple timeline below in Exhibit 8-2 shows the three major policy related activities of the project that have been discussed above. There were also some policy related workshops, but we did not receive any input that these were strongly focused on developing legislation in support of WRCs.

Exhibit 8-2: Timeline of Major Policy-Related Activities of Outcome 2

2008	2009	2010	2011	2012	2013
Study on all laws and regulations in China potentially related to agro-biodiversity		Invasive Alien Species (IAS) Study and drafting of IAS list and management guidelines		Drafting of management guidelines focused on agricultural wild plant *in situ* conservation sites	

8.2 Provincial-level Policy Work and Achievements

At about the same time the project issued its contract for draft management guidelines at the central level (June 2012), it also issued contracts to the agro-resource stations of five provinces for the drafting or revision of management guidelines related to WRCs. The provinces were Heilongjiang (contracted for the drafting of two guidelines), Jilin, Hubei, Ningxia, and Xinjiang. Expenditures were US8,000 per regulation or US48,000 total. We understand that the first four provinces have issued the five guidelines at the level of their Departments of Agriculture. Thus, similar to what we have seen at the central level, the guidelines lack enforcement mechanisms. Xinjiang, in contrast, is pursuing issuance of provincial-level guidelines. Its proposal was submitted to the Provincial Government in 2012, though stakeholders tell us it is a lengthy process and typically takes over three years for

provincial regulations to pass. In general, though, we applaud the approach of Xinjiang in pursuing a provincial-level regulation, as this could result in enforcement mechanisms.

Exhibit 8-3 below outlines the information we have been able to gather on WRC-related regulations and management guidelines in different provinces. This information may be incomplete, as sources are limited to: information regarding project sub-contracts, information included in provincial reports submitted by provincial experts, and information we gathered from face-to-face consultations during the mission. The overall finding is that four provinces have issued five management regulations (without enforcement mechanisms) related to WRCs. Two of these five guidelines are actually specific to WRCs while the others are specific to agricultural wild plants more generally. In addition, two provinces have submitted guidelines or clauses to regulations to their respective provincial level legislative bodies. If these items are approved, there can be enforcement mechanisms.

Exhibit 8-3: Provincial-Level Agricultural Wild Plant-Related Regulations and Guidelines Initiated after Project Start
(listing may be partial; based on findings during the TE)

Province	Regulation / Guideline Title	Status/ Enforceable?	Due to project?
Heilongjiang	1. Heilongjiang Management Guidelines for Conservation and Sustainable Use of WRCs 2. Heilongjiang Management Guidelines *for in situ* Conservation of Wild Plants	Issued (2012) / not enforceable Issued (2012) /not enforceable	Yes (a contract for two guidelines was issued to agro-resource station)
Jilin	Jilin Management Guidelines for Agricultural Wild Plants	Issued (2012) /not enforceable	Yes (a contract was issued to agro-resource station)
Hubei	Management Guidelines on the Conservation of Agro-biodiversity of Hubei Province	Issued (2012) /not enforceable	Yes (a contract was issued to agro-resource station)
Ningxia	In-Situ Conservation and Sustainable Utilization of WRC's in Ningxia	Issued (2012) /not enforceable	Yes (a contract was issued to agro-resource station)
Xinjiang	Xinjiang Management Guidelines for Conservation of Agricultural Wild Plants	Under consideration by provincial government (submitted in 2012)/ enforceable if approved	Yes (a contract was issued to agro-resource station)
Guangxi	Clause for Management of Agricultural Wild Plant Resource proposed for addition to *Guangxi Agricultural Protection Regulations*	Under consideration by provincial government (submitted in 2012)/ enforceable if approved	Yes, due to project, but not funded by project.

8. 3 Outcome 2 Indicator Assessment

Below in Exhibit 8-4, we offer assessment and comments on the status of Outcome 2 indicators as of the TE mission. The project has identified ways to address some of the

legislative shortcomings identified at project design (particularly through recommended revision to the *Seed Law*), but has not addressed all of the issues raised. It seems the project lost time in the first four years with regard to its policy work due to scope creep. We find the second indicator difficult to measure and therefore less meaningful – provincial agro-resource stations indicated no problems either prior to or after project initiation.

Exhibit 8-4: Outcome 2 Indicator Assessment

Outcome 2 Indicator	Status as of July 2013 and relevant comments
1. The project has identified ways to address all legislative shortcomings identified at project design	Project has recommended changes to the Seed Law, yet it has not done focused WRC related work in some of the other areas addressed in the project document (page 25, Table 2), such as problems with the *Regulation on Wild Plant Protection*. In general, early policy work suffered from scope creep.
2. No cases where implementation of conservation activities was prevented due to regulatory shortcomings are reported	Based on consultations, we are not sure of the value or measurability of this indicator. When we asked provincial agro-resource stations, they indicated no problems of this sort either before or after project initiation.

9. Outcome 3: Training and Awareness

The stated target of Outcome 3 is: "Stakeholders at the central and local level have adequate capacity to conserve wild relatives." We describe Outcome 3 as follows: "Build capacity at the central and local level for conserving WRCs." In practice, we find that Outcome 3 has a focus on training and capacity building and is more geared to the local level. We also include awareness building in Outcome 3, though activities throughout in other outcomes contribute to this aspect. Training is focused mainly on support relevant to promoting the "MiA" style of WRC conservation. A portion of the project's awareness building is also specifically focused on achieving successful implementation of the "MiA" approach through changing the mindset of involved stakeholders, while other awareness building is targeted at a broader population to advance the conservation of WRCs more generally. As of July 31, 2013, GEF expenditures for Outcome 3 were USD1,734,221. Yet, this includes a substantial portion of PMO and CTA expenditures, as well as other items, so that the actual amount spent on training and awareness is significantly less. Further, we note that awareness of farmers and local officials benefited highly from their involvement in the incentive mechanism work supported under Outcome 1 and from many workshops supported under that outcome.

The TE team has a favorable impression of the farmer training and the project's overall impact on involved local officials and farmers. In consultations, many stakeholders emphasized the training and "mindset change" achievements, suggesting these were really the most significant contributions of the project. As one stakeholder put it: "It's a real breakthrough to get so many people supporting conservation. It's uncommon to change the mindset."

In this section, we begin with a review of the Farmers' Field School training, which was integrated with the incentive mechanism at project sites. Next we look at changes in farmer mindset, said to be one of the most significant achievements of the project and due to a combination of factors, including the incentive mechanism, the work of local government officials, and the training of Outcome 3. We then discuss the change in mindset of local government officials regarding the "MiA" approach to WRC conservation. Next, more general awareness building regarding WRCs, targeted at a broader group of influential village persons is discussed. Finally, the section closes with an assessment of Outcome 3 indicators.

9.1 Farmers' Field School

Farmers' Field School design: The Farmers' Field School (FFS) concept was originally developed by FAO – one stakeholder mentioned being involved in FFS as early as 1986. While FFS has been implemented in China before by other international organizations, these generally focused on training farmers in a single topic that their project was trying to promote, such as a single crop. What is important about the FFS teaching approach is that it is participatory and gets farmers active in the classroom. Yet, the past efforts did not attract as much interest from farmers as hoped, due to the limited curriculum. Learning from the concurrently implemented GIZ agro-biodiversity project (part of the *EU China Biodiversity Partnership*, which is also implemented by UNDP), the CWRC took an approach that is more attractive to farmers and fits well with the incentive mechanism. The FFS of the project maintained the participatory classroom approach, but added participatory curriculum design, in which farmers can offer feedback on what they want to learn and in which there is more than one topic covered. Thus, what is new in the FFS of the GIZ Project and CWRC is the breadth of the curriculum and the participatory means by which it is determined. We were told that the participatory curriculum has been very attractive to farmers; and they are more interested in attending Farmers Field School than in the past.

Farmers' Field School results: The PMO indicates that, while demo site farmers were hesitant about attending FFS at first, they asked after the first session when there would be more classes. In interviews, farmers generally mentioned the training in a positive light. At the same time, one family showed us various gifts they had gotten for attending the training. In total, 189 Farmers' Field School training sessions were offered by the project, training 273 unique participants (total person-times trained is much higher). According to the FFS design contractor, there were generally over 30 participants at each training. In some locales, there were many female attendees, in some cases constituting over 50 percent of all attendees. The contactor used a method of training the trainers, teaching only one session per site.

During field trips, we asked villagers and local officials about the training. In Ningxia, a county official told us that there had been about 15 trainings divided into three training periods with over 270 person-times of training achieved. Of three villagers asked, one told us he had attended around six trainings, another said his wife had attended as he often out-migrates to work, and, of two others, one had attended and one hadn't. The county official

told us what, while they had had trainings before in the county, these had not been conducted in the participatory style. He found the classroom approach of FFS more lively and thus more effective. Topics chosen were those pertinent to the alternative livelihoods work. For example, as sheep were moved from open grazing to pens to achieve conservation of the wild wheat, miscarriage and malnutrition of the sheep increased. So, training courses addressed these two issues, among others. During the Ningxia demo site visit, we were able to see the FFS building and school equipment supported by financial input from the project. The school was built specifically for the project, has a large room with desks and chairs, and has a smaller "lab" room, with microscope, scales, and different types of seeds.

In Guangxi, the response on the FFS training was also positive. At the demo site, we visited the school building. In this case, the building had been financed in conjunction with a physical isolation site that was set up prior to the "MiA" style conservation site in a separate location and is still being maintained. It was interesting to learn that the building had been provided in conjunction with the physical isolation site, as we had previously understood this type of support to be unique to the "MiA" approach sites. Local officials indicated the CWRC project had provided desks, chairs, and textbooks. The first villager we interviewed at the Guangxi demo site indicated attending five or six sessions and receiving training in cultivating rice, watermelon, and oranges. Another indicated attending four sessions and learning about rice, watermelon, and conservation. A third had not attended training as he out-migrates to work.

FFS impacts beyond the project: Both because of the project's good demonstration of FFS and a lucky coincidence, the FFS experience of CWRC and the GIZ project appears poised to be leveraged far beyond the project. The former deputy director of CWRC's PMO is now in charge of a major MOA project and plans to incorporate a substantial amount of FFS training as a part of it. The program (*Grassroots Agricultural Technology Extension Reform Demonstration*) will cover all of China's 2,500 counties and (as of 2012) has an annual allocation of 200,000 RMB per county per year. The program was started in 2009 in eight provinces, but at that time did not include training, instead using more traditional extension measures. It was in 2011 that they shifted to using FFS methodology and the training of trainers and training in the villages began. The CWRC and GIZ projects, we were told, can be partly credited with this shift, particularly with regard to achieving a broader curriculum.

9.2 Mindset Change: Awareness of Farmers and Officials

Farmer awareness: Officials and experts consulted indicate the project has really changed farmers' mindsets regarding conservation – they are now enthusiastic about conserving WRCs. Officials and experts told us that it is very difficult to change farmer mindsets, so that the project's success in this regard is really impressive. Some examples raised as evidence include that of a fishpond dug by a villager in the Hainan wild rice conservation demo site. After this happened, the other villagers immediately notified local officials, something that, we were told, was unlikely to have happened prior to the project. In Ningxia, we heard of a similar example in which in 2010 a large company began drilling for oil on the border of the

protected area. Local people notified officials immediately, something that the stakeholder who told us about this felt would not have happened prior to the project. Likewise, stakeholders told us that in Guangxi, the local people won't let others damage the wild rice. A villager who has done well with his watermelon business since the project was implemented and is known as the "watermelon king" is said to be particularly known for his enthusiasm in protecting the wild rice.

We asked why this project has been able to achieve farmer mindset change when it is considered such a difficult thing to do. Stakeholders emphasized the integration of many aspects of the project and particularly the incentive mechanism as the key to success. They emphasized that farmers are practical. One noted, you can't just say, "Important, important, important!" Alternative livelihoods, he believes, are critical to the project's success in changing farmer mindsets. Training was also emphasized as an important factor in farmer mindset change. One expert offered a full list of factors that worked together to create the mindset change: (1) trainings, (2) discussions between villagers and local officials, (3) incentive mechanism (with explanation to farmers that the support is being offered with the goal of achieving conservation), (4) television broadcasts, booklets, and posters pasted in village, and (5) youth education on WRC and associated awards for young people.

Our interviews with villagers confirm an increase in awareness. Most villagers were aware of the need to conserve the WRC nearby and indicated that they had not been aware before the project. Some, but not all, were aware that the value of the WRC lies in the potential for breeding and increased production. For example, of four villagers we asked at the demo site in Guangxi, three confirmed that they did not know about the importance of wild rice conservation prior to the project, but now do. The fourth knew about the wild rice prior to the project. At the Guangxi replication site we visited, the two villagers we interviewed were aware of the need to preserve the WRC, but less clear (as compared to demo site interviewees) about the benefit it could bring. At the Ningxia demo site, we found an awareness of the need to conserve the wild wheat among interviewed villagers, though mixed results as to whether the villagers understood the value of the wild wheat. In one household interview, when the man of the house indicated he did not know the reason for conserving the wild wheat, his seemingly shy wife called out from another room that the wheat has potential value for breeding. While the husband often out-migrates for work, the wife had attended trainings, so that this anecdote may serve as a mini-illustration of the important role of women in this project.

The next generation of villagers: As a part of the project's mindset work, educational programs on WRCs were instituted in the schools in project areas. Students learned about WRCs and won small cash awards for doing well on tests on the topic. The strategy behind this aspect of the project was two-fold: (1) students will influence their parents and (2) raising awareness of local students will enhance sustainability of WRC conservation into the future. As an example of the project's student initiatives, in Ningxia, an award for excellent pupils on WRC content as well as an associated summer camp has been developed at the elementary and middle school levels. The township has only one middle school and one elementary

school; and, at the summer camp, these students from across the township visit the site. Further, the company that provided the irrigation system to the project demo in Ningxia has been donating 5,000 RMB annually for the student awards and plans to do so far into the future.

Awareness of officials and experts: Another impressive feature of the project is the extent to which mindset change regarding "MiA" style conservation was achieved among officials and experts and the extent to which they were able to build their knowledge of and skills for implementing "MiA" style conservation. During our mission, we repeatedly heard from provincial officials, provincial experts, and county officials that they had never thought of doing conservation in the "MiA" style before. At first, some had been skeptical, but now all have been impressed and believe the method is effective. For example, in Henan, a stakeholder indicated that provincial officials only knew about the physical isolation technique of conservation prior to the project. Now they have two methods to choose from. The stakeholder told us the project has changed their thinking due to the success of the demo. During the project, there were many training meetings attended by local officials. We believe these meetings, in conjunction with the success of the demo sites, were important in changing the thinking and raising enthusiasm among local officials and provincial experts for the open-style approach. The project also had a number of study tours, but we did not get much specific input on the impact of these and do wonder whether the content in all cases was specific and appropriate enough to the project to justify the cost.

9.3 Village Influential Person Campaign

The Village Influential Persons Campaign is a large campaign under MOA for raising the awareness and knowledge base of leading persons in villages. For the purpose of expanding WRC conservation awareness more generally, the CWRC project partnered with this program to incorporate a curriculum on the rural environment. This curriculum includes coverage of WRCs as well as other rural environmental topics. Now that the cooperation is over, it appears the curriculum will continue to be included in the campaign, which is a very positive leveraging into the future of the roughly USD336,031 in GEF expenditures on the partnership.

Background on campaign: The Villager Influential Person Campaign (also known as the Village Head Campaign) was started in 2006 with the strategy of training outstanding persons from the villages who may return home and bring up the level of the entire village. The program trains three types of persons: village political leadership (village chief or party secretary), college graduates who will be sent back to the villages, and heads of families who have been very successful in agriculture or animal husbandry and therefore have large holdings of land or herds. The trainees are trained in a select group of demonstration villages. The curriculum covers agriculture policy, key hot topic issues for MOA, and entrepreneurism in rural areas. The campaign has had good results, so that now the Organization Department of the Chinese Communist Party (CCP) has also gotten involved, contributing funding to the program.

Results and environmental curriculum: According to its leadership, the Campaign's success and strong brand attract many organizations that want to partner with it. They indicate the Campaign is selective in who it partners with. They explain that they were convinced to partner with CWRC not because of the funds offered (which they suggest were not enough to cover full costs), but because the content is meaningful and convincing. A representative from the partner organization indicated: "The project is small, but the meaning is big."

The environmental curriculum developed by the CWRC team for the campaign was a two-day program, which included a class and then field trip. The class was half a day (three or four hours) and perhaps a quarter or more of the time was spent on the topic of WRCs. The program is said to have trained 7,000 persons per year (one or at most two per participating village), though project records indicate 5,000 persons trained in the environmental curriculum over two years. In the end, it was decided to have the project team itself teach the class as they could provide more first-hand experience than other teachers to share with the students. At first, the curriculum was too hard for the trainees to understand. The Campaign worked with the project, encouraging it to use case studies and everyday language, and was happy with the end result. The project was also able to leverage its involvement to get 72 spots in the Campaign, one for a representative from each of the project's eight demo and 64 replication site villages.

Leverage into the future: We learned the project will have an ongoing impact through the Campaign. Even though there are no more funds from the project, leadership of the campaign plans to continue with the environmental content of the classes, which will include some coverage of WRCs. One of the key concepts MOA is promoting going forward is *Meili Zhongguo* (Beautiful China); and the environmental class is very relevant to this. The content has been designed and now would only require some adjustments and updating. Currently, it is expected the environmental class will be continued until 2020 (for the life of the campaign), though shortened in length from when the project was active. The program is now ramping up from its current level of 7,000 trainees per year to 10,000 trainees per year. While the Campaign started with a budget of 1 million RMB per year in 2006, in 2013 its budget will be 10 million RMB.

Interestingly, leadership of the campaign told us they had learned an important lesson from the CWRC project, which they will use to expand their own program. This is the approach of leveraging provincial/local resources for replication. It was noted that without leveraging these resources, it is difficult to expand to the needed scale. The campaign now has eleven demo villages in which it conducts training and will soon be expanding to 26 by leveraging provincial funding and partnering with the personnel divisions of provincial departments of agriculture.

9.4 Outcome 3 Indicator Assessment

Below in Exhibit 9-1, we offer assessment and comments on the status of Outcome 3 indicators as of the TE mission. Findings suggest the indicators have been largely met. One challenge that is noted in indicator assessment is that there is some concern as to whether stakeholders can carry on "MiA" style conservation at additional sites due to lack of ability to bring other ministries and departments on board with the livelihoods work.

Exhibit 9-1: Outcome 3 Indicator Assessment

Outcome 3 Indicator	Status as of July 2013 and relevant comments
1. Threat reduction assessment at each project site indicates a reduction of at least 80%.	Achieved at all eight demonstration sites. (Too early to be achieved at all 64 replication sites, though good progress in threat reduction achieved already at these sites as well.)
2. At EoP, 75% of farmers both women and men at project sites are actively conserving wild relatives.	While no data on this exists, anecdotal evidence as well as conservation results suggest very strong compliance with conservation needs.
3. Awareness and skills to support conservation of WRC amongst land users and relevant agricultural staff have been improved.	Interviews strongly suggest improved awareness and skills as indicated. (Note: No annual capacity assessments as indicated in the means of verification provided.)
4. Relevant staff in MoA and within DoAs, AB and LGWRC in the eight focal provinces implement initiatives to mainstream conservation of WRCs in agricultural production, and confirm that they are confident they have the skills and any knowledge required to operate effectively following project end.	Staff of these organizations are clearly implementing "MiA" style conservation at the 8 demo and 64 replication sites, though there are no additional sites beyond the project. Most seem confident on their knowledge and skills to carry out such work in the future, but there are concerns about: at the local level, (1) lack of central level direction on using the "MiA" conservation approach at additional sites; and, at the central level, (2) lack of ability to coordinate among ministries and departments (e.g. transportation, water resources, animal husbandry, etc.) to leverage funding and projects for "MiA" style WRC conservation in the future.

10. Outcome 4: Monitoring and Alert System and WRC Utilization

The stated target of Outcome 4 is: "Accurate and timely information concerning the status of wild relatives is available and utilized." We find the content of Outcome 4 to be somewhat broader and thus describe it as follows: "Promote timely information from monitoring of WRCs and promote eventual utilization of WRCs." Outcome 4 has three main parts. The first is the development and application of a monitoring and alert (M&A) software system. The system is meant to allow local users to input baseline and follow up survey data from WRC conservation sites. It is also meant to enable higher level users (at the provincial and central levels) to review the data, to become aware of trends that will inform planning and decision-making, and to be alerted of problems that require action. The second part of Outcome 4 consists of the purchase of nine vehicles to facilitate monitoring and other follow-up work at project sites. The third part of Outcome 4 consists of research on the germplasm of WRCs from each of the eight demo sites to identify superior characteristics that may be relevant for breeding in the future. This germplasm work is divided into three contracts: one

for each of wild rice, wild soybean, and wild wheat. The M&A and germplasm topics do not fit clearly together, though we imagine that the project designers did not want to create a separate outcome for the germplams research, as it consists of only one (albeit high budget) activity.

Each of the three major parts of Outcome 4 is covered in turn below, followed by an assessment of Outcome 4 indicators. Total GEF expenditures on Outcome 4 as of July 31, 2013 were about USD948,000. The team has a favorable impression of the relevance and design of the M&A system, but concerns about whether it is being put to good use as planned. The vehicles, while raising concerns at first and not typically preferred for incremental GEF investment, were justified through the need of provincial personnel to visit several sites each year. Yet, costs per vehicle seem high. Finally, the germplasm work's relevance and results have impressed the team, though we did have some questions about alternatives for financing such scientific research.

10.1 Monitoring and Alert (M&A) System

Relevance and design of M&A System: The M&A System allows the user (contingent on access level) to view data for all sites for which data has been entered into the system. Stakeholders indicate this is a valuable and needed function. One stakeholder explained to us that in the past, when there were just a few WRC sites, they could collect the reports and review the data without the system. Now with many sites, it would be difficult to access the data if there were no system. Further, in the past, it was more difficult to ascertain the status of WRCs at various sites. Another stakeholder emphasized that MOA decision-makers, through the system, will have timely access to information and be able to respond quickly to a crisis. Yet another noted that visits to the field by experts may be reduced with an effective monitoring system. (We note that this will also be contingent on an effective baseline survey system as well). This stakeholder noted that, despite the large number of physical isolation sites developed to date, there is no M&A system to support them, so that experts and officials cannot get the latest information on the status of resources.

The system was designed by the Beijing Research Center for Information and Technology in Agriculture. The long-term operator of the system will be the National Crop Germplasm Resource Infrastructure and National Genebank of the Institute of Crop Resources, CAAS. The operator is the key party at the central level monitoring the results and reporting to MOA officials on findings. The way the system works is that the data is input into the system at the county level. The county-level staff provide their data to Beijing by mailing a password-protected CD. The data is then uploaded to a single off-line computer in Beijing. Confidential information (such as geographic location and plant type) is then removed before this data is also input into the web-accessible database. Web access is designed at varying levels, so that the user can only view sites under his or her management level. Thus, it is designed so that a provincial user will only be able to view conservation sites in his or her province, while a central level user will be able to view all sites. Finally, in addition to this system developed

expressly for the project, some of the data will be integrated with an existing system that provides more limited information on both *in situ* and *ex situ* resources (mainly *in situ*). That system is called CGRIS.

Results of M&A system: The M&A system, in the opinion of the TE team, has been designed and built with a well thought-out approach and substantial final product. The M&A system work began with an assessment phase in which the contractor researched existing systems internationally and state of the art in China and assessed China's needs. Globally, they did not find any complete M&A system for CWR resources generally. (The US has a system that only covers corn.) Further, they found that China did not have much of a system at the time, so knew they needed to build one from scratch. The design actually includes two systems: (1) monitoring data input system and (2) monitoring and alert system. The latter system will automatically give the user a warning if a site's indicators are out of the recommended range. The warning will show up for all relevant parties (e.g. for a particular site, it will show up at the level of the county in which the site is located, at the level of the relevant province, and at the national level). There is also a decision support system, which generates automatic reports. Security is an important feature of the system, as MOA believes open access to site locations would create a risk for conserved resources. Thus, confidential information, such as site location and plant type, is available only at the Institute of Crop Resources at CAAS on a single computer and can be shared with MOA through a report if required.

The TE team was given a demonstration of the system and was favorably impressed. Graphics show a map with the eight demo sites across China and warning signals for any sites that may have issues. Clicking on one of the sites takes one to some additional choices regarding types of data. If there is an alert for a site, one is able to look into which of the factors is causing that alert. Experts can enter the reason for the problem. Further, the county station can insert text to provide updates of when and how the situation that caused the alert has been ameliorated. One can also inter-compare data from different sites or look at aggregate totals for all sites over time.

After some confusion on the actual situation, we were told that a great number of sites have been incorporated into the single computer, off-line system. In addition to the eight demo sites, these are said to include the 64 replication sites and, altogether, with lesser information, the 1,600 sites in China at which agricultural wild plants have been found, though not necessarily actively conserved.

Our main concern is that it appears the online system is not being used much. If use is not increased, the effort may go to waste. The key issues in lack of use appear to be: (1) lack of users and (2) the very small number of sites included. Although the CWRC project indicates that provincial users will have access to information through the system and use it for decision-making, we found that most provincial agro-resource stations do not have access to this system. Further, at present, only the eight demo sites are entered into the online system. This seems too limiting to attract the attention of decision makers that do not have access to

the single off-line computer. Altogether, China has 170 physical isolation sites and 72 open-style conservation sites, for a total of 242 conservation sites for agricultural wild plants, including WRCs. The entered sites in the online system represent just three percent of this total. We were told that expansion of the number of sites in the online system would require special approval, as would expansion of user-ship to various experts in the field.

The TE team sees a need for (a) greater discussion among stakeholders regarding who will have access to the system and what level of access they will have, (b) greater discussion about the possibility of including more sites in the online system, and (c) greater action taken to achieve agreed upon access and inclusion of sites. At present, the only access to the system (besides county-level access to the single site the county has entered) is at the Institute of Crop Resources. The Institute, in turn, provides information to two MOA users: the Agro-Resource Station of the Science and Technology Department and the Seed Department. The latter requires a report to be submitted from the Institute of Crop Sciences. We understand that concerns about confidentiality may be the reason for limiting both users allowed to access the system and sites included. Yet, we see lack of clarity in this regard and thus a need for discussion on what exactly the security concerns are and whether limited access at various levels (as originally planned) with more sites included would indeed compromise security. In practice, the provincial agro-resource stations should be able to access the system online, after the confidential information has been removed, by applying for an account.

The TE team visited the county-level monitoring system rooms run by the local agro-resource stations of demo site counties visited (Guangxi, Henan, and Ningxia demos). We found that each station has two sets of equipment. One is an off-line computer terminal for entering data, which is then copied onto CD and mailed to the central monitoring center in CAAS. The other computer is an online system, through which the user can access the M&A system website and view the data they have entered regarding their own site (minus confidential site location data). They do not have access to the data from any other sites via this system.

We also spoke with provincial experts and provincial agro-resource station officials of the provinces we visited about the M&A System. As indicated above, we found that provincial agro-resource station officials (aside from those in Xinjiang), while enthusiastic about the system, lack access to it and see the need for more sites to be included. One provincial expert suggested lack of money is the reason more sites had not been included and also suggested that a remote control/remote visualization system for sites is an important idea that in the long run might save resources, but that lacked funding for now. We also confirmed that provincial experts in the provinces visited do not have access to the system. Presently, provincial experts submit hard copy reports of the baseline survey to MOA. Yet, it seems that in the research community, there would also be an interest in access to the data.

At the county level, we found that users were not really using the system for decision-making and saw their function mainly as entering data and sharing it with the central operator in Beijing. One county we consulted, however, indicated that it would be convenient to be able to enter and then view all of their endangered species in the system for ease of monitoring.

The provincial agro-station in Xinjiang is the exception at the provincial level in that it does have the M&A system. It appears that in the case of Xinjiang the equipment went to the provincial level rather than to the county with the demo site. So far, Xinjiang has included two or three of its "MiA" style conservation sites in their system, but has plans to include all sites for agricultural wild plant conservation, not only those for conservation of WRCs.

Results of M&A system beyond duration and scope of project: During consultations, we found that the M&A system does have the potential for extensive use beyond the project. Indeed, to ensure the benefits of this system are realized, we recommend that in the closing five months of the project, the team give attention to provincial access and coordination of stakeholders to determine potential expansion of access of non-confidential online data to researchers. Further, we recommend the team coordinate discussions of expansion of sites in the online system to include the project's 64 replication sites. Next, it may promote the idea of inclusion of the 170 physical isolation sites in the online system. Interestingly, we learned that the project had already shared the system for free with another GEF project (the Huai River Project in Henan Province).

The M&A system is considered a novel approach in China; and MOA stakeholders hope to make the CAAS operating center a formal central monitoring center during the 12th Five-Year Plan (2011-2015). This would institutionally formalize the relationship and enable a more complete set of equipment to be provided. There is also a hope to establish seven regional substations under the CAAS center that would correspond to China's seven major regions. MOA's *Action Plan for Conservation of Agricultural Wild Plants* (written by MOA in 2010 and approved by NDRC), includes this plan. The project influenced the portion of the *Action Plan* that covers the M&A system and institutions.

Finally, the M&A system had one further benefit beyond the project. The contractor retained got a lot of experience in M&A system design for agriculture. This was quite a new area to them and to China's agricultural sector at the time. Since then, over the past two years, they have gotten a lot of clients in this area. Some large farms in more populated areas are using remote surveillance systems. A remote surveillance function has been incorporated into the software of the CWRC system, but will probably not be utilized for some time due to expense and inconvenience of power access at remote sites.

10.2 Vehicles

Altogether, the project purchased nine vehicles – all sports utility vehicles (SUVs) – for provincial agro-monitoring stations in provinces with project sites. Six went to provinces with demonstration sites; and three went to provinces with replication sites only. Total expenditures on the nine vehicles were US340,000 or about US38,000 per vehicle. We understand that USD20,000 per vehicle would be a more cost efficient amount. During the mission, the TE team felt concerned about the vehicle purchases, as it would generally be preferable for government resources to be used to provide necessary items such as vehicles,

while GEF incremental funding is used for more focused and specialized items. Stakeholders, however, did offer good justification, with the main one being that the agro-resource departments at the provincial level simply didn't have the vehicles they needed to monitor sites and conduct outreach with county-level stations. One way to look at the purchase is that the project supplied a necessary item that is not easy to get supplied through government channels, while government co-financing of the project overall (as will be discussed in the section on cost effectiveness) enabled a high level of leveraging of incentive mechanism investments, particularly at replication sites. The issue is that at present the Chinese government has put strict limits on purchases of cars by government departments. Work units with less funding, such as those under the Ministry of Agriculture, are short on vehicles, so often have to borrow or rent them.

The PMO explained to us their reasoning for the vehicle purchases in that WRC sites are mostly in remote areas, many with very bad road conditions, and thus the choice of SUVs. As an example, it was mentioned that Hainan has very good roads so that, despite having a demonstration site, the project did not supply them with a vehicle. The PMO also set as a pre-condition that the receiving work units could afford maintenance and gas for the SUV. While the PMO has run other projects, such as the UNDP-GEF Township and Village Enterprise (TVE) Project, it did not provide vehicles for these. The PMO explained that it was because there was a real need in the case of CWRC that vehicles were provided. After the project, it is expected that the vehicles will continue to be used to go to demonstration and replication sites as well as carry out province-wide WRC surveys. It was decided to provide the cars at the provincial level rather than the county level, as the provincial stations have much larger distances to cover and more sites to visit.

Among the provinces we visited, we saw the project vehicle in Guangxi and confirmed that it was being used by the Guangxi Agro-Resource Station. In Henan, we learned that the SUV was also being allocated to the provincial agro-resource station, but that unfortunately, after almost one year, the work unit still had not been able to get the vehicle. Related to the Chinese Government's strictness on allocation of vehicles to government work units, the issuing of license plates to government work units is also very strict. Thus, Henan's SUV, while purchased, is still sitting in the shop. In our discussions with representatives from Xinjiang, we confirmed that the project had allocated a vehicle to the provincial agro-resource station and that this is being used to cover the province's vast distances in conducting their work of protecting wild agricultural plants.

10.3 Germplasm Research

Relevance of germplasm research: The superior germplasm identification work appears highly relevant to the project, with the drawback being that it is only the beginning of a slow process that could lead to the eventual utilization of the wild rice, wild soybean, and wild wheat being conserved at the eight project demo sites. In ascertaining the appropriateness of this work, the TE team made an effort to determine if this type of research was already being

conducted and funded in China anyway, or if, instead, the project helped get funding to a new area that might later then be able to attract more funding. Explanations were provided and we relate these here, though we did not get a completely clear understanding of the rationale. Overall, the three researchers carrying out the work (one for wild rice, one for wild soybean, and one for wild wheat) are considered among the top in their fields in China and have extensive experience in WRC germplasm research. One was said to have published the first WRC article ever in *Nature* and another was said to have published in *Science*.

Clearly, utilization is the missing link in the project and the reason for inclusion of this work. Adding credibility to this conclusion, in our meeting with the party secretary of a poor, but resource-rich county with a demo site, the Party Secretary emphasized to us that utilization of WRCs is the next important step that needs to be taken in China's WRC work.

We asked several stakeholders what was new in this research that had not been supported in ongoing government funding of WRC germplasm research before. One researcher mentioned that his research prior to the project had all been done with *ex situ* germplasm resources. He was glad to be able to do work with *in situ* resources as there is a lot more genetic variety to work with. Another stakeholder emphasized that seed companies in China are not interested in doing this work (they only sell seeds), so it is mainly research institutes that are handling all the seed development work. He further added that it would have been difficult for the researchers involved in this project to get access to the project's *in situ* resources without affiliation with the project, though we did not find this a convincing enough reason for project financing of the research. We further learned that the Chinese Government has been supporting germplasm research work every year, including that by the contractors for this project. So, the TE team remains unclear as to whether it was necessary for the project to support this work or whether the work could have easily been supported by co-financing, in the form of ongoing Chinese Government support for germplasm research. At the same time, we do appreciate that the work fills an important gap – the utilization gap – in the overall fabric of the project. Also, we confirmed that at least two of the research groups were working with *in situ* resource for the first time, but did not get clear on why they had not previously pursued work with *in situ* resources. The PMO suggested that without the project, the researchers would not have chosen to use germplasm from the project sites. GEF expenditures for the work, according to PMO-supplied activity expenditure breakdowns was USD460,000, though we have seen in other sources that the budget for this item was expanded to USD540,000.

It was explained that the genetic approach to "identification," in which superior gene sets are identified, is faster than the old approach of random breeding to see which offspring happen to turn out well. Still, we heard estimates that real economic results will take five to ten years or more. Wild rice result may be obtained on the shorter end of the scale (five years), while wild soybean and wild wheat results may be at the longer end (ten years or more).

Results of germplasm research

Wild Soybean: The wild soybean work identified high protein levels (over 50 percent protein content) as compared to cultivated soybean. For the soybean researcher, this is the first time he has worked with *in situ* WRC and he is enthusiastic about the greater amount of genes to be studied. His highest result to date for *ex situ* soybean protein content is 53 percent, whereas with the *in situ* work under the project, he identified a variety with 56 percent protein content. Other benefits studied were resistance to illness and high isoflavin and high oligosaccharide content. The researcher suggested it may take over ten years to develop new varieties from this research.

Wild rice: The researcher for superior wild rice germplasm identification indicates that they concluded from their research that *in situ* WRC is an important resource, though we did not confirm whether his team had worked with *in situ* varieties before. The researcher believes that, in the case of wild rice, they may develop an improved variety within five years, as wild rice is more closely related to cultivated rice (different sub-species) than the other WRCs studied and thus easier to interbreed. The researcher indicated that his team would certainly give a share of any profits generated to the local farmers at the demo site of origin, as compensation for their conservation work.

Wild wheat: The wild wheat germplasm researcher indicated that an application for one of the species being conserved at the project demo sites may be to develop a forage variety. The wild wheat research work looked at protein content, among other items. Further, it was mentioned the varieties from Ningxia can handle a high salt environment, such as is found in Yanchi (the county of the site, translated as "Salt Pool"), so this is a strength of the Yanchi germplasm. Tests on salt stress, cold stress, and heat stress were included in the work. China worldwide suffers a 20 percent annual loss in wheat due to pests, so pest (aphid) resistance was one thing they were looking for, but unfortunately did not find. The researcher indicated this work was the first time his institute worked with *in situ* varieties and felt that having more different genes from more different plants was beneficial. Wild wheat may be more challenging and a longer term prospect than wild rice in terms of developing new varieties, because the work involves crossing cultivars from very different species.

Overall: Overall, the three researchers indicated that the work had been fruitful and that they intended to continue building on it. We also heard from the PMO that all three are continuing to do work related to the sites. So, this may be an important result of the project – jumpstarting site-focused research of *in-situ* WRC germplasm.

10.4 Outcome 4 Indicator Assessment

Below in Exhibit 10-1, we offer assessment and comments on the status of Outcome 4 indicators as of the TE mission. The M&A system has been set up and appears well done. The single computer, off-line system is said to include all of the project's 72 sites as well as the 170 physical isolation sites and (with more limited indicators) the broader group of 1,600 identified sites with agricultural wild plants in China. Yet, aside from this single computer

access point, it appears the system is not being used much by decision makers and is not accessible by most of the provinces, so that indicator targets have not been met. Further, only eight sites are included in the online system, making it not very useful for other users, even if they were to have access. We recommend the project focus on expanding access of the non-confidential online version of the system to the provinces and possibly to relevant researchers. Further, we recommend that the project ensure that data from the 64 replication sites is available in the online system and, further, that the project push for inclusion of China's 170 agricultural wild plant physical isolation sites in that system.

Exhibit 10-1: Outcome 4 Indicator Assessment

Outcome 4 Indicator	Status as of July 2013 and relevant comments
1. By EoP, all Provincial and National level decision-makers with responsibility for CWRC are able to describe the status of WRC populations from annually updated monitoring data.	Target not met, as M&A system not yet being accessed at the provincial level, except for in Xinjiang. Yet, online M&A system has been designed and set up and data available for the eight demonstration sites. Expansion of access and expansion of included sites in online system recommended. Offline system said to include all 72 project sites, 170 physical isolation sites, and more limited data on all of China's 1,600 known agricultural wild plant sites. There is a single access point for the offline system – at the offices of the Beijing-based operator of the system.
2. By EoP, County, Provincial, National level WRC conservation strategies, annual work plans and budgets are based on analysis of annually updated WRC monitoring data.	As above, target not met, as M&A system not yet being accessed at the provincial level. Further, does not seem that at any level strategies, work plans, and budgets are being based on analysis of data provided through M&A system. As above, expansion of access and expansion of included sites recommended. System has been designed and set up. Data for all sites has been entered in the single access point off-line system, but only eight sites are available via the online system.

PART IV: SUSTAINABILITY, COSTS, AND OTHER APSECTS OF PROJECT

11. Sustainability

This section reviews sustainability of project results. The most important sustainability questions in our view are (1) whether the achievements of the 72 "mainstreaming-in-agriculture" style sites, particularly in the areas of livelihoods and conservation, can be maintained and (2) whether the concept and mind-sets associated with "MiA" style sites will have longevity in China, so that more "MiA" style sites are established. Other key issues are whether the baseline and follow-up survey work at the project sites can be maintained in the future and extended to other sites and whether the M&A system will have longevity and use in the future. The first sub-section below discusses overall views of stakeholders on sustainability of project results and our own view of key, big picture sustainability issues. The second sub-section offers further depth and stakeholder input on the sustainability of livelihood and conservation results at the project sites. The third sub-section discusses the sustainability of follow up to the baseline survey work and the sustainability of the monitoring system. The fourth sub-section discusses sustainability of remaining key aspects of the project, namely, policy, training, and the germplasm work.

11.1 Overall Views on Sustainability of Project Results

Stakeholder comments on overall sustainability of project results: While a good number of stakeholders have concerns about the sustainability of livelihood results in particular, most offered positive comments about the overall sustainability of the project. One noted that the project results will be sustainable because the policy developed is sustainable, the incentive mechanisms (livelihood inputs) are sustainable, and the baseline survey (having been adopted by MOA) is sustainable. The stakeholder further noted that the two remaining major areas of activity of the project, (1) major conference with all of China's provinces (held in Sept. 2013) and (2) publishing of two books and production of a final promotional film, are both very related to achieving sustainability of results. Others emphasized that the training and classes of the project have contributed to its future sustainability. Other stakeholders, like the first, emphasized policy results. We are not sure about the impact of policy results at the national and provincial levels, because the policies achieved were mostly issued by MOA and provincial departments of agriculture, a level at which there is an absence of enforcement power. Yet, we believe that the county policies and villager agreements may have a long-term impact. Another issue worth noting is urbanization. With increasing urbanization, pressures on WRCs will be less, thus creating a positive force for sustainability.

Overview of sustainability of livelihood and conservation results at existing sites: The TE team, along with many stakeholders, feels there is some degree of uncertainty with regard to sustainability of livelihood results. We discuss stakeholder input in this regard in further detail in Section 11.2. For now, we note that stakeholders with such concerns believe the

availability of follow-up resources for livelihoods may be important. Yet, they believe the level of investment will be much lower than the "start-up" requirements of the incentive mechanism. One provincial level stakeholder suggested that it will be important to continue leveraging resources from other projects and organizations for follow-up support. Another suggested that follow-up support from MOA would be needed, whereas others suggested the local county agriculture bureaus should be the ones to provide support. Another stakeholder stressed that in poor provinces like Ningxia, without a lot of resources, follow-up support for livelihoods will be absolutely necessary. In general, these stakeholders believe it will be critical to keep an eye on the sites and be ready to help solve problems if there are livelihood issues. Indeed, the Division of Agro-Resources at MOA has indicated that they, given their responsibility for conservation results, will be fulfilling this role of keeping an eye on the sites for issues that may arise. Finally, some stakeholders suggested ongoing training as a way to ensure livelihood results.

To address this issue of livelihood sustainability in the case of new "MiA" style conservation sites, it will be important to deign incentive mechanisms carefully with an eye out for those types of livelihood enhancing investments that are more sustainable. Our general conclusion is that public goods investments, such as roads and irrigation, have the greatest sustainability potential, though tend to have high costs. For investments supporting alternative livelihoods at the individual household level, different options should be compared. It should be noted that many agricultural products, as commodities, may suffer unpredictable ups and downs, even in the short term. Follow-up socio-economic monitoring at projects sites will offer more insights into which types of incentive mechanisms are most sustainable and thus will be important to further advancing the "MiA" approach. Further, for the cases in which follow up investment is needed, some kind of institutional arrangements and plans needs to be developed. Ideally, a multi-department team might be set up within MOA, not only to handle the design of incentives at new sites, but to be prepared to support existing sites that have problems.

One idea for ensuring "MiA" style conservation site sustainability is to secure the same follow-up funding per site allocated in the case of physical isolation sites. Indeed, it is expected that these sites will be taken into the national system after project close and be eligible for 50,000 RMB in funding per year per site. These funds could then be pooled to be available for "MiA" style sites that need it, as many sites that are doing fine will not need the same level of annual support that physical isolation sites require. In this regard, we note that follow up costs of physical isolation sites tend to be substantial. Some stakeholders told us that some physical isolation sites have fallen into disrepair due to lack of follow up funds. Thus, as we question the sustainability of "MiA" style sites, we should be mindful of drawing a reasonable comparison by considering the sustainability issues inherent to physical isolation sites.

Sustainability of the concept and mindset associated with the mainstreaming-in-agriculture approach through establishment of additional sites: One stakeholder commented to us that there is a risk that the "mainstreaming-in-agriculture" approach to

WRC conservation will be forgotten if it is not mainstreamed through large-scale policy, institutional arrangements, and planning. He noted that the project has done a lot, but more needs to be done to ensure sustainability. The TE team is also very concerned about the risk of the WRC conservation "MiA" approach being forgotten, or at least not being extended to additional sites in the future. We have discussed this topic to some extent in Section 5 of Part II. The concern is raised both by the lack of specific plans for additional "MiA" style conservations sites in China as well as other input we gathered during the mission. Comments by key stakeholders gave us reason for concern. One noted that it would be difficult to set up "MiA" style sites with incentive mechanisms without the project and the PMO, as this work is very challenging. Another also thought it would be difficult to set up "MiA" style sites without the project, because the Ago-Resource Division at MOA does not have the ability to get other departments to cooperate with it on livelihoods work. Finally, a third suggested that future sites are most suitable for physical isolation, although training and some livelihoods work might be added.

While the foregoing paragraph paints a relatively dismal picture for sustainability of the "mainstreaming-in-agriculture" conservation approach mindset, we also got some positive input. An MOA stakeholder told us he believes future sites will include a mix of some physical isolation sites and some "MiA" style sites. He also suggested that the "mainstreaming-in-agriculture" approach will be mentioned in the next five-year plan (2015-2020).

Given concerns about the sustainability of the "MiA" concept in WRC conservation, we believe it's critical the project team focus on this issue in the closing months of the project. Guidelines should be developed so different stakeholders aside from the PMO can implement it. A comparison of the two approaches, including cost comparison, should also be made so that policy makers will have the tools with which to make decisions. Finally, a means for involving MOA's Agricultural Wild Plant Conservation Leaders Small Group in cross-department cooperation on "MiA" style WRC conservation projects should be pursued. Following submission of the draft version of this report, the PMO indicated to us that guidelines for the MiA approach as well as a methodology to assess whether to use the physical isolation approach or the MiA approach at various sites were being developed. They have also indicated to us that the MiA approach will be put on the agenda for discussion among experts when these offer input on WRC conservation aspects of China's next Five-Year Plan.

11.2 Sustainability of Livelihood and Conservation Results at Project Sites

Stakeholders offered strong rationale for the sustainability of livelihood aspects of project sites and, thus, the sustainability of conservation results. One stakeholder offered the view that sustainability of improved incomes and conservation will hinge on the work the project did in awareness and alternative livelihoods. Another mentioned the trend that more and more people are out-migrating for work and there is less interest in agriculture on marginal lands. He feels that sustainability may be enhanced just by the trend of lack of interest in the land in

the conservation areas. In general nowadays, according to this stakeholder, due to out-migration trends, there is less development of bare land in rural areas than previously. Another stakeholder mentioned ongoing improvements in the standard of living in China as a reason sustainability of the livelihood results are not of concern.

Some stakeholders offered sites-specific reasons for sustainability of livelihoods and therefore of conservation results. For example, in the case of Xinjiang, the project is helping some people change their lifestyle from nomadic to fixed location and their livelihood from traditional grasslands grazing to feeding in stables. A Xinjiang stakeholder suggests most herdsmen will stick with the new way of life in which they can take a shower every day if they like. As incomes are better and life is better, the stakeholder notes, herdsmen don't want to return to the nomadic way of life.

In terms of specific livelihood investments to date, the TE team noted only a few that have not been sustainable so far. These include the gem polishers at the Guangxi demo site, which became obsolete due to the availability automated polishers. In some sense, they also include the biogas installations at the Ningxia site. Yet, incomes are still strong at the site; and it is because of the improved incomes that people are able to use electricity and gas instead of the biogas, which requires more effort.

We asked villagers both about sustainability of conservation results and sustainability of the improvements in their livelihoods that they had experienced because of the project. Given that villagers are the closest of all to the real situation, we were interested in their response. In most cases, villagers responded with confidence that conservation would be sustained far into the future and that their livelihoods would continue to get better. One villager at the demo site in Ningxia pointed out that her two children are college students and, with a good education, will continue to protect the WRCs. A villager at the demo site in Guangxi was enthusiastic in her assertion that the villagers would continue to protect the wild rice and told us her child, who was going to college soon, with a high level of education would be likely to conserve the wild rice. Another demo site villager in Guangxi told the TE team that he believes the villagers will continue to protect the wild rice. He noted that living standards have gone up, so people have no reason to go to the conservation area. Further, they are no longer using oxen for agriculture, so this is also another reason the conservation area will be protected. A third villager at the Guangxi demo site told the team that the conservation is sustainable for two reasons: (1) incomes are up and (2) the biogas replaces wood fuel.

11.3 Sustainability of Baseline Survey and Monitoring System

Two other key sustainability concerns that arose during the mission were that of the baseline survey follow-ups and that of the M&A System. When asked, stakeholders at the provincial and county levels repeatedly confirmed that no arrangements for funding baseline survey follow-up at project sites had been made. Further, as discussed in Section 10, the current situation of the M&A System in terms of users and sites included in the online system has

resulted in not much use being made of it. If this situation does not change, the system may not be sustainable. We cover each of these two sustainability concerns below.

Baseline survey follow-up: Stakeholders at the central level offered the TE team assurances that the 72 project sites will be taken up as national sites by MOA in the future and therefore get funding for follow-up survey work. This year, in fact, an application was made for the sites to join the group of 170 physical isolation sites in this regard. Yet, the application was refused by the MOA Planning Department, as the UNDP-GEF project is still ongoing. They will have to apply again, once the project is over. For the national sites (the 170 physical isolation sites), the Government allocate funds of 50,000 RMB per year per site. At present, for the project sites, the baseline and follow-up surveys are conducted by the provincial experts, who are compensated for their time. The provincial experts have been training the county agro-resource stations in the baseline survey methodology during the project, however; and the latter are expected to take over the task once the project is over. One stakeholder pointed out that these organizations would have the responsibility to carry out these surveys as a basic part of their duties even if there is not specific follow-up funding. Another stakeholder mentioned that MOA has a substantial fixed budget for WRCs that should cover the costs of the follow-up surveys. The TE team was convinced by discussions that it is extremely likely that the project's 72 sites will enter the national plan for follow up and receive 50,000 RMB funding per year each. Yet, the extent and nature of the follow up may be uncertain, since the baseline survey is indeed a new initiative introduced by the project.

At the provincial and county levels, a different viewpoint was offered, as these stakeholders did not feel assured of ongoing resources for baseline survey follow-up. More than one source suggested that after project close the surveys would be conducted less often, perhaps every other year. In contrast, we heard at the central level the surveys would remain an annual affair.

Monitoring System: Issues with the monitoring system were discussed in depth in Section 10. If actions are not taken to increase the use of the system by including more sites in the online system and liaising with the provinces on how they can get access, it is possible the system will be unsustainable. There may be some security issues, but these need to be discussed clearly among stakeholders so that informed and rational decisions can be made. At this point, the TE team is not clear if the system's potential use at the provincial level is going to be eliminated because of security concerns or if the issue is more one of communications in bringing the provinces onboard to use the online system and getting officials at MOA to allow inclusion of more sites. During the remaining few months of the project, the project team should ensure that data from the baseline and follow-up surveys at the 64 replication sites is available through the online system and that there is a plan for follow-up data entered to be accessible in subsequent years. They should coordinate discussions among stakeholders so that clear decisions on access at the provincial level are made and followed up on. They may also wish to coordinate discussions regarding access for researchers and promote an initiative to get data from the 170 physical isolation sites included in the online system as well.

We asked some stakeholders about their view of the sustainability of the system. One explained that financial sustainability is not of much concern, as maintaining the system itself is not costly. The Institute of Crop Science is both a user and operator. They bought equipment including server and terminal; and the main costs occurred at the start-up of the project. More broadly speaking, though, expanding the system to other sites (via the baseline survey methodology) and other users will cost money; and it is not clear if and when the funds will be available.

11.4 Sustainability of Other Key Project Initiatives: Policy, Training, and Germplasm Work

Policy: In general, policy results achieved to date are considered to be long-lasting and sustainable. The TE team feels that the policy work at the county level, along with the township and villager agreements, may be the project's most sustainable policy work of all. Unfortunately, the policies adopted at the national level and most of the provincial level policies lack enforcement potential, as they are in the form of management guidelines issued by MOA or the respective provincial department of agriculture. Policies that go through an approval process via the NPC or State Council at the central level or via the provincial government analogues at the provincial level are more effective, as these bodies have the power to institute penalties that lead to enforcement. Thus, one of the weaknesses of the project is that policies going through this type of approval process were not prioritized early in the project's life. Further, another sustainability issue with regard to policy is that the "MiA" style conservation approach has not been incorporated into the five-year plan. If work can be done in the closing months of the project to secure a place in the next five-year plan for the "MiA" approach to conservation of WRCs, that would be a very positive achievement in terms of sustainability. The timing appears to be appropriate as it is just over two years before the next five-year plan begins, so that drafting is likely soon to be underway. Indeed, project proponents have told us they will make sure the "MiA" approach is included in the discussion agenda for experts convened to make recommendations on the next five-year plan.

Training: Some stakeholders believe that the project's livelihood work has increased potential for sustainability due to the villager training conducted during the project. This reflects their belief that training impacts are sustainable. Interestingly, some stakeholders also suggested that follow up investment in livelihoods should focus on training and mindset change – the "software" rather than the "hardware."

Sustainability of germplasm work: Results from the germplasm work will only remain valuable sustainably if there is follow up work. As explained by the germplasm researchers, the project work covered assessment only and did not cover breeding of improved varieties. Yet, as a group, they seemed very bullish that follow up breeding related work would be carried out and that funding for this could be obtained. As mentioned previously, it is expected that it will take around five years to get an improved variety of rice from the

project's germplasm results and ten or more years to get improved varieties of wheat and soybean from these results. One of the three researches explained that he believes funding for next-step research will come from the following sources: (1) MOA, (2) national budget to conserve wild relatives, and (3) application for scientific research grants. It was also mentioned that utilization of genetic resources is one of China's national priorities, so the next-step research is likely to get strong support. Further, it was mentioned that (4) the seed companies, while traditionally not so strong, are now seeing some of their group becoming larger and more influential, so that these may also be a future source of funding. China has a national strategy to get the seed companies doing the breeding, though this work currently takes place in research institutes. Another one of the researchers emphasized that rice, soybean, and wheat are very important to China and that the government will support related work. Already, he noted, MOA and MOST have supported related work. He closed by saying with confidence, "Don't worry, China will support further work!"

12. Cost Efficiency and Expenditures

12.1 Overall Cost-Efficiency

The project appears to have achieved a high level of cost efficiency in use of GEF funds *at demonstration and replication sites* by leveraging local government funding. Co-financing of the incentive mechanism to date is estimated to be about 2.7 times total GEF funding for the project as a whole and is expected to be more as information is collected from additional replication sites. If we look at only GEF investment in the demo and replication sites, co-financing of these sites is estimated at 11.5 times GEF investment. All other co-financing for the project (aside from USD43,000 in co-financing for training) is classified as administrative, either at the central or local levels, and with no breakdown, other than central versus local, provided. (Local co-financing is divided in some cases by province and site, but not by type of cost.) Aside from the investments in conservation sites (applicable to Outcome 1 and Outcome 5) and administrative support (applicable to "Management Costs"), the TE team did not find much government co-financing of other project activities. We did find that in Outcome 3, the Farmer Field School initiative benefited strongly from lessons learned from the GIZ agro-biodiversity project. The GIZ project is part of the UNDP-implemented platform *EU China Biodiversity Partnership*; and the funding of that project is leveraged in CWRC via the FFS synergy.

Exhibit 12-1 shows the government co-financing reported to the TE team by the PMO; and Exhibit 12-2 shows our understanding of the breakdown of that co-financing by Outcome. For comparison, Exhibit 12-3 shows total GEF funding for alternative livelihoods ("the incentive mechanism") at the demo and replication sites. For purposes of analysis, in this section and beginning with Exhibit 12-2, we have separated out management costs from Outcome 3 and other outcomes. In official reporting, the management costs were included in Outcome 3 as well as in three other of the project's outcomes.

Exhibit 12-3 shows that only 23.3 percent of total GEF financing was invested directly in the conservation sites. Even if we include all indicated GEF spending for Farmers Field School (FFS) training (which comes to around USD76,000, whether for training on-site or design of training) in the total investment made directly in project conservation sites, the share of total GEF funding invested directly in the sites rises only to 24.2 percent.

Given that the sites (and associated alternative livelihood investments) are the core strength of the project, this amount of less than one quarter of GEF funds invested directly on investments in the conservation sites seems low and implies low cost efficiency. The point made here is that we should pay attention and consider trying to get a greater proportion of funds spent directly on activities at site as compared to funds spent on consultants doing design work and reports, etc. in support of eventual activities to be conducted at the sites. Funds spent on sub-contracts for consultants carrying out activities such as "designing incentive mechanisms" are not considered the same as "money spent directly in the conservation site via livelihood investments." Indeed, one provincial stakeholder expressed some disappointment, pointing out that in the preparatory phase, he had thought that for the 8 million USD in GEF funding, each of the eight demo provinces would get about 1 million in GEF funds rather than the much lower amount they did get (approximately 117,000 per site plus some other lesser benefits).

Exhibit 12-1: Central and Local Government Co-financing of CWRC
as reported by PMO (August 2013)

Type	Incentive Mechanism for 8 Demos (*local co-financing*)	Incentive Mechanism for Replication Sites (partial data) (*local co-financing*)	Farmers Field School (*local co-financing*)	Local Admin (staff and office)	Central Admin (staff and office)	Total
In-kind	---	---	---	8.117 M	6.561M	14.678 M
Cash (with some farmer in-kind)	7.803 M	13.269 M	43,000	---	---	21.115 M
Total	7.803 M	13.269 M	43,000	8.117 M	6.561 M	35.793 M

Exhibit 12-2: Co-financing by Outcome (Estimates Only)
Derived from PMO reported data in August 2013

Outcome	Co-financing	% cash co-financing	% in-kind financing
Outcome 1 (demos)	7.846 M (cash)	37%	0%
Outcome 2	0.0	0%	0%
Outcome 3*	0.0	0%	0%
Outcome 4	0.0	0%	0%
Outcome 5 (replication sites)	13.269 M (cash)	63%	0%
Management Costs	14.678 M (in-kind)	0%	100%
Total	35.793M	100%	100%

Table 12-3: GEF Expenditures Spent Directly on Sites* (in USD)

	Demo Sites	Replication Sites	Total all sites	Total GEF
In USD	941,280	882,800	1,824,080	7,850,000
% GEF funds	12%	11.2%	**23.2%**	100%

*GEF investment of around USD75,000 in Farmers Field School, including training at sites, is not included, but would not substantially affect conclusions, raising share of GEF funds spent directly on sites by only about 1 percent.

At the same time, these sites garnered almost all of the cash government co-financing of the project. Thus, we see two competing factors in assessing overall cost effectiveness of the project. On the one hand, GEF funds are strongly leveraged at the project sites (by over 11 times if considering the sites only, or 2.7 times considering the project overall). On the other, GEF investment directly in the sites is only about 23 to 24 percent of total GEF investment.

Note on the Data: Overall, the TE team found PMO provision of financial data highly disappointing, raising concerns that PMO financial record-keeping in general is weak. We were provided with individual reports from all involved provinces, which provided a breakdown of co-financing by type of expenditure. This offered some confidence of local level co-financing spent on the incentive mechanism. We have less assurance, however, of "administrative" co-financing either at the central level (provided as a single figure with no breakdown) or at the local level (provided by each province, generally with no breakdown). Incentive mechanism co-financing was about USD21.12 million. While this includes in-kind contributions by farmers of their labor, it is believed to be largely cash contribution. In-kind contribution by local government (no explanation) is said to be USD8.12 million and in-kind contribution by central government (no explanation) is said to be USD 6.56 million.

Note on cost-effectiveness of the "MiA" approach: In other parts of this document, we have discussed the need to compare the cost and benefits of the "MiA" approach to those of the physical isolation approach. There is a lack of data and a lack of work on this topic. Yet, in Section 7, we saw that total investment in replication sites is on the order and probably less than that typical for physical isolation sites. If indeed "MiA" conservation sites require less follow up investment as expected, their cost effectiveness vis-à-vis comparison to physical isolation sites will be strong. In order to prove cost effectiveness of the "MiA" approach, it will be important in the future to show that these sites can be set up with direct investment levels similar to those of the project's replication sites, but without all the other support (e.g. outside incentive mechanism design consultants) provided by the project.

12.2 Assessment of Expenditures by Outcome and Activity

Official GEF expenditures by outcome are provided in Exhibit 12-4 and by year, in Exhibit 12-5. The data is as of July 31, 2013 and is provided from UNDP CDRs. This data is important in that it offers a true view of the amount spent to date and under which outcomes expenditures were officially reported. Yet, the TE team found in the PMO's activity-by-activity expenditure accounting that there were many entries that seemed misplaced outcome-wise. Some were quite large. Therefore, we do not recommend using the outcome breakdown in Exhibit 12-4 to get an overall feel for where GEF funds were spent. In Exhibit 12-4, we

also include the totals by outcome of the PMO-provided activity-by-activity GEF expenditure data. The PMO data did seem to have substantial problems and inconsistencies, so that its variation from the GEF data is not surprising. Also, UNDP CDRs are considered the most accurate source of data on UNDP-GEF project expenditures. Yet, because we had no other source of actual activity-by-activity expenditure data and because we do feel there are insights to be gained, the PMO data is referenced heavily in the discussion below. Thus, we preface that discussion with this comparison and highlight that the most glaring difference is about USD480,000 in PMO under-accounting in Outcome 1. (The PMO suggests this difference may be due to different end dates of the two sources of expenditure data.) Exhibit 12-5, showing official GEF expenditure totals by year, suggests that the project has kept up a good pace with expenditures rising to a peak in 2010 and then tapering off.

12-4. Total GEF Expenditures: UNDP Official Data by Outcome (in USD) as of July 31, 2013

and comparison to PMO-provided activity-based GEF expenditure totals (provided in early August 2013)
Note: TE Team acknowledges that UNDP CDRs are considered the most comprehensive expenditure records for all UNDP projects. Yet, we choose to make use of PMO reported expenditure data as well as it provides a more detailed breakdown of spending on specific types of activities.

Outcome	UNDP CDRs	PMO reported activity-wise expenditures	Difference (UNDP-PMO)
Outcome 1: Demos and Baseline Survey	3,421,281	2,939,528	481,753
Outcome 2: Policy	675,551	666,160	9,391
Outcome 3: Capacity Building	1,734,221	1,701,498	32,723
Outcome 4: M&A System, Cars, Germplasm	948,133	968,119	-19,986
Outcome 5: Replication and Outreach	659,622	625,585	34,037
Gain and Loss (exchange rate)	-49,115	-19,649	-29,466
Total	**7,389,693**	**6,881,241**	**508,452**

12-5: Total GEF Expenditures by year: UNDP Official Data (in USD)

Annual Totals for GEF Disbursement (all Outcomes included, based on UNDP CDR data)							
2007	**2008**	**2009**	**2010**	**2011**	**2012**	**2013 (as of July 31)**	**Total**
171,040	860,528	1,324,529	2,313,547	1,340,772	1,114,267	234,899	7,389,682

Exhibits 12-6 through 12-15 show, by outcome, expenditures for "major activities." This information is based on (a) the full project sub-contract list provided by the PMO (all funding for these contracts is GEF funding) and (2) the activity-by-activity GEF expenditure information provided by the PMO. While the sub-contract list appears professionally prepared and complete, the expenditure information, as mentioned, has some problems. Yet, we still feel it is complete enough to offer big picture insights for our analysis.

In many cases, we have consolidated sub-contract line item information or activity expenditure line item information so that there are fewer total line items and the reader can thus get a better grasp of where the funds are being spent. For each outcome, we have prepared two tables. The first table for each outcome is based on the sub-contacts list, covering all "sub-contracts" for the outcome, though some are consolidated into a single line.

"Sub-contacts" are those contracts issued to organizations. Contracts issued to individuals are not included in the official sub-contract list (and thus are later extracted from the full activity-by-activity expenditure list). The second table for each outcome is based on items included in the activity-by-activity expenditure list with sub-contracts subtracted out and other items, such as conferences, consolidated into one line when this is felt to be helpful. We note that in the PMO's activity-by-activity expenditure list, we found some degree of disorder. Four of the five outcomes include PMO staff salaries line items. For our analysis, these were moved, with other PMO expenses, to a "Management Costs" table shown in Exhibit 12-17. Other items, such as some conferences or the replication site investments (included in Outcome 1 rather than Outcome 5), also seemed misplaced. Most of these we left in their original position. However, we did consolidate inception workshop expenditures into one outcome and Village Head Campaign expenditures into one outcome, as originally each of these were split among two outcomes.

The purpose of these "major activity" sub-contract and expenditure tables is to provide transparency and a means to assess the magnitude of GEF monies spent in certain areas. As we reviewed the tables, we asked whether the individual amounts seem reasonable and also whether the emphasis or proportions of where funds were spent seems effective. As mentioned above, in general, we feel the proportion of GEF funds spent on the actual livelihoods investments at sites, at 23 to 24 percent of total funds, is somewhat low. At the same time, we recognize this is the main area of the project responsible for the estimated USD21 million in cash co-financing.

Outcome 1 GEF expenditures (baseline survey and demo sites): Expenditures for Outcome 1 include the sub-contracts for the eight demonstration site incentive mechanisms (about USD118,000 each) and for most of the 64 replication site mechanisms (about USD15,000 each). Strictly speaking, the latter should be a part of Outcome 5. Other major subcontracts include design of the baseline survey, support by Beijing-based contracting organizations for incentive mechanism design (4 contracts), and baseline survey work by county agricultural bureaus (annually over a period of 5 years) for each of the demonstration sites. We note provincial experts (paid separately) are responsible for most of the annual baseline survey work during the project, but are accompanied by the local bureaus, who also handle socio-economic aspects of the survey. Each bureau is paid about USD20,000 total, which is an estimated USD4,000 per annual survey.

In reviewing the subcontracts, the TE Team notes that four contracts totaling USD350,000 are allocated to incentive mechanism design. While the outcomes of the incentive mechanism implementation overall are very good, we did wonder about both the level of resources and also some institutional issues related to sub-contracting. In terms of level of resources, the USD350,000 spent on design is about 20 percent of the GEF total spent on the incentive mechanisms themselves, which seems high. Yet, we do recognize this does not include co-financing at the sites. Also, we note that some stakeholders praised the incentive mechanism design as "very scientific" and "anticipating problems". Institutionally, we have concerns about team composition of these sub-contractors and related transparency. Because

one of the PMO's main duties is administering sub-contracts, it seems important that advisors to the PMO (including experts and the CTA), and of course PMO team members themselves, do not serve as team members of sub-contractors while their own individual contracts or employment agreements are active. A prohibition of serving on sub-contractor teams should hold even if the individual is not included in the original proposal but added later. If current rules do not contain such a prohibition, they should clearly be changed.

The TE team noticed the company Greenfield Biotechnology International Company held three sub-contracts with the project totaling over USD200,000 (two in Outcome 1 and one in Outcome 2), one still ongoing. We asked the PMO about team members from the company involved in incentive work, and the only information offered was contact information for the company staff person who served as "project manager." This person indicated the work took place a long time ago and it was hard for him to remember. He has left the company even though one of the contracts for the replication sites (with value of USD100,000) is still on-going. He could not provide us with any information on who this work had been handed over to or even any contact information for anyone at the company. The one other former team member that was reachable told us he had not participated at all in this second contract. Further, we understand the team at the other incentive mechanism sub-contractor is led by the project's current CTA. One of its contracts (with value of USD99,980) is still on-going as well.

For future projects, we recommend that greater emphasis is put on keeping a clear separation between contracting organization and PMO advisors and staff. We further recommend that the project keep active track of the main team members for major contracts – even team members added after the proposal is submitted - to ensure there is no conflict of interest. For purposes of transparency, final auditors of the project should clarify team member issues for certain sub-contracts vis-à-vis conflict of interest.

There may also be lessons to be learned from a review of bidding procedures, including information on organizations submitting competing bids and efforts made to ensure a good pool of qualified bidders. If limitations of quality of bidding pool are discovered, future projects may wish to put strong effort on achieving wider reach of bid notices. In addition to the aforementioned contracts, we note that the contracts for each of the incentive mechanisms at demo sites were awarded to the local county agricultural bureaus (except for the case of Xinjiang). Given that these contracts were all on the order of USD100,000, competitive bidding should have been conducted.

Non-sub-contract expenditures for Outcome 1 are given in Exhibit 12-7. Conferences and study tours are the largest line items. The three study tours at USD223,183 represent all study tours of the project, while the eight conferences represent only a portion of the total of 17 conferences or workshops held by the project, which had total expenditures of USD708,921. During the mission, we received positive input on the conferences as a means of building the capacity of local officials and building a positive mindset with regard to the "MiA" style of WRC conservation. We did not get any clear feedback on the benefits of the study tours.

Exhibit 12-6: Outcome 1: Sub-contracts (all are GEF expenditures; in USD)

Note: Top part of table shows central-level role; middle shows sub-contracts for local government work; bottom shows contracts for village incentive mechanisms; source of original data is PMO (Aug. 2013)

Subcontracts	Party	Amount of Subcontracts
Baseline survey design	Institute Agro-env't, CAAS	40,000
TA, Baseline Survey	Tianjin Monitoring Dept., MOA	29,000
Incentive Mech. Design (4 sites)	Institute Crop Sciences, CAAS	80,000
Incentive Mech. Design (4 sites)	Greenfield Biotech Int'l Co $350,000	70,000
Incentive Mech. Design (southern replication sites)	Greenfield Biotech Int'l Co	100,000
Incentive Mech. Design (northern replication sites)	Institute of Crop Sciences, CAAS	99,980
Baseline Survey (8 sites over 5 years)	Local Ag Bureaus x 8	170,000
Incentive Mechanism (8 demo sites)	Local Ag Bureaus x 8	941,280
Replication sites (average US15,000 per site x 59?)	Local or provincial AB/DoA	882,800
Total	**---**	**2.413 M**

Exhibit 12-7: Outcome 1: Non-Sub-contract GEF Expenditures (in USD)

(note: total of all expenditures for Outcome 1 in this source is about USD 500,000 short of actual expenditures – purpose is to get general "feel" for scale of expenditures in different categories) source of original data – PMO (Aug. 2013)

Item	Amount
Study tours (3)	223,183
Conferences (8)	402,202
Central design of incentive mechanism (additional)	38,000
Central experts	4,995
Provincial experts	45,000
Total	**713,380**

*moved $40,000 of inception workshop to Outcome 3; moved $55,755 of PMO staff expenses to "Management Costs"

Outcome 2 GEF expenditures (policy): Related to our comments in Section 8, the TE team has some concerns about the focus of Outcome 2. Most of the policies issued at the central and provincial levels are management guidelines issued by the MOA or provincial departments of agriculture, respectively, and lack enforcement mechanisms. Also, this work, meant to be key to the project, was not initiated until June 2012. Regarding specific subcontracts, as mentioned earlier, the project manager for Greenfield Biotechnology indicated his team only provided some editing to the 15 to 20 pages of policy (contract value of USD27,000). Also as mentioned previously, two of the three policies drafted as the output of this contract have the project CTA and head of the project PMO as the first and second lead authors, respectively.

Earlier work conducted for this outcome lacked focus on WRCs. Yet, the invasive alien species work is considered a positive contribution to the field. The expenditure for the China Rural Folk Culture Festival, at USD81,119, seems high and irrelevant to this outcome.

Exhibit 12-8: Outcome 2: Sub-contracts (all are GEF expenditures, in USD)

Note: Top part of table shows central-level role; bottom shows local role; source of original data is PMO (Aug. 2013)

Subcontracts	Party	Amount of Subcontracts
Invasive species: study and management guidelines	Institute Agro-env't, CAAS	80,000
Design 3 management guidelines for wild plants	Greenfield Biotech Int'l Co	27,000
Local policy design (6 policies)	Provincial Agro Station (5)	48,000
Total	-----	**155,000**

Exhibit 12-9: Outcome 2: Non-Sub-contract GEF Expenditures (in USD)

Note: Source of original data is PMO (Aug. 2013).

Item	Amount
Conferences (4)	135,174
Policy study	99,682
China Rural Folk Culture Festival	81,119
Total	**315,975**

Note: Moved Village Head Campaign item of $90,367 to Outcome 3; moved $107,800 of PMO and CTA salaries to "Management Costs".

Outcome 3 GEF expenditures (capacity building): In terms of Outcome 3 expenditures, the TE team has a positive impression of the value of the FFS sub-contract and other FFS expenditures. The training materials provided by the Rural Social Center of MOA (USD94,800) or the capacity assessment at local level conducted by the Energy Environment Development Center (USD22,000) did not come up in discussions during the mission. After submission of the draft report, however, we learned that the Rural Social Center of MOA published two training books and the Energy Environment Development Center submitted an assessment report. Expenditures on the Village Head Campaign at USD336,031 seem quite high. While the TE team is impressed at the potential to get WRCs incorporated into the curriculum of this extensive program, we also note that the impact is diluted in terms of the project objective. The project supported environmental coursework for the Village Head Campaign of which perhaps one-quarter focuses on WRCs. For purposes of transparency, further review of the two aforementioned sub-contracts might be conducted. Assessment of whether the Village Head Campaign expenditures included appropriate cost-sharing with the rest of the program, given that the project was to support only environmental coursework, may also be conducted.

Exhibit 12-10: Outcome 3: Sub-contracts (all are GEF expenditures, in USD)

Note: Top part of table shows central-level role; bottom shows local role; source of original data is PMO (August, 2013)

Subcontracts	Party	Amount of Subcontracts
Training materials	Rural Social Center, MOA	94,800
Capacity Assessment at Local Level	Energy Environment Dev Center	22,000
FFS	Local Ag Bureaus	50,000
Total	-----	166,800

Exhibit 12-11: Outcome 3: Non-Sub-contract GEF Expenditures (in USD)

Note: Source of original data is PMO (August, 2013).

Item	Amount
Conferences (2)	62,738
Set up local implementing organizations	28,038
FFS (in addition to above – probably local)	26,869
Village head campaign	336,031
Inception Workshop	62,500
Domestic experts	87,500
International expert	4,916
TPR & PSC	46,977
M&E	21,543
Total	**677,112**

Note: Moved $641,221 of PMO and CTA salaries, $38,928 of office equipment, and $159,509 of travel to "Management Costs."

Outcome 4 GEF expenditures (M&A System, vehicles, germplasm research): In terms of Outcome 4 expenditures, the TE team notes that the germplasm research and vehicle purchases dominate. Stakeholders we spoke with indicated that the cost of each of the three germplasm studies (about USD150,000 each) was not high in comparison to "market rates". Further, while the vehicle purchases did raise concerns, justification was provided as discussed in section 10. Costs averaging USD38,000 per vehicle are high. It seems that USD20,000 per vehicle would be more appropriate. We are not entirely clear on the content of the estimated USD70,000 spent on M&A system *construction* at the sites. During our mission, it seems the main equipment provided to each site (eight sites total) consisted of two simple computers.

Exhibit 12-12: Outcome 4: Sub-contracts (all are GEF expenditures in USD)

Note: Top part of table shows central-level role; bottom shows local role; source of original data is PMO (Aug. 2013)

Subcontracts	Party	Amount of Subcontracts
M&A System Design and Development	Beijing Center for IT in Ag	65,000
Establishment and Operation of M&A System	Institute of Crop Sciences, CAAS	29,500
Germplasm research (3 groups)	3 groups	459,700
----	----	---
Total	-----	554,200

Exhibit 12-13: Outcome 4: Non-Sub-contract GEF Expenditures (in USD)

Note: Source of original data is PMO (Aug. 2013).

Item	Amount
M&A System Construction (including equipment)	70,392
Vehicles	340,000
Total	**410,392**

Outcome 5 GEF expenditures (replication, dissemination, and promotion): As mentioned above, what should be considered a major Outcome 5 expenditure, investments in the replication sites, was officially including in Outcome 1 expenditures. The TE team

considers that investment extremely cost effective and, given the leverage of cash co-financing, probably the most cost effective "major activity" expenditure of the whole project. Remaining sub-contracts for Outcome 5 include four sub-contracts with Beijing Baixin Film for a total of USD239,800. Given that the company's work resulted in a three-part series on WRCs broadcast via the TV show *Discovery* (with viewership estimated at 50 million), many stakeholders are happy with this item. The local baseline surveys at replication sites, as above, are conducted by provincial experts, but a sub-contract is also issued to local agricultural bureaus, which accompany them.

Exhibit 12-14: Outcome 5: Sub-contracts (all are GEF expenditures, in USD)
Note: Top part of table shows central-level role; bottom shows local role; source of original data is PMO (Aug. 2013)

Subcontracts	Party	Amount of Subcontracts
4 subcontracts for films	Beijing Baixin Film	239,800
Expert to synthesize 64 baseline surveys	Ningxia University	12,000
Local baseline surveys (replication sites)	Local Ag Bureaus	209,700
Total	-----	461,500

Exhibit 12-15: Outcome 5: Non-Sub-contract GEF Expenditures (in USD)
Note: Source of original data is PMO (Aug. 2013).

Item	Amount
Project newsletter and printing agro-biodiv brochure	24,484
Workshops (3)	108,807
International Expert	14,315
Guangxi book on wild rice	8,294
Provincial Experts	85,500
Total	**241,400**

Moved $10,611 of PMO salaries to "Management Costs."

Management Costs: Exhibit 12-16 shows the project management costs as extracted from line items of Outcome 1, Outcome 2, Outcome 3 and Outcome 5. We are not sure if this data is complete, due to about USD500,000 in missing expenditures from PMO expenditure data, with the bulk of the gap in Outcome 1. Yet, the data implies that so far, PMO costs represent almost 14 percent of project costs. This is a bit higher than the ten percent limit of GEF projects at the time of CWRC's approval. One possible explanation for the gap in expenditures is a differential end date between the two data sources. This explanation, however, would indicate that 14 percent management costs computed are accurate through the end date of the PMO expenditure data. We note that CTA costs are included in the computation of management costs. Indeed, these costs were not fully disaggregated from other PMO staff costs, so could not be separated out. Yet, the TE team understands the CTA's function to be largely project management in nature and thus believes CTA cost inclusion in management costs is reasonable.

The TE team has two main comments or lessons in terms of management costs. First, future projects should without exception account for management costs separately from project

outcome costs. If there are situations in which certain management costs warrant inclusion in outcome budgets, such as a PMO staff member carrying out work that might otherwise have been handled by a sub-contractor, such inclusions should be well justified. The CWRC budget, with PMO salaries included in four out of five outcomes, presents a very confused picture and makes it difficult for decision makers and evaluators to see the real picture of management costs.

Second, as the PMO team works on multiple projects, some justification needs to be made of their time. We understand that the PMO's special nature as a multi-project PMO presents strong advantages, as resources can be shifted from one project to another to deal with variable workloads. Also, the PMO can be available to work on projects under development, even when these do not provide funding for salaries. Yet, we think it important that some justification of personnel's time be provided to the project that is paying their salaries. Also, some standard procedure should be used so that there is transparency as to whose salary is paid by which project or what proportion of staff members salaries are paid by each project.

Exhibit 12-16: Management Costs (in USD)

Note: Source of original data is PMO (Aug. 2013).

Item	Amount
PMO Staff and CTA*	815,407
Office Equipment**	38,928
PMO Travel**	159,509
Total	**1,013,844**
% of 7,389,682 = project expenditures to date: 13.7% (over 10% limit), but data in bad shape	

*from Outcome 1: $55,775; from Outcome 2: $107,800, from Outcome 3: $641,221, from Outcome 5: $10,611. CTA costs were not provided in a form fully disaggregated from PMO costs. Yet, TE team believes due to largely project management role of CTA that CTA should indeed be included in project management costs.
**from Outcome 3.

13. Design, Implementation, M&E, and Other Issues

13.1 Project Design

Overall, the project design is attractive. The project chose a meaningful area in which to focus - WRCs and the "mainstreaming-in-agriculture" approach to conservation. The project's five outcomes are designed to work together in an integrated fashion to promote the conservation of WRCs in China from different angles: demonstration, policy, training, monitoring and utilization, and dissemination. The project's demonstration and replication sites have turned out to be particularly impressive, reflecting the strength of project design in making these central to the project.

Project design, however, does have some associated issues, which became apparent during implementation and/or evaluation. These are discussed below, followed by comments on project preparatory work.

Project Design Issues:

1. Confusion over the project objective and use of the term "mainstreaming." As noted in Section 1.2 (Project Description), there is confusion regarding the scope of the project. The objective as stated in the project document implies the focus of the project is to implement the "mainstreaming-in-agriculture" approach to WRC conservation in eight provinces in China. Yet, we find some parts of the project, including all of Outcome 2, have the much broader focus of promoting WRC conservation in general. A more effective objective would have reflected this. In effective project design, the outcomes will all be clearly encompassed by the objective. An example of a possible reformulated objective for CWRC, as indicated in Section 1.2 is: "Increase the extent and quality of WRC conservation results in China via widespread adoption of the 'MiA' conservation approach and via general advances in WRC conservation policy and capacity."

Related to the confusion of project objective is confusion with regard to the use of the term "mainstreaming." In some cases the term was used to refer to the "MiA" approach of WRC conservation. In other cases, it was used more broadly to indicate the strengthening of WRC conservation more generally in policy and other areas. This created weakness in some cases in the assessment of indicators, where one use of the word "mainstreaming" may have been originally intended, but the other was used to assess the indicator.

2. Issue of definition of mainstreaming conservation in agriculture: As has been discussed, integration of agriculture with conservation at many of the project's sites turned out to be less of a clear priority for their design than anticipated. At some sites, all activity is forbidden in the conservation area. At others, previous activities are forbidden and allowed activities have not attracted interest. At one demo site, almost all families have moved away to live in the township or a nearby area. While some of this may be due to the reality on the ground in China, project design may have strengthened understanding of the approach and confidence in implementation results by including more details on the definition of the integration of conservation with agriculture.

3. Confusion regarding WRC definition and species scope of project: Implementation has also evidenced confusion over the use of the term "WRC" and what plant types are to be included in the scope of the project. For clarity, project design could have addressed this issue. In practice, we find reference to "WRC policies" that in actuality encompass all wild and endangered plants in agricultural areas. In fact, at the replication sites, the scope of the protected species has been expanded to include wild plants that are not wild relatives, but instead have direct economic value. Definitions should be offered in project design and instances (such as policy work) where the scope will encompass not only WRCs but a broader group should also be clarified. Clarity for all stakeholders on the scope of work is important to project effectiveness, learning, and transparency.

4. Financial mechanism – project design: One of the key issues with regard to project design is the design's emphasis on development of a financial mechanism to ensure conservation at

WRC sites. A review of the project document gives the reader the very strong impression that the project is going to be largely focused on such a financial mechanism. Six possible such financial mechanisms are described in the document. Yet, in implementation, no substantial financial mechanism was utilized at project sites. There was some assistance with interest payments for micro-credit loans at some sites, but this was only a very small part of total investment in the incentive mechanism. The PMO points out correctly that the project document does include "other incentive mechanisms" in its scope. Yet, emphasis throughout the document is on financial mechanisms and no substantial hint of the "alternative livelihoods" approach that eventually became the key focus of the mechanism is given.

It appears there were some differences of opinion at the time of drafting the project document. Of the full project GEF budget of USD7.85 million, USD4.3 million was put into Outcome 1, we are told, because a financial fund was envisioned by some of those involved. According to project decision-makers, they found the idea of a fund impractical and felt with a budget of USD7.85 million there would not be enough money to set up an effective fund. Further, they point out that micro-credit loans are now available in China, so there was no reason for the project to set up its own such fund. In our consultations, we also learned that the project talked to a financial expert who said it would be very difficult to set up a fund and that, generally, the project had trouble finding financial experts to assist in this area.

It is not entirely clear whether the absence of a financial mechanism should be attributed to a project design problem or an implementation problem. If indeed, from the start, it was obviously infeasible to set up a financial mechanism, as was suggested to us, this clearly should have been determined at the project design phase. If the inconsistency between the project document and the project as implemented was more a result of implementation problems, the designers may have been able to keep the project more focused on its intended direction by adding more definition to the financial mechanism at the design stage.

An additional perspective on this issue may be gained through the question of how to handle innovative, untested ideas in project design. According to sources, even those in favor of emphasizing the financial mechanism in the project document were not sure it would work, but were enthusiastic about promoting innovative ideas. We applaud the promotion of innovative ideas, but suggest project design in such cases may need to: (a) ensure the ideas are thoroughly investigated during the design phase rather than being tenuously described and then immediately abandoned upon implementation and (b) reflect contingency planning. For example, the project may have been designed to ensure activities in the early stage of the project fully fleshed out options of the financial mechanism. It seems that even this critical step of fully fleshing out financial mechanism options was never taken by the project team and that, rather, they assumed from the start that the financial mechanism would not work and immediately moved on to other options. Second, if there is a chance a major aspect of a project will not be feasible (in this case, the financial mechanism), alternatives should be laid out clearly.

5. Policy – project design: As discussed in Section 8 of this document, the project's policy work had some shortcomings. Drafting of new WRC-focused policies was postponed until the fifth year of the six-year project. Further, policy work in the early years of the project was not highly linked to the policy eventually drafted. While these are largely implementation issues, more focused design (both in the project document and at inception) may have ensured the outcome was more on track. Further, per the analysis in Section 8, "management guidelines" issued at the level of MOA or provincial departments of agriculture have little if any means to ensure compliance. As such, design may have been more effective had it outlined an "aim higher, start earlier" game plan for policy initiatives.

6. Separation of project management from project outcomes: One major issue with design is that management activities and costs are designed to be a part of Outcome 3. Keeping management activities and costs separate from project outcomes is preferable, as it makes it much easier to assess cost effectiveness, whether the outcomes are on track, and whether management costs are kept in a reasonable range.

Effectiveness of project preparatory work (PDF B): PDF B work, which is the preparatory work leading up to and including drafting of the project document, appears to have focused mainly on site selection. By the time the project document was drafted, there was still no clear idea of the financial or other incentive mechanism that would be used to achieve "mainstreaming-in-agriculture" style conservation. Given the centrality of the incentive mechanism to the project, we believe this was a shortcoming of the preparatory work. In general, weaknesses in the design of preparatory work activities can lead to weaknesses in project design. It is recommended that in the future, the design of activities and outputs to be carried out during preparatory work be carefully thought out so that they can contribute to a solid design of project outcomes. In preparation, key questions that need to be answered before project drafting commences should be identified and should be the focus of preparatory activities. GEF funds for project preparatory work for CWRC were US206,000, with co-financing of US270,000.

13.2 Project Implementation

Effectiveness of institutional arrangements as evidenced during implementation: The project's institutional set-up has been described in Section 1. 4. Here we mention some points regarding actual experience with these institutions during implementation:

PSC: As PSCs of UNDP-GEF projects in China typically meet only once per year, unless there is a special issue that needs discussing, their role in such projects is generally focused on oversight. During discussions with CWRC PSC members and the PMO, however, the TE team noticed that individual PSC members had contributed their expertise to actual implementation ideas and, in the end, impacted results. For example, the PMO mentioned that the PSC member from the National Poverty Alleviation Office had emphasized the need of alternative livelihood incentives, noting that training alone would not be enough. We also

heard this PSC member had been the one to suggest taking the WRC curriculum to local schools in project areas. As another example, the PSC member from the All China Women's Federation told us she suggested the project set a target of 50 percent women trainees at the village level. The project took her advice and the target was instituted. Further, the project ended up cooperating with the Women's Federation on the local level and incorporating it into local WRC leading groups and PSCs, something that was also recommended by the PSC member from the national-level of the All-China Women's Federation. We further note that the three PSC members we spoke with had all been involved with the project from the start. In terms of the PSC, then, we believe CWRC offers a positive example of recruiting PSC members who can offer quality, substantive input and ideas to the project, as well as those who have high potential for continuity throughout the life of the project.

PMO: The CWRC PMO has received strong compliments for being professional, hard-working, and well run. As mentioned, they have a long-term history, having begun their existence with the UNDP-GEF Township and Village Enterprise (TVE) project in the year 2000. The TE team was impressed with the PMOs capabilities in orchestrating a complex terminal evaluation mission, as well as with the knowledge base of individual PMO members with regard to the project. An issue with regard to the PMO, which is also mentioned in Section 12 (Cost Effectiveness), is that PMO team members work on more than one project at once, but their salaries may be drawn from a single project. We were told that this is particularly useful at times when one project is in the preparatory phase and does not have funding for staff and that it is also useful when one project is busy and can borrow staff from another project. (Currently, the PMO has three ongoing projects.) While this "company style" approach to the PMO may have good benefits, we recommend in cases such as this that there be an increased level of oversight and justification of staff time spent on various projects vis-à-vis the source of their salaries. Further, as mentioned in Section 12, there may be a need to institute additional oversight in contracting processes to avoid conflict of interest, with more stringent rules applied to team members of sub-contractors, whether those team members are original or added later.

CTA and experts: The project has had a part-time CTA throughout its lifetime and other part-time experts off and on. Our understanding is that the role of the CTA and experts is to provide guidance to the project. The CTA's role, in particular, includes working closely with the National Project Coordinator (NPC), who heads up the PMO. As such, although part-time, we do view the CTA as part of the PMO team. We learned that the CTA has changed three times during the life of the project. The previous CTA's were both expatriates. The current CTA is a Chinese citizen and WRC expert who has been involved with project throughout, in earlier capacities as both an expert and team leader of a contractor. We believe that this CTA has provided very valuable technical guidance to the project and may be a good example of the value a domestic CTA with the proper expertise can bring to a project in the current Chinese context.

As noted in Section 12, we also suggest that projects of this type disallow experts retained by the project from participating as team members of contracting organizations to the project

while their CTA/expert contract is active. Given their role of providing guidance to the project and PMO and given the PMO's key role of managing contracts, a complex situation would arise from a dual role as advisor and member of contractor team. This disallowance of overlapping duties should apply not only to team members of sub-contractors listed on proposals, but to individuals potentially added later to sub-contractor teams, though not listed on proposals.

IP involvement in implementation: The Implementing Partner (IP), MOA, has assigned a National Project Director and Deputy National Project Director to the project. The TE team's impression is that the National Project Director has almost no involvement in the project, while the deputy has some involvement, but not on a day-to-day basis. Because the Deputy NPD's work is very closely tied to the project's work, a convenient channel is created to ensure the project is in line with Government priorities.

UNDP role: The TE team gained a positive impression of UNDP's role in the project. UNDP has provided the project with strong macro-guidance on project direction and sustainability, in line with UNDP's expertise in these areas. UNDP has encouraged cooperation between synergistic projects. In the end, the project benefited substantially by building on the FFS content of the GIZ project which was part of UNDP's *EU-China Biodiversity Partnership*.

Local PMOs and local leading groups: The TE team found the methodology of setting up local leading groups and local PMOs to be effective. The leading groups, in particular, were a way to bring other departments on board to help support incentive mechanisms at the local level. At the county level, we found examples in which the local leading group included the county party secretary and county mayor, thus bringing a lot of leverage to these groups.

Timeliness: As mentioned in Section 1.3, the project suffered major delays during its preparatory phases. Regarding the delay in project start-up, the TE team is not entirely clear why the PMO felt it would be difficult to have had its funds managed by a Ministry of Finance organization rather than CICETE of Ministry of Commerce. Currently, MOF, by standard practice, does manage the finances of all GEF projects in China. The explanation given is that the project had already set up project accounting systems to comply with CICETE format. Despite the slow start, since implementation began full force in Dec. 2007 (with the Inception Workshop), the project has moved forward with a good pace.

Implementation strengths: In addition to a strong and effective PMO, stakeholders praised the project for other implementation strengths. One important strength exercised during implementation was the ability to mobilize government departments at different levels and responsible for different sectors. Stakeholders in Guangxi pointed out that, for physical isolation sites, only resources from the provincial department of agriculture were used, while for this project, they were able to involve over 20 departments. Asked how agro-resource personnel are able to mobilize persons from other departments, one provincial-level official told us that by referring to Yuan Longping and food security issues, he was able to get them to quickly recognize the importance of WRCs. This official told us that at the county level,

there is less convincing to do, as county leadership (i.e. county party secretary or county mayor) lead the effort.

Issue of financial mechanism in implementation: Above, we discussed the issue of the financial mechanism being a key part of project design, but not implementation. In terms of implementation, the TE team was offered convincing reasons as to why an alternative livelihoods approach may be preferable. As one example, the PMO pointed out that 3,000 yuan given to a farmer for ecological compensation may not be as effective as 3,000 yuan invested in the farmer's future livelihood. The approach taken in the end appears interesting, effective, and replicable. At the same time, we believe that during implementation more effort may have been made to fully investigate financial mechanism options. Stakeholders provided much input on ABS and why this would not work. Likewise, the project spent a good deal of effort (study tours, conferences, etc.) in delving into ABS. Yet, there was not much discussion of alternative financial mechanisms, such as a simple ecological compensation or payment for environmental services scheme, supported by the government in return for protection of a public good. China has already successfully implemented a major ecological payments scheme through the *Sloping Cropland Conversion Program*, though some stakeholders note that sustainability once payments are stopped is not ensured.

Some stakeholders told us that an ecological compensation scheme to support WRCs is interesting, but would be hard to implement. Issues may include the small area involved and difficulty in determining beneficiaries. In the long-run, we were told, MOF and NDRC would need to agree to such a scheme. At the same time, we note that MOA has an annual budget of 50,000 RMB for physical isolation sites that might play a role in ecological compensation at "MiA" style sites. While the TE team feels the results of the project's "MiA" style demo sites are effective, we believe that ecological compensation for WRC conservation is perhaps one alternative area in which some valuable exploratory work could have been done during the project, perhaps as part of the policy component.

13.3 Project Monitoring and Evaluation (M&E)

The project document contains a detailed M&E plan with a budget of USD251,000. The project has completed most of the standard M&E work, such as the Quarterly Reports, Annual Project Reviews, and Project Implementation Reports (the PIRs). The PIRs (which are annual) include a detailed assessment of current status of project indicators. In addition to this project monitoring, the project has also supported development of a baseline survey system, which is used to evaluate conservation results and has been discussed in Sub-section 6.1. The baseline survey is a strong aspect of the project, though we would recommend that the PMO have a more systematic way of keeping on top of key baseline survey numbers.

The TE team finds there may be some lessons to be learned from the indicators and measurement of indicators in the project logical framework. We spent many hours reviewing and discussing the indicators and found that, in assessment of several of the indicators, the meaning of the indicators had been interpreted differently than we would have interpreted

them. We also found that sometimes when the term "mainstreaming" was used with one meaning in the indicator (particularly to mean mainstreaming of conservation into agriculture), the assessment of the indicator was made based on another use of the word "mainstreaming" (e.g. mainstreaming of WRC conservation more generally into plans, regardless of approach). Also, some indicators seemed too easy (and possibly not related to project achievements) and others too challenging. There also seemed to be some repetition of indicators in different parts of the framework. Developing an indicator system is an extremely challenging job. In the future, we recommend that individual PMO team members and the CTA work closely together, step-by-step, including vigorous debate in the process, to come up with a set of indicators, each of which presents reasonable challenge and is expressed without ambiguity.

Because of the special issues associated with this project and with the "mainstreaming in agriculture" approach to WRC conservation, we strongly recommend that follow-up monitoring some years after project close (e.g. 5 years) is adopted. There are two major questions that such monitoring would address. The first is the question of whether the project will truly have broader impact beyond its own demonstration and replication sites. That is, after the project, will the Government of China continue only with physical isolation sites, such as the 15 to 20 sites targeted per year in the current five-year plan? Or, will it begin to implement additional "mainstreaming-in-agriculture" approach sites? The second question is whether livelihood results and associated conservation results at "MiA" style sites will be sustainable. As part of this work, it will be important to see whether and how, in those cases in which there have been livelihood issues or needs for follow-up investment, needs have been handled institutionally. Another interesting question will be to compare results and follow-up costs at physical isolation sites to those at "MiA" style sites.

13.4 Other Issues (Women and ABS)

Women: Women play an important role in conservation at the project's sites. In particular, we found that women often are more closely involved with agricultural activities as more men out-migrate to work. According to stakeholders, the project did a good job of paying attention to women. We were told that in training at the village level, the proportion of women involved reached 52 percent, surpassing slightly the 50 percent target. In person times, there were 30,000 person times of training at the village level and 16,000 of these were women. In terms of management training (e.g. training of officials), there were 6,000 person times of training of which 1,200 were women. In Yunnan, there was even a special training course for women. In some locations, the alternative livelihood design paid special attention to women's specific needs. The embroidery promoted at the Xinjiang demo site is a good example. At one demo site, we spoke with a county representative of the Women's Federation and learned that ACWF was cooperating with the project to deliver training at the site.

ABS: As referenced earlier, the initial project design emphasized implementation of a financial mechanism to achieve conservation of WRCs. While a decision was made early on not to pursue a financial mechanism, the project did give substantial attention to one type of financial mechanism that may play a role in the future. That mechanism is "Access Benefit Sharing" (ABS) in which those who conserve the WRCs are able get some benefits from profits of future commercialization of the WRCs they have helped conserve. Stakeholders indicate that there was very little knowledge of ABS in China before the project and that the project really built awareness. For example, an ABS workshop with international experts was held and study tours conducted. Most stakeholders, however, indicate there are real difficulties with implementing ABS in China so that practical applications are likely years away.

The project did promote the signing of an agreement – called a "Material Transfer Agreement" (MTA) – by the research institutes carrying out the germplasm research of Outcome 4. Yet, a big problem in China's constitution with regard to actually implementing such an agreement was found, since land is owned by the country and not by the farmers. One of the researchers told us that if his team makes profits from the research, part will go to his research institute and part would go to his group. His group has already decided they will certainly share benefits with the farmers. He was not clear on the amount to be shared with the farmers, though a typical amount being discussed is five percent. One stakeholder made the point that even if ABS were successfully implemented, it may not result in such a huge pay-out for farmers. Congruent with this idea, we heard from another stakeholder that the highest amount a seed company has agreed to pay in China for such results to date is 15 million RMB. Of that, 2 million RMB was actually paid. Five percent of 2 million RMB is only around USD17,000 which pales in comparison to the amount invested in the incentive mechanism at each site.

Part V: Recommendations, Lessons Learned, and Next Steps

14. Recommendations, Lessons Learned, and Next Steps

This section includes recommendations, lessons learned, and ideas for next steps. For some recommendations and lessons learned, we have indicated the group(s) or organization(s) that may be most appropriate to carry out next steps in parentheses after the recommended action. We also note those items that the PMO, following submission of the draft version of this report, has indicated plans to follow up on or other new developments.

Outcomes 1 and 5: Baseline Survey, Demo and Replication Sites, Dissemination (Recommendations and Lessons)

Baseline survey and other monitoring:

- Take measures to ensure 72 project sites are incorporated into national care, so that funding is provided for annual follow-up surveys. (project team) [Note: PMO has indicated it is extremely likely the 72 sites will be incorporated into national care.]
- Improve indicators. Indicators should be expanded to include invasive species and non-point pollution. Options for the growth index, which is based on visual judgment and may change due to change of person conducting survey, should be discussed. Also, variation among species may need to be taken into account in design of indicators, with some adjustment based on species. Most importantly, socio-economic indices need to be redone. These indices should look not only at household income overall, but also at: income broken down by type, especially including agricultural/on-farm income; income generated by the project; and income lost due to disallowed activities in the conservation area. Income generated by project should be broken down by type of private good responsible. Case study interviews should be combined with data collection. The interviews may in particular aim to confirm benefits from public goods. Comparison with similar villages or township may be considered. (project team; sub-contractors; experts)

Existing and future sites:

- Monitor project villages in coming years for problems with livelihoods. (MOA) Leverage MOA's Agricultural Wild Plant Leaders Small Group, set up in 2002, to harness resources for livelihood aspects of future conservation sites and to address problems that arise with existing project sites. (MOA)
- Develop and disseminate detailed guidelines for implementing the mainstreaming-into-agriculture approach of WRC conservation. (project team and project advisors) [Note: Following submission of draft version of this report, PMO has advised that they are currently preparing such guidelines.]
- Commission in-depth, data driven comparison of the mainstreaming-into-agriculture and the physical isolation approaches and disseminate results. A cost-benefit analysis, looking

at inputs and outputs, should be conducted. The analysis should assess the costs and benefits of the demonstration sites as compared to physical isolation sites. (At present, it may be too early to assess costs and benefits at replication sites, but some preliminary results may be important, as the replication sites on average had much lower costs than the demo sites. Full assessment of replication sites may be conducted a few years from now.) Economic benefits as well as social/environmental benefits should be included. (project team to commission) [Note: Following submission of draft version of this report, PMO has indicated that comparison of MiA approach to physical isolation approach will be conducted.]

- In assessment of results to date at project sites, also address efficacy of various livelihood support options, comparing the costs and benefits of public goods versus private goods and also comparing the costs, benefits, and sustainability of different types of private goods. (project team to commission) Findings of assessment should be disseminated to stakeholders. (project team) In general, it is expected that public goods, such as roads and irrigation works, will provide the greatest sustainability and thus should be emphasized at future mainstreaming-into-agriculture WRC conservation sites if the cost is not deemed too high. (MOA)
- Assess situation of IAS at all sites to see how common a threat it is. If it is common at project sites, guidelines should be developed for addressing. (project team via liaison with provincial experts) So far, the TE Team only heard of serious issues at two Hubei sites.
- Analyze and debate key issues related to the mainstreaming-in-agriculture approach, with findings disseminated before project close. These issues include: (1) integration with agriculture, (2) equity, (3) efficiency of multiple investments channeled to one village/ cost efficiency, (4) sustainability of livelihood investments, and (5) measurement of livelihood impacts. (project team to organize discussion and disseminate results) Regarding integration with agriculture, clear guidelines of what is possible and what is not should be provided. Further, issue of "fence of the heart" should be discussed. Namely, for those sites at which integration with agriculture within the site is not possible, would it still be better to have no fence (for psychological reasons or occasional collection of NTFPs, etc.) or preferable to erect one? [Note: Following submission of draft version of this report, PMO has indicated it will facilitate deliberation of key issues such as those outlined above.]
- Link future "mainstreaming-in-agriculture" approach WRC conservation site selection with poverty alleviation sites, if possible, so that dual benefits may be achieved. (MOA, NPAO)
- When relevant, support direct utilization of conserved wild agricultural plants (such as a gynostemma processing machine in Tongbai, Henan). (MOA)
- If possible, organize follow-up evaluation at project sites around five years from now. This work will: (1) compare sustainability of project site conservation results to those of physical isolation sites and (2) see which livelihood measures have proven to be most sustainable and proven to have had the most positive impact in the long run. (UNDP and MOA) [Note: TE Team has learned that the project is considered a likely candidate for follow-up evaluation.]

- Clarify definition and scope of WRC, with distinction between larger category of wild agricultural plants and subset of those plants that are WRCs. (project team; to be utilized in materials disseminated)

Outcome 2: Policy (Recommendations and Lessons)

- In future projects, aim high for enforceability and focus early on policy formulation (development of excellent and competing drafts, dialogues on policy content, etc.). Studies, if any, should be strategically focused on facilitating achievement of targeted policy outcomes. To prevent scope creep, targeted scope of policy work and rationale for that scope should be clearly delineated in project document. (future PMOs and project design teams; UNDP; MOA)
- Revise wild agricultural plant management guidelines noted to exclude farmers from sites so that exception is made for local farmers. (project team; MOA) [Following submission of draft version of this report, PMO facilitated revisions to the appropriate guidelines during its September 2013 workshop. The next step will be to have these revisions approved by MOA.]
- Follow up regarding *Seed Law* revisions if needed. (project team)
- Ensure that the "mainstreaming-into-agriculture approach" is a priority agenda item for discussion in upcoming expert meetings to design the 13th Five-Year Plan. (China Agro-Ecology Station) [Note: China Agro-Ecology Station, which houses the PMO, has indicated its intention to make sure the MiA approach is a priority agenda item for upcoming 13th Five-Year Plan discussions.] Proponents of the "mainstreaming-into-agriculture" approach should push to get the approach included in the 13th Five-Year Plan. (Stakeholders who believe "mainstreaming-into-agriculture" approach is preferable.) Annual budget for WRCs should be expanded to include training and livelihoods work. (Stakeholders who support this idea.)
- Consider work on ecological compensation for WRC conservation as a closing part of this project or as follow-up work. (project team; MOA)

Outcome 3: Capacity Building (Recommendations and Lessons)

- Assess possibility and potential benefits of continued FFS at existing project sites. (project team; MOA)
- Adopt not only participatory classroom approach of FFS in future projects, but also the multi-topic curriculum approach that incorporates farmer input into determining topics to be taught. (project teams and designers of future projects with farmer training)
- For teaching farmers scientific topics (as learned through experience with the Village Head Campaign) simplify content and use case studies. (trainers for future projects)
- For future projects targeting mindset change, reference CWRC's success via utilization of a multi-pronged approach (training, livelihood incentives, discussions with officials, posters in village, etc.) and particularly the importance of focusing on livelihood benefits. (designers and implementers of future projects)

Outcome 4: M&A System and Germplasm Research (Recommendations and Lessons)

- Make strong efforts to obtain approval for inclusion of the 64 sites (after confidential information is removed) in the online M&A system. Efforts might also be made to obtain approval for the same sort of inclusion of the 170 physical isolation sites. (project team; operator of M&A system; MOA Agro-Resource Division)
- Hold discussions regarding extension of user access for the online M&A system to researchers and the provinces and ensure that potential users know how to apply for an account. In particular, once the 64 replications sites have been added to the online system (assuming permission is granted), notify the 15 relevant provincial agro-ecology stations and encourage them to apply for online account. (project team; operator of M&A system; MOA)
- Encourage follow-up germplasm research for the demo sites and new germplasm research for the replication sites. This should involve comprehensive outreach to germplasm researchers so that they can be aware of the opportunity (including plant types available) and benefits of working with *in situ* WRC resources. It will also involve the development of streamlined processes, so that researchers can easily understand what may be available and apply for access. (project team)
- In follow up evaluation (around five years after project close) mentioned above, include follow up on project germplasm research to see if it has led to breeding work that in turn has led to positive results.

Other Recommendations and Lessons Learned

- Scope: For current project, in dissemination materials, clarify that scope of project objective has been two-fold: (1) to promote the "mainstreaming-in-agriculture" approach to WRC conservation, which is new to China; and (2) to promote conservation of WRCs in China more generally (regardless of approach) through capacity building, publicity, and policy improvements. (project team) For future projects, ensure that project objective encompasses all outcomes, while at the same time achieving appropriate level of specificity. (future project design teams; UNDP; MOA)
- Definitions: For current project, improve specificity of definition of "mainstreaming-in-agriculture" approach and eliminate confusion with concept of "mainstreaming" WRC conservation more generally (regardless of approach) in China. Delineate how concept of "mainstreaming-in-agriculture" has changed through project experience. Consider establishing more appropriate terminology for future efforts, such as "livelihood approach to WRC conservation." (project team; experts; MOA) For future projects, pay close attention to conservation approach definitions as they evolve and acknowledge changes, adjusting definitions and terminology as needed. (implementers of future projects)
- Evaluation methodology: For future evaluations with substantial driving involved, consider utilizing car time for formal interviews. Consider advantages of one-on-one or small group consultations versus very large meetings. If possible, include consultations with persons not directly involved in implementation. Keep in mind that villager interviews present methodological challenges and make arrangements to ensure that time

is sufficient, randomness in selection of interviewees can be achieved, and privacy for discussion is possible. (future project implementers; UNDP; evaluators of future projects)

- Project design: In future projects, ensure that project preparatory activities are well-designed so that key questions of project content and methodology are answered during the design phase. If innovative methodologies are to be used, ensure they are well-defined during the preparatory phase and that contingency plans are made. Finally, ensure that project document reflects strategy that key proponents believe to be feasible. (designers of future projects; UNDP)
- Collection and presentation of conservation results: For future projects of this sort, keep in PMO updated database of survey results and design easy to grasp means of presenting results. In this way, PMO can both ensure contract requirements are met and provide clear updates on overall conservation results to stakeholders and evaluators. (PMOs of future conservation projects)
- Extending livelihoods approach to other conservation efforts: Given success of project, consider extending the livelihoods approach to other conservation efforts, such as grassland conservation. (MOA; UNDP)
- Publicity: Learn from CWRC's approach in developing a relationship with TV publicity sub-contractor early in project and being selective about station affiliation. (implementers of future projects)
- Co-financing and focus of GEF funds: In future, make greater effort to obtain cash government co-financing at the central level. For areas typically financed by the Central Government, such as germplasm research or other forms of scientific research, special attention should be paid to the potential for partial or full co-financing. Emphasis in spending of GEF funds should be on those areas that would not otherwise receive funding and that are considered the core focus of the project. As did CWRC, future projects should make an effort to leverage results of other international projects in the same area that are being carried out simultaneously. (designers and implementers of future projects; MOA; UNDP)
- Co-financing and expenditure record-keeping: In the future, throughout the project, keep records of project co-financing according to activity and outcome and support of management costs. Administrative or management cost claims of co-financing should be substantiated with budget breakdowns (e.g. value of office space, staff time, etc.) Activity-by-activity expenditure data should also be carefully documented with effective ways of summarizing data developed to aid relevant stakeholders in tracking project spending. (future project teams; MOA)
- Team members of sub-contractors and competitive bidding: In the future, develop heightened transparency regarding team members of sub-contractors. To avoid conflict of interest, strict rules should be instituted to assure project leadership, including the CTA, PMO staff, and other project advisors do not concurrently hold roles as team members of sub-contractors. This oversight should go beyond oversight of team members indicated in the proposals to cover all persons performing work associated with the sub-contract or otherwise deriving financial benefit from the subcontract. If current rules do not prohibit overlap for team members added after proposal submitted, rules should be changed to

prohibit this. It is recommended that certain sub-contracts associated with the current project be reviewed in this regard. Further, there should be heightened oversight of competitive bidding to assure that outreach to potential bidders is sufficient and that actual bidders do include the required number of qualified firms. (UNDP; future project teams; GEF)

- Managements costs: For future UNDP-GEF projects, keep management costs in a separate category from outcomes. Management costs as a percentage of total GEF expenditures should be monitored frequently assuring compliance with maximum proportions allowed by GEF. Further, given its multi-project nature, the CWRC PMO should for its future projects provide clear information on which team members are deriving their salary from the project and provide an accounting of team members' time to justify salary expenditures. (designers and implementers of future projects; current CWRC PMO)
- Institutional arrangements and implementation: In the future, leverage implementation lessons learned from this project. These include selecting PSC members who may offer contributions to project content and are likely to have longevity with project. For national-level projects, local leading groups or local PSCs may provide strong benefits for channeling cross-department funds at the provincial level. At the county level, having the county party secretary or mayor as a member of the leading group also contributes to strong cross-departmental leverage of resources. In general, leveraging provincial resources can help extend reach of project. Emphasizing a well-known and critical issue – in this case food security – may be a good way to mobilize stakeholders in other departments at the provincial level. (future project teams)
- Project M&E: For future conservation-related projects, reference CWRC's approach of designing and utilizing a baseline survey, which is a real strength of this project. For general M&E for future projects, considerable effort and debate should be put into developing indicators for project logical framework. Effort should be made to insure that indicators are not ambiguous and neither too difficult nor too easy, and directly relevant to project. (designers of future projects; MOA; UNDP)

Ideas for Future Projects as Suggested by Stakeholders

During consultations, the TE team asked a number of stakeholders for their ideas for future international or domestic cooperation projects or initiatives. One stakeholder noted that nowadays for China the funds from international projects are less important than before, but that the branding and platform created by such projects is valuable to conservation in China. Another noted that new conservation ideas are what is valuable. A third noted that the emphasis on results of international projects has had a positive impact in building the capacity of local officials involved.

Ideas proposed for future international cooperation work or other types of follow up projects are listed below:

- More extensive replication of "mainstreaming-in-agriculture" approach at new WRC conservation sites: Yet, most agree that this will not be an area for GEF support, unless some kind of new angle is developed for this work.
- Application of alternative livelihoods approach to other conservation issues, such as conservation of grasslands in Northwest China. Or, application of approach to WRC conservation in a regionally appropriate locale. Of note, the livelihood approach to conservation may be particularly appropriate to Northwest China, in areas with low incomes. In such cases, the incentive mechanism can serve the dual purpose of poverty alleviation and conservation. Further, Northwest China tends to have potentially large conservation sites, which would be expensive to put a fence around and manage, thus potentially rendering cost advantages for the "mainstreaming-in-agriculture" approach at such sites.
- An IAS project, with focus on WRCs or with more general scope.
- A GMO safety project, with focus on keeping WRCs safe from GMOs, or with more general scope.
- Ecological compensation for WRCs.
- ABS legal issues. (This would be a small project.)
- Agro-biodiversity conservation in the face of China's urbanization.
- New conservation methods that appear worldwide: One stakeholder suggested that an eye be kept out for new conservation methods worldwide and that new projects be developed accordingly when attractive measures appear.
- Civil society or company sponsorship of "mainstreaming-in-agriculture" WRC conservation sites: This initiative would seek to generate interest and support from society for sponsoring "MiA" or "livelihood" approach WRC conservation sites.
- Incorporation of WRCs into EIA and SEA. (May be a small initiative or project.)
- Biodiversity cooperation through *Strategic Dialogue* with the US.
- South-South cooperation on "mainstreaming-in-agriculture" approach (sharing lessons from China).
- Asia cooperation on WRCs.
- Asia cooperation on IAS.
- Provincial level WRC project.