ADB

Technical Assistance Consultant's Final Report

Project Number: 47075-001(TA 8541- PRC)
August, 2016

Peoples Republic of China: Strengthening Capacity for Wetland Protection for Sanjiang Plain

(Finance by the Technical Assistance special Fund and Multi-Donor Trust Fund under the Water Financing Partnership Facility)

Prepared by:

Training and Technology Transfer Ltd (TTT), New Zealand

Joint venture with DONG IL Engineering Consultants Co. Ltd, Korea and in association with Pacific Rim Innovation And Management Exponents, Inc, Philippines

prepared for:

Heilongjiang Provincial Forestry Department

Asian Development Bank

STRENGTHENING CAPACITY FOR WETLAND PROTECTION FOR SANJIANG PLAIN: A Capacity Development Technical Assistance Project of the Asian Development Bank (TA-8541 PRC)

Final Report

prepared for:

Heilongjiang Provincial Forestry Department

prepared by:

Training and Technology Transfer (TTT), New Zealand

20 August 2016

Disclaimer: The views and opinions expressed in this report are solely those of the authors, and do not reflect official positions of the Government of the People's Republic of China, Heilongjiang Provincial Government, or the Asian Development Bank.

Table of Contents

List of Abbreviations and Acronyms

ADB	Asian Development Bank
CDTA	Capacity development technical assistance
EAAE	Environment, Natural Resources, and Agriculture Division, East Asia Department (ADB)
EARD	East Asia Department (ADB)
FAO	Food and Agriculture Organization (UN)
GEF	Global Environment Facility
HPFD	Heilongjiang Provincial Forest Department
HPG	Heilongjiang Provincial Government
IED	Independent Evaluation Department (ADB)
IWRM	Integrated Water Resource Management
KP	Knowledge Product
MEP	Ministry of Environmental Protection
NDRC	National Development and Reform Commission
NR	Nature Reserve
PA	Protected area
PDRC	Provincial Development and Reform Commission
PEP	Poverty and Environment Program (ADB)
PMO	Project Management Office
PRC	People's Republic of China
PRCM	PRC Resident Mission (ADB)
SFA	State Forest Administration
SPWPP	Sanjiang Plain Wetlands Protection Project
TA	Technical assistance
TMO	TA management office
TNA	Training Needs Assessment
TOR	Terms of reference
TTT	Training and Technology Transfer (Consulting, Ltd., New Zealand)
USD	United States Dollars
WHI	Wetland health index

I. INTRODUCTION

1. During 2005-2012, the Heilongjiang Provincial Forest Department (HPFD), with support from the Asian Development Bank (ADB) and Global Environment Facility (GEF), implemented a 55 million dollar (USD) project with the overall goal of sustainably managing natural resources and protecting globally significant biodiversity, while promoting economic development in the Sanjiang Plain, in Heilongjiang Province, People's Republic of China (PRC). This project, the Sanjiang Plain Wetland Protection Project (SPWPP) supported the implementation of activities in six nature reserves (NRs) selected as pilot demonstration sites. The project was complex and broad in scope, and a wide range of interventions were successful in achieving improvements in watershed management, wetland nature reserve management and biodiversity conservation, capacity building, and sustainable alternative livelihood development.

2. To expand upon the successes under the SPWPP in the Sanjiang Plain, and to share lessons learned from the project, the Heilongjiang Provincial Government (HPG) requested ADB's continuing support through a capacity development technical assistance (CDTA) project entitled, "Strengthening Capacity for Wetland Protection for Sanjiang Plain" (ADB TA 8541-PRC). This technical assistance (TA) was to support continuing capacity development, dissemination of the wetland protection models developed under the SPWPP, and sharing of knowledge accumulated, including providing information useful for considering future investment projects.

3. The main purpose of this Final Report is to briefly summarize work completed in previous phases of TA-8541 PRC, and to document in detail the activities that were conducted during the final project period, from mid-May 2015, up until the conclusion of project activities in July 2016. In addition, this Final Report presents (i) a summary description of the main results achieved by the project; (ii) lessons learned with respect to the implementation of the CDTA, that might inform similar efforts in the future; and (iii) recommendations for the future, intended for both ADB and the HPFD.

II. ACTIVITIES CONDUCTED DURING PREVIOUS PROJECT PHASES

A. Inception Phase

4. The contract for TA-8541 PRC was awarded by ADB to Training and Technology Transfer (TTT), a New Zealand consultancy firm, in a joint venture with DONG IL Engineering Consultants Co. Ltd, Korea and in association with Pacific Rim Innovation and Management Exponents, Inc, Philippines. The activities under the TA commenced in July 2014, with the fielding of the consultant team to Harbin, Heilongjiang Province. The activities of the project team during the inception period were documented in an Inception Report submitted in early September 2014. Key accomplishments during the Inception period included several administrative functions, namely: (i) execution of consultant contracts; (ii) mobilization of the team during Mission No. 1 to Heilongjiang from late July to late August 2014; (iii) preliminary consultations with the Project Management Office (PMO) within HPFD; (iv) detailed delineation of the scope of work for analysis of alternative livelihood options; and (v) submission of an Inception Report which documented the activities carried out during the Inception phase, and presented a roadmap for further actions required to implement the project.

5. Apart from these administrative functions, the key substantive accomplishments during the Inception period were (i) completion of site visits to two of the NRs in Sanjiang Plain (Xingkaihu NR and

Zhenbaodao NR); and (ii) preparation of a preliminary Training Needs Assessment (TNA).

6. A report of the site visits during the inception phase is presented in Annex A. The site visits enabled members of the consultant team to become familiar with the key existing issues and concerns for watershed and wetlands management in the Sanjiang Plain, and afforded opportunities for consultation with local stakeholders.

7. A report of the TNA that was conducted is presented in Annex B.[1] The TNA was based on a desk study of SPWPP documents and the field visit to two of the Nature Reserves (mentioned above). The TNA examined whether or not training had been administered under the SPWPP for several core components of the project (watershed management, NR management, livelihoods, and policy and institutional considerations), and the degree to which ongoing training activities may have been institutionalized into regular programs of the concerned agencies.

B. Interim Phase

8. Project activities continued during the interim period from October 2014 through June 2015. The main accomplishments during the interim period were primarily realized during two field missions (Missions No. 2 and No. 3) to Heilongjiang Province.

9. Mission No. 2 was conducted during the period from mid-October to mid-November 2014. The activities completed during Mission No. 2 included: (i) consultations with key informants in Harbin; (ii) two separate trips made by consultant team members to the Sanjiang Plain to visit a total of five NRs (Anbanghe NR, Qixinghe NR; Xiaobehu NR, Naolihe NR, and Dajiahe NR); (iii) dialogue between the consultant team, PMO, and ADB, to further clarify project objectives and terms of reference, and to plan subsequent activities of the TA team; (iv) successful completion of the first project workshop ("Learning and Reflection" workshop) conducted in Harbin on 7 November 2014; (v) and a Tri-Partite Meeting between the PMO, ADB, and consultant team, held in Harbin on 8 November 2014.

10. Following Mission No. 2, several important activities continued from home office: (i) revision of the inception report following receipt of comments from the PMO (revisions in English and Chinese submitted by 19 January 2015); and (ii) preparation and submission of a draft Knowledge Product (KP), with the first draft (in English) submitted on 13 February 2015, and a revised draft submitted on 20 March 2015. The Chinese version of the revised draft was submitted on 7 April 2015.

11. Mission No. 3 was conducted in late April-early May 2015. During the third mission, the following activities were carried out: (i) further field work was conducted at one of the NRs previously visited (Xingkaihu NR); (ii) a second workshop, the "Knowledge Product Review Workshop", was planned, organized, and conducted in Harbin on 11 May 2015; and (iii) preparation of the Interim Report that documented the activities for the Interim period was initiated. Mission No. 3 was concluded in early May of 2015.

12. Further details about key activities that were undertaken during the interim project period are presented in several annexes. These are as follows: Annex C: notes of meetings and consultations

[1] It should be noted that it was originally intended that a more in depth TNA, to be followed by conventional training sessions, would be conducted. However, at the request of the PMO, this approach to capacity-building was relinquished, in favor of a more flexible and open approach. This aspect is further explained in Section IV.A., below.

conducted in Harbin; Annex D: report of site visits conducted in October 2014; Annex E: report of 'Learning and Reflection' workshop; Annex F: report of the May 2015 site visit; and Annex G: notes on the Knowledge Product Review Workshop. In addition, several aspects relating to the activities of the interim period are further discussed in Section IV., below.

III. ACTIVITIES CONDUCTED DURING THE FINAL PROJECT PHASE

A. Home Office-Based Activities after Mission No. 3

13. Following return of the consultants to the home office after Mission No. 3, the Interim Report was finalized and submitted to ADB and the PMO on 30 June 2015. In addition, there was extensive communications and exchange of information between ADB, the PMO and the consultant team, aimed at finalizing the manuscript of the KP for publication. As part of this process, the KP manuscript went through several rounds of review and revision. The English-language version of the KP manuscript was finalized by mid-January 2016. However, further reviews by ADB technical staff, other technical and typesetting editors, and Chinese editors in the ADB Resident Mission in Beijing were conducted over a period that lasted for several months. For each round of review, comments were submitted back to the TA consultant team, and any required changes to the manuscript were made.

B. Finalization of the KP

14. The KP manuscript in English was finalized, and the final KP, entitled "Reviving Lakes and Wetlands in the People's Republic of China, Volume 3: Best Practices and Prospects for the Sanjiang Plain Wetlands," was published in hard copy and on the ADB website in early May, 2016. Initial printing of the KP in English was 300 copies. The document is presented here by reference, as Annex H.[2]

15. As of this writing (late August 2016), the finalization of the Chinese language version of the KP is still in process.[3] Once completed, the Chinese version will also be posted on the ADB website, and the first printing of 200 printed copies distributed to relevant government agencies in Heilongjiang Province and to other interested stakeholders.

C. Mission No. 4

1. Final Workshop

16. In early May, 2016, plans for scheduling the fourth and final mission for the TA were confirmed when the PMO communicated to ADB and the consultant team its strong desire to launch the KP and to conduct the final workshop in conjunction with a planned international event, the "2016 Heilongjiang Wetland High-Level Forum and Tourism Promotion Conference," in mid-June 2016. It was quickly agreed among all parties that this would be feasible, and plans were made accordingly to prepare for Mission No. 4 (the final mission).

[2] Full citation for the KP is: ADB. 2016. Reviving lakes and wetlands in the People's Republic of China, Volume 3: Best practices and prospects for the Sanjiang plain wetlands. Asian Development Bank, Mandaluyong City, Philippines.
[3] Preparation of the Chinese-language KP for publication is being done by a publisher in PRC, with technical and editorial guidance being provided by personnel at ADB Headquarters, ADB's Resident Mission in PRC (PRCM), and the TA consultant team.

17. The final workshop was co-organized by the HPFD and Heilongjiang Wetland Centre. The workshop, entitled "Wetland Restoration Techniques and ADB Strengthening Capacity for Sanjiang Plain Wetland Protection Project Workshop", was held on the morning of 19 June 2016, at the Sun Island Garden Hotel, Songbei District, Harbin City.

18. The workshop was moderated by Mr. Cheng Shioxia, Director of the Heilongjiang Provincial Forestry External Cooperation Division, and Director of the PMO for the TA project. Opening remarks were made by Mr. Zheng Huaiyu, Deputy Director General, HPFD. Mr. Yoshiaki Kobayashi, Senior Water Resources Management Specialist of ADB's Environmental, Natural Resources, and Agriculture Division, East Asia Department, and Project Officer for the TA, made a presentation on "Reviving Sanjiang Wetlands – Lessons Learned from the ADB's Operations." This presentation provided background on the SPWPP, and listed the lessons learned and recommendations of the recently published Knowledge Product. It also provided information about ADB's other efforts for wetlands conservation in the PRC, and about the other Knowledge Products in the ADB's "Reviving Lakes and Wetlands" series.

19. Following the presentation by Mr. Kobayashi, the workshop featured a presentation by the TA consultant team on "The Sanjiang Plain Wetlands: Past, Present, and Future Prospects for Conservation." [4] This presentation closely followed the KP in its structure and content. As such, the consultants' presentation provided a comprehensive overview and introduction of the KP to the workshop participants. The presentation touched upon: (i) the history of the Sanjiang Plain, and how the wetlands of the area have been transformed over time; (ii) lessons learned from past experience, that could help to improve management of the wetlands, and (iii) recommendations for the future, including sustainability guidelines and specific options for action. Because of the workshop time limitations, not all the recommendations of the KP could be presented in detail. Rather, some of the most significant and representative recommendations were selected for presentation as examples during the workshop. These were as follows:

- **Sustainability Guidelines:**
    - Supporting sustainable livelihoods to complement wetland conservation efforts
    - Creating a strong foundation for wetland conservation through continuing awareness-raising, educational, and capacity-building activities (e.g., wetland protection and conservation in school curricula; disseminate of learning materials in multimedia and electronic media, development of learning centers)

- **Options for Action:**
    - Establishing biodiversity corridors and Protected Area (PA) networks
    - Using Eco-labeling (e.g., eco-certification programs)
    - Using Hi-Tech methods and equipment for monitoring (e.g., satellite imagery, drones, animal tagging)

[4] The Powerpoint version of the presentation was provided to the PMO, and is available on request to other interested parties.

- Specific sustainable livelihood opportunities most relevant for Sanjiang Plain (nature-based ecotourism/building with nature, vegetable farming in eco-greenhouses)

20. Following this presentation, the National Wetland Management Specialist/Deputy Team Leader[5] made a short presentation[6] to highlight the following two additional aspects:

1. ***Rationale behind ADB and HPFD commitment of resources and support to preparing the KP:***

21. It was explained that the ADB and HPFD have committed considerable resources and support to conducting the CDTA, and preparing the KP over a period of nearly two years. Reflecting this high level of commitment, the current TA project (TA-8541 PRC) was selected as a model project to help mark the 30th anniversary of PRC-ADB cooperation.[7] Much of the commitment by HPFD and ADB to the TA was based on a desire on the part of these institutions to produce a Knowledge Product that would accurately record and highlight the accomplishments of the SPWPP. Following are some of the reasons why it was felt that it would be important to support the TA efforts:

i. Valuable experiences:

22. Valuable experiences were gleaned from the ADB-GEF project on wetland protection in Sanjiang Plain. The SPWPP demonstrated a range of success stories regarding efforts to conserve and restore wetlands in Sanjiang Plain through a range of systematic approaches, including integrated river basin management, habitat restoration, alternative livelihood development, and capacity building. ADB and HPFD felt it would be important to capture these lessons and disseminate them to the widest audience possible. Therefore, the principal lessons learned from the SPWPP have been summarized and presented in the KP.

ii. Effective results:

23. The SPWPP achieved tangible results that benefitted wetland and biodiversity conservation. As compared to other areas in China, the areal extent and quality of the wetlands in the Sanjiang Plain have remained relatively stable over the last 10 years; by contrast wetland areas nationwide have been reduced by 8.82%, and have become more degraded. In addition, under the SPWPP, some degraded wetland areas, and some wetland areas that had been converted to agricultural land, have been restored.

iii. Potential for replication and scaling up:

24. During the SPWPP, six nature reserves of the Sanjiang Plain were selected as pilot sites. It is possible to expand the lessons learned about wetland conservation from these sites to other regions of Heilongjiang Province, and beyond. Within the Province, one of the most attractive replication sites is the

[5] Prof. Xiubo Yu.
[6] This presentation was made in Chinese, without translation to English. The synopsis offered here explains the content of this brief presentation to non-Chinese speakers.
[7] The PMO informed ADB and the consultant team of this honor by e-mail on 17 February 2016. In their e-mail the PMO wrote "Dear experts: Many thanks to your effort for our TA 8541-PRC Project: Strengthening Capacity for Wetland Protection for Sanjiang Plain. I'm very much pleased to tell you that this project has been selected as one of the model cases for the 30th anniversary of ADB-PRC Cooperation." The PMO went on to state that the Ministry of Finance was collecting information about the selected cases.

Song-Nen Plain wetlands in western Heilongjiang Province. In addition, due to the significance and representativeness of the Sanjiang Plain wetlands in China, the lessons learned could also be disseminated to other provinces, and even to other countries in Asia. The availability of the KP in both English and Chinese versions can greatly facilitate the dissemination process.

2. How stakeholders can best make use of the KP:

25. The second point conveyed during the presentation of the Deputy Team Leader was to inform the participants about how to use the KP effectively. It was explained how specific sections of the report could best be utilized by specific groups of stakeholders:

- **Executive Summary**: This part of the KP is very important for policy-makers at provincial and national levels, so it is suggested that the PMO and HPFD provide it to related government agencies, to help to inform their policy making and decision making. Relevant recipients would include National and Provincial Development and Reform Commissions (NDRC/PDRC), the water resource management and environment protection agencies, and the State Forestry Administration (SFA) of the PRC.
- **Main sections**: The main body of the report (Sections I to VI) has been prepared primarily with the wetland nature reserve managers and staff in mind. Also included in this group are the local officials and technical staff of forest bureaus and wetland management centers, who collectively are the major audience for the KP. The best management practices, lessons learned and recommendations (including principles and actions) should prove to be very useful as a guide for wetland practitioners in their overall planning and day-to-day work activities.
- **Appendices**: The appendices contain a great deal of valuable information, including a comprehensive listing of best management practices for wetland conservation, river basin management and ecosystem approaches, as well as an up-to-date listing of references for further reading. These materials are not only helpful to wetland practitioners within the nature reserves, but also to scientists at research institutions and colleges.

26. Following the team's presentations, a formal ceremony was conducted to launch the KP. The workshop continued throughout the rest of the morning with presentations by several other speakers on topics relevant to wetland conservation. Closing remarks were made by the Deputy Director General of the HPFD, prior to adjournment.

27. Due to time constraints, it was not possible to conduct formal discussion groups or break-out sessions during the workshop. However, during the coffee break, informal discussions took place, and appreciation was expressed by several participants for the team's presentation, and for the KP, especially for the numerous recommendations made for future actions to support and strengthen wetlands conservation in the Sanjiang Plain.

28. Associated with the morning workshop, in the afternoon of the same day, a large and well-publicized international conference, the "2016 Heilongjiang Wetland High-Level Forum and Tourism Promotion Conference," was hosted by the Heilongjiang Provincial Government. This conference included presentations by government officials, nature reserve personnel, academia, and private sector representatives, about opportunities for tourism development in Heilongjiang, focusing especially on wetland tourism. Sophisticated video presentations accompanied the talks. A presentation was also

made about protection and sustainable use of wetlands, from an international perspective.[8]

29. Further information regarding the final workshop (including attendance sheets and a list of participants) and the high-level forum is contained in Annex I.

2. Administrative Meetings

30. A short, informal tri-partite meeting[9] was conducted over lunch on the day of the workshop and conference. The tasks remaining to be completed for the conclusion of the TA were discussed.

31. In addition, a final wrap-up meeting between the PMO and the consultant team was held at the PMO on the morning of 21 June 2016. The agenda included discussion of the outcomes of the final workshop; status of finalization of the Chinese version of the KP; and remaining tasks to be completed for conclusion of the TA. The PMO representatives and the consultant team reached general agreement on all these matters. Several important suggestions were made by the PMO, relating to recommendations to be included in the final report. These suggestions were taken on board and have been incorporated into the Recommendations section of this report.

32. The ADB Project Officer informed the team that an Aide Memoire for the final project mission would be prepared. This has been received and is included here in Annex J.

3. Other Activities

Closure of the TA Project Office

33. All members of the consultant team completed their field activities and vacated the TA project office in Harbin by 24 June 2016. Office keys were returned to the PMO on the same date.

IV. PROJECT RESULTS

34. According to the Terms of Reference (TOR) for the assignment, the expected outputs of the project were to (i) expand relevant HPG staff capacity for wetland protection developed under the Sanjiang Plain Wetlands Protection Project; and (ii) expand and disseminate wetland protection models developed under the Sanjiang Plain Wetlands Protection Project and share knowledge developed or accumulated for Sanjiang Plain. Simply put, these two outputs are referred to as ***building capacity*** and ***sharing knowledge and awareness*** and are discussed below.

A. Building Capacity

35. In consultations conducted during the inception phase, the opinion of the PMO with respect to capacity-building was made clear to the consultant team. It was explained that for this TA, it would not be necessary to conduct conventional, lecture-style training activities as a mechanism for building capacity. The reason for this was that extensive technical training, covering a broad range of subjects, had already been provided under the SPWPP. Thus it was felt that further technical training under the

[8] Mr. Yoshiaki Kobayashi of ADB made the presentation.
[9] Mr. Shaoxia Cheng of PMO, Mr. Yoshiaki Kobayashi of ADB, and Mr. James T. Berdach of the TTT consultant team were present.

TA would be redundant and waste valuable resources. PMO expressed the preference that capacity-building be achieved through other means, and thus, some modification of the TOR was suggested. It was generally agreed by all parties (PMO, ADB, and the consultants) that capacity-building objectives of the TA could generally be accomplished through the series of workshops planned as part of the TA, and through continuing consultations and sharing of knowledge between the consultant team and the PMO and other stakeholders. Building of capacity would be enhanced by creating opportunities for greater exchange of information among peers, especially among the managers and staff of the NRs. During the course of implementing the project, besides interactions that took place during the three project workshops, other discussions with stakeholders took place during site visits, and during small meetings held in Harbin. The Training Needs Assessment that was conducted at the beginning of the project helped to enhance the consultants' understanding of general capacity-building needs. Annexes A through G and I provide further details about the above-mentioned activities. All the above-mentioned consultative activities contributed to strengthening and building capacity.

36. Among the activities described above, the three project workshops were likely the most significant contributors to building improved capacity during the course of conducting the TA. Both the "Learning and Reflection Workshop" and the "KP Review Workshop" were highly successful in bringing about improved communications, promoting exchange of ideas, and stimulating dynamic discussion among the workshop participants, especially among the NR managers and staff.

37. During the KP Review Workshop, it was recognized that a comprehensive capacity-building program would also need to be continued in the future, if advances in wetland management in the Sanjiang Plain were to be sustained. The following were identified as the key elements of such a program:

- Mechanisms to strengthen scientific and technical capacity among NR managers;
- Capacity-building initiatives in the community, including environmental education programs;
- Strengthening capacity for watershed management;
- Strengthening of research, monitoring, and patrol and enforcement capabilities within the NRs; and
- Strengthening capacity for sustainable alternative livelihoods.

38. The site visits that were made by team members to various NRs were also very useful for capacity building, as they afforded excellent opportunities for informal discussions between the TA consultants and NR managers and staff. During these discussions, the key issues and concerns of NR personnel were explored.

39. It was also noted that the dissemination of the KP would itself serve an important capacity-building function, and it is believed that the KP can continue to serve this purpose for the foreseeable future.

40. In light of the above considerations, it can be stated with confidence that the project objective of building capacity, especially among personnel of HPFD and the NRs, was amply satisfied.

B. Sharing Knowledge and Awareness

41. From the outset, it has been clear that the main intended output for the TA would be the

production of a high-quality knowledge product, which could serve to achieve multiple objectives. Among the purposes envisioned for the KP were the following:

- To capture lessons learned from the SPWPP and from other relevant experiences from PRC and other countries, with respect to conservation of wetlands;
- To serve as a "user's manual" to guide NR managers and staff in recognizing core guiding principles and specific best practices to be followed in promoting improved management and conservation of wetlands; and
- To serve as a general reference on the wetlands of the Sanjiang Plain, which could be used by the general public within Heilongjiang Province, including stakeholders in the conservation, educational, academic, research, and ecotourism sectors.

42. In order to prepare a Knowledge Product that would fulfil the stated purposes, it was necessary to conduct extensive research. The main thrust of this research was review of information from over 100 different scientific publications, technical reports, and website postings on the internet. The complete list of references employed in the preparation of the KP, and throughout the implementation of the TA, is presented in Annex K.

43. In addition, it would not have been possible to prepare the Knowledge Product without conducting in-depth stakeholder consultations. The complete list of persons consulted during the TA, which numbered some 100 stakeholders, representing a wide range of agencies, institutions, and sectors, is presented in Annex L. Consultations were conducted in a participatory manner, as evidenced especially by the series of workshops that were held. During the workshops, stakeholders were given the opportunity to provide their inputs and feedback regarding the Knowledge Product. Through an iterative process, which included the feedback of stakeholders during the workshops, the KP was continuously updated, revised and improved.

44. While the Knowledge Product has only recently been published, preliminary feedback—from ADB, the PMO, and stakeholders—has been positive, especially as concerns the numerous recommendations for future actions to promote conservation of the Sanjiang Plain wetlands. It appears and it is hoped that the KP can indeed serve the intended capacity-building and awareness-raising purposes detailed above.

V. LESSONS LEARNED

45. In relation to many other projects, this CDTA was of relatively short duration. Still, the activities conducted and the outcomes realized during its timeframe of more than one year have provided several lessons, which could help to inform similar efforts in the future. Some of the key lessons learned are presented here.

Lesson 1: Workshops may be a more appropriate vehicle for capacity-building, than classroom learning.

46. Most of the participants in the workshops conducted under TA-8541 were experienced conservation practitioners, primarily managers and staff at the nature reserves. For such an audience,

whose membershad already received extensive classroom instruction in most cases, the workshops offered opportunities for participants to ask specific questions and share their experiences with their peers. Thus it is believed that the participants were more engaged in knowledge sharing during the workshops, than they might have been in a one-way classroom-learning situation. Thus, workshops such as the ones conducted as part of the TA project can be an important and effective contributor to capacity-building.

Lesson 2: More time allocated for workshops and other interactive activities could have yielded more effective capacity-building.

47. The consultant team lobbied to conduct longer workshops (e.g., two full days) that would have included more extended discussion sessions, focused break-out working group sessions, and field visits. This would have increased the opportunities for interactive exchange of information among the participants. However, for various reasons (believed to be a combination of budgetary and administrative limitations), it was not possible to accommodate the longer format for the workshops. As a result, in most of the workshops, only a full day at the maximum, and in some cases only a half-day, was provided for presentations and discussions among participants. Therefore, while it was acknowledged that the workshops did indeed contribute to knowledge transfer and capacity-building among the participants, even stronger results could have been achieved, had more time been allotted for additional workshop activities.

Lesson 3: During the course of the TA, no technical personnel from the PMO/HPFD were formally assigned to work closely with the experts of the TA consultant team. This represents a missed opportunity for further knowledge exchange and capacity building.

48. The consultant team requested that the PMO assign technical staff as counterparts to work alongside the team members, throughout the course of the TA. However, this request could not be accommodated, possibly due to existing heavy workloads and time commitments of staff. Closer collaboration between PMO/HPFD staff and the consultant team would have certainly yielded reciprocal benefits: it would have improved communications and made the efforts of the team more efficient, while at the same time presenting opportunities for on-the-job training and strengthening of knowledge and skills among the staff of the HPFD.

Lesson 4: ADB could have arranged the internal review process for the Knowledge Product to be more efficient.

49. The consultant team spent a significant amount of time in producing several iterations of the “final” draft for the Knowledge Product manuscript. Once “final” revisions had been made, and only after considerable further time had elapsed, substantive technical review was performed by ADB, and comments submitted to the consultant team for further action. Some of the comments came from reviewers who were not very familiar with the project and who submitted comments and questions that were either elementary in nature, or not entirely relevant to the process required for effective review of the document. As a result, the consultant team was forced to “go back to the drawing board” and respond to some queries that had already been answered earlier. This was a bit repetitious and time-consuming, thus not as efficient as would have been hoped. Ultimately, with the ADB review held over until the Final Draft KP stage the team were left with a substantial rework and a loss of project momentum, which was probably a significant factor in causing the final international workshop, and publication of the KP, to be

unnecessarily delayed for some eight months longer than originally planned.

Lesson 5: Economic incentives can greatly facilitate wetland conservation efforts, especially farmland to wetland conversion.

50. Many of the lessons learned through the CDTA emerged during discussions held at the three workshops. For example, during the second workshop, a staff member from one of the NRs stated his opinion that, rather than forcing farmers to relinquish their farmland so that it could be converted back to wetlands, it was more effective and more acceptable to find means to replace income from traditional farming practices with income generated through other livelihood options, so that farmers might voluntarily relinquish their farmland for wetlands conservation purposes. In the instance reported, the informant stated that bee-keeping was one such activity, that could enable farmers to earn income comparable to or greater than that which they had been earning through their conventional farming activities. Livelihood replacement thus offered a more sustainable mechanism that could lead to more land area being made available for conversion back to wetland.

VI. RECOMMENDATIONS

51. Presented here are several recommendations, directed toward both HPFD and ADB, that might help to improve and strengthen future efforts for wetlands conservation. These recommendations are intended mainly to inform planning and implementation for projects that are similar in nature to the present CDTA, i.e., projects that aim to deal with biodiversity conservation, improving the management of wetlands, or production of Knowledge Products (or a combination thereof). In some cases, these recommendations are a natural outgrowth of the lessons that have been presented in the preceding section. The recommendations presented here relate both to (i) project implementation, administrative, and procedural aspects; and (ii) technical matters.

Recommendation 1: Scaling-up, replication, and expansion of geographic coverage with continuing donor support

52. It was a stated objective of the SPWPP that the interventions carried out in the six demonstration NRs under that project would serve as test cases for possible replication and scaling-up, potentially as part of a future project. Since there are 25 wetland nature reserves within the Sanjiang Plain, the 19 NRs not yet covered under the SPWPP offer immediate possible expansion sites.

53. In addition, the important natural wetland areas of Heilongjiang Province are not limited only to the Sanjiang Plain, but also include, for example, the Song-Nen Plain and Daxing'anling wetlands. These other wetland areas thus offer further potential for scaling up the best practices that were demonstrated under the SPWPP, to cover an expanded geographic range.

54. Given this clear potential and need for replication and scaling up throughout the province, there is a strong case to be made for continuing assistance from ADB and others in the donor community to support future efforts aimed at improving the conservation and management of sensitive and critical wetlands and associated watersheds in Heilongjiang Province. Thus it is recommended that ADB and other development partners engage in close dialogue with HPFD, to determine the next set of priority actions that should be carried out, and the support that will be required, in order to achieve these objectives.

Recommendation 2: Key technical focal areas for future assistance

55. The Knowledge Product provides numerous recommendations for future interventions intended to strengthen the management of wetlands in the Sanjiang Plain (and beyond). For any future assistance project(s), one challenge would be to identify, out of the numerous available options, the priority thrusts that such a project(s) would undertake. In part, site-specific conditions would need to be considered to make such determinations. Equally important, however, is the identification of key thematic areas that have emerged as priorities during the course of the dialogue that took place as part of the CDTA. Among the top priorities that emerged, it is recommended that the following thematic areas be considered, in the course of planning for any future assistance efforts:

a. Wetland eco-tourism:

The Heilongjiang Provincial government is committed to developing tourism as a major economic activity within the province, with wetland ecotourism being one of the unique opportunities to be found here, that could be utilized not only as an economic driver, but also as a supporting activity for wetland conservation. This opportunity was highlighted during the recent "2016 Heilongjiang Wetland High-Level Forum and Tourism Promotion Conference," held in Harbin in June 2016, in which high-level representatives including the Provincial Governor, Vice ministers of SFA and State Tourism Administration participated. Planning for ecotourism development that is well-harmonized with wetlands conservation objectives can help to ensure that the potential adverse impacts and environmental threats of "mass tourism," with its concurrent high pressures due to concentrated human activities and inappropriate infrastructure development, can be avoided and properly managed.

b. Biodiversity corridors and integrated river basin management:

River systems form natural "biological highways" that provide corridors and habitat for dispersal, migration, feeding, sheltering, resting and reproduction of a range of wildlife species. The Naoli River basin in the Sanjiang Plain is one such natural "green corridor" that includes several wetland areas along its length, which are managed and protected within several NRs. The corridor along the Songhua river is a similarly rich repository of wetland biodiversity. Coordinated management of such corridors could yield significant benefits in terms of increased survivorship of endangered, threatened, and protected species of migratory waterfowl and other associated species of flora and fauna. However, significant challenges will accompany the designation of river basins or biological corridors for protection, since the management of these areas will require a multi-sectoral, multi-agency approach that spans across a variety of habitats, over several municipalities, and across a range of government agencies that have administrative authority for varied functions.

c. Applying advanced technologies for improved wetland monitoring and assessment:

One of the best practices highlighted in the KP was the use of "hi tech" applications and equipment for field monitoring of migratory bird populations. In applying new technology, such as drones, trap cameras, and GPS loggers for waterfowl, new wetland monitoring protocols will also need to be developed, and the wetland health index (WHI) will need to be standardized and applied for wetland assessment.

Recommendation 3: Future capacity-building efforts

56. The Knowledge Product suggests capacity-building as an ongoing imperative. In relation

specifically to wetland nature reserve managers and staff, and similar hands-on "practitioners", capacity building initiatives might include the following:

- Establishment of and participation in knowledge networks
- use of published scientific literature
- seminars and webinars
- Internet search
- Continuing professional development as members of professional societies
- On-the-job training
- Mentoring by senior colleagues
- Peer to peer knowledge exchange
- secondment to higher positions or other organizations
- Being open to adopting and embedding new ideas and best practices into everyday work practices and programs

57. By its very nature, capacity building in conservation management is multi-faceted, multi-disciplinary, multi-functional and challenging.

58. More broadly, dissemination of the Knowledge Product can greatly facilitate learning and raise awareness concerning the importance of the wetlands of the Sanjiang Plain and the requirements for their management. Dissemination of the KP can be done in conjunction with public awareness-raising programs, education initiatives, and events and activities conducted through existing Nature Reserve education centers. In addition, regular liaison with media outlets can be effective for securing newspaper coverage and television air time to further publicize the KP and build public awareness.

Recommendation 4: Continuing dissemination of the KP

59. The KP needs to widely publicized and its contents made available to the broadest possible audience via newspapers, radio and TV, professional and community workshops, within school curricula, etc.

60. The electronic (PDF) file for the English version of the KP is already downloadable from the ADB website, and it is expected that the Chinese language version will also soon be available there. In addition, it is recommended that HPFD include a link to the KP on its own website, so that a broader audience can be reached within Heilongjiang Province. Similar links could be included on other PRC government agency websites, especially, the SFA website.

61. In addition, following up on ideas presented by the team during the final workshop (see "***How stakeholders can best make use of the KP***" in Section III.C.1. [sub-item 2], above), it may also be desirable to produce abridged versions of the KP or of specific sections, as pamphlets that could be distributed to various interest groups. Some suggestions for such products are as follows:

- "Sustainability Guidelines" and "Best practices: "Options for Action" could be produced as pamphlets targeted for distribution to NR managers and personnel;

- An abridged paper modelled after the Executive Summary of the KP could be printed as a pamphlet that could be distributed to policy-makers within various government agencies at

provincial and national levels, to inform their policy making and decision making; and

- A simplified pamphlet that presents the key points of the KP could be prepared and distributed to students within primary and secondary schools, and used for curriculum development.

Recommendation 5: Periodic review and updating of the KP

62. In general, the KP has been well received. To avoid the risk that it becomes a static, out-of-date document, there should be formal reviews conducted at regular intervals (perhaps every three years), with the following objectives: (i) to evaluate progress in the implementation of the recommendations of the KP; (ii) to update information in the light of new scientific or administrative developments; and (iii) to determine in which areas updating may be required. Updates could be accomplished either through publication of revised versions of the KP, or by means of web-based postings on the ADB and HPFD websites.

Recommendation 6: Transitioning from traditional to internet and electronic media as mechanisms for knowledge sharing

63. Even with periodic review and revision (as suggested in Recommendation 5, above), there is a risk that the KP will eventually become out of date, and thus there may be a time limit to its usefulness. The risk of "gathering dust" is common to all print media.

64. Within the field of knowledge management, current trends are moving quite rapidly in the direction of adopting electronic media as the media of choice for information-sharing. This is primarily because electronic media are flexible, easily accessed, and highly interactive.

65. In this context, it is recommended that any future initiatives that may be considered for preparing knowledge products on wetlands management, look to doing so in a format that is primarily electronic, rather than in print. While the importance of presenting scientific data in a coherent manner cannot be discounted, this no longer needs to be done in the form of a printed publication. For future knowledge products, the following elements may be considered as the key components, to be part of an integrated, interactive "electronic Knowledge Product":

- Web pages on a range of topics relevant to the management of the specific wetlands in question;
- Free access to maps and databases, preferably designed to be highly interactive and easily tailored to meet the specific informational needs and requirements of visitors to the website (e.g., having a strong search function, having an option for producing thematic maps or graphs that highlight specified parameters);
- A blog to record reactions and comments from stakeholders;
- Generous use of multi-media resources (e.g., graphics, videos, audio files, links to real-time monitoring systems, etc.) throughout the website;
- Regular "newsletter" that provides reports on new developments;
- Electronic educational courses and seminars; and
- Extensive linkage to other related websites.

VII. CONCLUSION

66. The KP produced under TA-8541 PRC, with its presentation of sustainability guidelines and recommendations for a wide array of future actions, serves as a bridge between the interventions completed under the SPWPP, and possible projects and programs for strengthening wetland management in the Sanjiang Plain in the future. While the accomplishments of the SPWPP were numerous, there is still much work to be done to improve conservation efforts in the wetlands, which in turn is required to ensure the survivorship of the globally-important endangered, rare and threatened species of flora and fauna that are found there. Much of this work involves taking the lessons learned from past experience, and applying them more broadly across the wetlands of the Sanjiang Plain and in fact to other important wetland areas of the PRC as well.

67. In this regard, it was mentioned in its presentation at the “2016 Heilongjiang Wetland High-Level Forum and Tourism Promotion Conference," that the ADB stands ready to offer continued support to the HPG for strengthening management of wetlands in the province. Thus it is hoped that the vision that has been presented in the Knowledge Product for (i) improving ecological conditions of the Sanjiang Plain wetlands and watersheds; (ii) promoting greater knowledge, awareness and understanding among provincial government agencies, communities, and other local stakeholders; (iii) developing alternative livelihoods that can minimize adverse impacts to wetlands and even improve their condition, while at the same time providing a higher living standard and better quality of life to local communities; and (iv) building stronger capacity and capability among nature reserve managers and staff—can be fully realized.

ANNEXES

ANNEX A: REPORT OF SITE VISIT, AUGUST 2014

Xingkai Lake Nature Reserve and Zhenbaodao Nature Reserve

Purpose of the Field Visit

(1) To analyze training needs and develop capacity-building interventions for wetland nature reserves in Sanjiang Plain;

(2) To analyze the wetland conservation practices and models developed under ADB Project on Sanjiang Plain Wetland Protection.

Date Conducted

17-21 August 2014

Sites Visited

- Xingkai Lake NR, Sanjiang Plain, Heilongjiang Province
- Zhenbaodao NR, Sanjiang Plain, Heilongjiang Province

Participating Project Personnel

- David Parkin, Watershed management specialist
- Xiubo Yu, Wetland Biodiversity Specialist and Deputy Team Leader
- Zhang Xuemei, Alternative livelihoods specialist

Persons Met

- Shangzhu Feng, Former deputy director, Xingkai Lake NR
- Jinling Li, Chief of Communication and Education Division, Xingkai Lake NR
- Chunchen Wu, Chief of Administration Office, Xingkai Lake NR
- Wentao Yu, Chief of Research Institute, Xingkai Lake NR
- Huajin Liu, Deputy Chief of Research Institute, Xingkai Lake NR
- Mr. Zhang, Director and chief engineer of Zhenbaodao NR
- Fulin Zhang, Chief of Conservation Division, Zhenbaodao NR
- Fuqiang Wan, Chief of Communication and Education Division, Zhenbaodao NR
- Jingdong Zhang, staff of Conservation Division, Zhenbaodao NR

Schedule of Field Activities Conducted

Date	Route	Activities	Overnight
17 Aug (Sunday)	Harbin-Mishan		Mishan
18 Aug (Monday)	Xingkai Lake NR	(Morning) Focus Group Discussion with Xingkai Lake NR staff (1) Water bird monitoring program (2) Orential Stork breeding (with atificial nests)	Xingkai Lake NR Traing Center

Date	Route	Activities	Overnight
		(3) Alternative livelihood (4) Eco-tourism of wetland park (5) Water resource management and non-point pullution control (6) Restoration of wetland from cropland program (Afternoon) Field visit of Xingkai Lake NR (1) Experiment zone. Xinkai Lake museum, water bird habitats, Small Xingkai Lake boat trip, bird watch tower; (2) Core zone of NR Car trip along the lakes (including sluice gates), birdwatch tower, Oriental Stork nests (artificial), water bird habitat, bird monitoring with real time video camera and long-distance data transfer	
19 Aug (Tuesday)	Xingkai Lake NR to Zhenbaodao NR	(Morning) Field Visit of Xingkai Lake NR (continued) (1) Visit the wetland ecosystem monitoring station of Chinese Academy of Sciences and Wetland Park (Morning) Xingkai Lake NR to Zhenbaodao NR (Afternoon) Field visit of Zhenbaodao Core Zone of NR (1) Crescent Moon Core Zone, including eco-tour facility, wild lotus, bird-watch tower, water resource management (2) River View Flatform Core Zone, including River View Flatform, wetland landscape, restoration of wetland from cropland, alternative livelihood	Hutou Town, Hulin
20 Aug (Wednesday)	Zhenbaodao NR	(Morning) Field visit of Zhenbaodao Core Zone of NR (Continued) (1) Houtou Town Core Zone, including the Ussuri River system, birdwatch tower, wetland landscape, spotbill habitat (Morning) Focus Group Discussion with Zhenbaodao NR staff (1) Water resource management (2) Demolish of dams and dykes for wetland ecological features (3) Restoration of wetland from cropland program (4) Alternative livelihood (5) Eco-tourism of wetland park (Afternoon) Zhenbaodao NR to Mudanjiang City	Mudanjiang City
21 Aug (Thurday)	Mudanjiang City – Harbin City		Harbin City

Major findings: Xingkai Lake NR

General observations

This reserve has significant as-built infrastructure including a new hotel. Visually the hotel is unattractive with the external air conditioner from each room visible on the façade of the building. Some overall provincial level architectural design standards are needed to reduce and improve the visual impact of new infrastructure in reserves.

The marshland walkways are incomplete. It was noted that the horizontal framework is in place but made of steel which seems incompatible with the natural and sustainable image being sought for the nature reserves. There may be permafrost constraints regarding construction methods.

Watershed management

- Restored wetland helps to reduce non-point pollution from cropland
- An obstacle to further recovery of cropland inside the reserve is the compensation cost (calculated on the annual price of the rice crop over ten years)
- Point and Non Point pollution from the watershed draining to the Maling River is a problem for water quality during the flood season (June-July). We understand about 700km of rivers and three cities (Mi Shan, Jixi and Jidong) drain into the River. There is a floodgate located on the river above the "small lake" which is operated by the Water Resources Institute. The gate is operated (in consultation with the Nature Reserve staff and other stakeholders) during high flood levels. Hence there is some significant pollution of the small lake during the flood season.
- The small lake is only 1.5 meters deep on average and shows signs of stress with floating islands of debris and algae/weed growth. Wind generated waves would stir up bottom sediments during storms. The depth of the lake should be surveyed and monitored regularly, at least annually to see if sedimentation is an issue. The small lake protects water quality in the main Xing Kai Lake.

Wetland biodiversity monitoring and management

- Migratory bird and breeding habitat monitoring by satellite remote sensing is recording migration patterns. Ringed birds have been recorded in Korea. Innovative real time video monitoring is proving invaluable in establishing a baseline and a means of demonstrating progress with work programs. New species have been discovered by bird photographers who can be regarded as stakeholders. New nesting sites have been located outside the reserve.
- The species recovery of Oriental White Stork in Xingkaihu is successful whereby the number of stork pairs occupying nesting territories increased from 9 to 44 nests over a 6-year period from 2005-2011 during ADB Sanjiang Plan Wetland Project (this decreased to 27 in 2012 due to colder temperatures which is still a 300% increase), and 85 nests in 2014, in which 38 nests are successfully used by Oriental White Storks (OWS) in 2014.
- The team watched at a video camera site this year's (OWS) nesting and fledgling activity.

Major findings: Zhenbaodao NR

General observations

This reserve has significantly less infrastructure development than Xingkai Lake. This is consistent with a policy for those tourists who wish to have a wilderness experience without high intensity tourist development. Hence there is a need to balance the number of tourists and appropriate infrastructure against conserving the wetlands. This reserve has used timber for its marshland walkways. The timber was sourced from Russia, perhaps a more sustainable practice than using steel from China.

Watershed management

The reserve has adopted a policy of free-flow rivers, i.e. no dredging. This is innovative and a good management practice. If dredging is carried out and material removed from a river system the river will seek out new material and begin an erosion process usually in an anthropologically inconvenient place.

A reclamation dam and associated dikes built after 1998 are being demolished (5 to 6 meters high and 3300 metres long).

Re-conversion of 300 ha of cropland to potential wetland has been achieved. The reserve would like to recover a further 400 ha but this was reclaimed prior to 1998 on state owned land. The leases still have 13 years to run. Compensation to buy the farmers out early would be expensive.

In one case, it was reported that a farmer who had formerly farmed land that has now been re-converted to wetland has become a tour guide. Some cropland farmers are being employed (and paid monthly) to keep daily records on activities in adjacent wetlands (i.e. they have become new stakeholders).

There is an all year round fishing ban and a logging ban in the reserve.

Efforts are ongoing to recover croplands affected by contamination from fertilizers and chemical products; this normally takes at least three years to get back to organic. The Nature Reserve is getting help from North East Forest University, but would also appreciate help on decontamination international best practice.

Wetland biodiversity monitoring and management

There is an emerging human-avian interface issue with regard to geese. This species is a threat to livelihoods of the crop farmers, as the flocks devour newly planted seed.

Alternative Livelihoods

Continuous education of farmers on wetland protection

“From Conflict to Communication” is a track of relationship between the affected farmers and the nature reserves (NRs). In the beginning of the conversion of farmland to wetland, the relationship between the farmers and the NRs are conflicting. Farmers refused to convert their farmland, and have no willingness to communicate with the NRs about their farmland conversion. After a number of education on wetland protection in various forms including training, publicity, delivering pamphlets and leaflets and TV

advertisement, farmers changed their mindset and started to sit down and communicate with the NRs on the things of converting their farmland. The managers of Xinkaihu and Zhenbaodao Nature Reserves highly emphasized the importance of the education. Education of farmers on wetland protection is crucial for conversion of farmlands to wetland and stoppage of wetland reclaiming.

Education of students on wetland protection

Both the NRs of Xingkaihu and Zhenbaodao conducted numbers of education of students in local primary and middle schools on knowledge, functions, history and protection of wetland in various ways, such as giving lectures, site-visit, watching video, demonstrating specimen. Education of students on wetland protection has positive impact shortly and in the long term. The education makes the young generation growing up with an environment-friendly attitudes, and setting up a positive mindset on wetland and environment protection. Meanwhile, the educated students persuade their parents to protect the wetland, and as the results, knowledge, awareness and willingness of their parents to protect wetland are enhanced.

NR of Xingkaihu is rebuilding its wetland museum. Its original museum had two exhibition halls—Video on Wetland, and Historical Figures. After rebuilding, two new halls will be set up—Geographical Hall and Ecologic Hall, and the video will be updated to 4G.

After improvement of the construction, the NR will organize co-program with local schools, primary and middle schools. The tentatively planned activities are as follows:

- The NR will invite experts (experts from other institutes and/or staff of the NR) on wetland protection to give lectures to the students on the museum;
- School biology classes will be organized in the museum;
- 4G video on wetland will be open to the schools and students freely all the time;
- Updated specimen of birds will be explained by the guides to the students whenever needed;

Eco-tourism

Eco-tourism can create employment opportunities to affected farmers and generate income for the NRs to supplement their management fund.

Both of the NRs of Xingkaihu and Zhenbaodao have initiated their eco-tourism. “Xinkailiu” tourist site in Xingkaihu NR, and three tourist sites in Zhenbaodao NR—1st Tower in Wusuli River, Research-monitoring-tourist Tower, and Crescent Lake.

Tourism has created job opportunities for about 330 farmers and fishermen[10]. With trainings of resettlement plan and emphasis on benefits to the affected farmers, majority of the opportunities were provided to the affected farmers. For example, the RMT Tower in Zhenbaodao NR is just on its first year operation, which provided three jobs to the affected farmers—ticket seller, tour guide and cleaner- with monthly salary of CNY 2,000[11].

[10] From the Project completion report (ADB, October 2013)
[11] From manager of Zhenbaodao NR.

The case of Mr. LI Wenyuan, 38 year old, from Baofeng village, where many farmlands were converted to wetland, was discussed. It was from Mr. Li that more than 6 ha of farmland of his family were converted into wetland. He has been employed as a ticket seller since the operation of the Research-monitoring-tourist Tower, earned CNY 2,000 per month.

The Research-monitoring-tourist Tower is developing and will create more employment opportunities to the affected farmers, such as management of the tourist cars etc.

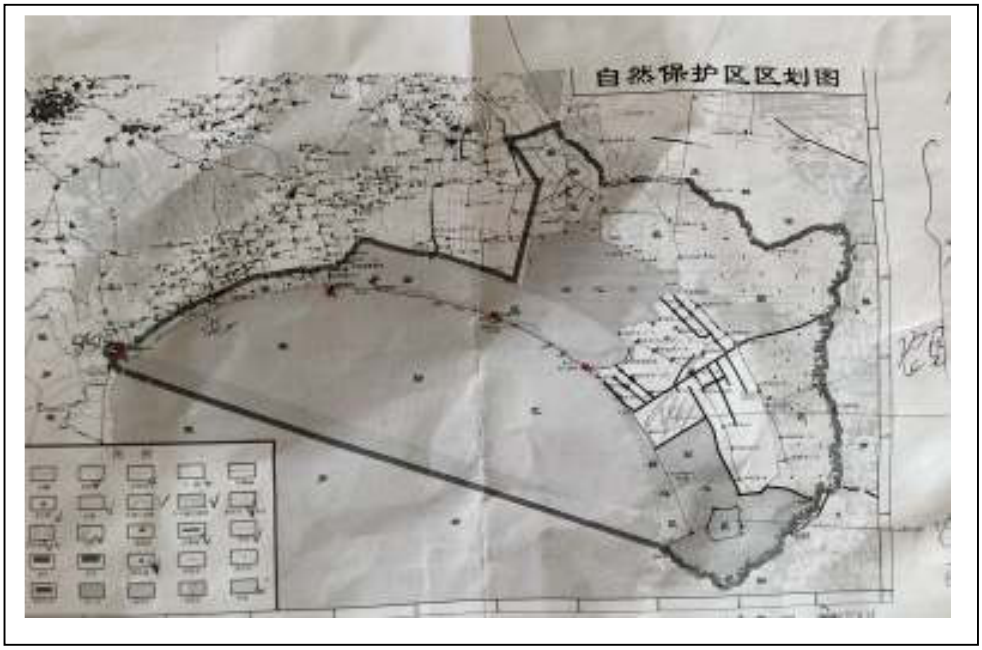
The tourism sites also provide places for farmers to sell local products such as handicrafts, honey, fish, shrimp. Figures 1 and 2 show products being sold to tourists in Xingkaihu and Zhenbaodao NRs respectively. The handicraft of flower vase in the picture 2 is made of shells of walnut. Price of the flower vase is CNY 200.

Figure 1: products sold to tourists in Xingkaihu NR

Figure 2: products sold to tourists in Zhenbaodao NR

There are four tourist sites along the Chinese side of Xingkai Lake, which are marked as red points in Figure 3. The four sites are developed respectively by Xingkaihu NR and two national farms, who administratively have different affiliations. Currently, the three institutions separately manage their tourist sites. Managers of Xingkaihu NR ask for coordination management of the four tourist sites, which should be better in terms of wetland protection. Of the four tourist sites, two are relatively large which are respectively developed by Xingkaihu NR and 8510 national farm, and the other two are small which are developed by Xingkaihu national farm. The two small tourist sites are not eco-tourism, manager of Xingkaihu NR said. The sites have only small restaurants and water areas for tourists to play, which causes some problems to wetland protection. For example, the waste water from the restaurants, garbage from the tourists, etc.

Figure 3: Xingkaihu Nature reserve



Community Relations

It is very important for the NRs to keep a good relationship with the farmers in and around the NRs in order to protect the NRs. There are a number of farmers who are living in and around the NRs, and the NRs cannot keep an eye on each of the farmers. If not keeping a good relationship with the farmers, and the farmers did not voluntarily protect the wetland, the wetland could not be kept well.

Co-management of the wetland is necessary, and is efficient economically and socially if done properly. The current way of co-management of the wetland is that the NRs employ farmers as patrols and pay some subsidies. For example, in Zhenbaodao NR, there are more than 40 farmers employed by the NR as patrols with subsidy of CNY 1,800 per month. Criteria of selecting the patrols are awareness and willingness of wetland protection. The patrols go through their responsible area and record situation every day. In the agricultural seasons, the farmer patrols go around their responsible area when cultivating their farmlands, which saved a lot time. Otherwise, the NR managers said, CNY 1,800 is

much lower than that farmer patrols would get.

The farmer patrols work not only as a patrols. They also function as everyday trainers to raise villagers' awareness of wetland protection including not reclaim the wetland, and increase villagers knowledge on wetland and its protection.

Zhenbaodao NR organized a three-day training that trains the farmer patrols on knowledge about wetland plants and birds by two professors from Northeast Forestry University on April, 2014. After the training, the farmer patrols to great degree can recognize plants and birds needed be protected, the levels of protection and the reasons to protect them. This is very helpful for the farmer patrols to further educate and persuade villagers not to reclaim wetland and to protect the wetland.

Other Management Issues

Currently, vehicles such as trucks and tractors for transporting products to and from Xinkaihu national farm go through large part of way within Xingkaihu NR, which is not good for wetland protection. Xingkaihu NR staff are unable to recognize people who are going to the national farm or not, which to certain degree cannot prevent people from going to the NR and doing damage to the wetland and its biodiversity, for example, picking up eggs of birds.

Managers of Xingkaihu NR have a plan for restricting access within the NR. They have asked the government to build a new route for Xingkaihu national farm. The new route would have a shorter length of roadway that passes through the NR, than the existing route, and farm vehicles would be routed along a road with only two access points connected to outside[12]. With this arrangement, tourists could still access tourism sites, but the access of farm vehicles would be restricted from entering sensitive areas within the NR.

Final discussion points

- The field study proved an effective means for understanding the interventions carried out under the SPWPP, and is thus an effective way for the team to fulfill the TA tasks. If possible, field studies should be carried out in all the six NRs included in the SPWPP.
- Currently, in addition to hand-made items, there are also a variety of fish being sold to tourists. However, it was not determined what species these were, or where they are harvested. While the SPWPP provided some training on alternatively livelihoods, what constitutes "wetland-friendly" products needs to be commonly understood.
- The managers of both Xingkaihu and Zhenbaodao NRs asked for presentation of international and national successful wetland protection cases.

.

[12] This needs be further clarified by Xingkaihu NR.

ANNEX B: TRAINING NEEDS ASSESSMENT

During the Inception phase, the consultant team prepared a preliminary training needs assessment (TNA) based on a desk study of SPWPP documents and a brief field visit to two of the Nature Reserves where the SPWPP was active. In this Annex, an indicative training plan is presented in Section A, while the preliminary TNA (upon which the plan was based) is presented in Section B. The indicative training plan contains recommendations for building capacity through a variety of accepted training methodologies.

Because it is considered that the TNA was only of a preliminary nature, a more in-depth, participatory, capacity strengthening Gap Analysis and Needs Assessment (GANA) will be conducted during the next period of field work beginning in October 2014. That assessment will consider capacities already in place, based upon existing knowledge, skills and behaviors and those which have been developed as a result of past training provided during the course of the SPWPP. The current state of knowledge will then be compared to best international practice and knowledge regarding capacities required to effectively support: (i) wetland restoration, (ii) nature reserve management, (iii) watershed and river basin management; and (iv) development of alternative livelihoods. Following completion of the GANA, a determination will be made about the types of capacity-building interventions that the project should deliver, and who the target participants in these activities will be.

A. Indicative Training Plan

1. Biodiversity Conservation and Ecological Restoration in Wetland Protected Areas

Topic / Subject Area	Why Required	Methods to be Applied	Who will be involved / Participants
Wetland conservation and restoration project design and management	Wetland conservation and restoration has been mainstreamed in national and provincial financial plan and policy. The nature reserve managers and provincial technical staff need to understand the key elements for the wetland related projects.	Classroom sessions Focus group discussion Exercises	Provincial wetland conservation management center, Nature reserve managers
Wetland biodiversity survey and monitoring.	There are some gaps in biodiversity monitoring of nature reserves, including the plants and animals, especially the migratory birds. From the Completion Report of ADB Sanjiang Wetland Project, the bird population fluctuated greatly, and the birds monitoring (especially bird counting) was an explanation.	Classroom sessions In the field practical application of protocol and methodology of migratory bird monitoring	Nature reserve staff community leaders, and NGO staff, and bird-watchers.
Migratory bird habitat monitoring and management.	The migratory bird habitats are very important for migratory birds, especially during the breeding period in May to September each year. The components of bird habitats consisted of water level and water depths, plants, fish, and soil. The techniques for habitat	Classroom sessions In the field practical application of protocol and methodology of migratory bird monitoring	Nature reserve staff community leaders, and NGO staff, and bird-watchers.

	monitoring and is still a big gap in natural reserve management		
How to manage the tourists and visitors in the context of eco-tourism development and wetland conservation of wetland nature reserve	The nature reserves are facing either too few tourists or too many tourists in the nature reserves during the summer seasons. The tourists and visitors are not well managed in term of nature reserve management. Some models including Mipo Nature Reserve of Hongkong and Koshiro Nature Reserve of Japan could be shared in the Sanjiang Plain.	Classroom sessions Focus group discussion Role play	Nature reserve managers and eco-tourism developers, and travel agents
Ecological restoration in wetlands protected areas	The wetlands protected areas have been degraded due to the threats of water shortage, reclamation, over use of natural resources, water pollution, nature disasters (such as wild fires, pest, etc.) and climate changes. Actions need to be taken for the ecological restoration of the protect areas.	Classroom sessions, in the field practical application of best management practices (BMPs)	Nature reserve managers, local community leaders, and NGO staff.
Mainstreaming wetland biodiversity conservation in local governmental policies	The threats causing ecological degradation of the wetland protected areas are resulted from the institutional, regulatory and policy barriers. It is important to build the common sense to mainstreaming the wetland biodiversity conservation into local government institutional arrangement, regulatory process, policy and planning	Classroom sessions Focus group discussion Role play	Local government leaders, local government officials for various sectors (such as reform and develop, water resource, land resource, environment, forest, etc).

2. Watershed and River Basin Management

Topic / Subject Area	Why Required	Methods to be Applied	Who will be involved / Participants
Watershed Management Approach, Best International practice, ADB's 25 elements of Integrated Water Resources Management (IWRM) in river basins[1]	Key to the development and success of future watershed management Input to Knowledge Product	To feature in the first Workshop with training.	Officials from provincial, city and county forest department, Wetland management centre, PMO, and staffs from wetland reserves.
Effective Stakeholder Engagement[2]	It involves translating problems using language that people understand and connecting them with issues they recognise. Input to Knowledge Product	To feature in the first Workshop with training.	Officials from provincial, city and county forest department, Wetland management centre, PMO, and staffs from wetland reserves.
Policy Development[3]	Avoiding policy conflicts in watersheds with multiple agencies with shared management and	To feature in the first Workshop with training.	Officials from provincial, city and county forest department, Wetland

	operational responsibilities. Input to Knowledge Product		management centre, PMO, and staffs from wetland reserves.
Forest Improvement[4]	To use International Best Practice Forest Management guidelines to minimize the future impact of forestry in the Sanjiang Watershed, on Sanjiang wetlands. Input to Knowledge Product	To feature in the first Workshop with training.	Officials from provincial, city and county forest department, Wetland management centre, PMO, and staffs from wetland reserves.

[1]ADB (Nov 2006): ADB Water Financing Program 2006-2010 - Helping to introduce IWRM in 25 river basins in the Asia-Pacific region

[2] CIWEM (Nov 2013) Policy Position Statement, the Catchment Based Approach in England, the Chartered Institution of Water and Environmental Management

[3] Waikato Regional Council - Operative Waikato Regional Policy Statement, Significant Resource Management Issues, Objective, Policies and Methods of Implementation, Environmental Results Anticipated

[4] Terms of Reference for Consultants for Technical Assistance for Strengthening Capacity for Wetland Protection for Sanjiang Plain

3. Ecologically and Economically Sustainable Alternative Livelihoods

Under the previous GEF-and ADB-supported initiatives in the Sanjiang Plain Wetlands Nature Reserves, and the ADB Poverty Environment Programme (PEP), various assessments of potential for the development of ecologically sound livelihood alternatives have been conducted and a number of on-the-ground alternative livelihoods pilot initiatives were implemented. It remains likely that additional opportunities remain but have not yet been tested. Capacity strengthening for support and development of alternative eco-livelihoods will continue to be valuable for improving the overall performance and achievement of objectives related to wetlands conservation, restoration and sustainable management.

Subject Area/Topic	Why Required	Methods to be Applied	Who will be involved/ Participants
Training of trainers: Participatory needs, opportunities and constraints assessment for alternative eco-livelihoods in the Sanjiang Plains Wetlands Reserve areas	There are a range of persons and sectors which gain their income from various income generating activities in the Sanjiang Plains. Each will have their own ideas regarding how to develop income generating alternatives. This activity will provide methods for surveying and assessing these ideas, and for selecting those which are ecologically sound, and which appear to have the strongest potential for success.	Classroom sessions on the underlying rationale and methods for conducting participatory livelihood opportunities assessment. Practical training in the field through the implementation of the methods which have been taught.	Provincial staff, Municipal staff, county staff
Participatory needs, opportunities and constraints assessment for alternative eco-livelihoods in the Sanjiang Plains Wetlands Reserve areas	There are a range of persons and sectors which gain their income from various income generating activities in the Sanjiang Plains. Each will have their own ideas regarding how to develop income generating alternatives. This activity will provide methods for surveying and assessing these ideas, and for selecting those which are ecologically sound, and	Classroom sessions on the underlying rationale and methods for conducting participatory livelihood opportunities assessment. Practical training in the field through the implementation of the methods which have been taught.	Township staff, Reserve staff, farmer and local occupational group leaders

	which appear to have the strongest potential for success.		
Meaning of "eco-livelihoods" and ways in which the development of eco-livelihoods will contribute to the sustainable management, integrated conservation and development of the Sanjiang Plains.	Only some livelihood methods will contribute to the ecologically sound management of the Sanjiang Plains. It is important to clearly understand which livelihood options are ecologically sound, which are not, and why. This training will also provide participants with an understanding of how various eco-livelihoods will contribute directly or indirectly to sustainable environmental management and wetlands restoration.	Classroom sessions. Field visits to learn about ecologically sound livelihoods and how they contribute to Sanjiang Plains conservation and rehabilitation objectives, as well as to livelihoods which are antithetical to achieving these objectives.	Provincial staff, municipality staff, township staff, reserve staff, farmer and occupational group leaders
Agro- and community forestry and non-timber forest products.	The Sanjiang Plains and its watersheds have sustained significant forest depletion over the past 40 years. Planting of trees has beneficial impacts on a range of ecological and hydrological parameters. This training will review both the environmental and economic benefits of tree planting and how they can be realized for the Sanjiang Plains, including intercropping with trees, and on-farm cultivation of high-value non-timber forest products (NTFPs).	Classroom sessions on key principles and best practices. Presentations by best practice agroforestry and NTFP projects in similar eco-zones in China. Learning visits to best practice sites.	Provincial staff, municipality staff, township staff, reserve staff, farmer leaders
Eco-greenhouse agriculture	There continue to be advances in eco-greenhouse agriculture, such as solar heating and solar water heating for hydroponic vegetable production in cold climates. This training will cover state of the art in eco-greenhouse agriculture, production and use of organic fertilizers and integrated pest management.	Classroom sessions Presentations by eco-greenhouse managers. Field learning visits to best practice sites.	Provincial staff, municipality staff, township staff, reserve staff, farmer leaders
Living softly on the Earth: Ecological alternatives for sustainable agriculture production in ecologically sensitive areas	The training will cover alternatives to high input chemical intensive crop production which are both ecologically and economically beneficial. It will also involve training on organic meet, poultry and fish production.	Classroom sessions Interactive discussions Field visits to best practice sites. Presentations and demonstrations by subject matter specialists.	Provincial staff, municipality staff, township staff, reserve staff, farmer leaders
Crafts production potential and handicraft raw materials production for the Sanjiang Wetlands area	The training will cover various kinds of crafts which are either already produced locally and can have quality improvement for better marketing, or other types of handicraft which can be produced from locally available products.	Classroom sessions on handicraft production. Hands on training by production specialists. Session on product marketing.	Residents living in and around the various Sanjiang Plains Wetlands Reserves.

	Crafts production can provide alternative livelihood opportunities for local people and help to reduce pressure on the wetland areas currently under agriculture cultivation.		
Monitoring and evaluation for adaptive management of livelihoods alternatives and income generation activities	Newly establishing livelihood alternatives may encounter initial difficulties of one sort and another. To ensure that they succeed, it will be essential for responsible persons to be able to follow-up on progress through regular monitoring, both to identify any problems so that they can be addressed and resolved in a timely manner, and also, to identify successes so that they can obtain the support required to scale up the benefits.	Classroom sessions. Hands-on practice in the field monitoring livelihood activities and seeking to identify any problems and constraints, and enabling feedback from stakeholders regarding how these could be resolved in order to improve the performance and successful results of the activities. (The same types of monitoring, evaluation and adaptive project management approaches can be applied in any number of circumstances.	Provincial staff, municipality staff, township staff, reserve staff, farmer leaders
What's working, what's not, and why in Sanjiang Plains alternative eco-livelihood development?	There is a need to stock of what has been done, and what has been learned, as a result of recent efforts to develop alternative eco-livelihoods in the Sanjiang Plain. The information will contribute important insights to future initiatives.	Workshop	Provincial staff, municipality staff, township staff, reserve staff, farmer leaders
Ensuring livelihood benefits for women, the poor, ethnic minorities and disadvantaged groups.	By definition, disadvantaged groups are often excluded from obtaining a fair share of benefits from local livelihood activities and project initiatives. This training will impart skills, knowledge and behaviors which will help to ensure that groups which often fail to benefit are included in alternative livelihood development activities tailored to their needs and interests.	Classroom sessions In field practical application of methods learned in the classroom.	Provincial staff, municipality staff, township staff, reserve staff, women's federation, youth federation, ethnic minorities federation, federation of the elderly, farmer leaders
Eco-tourism in wetlands areas	Some training has already been provided on this subject. But because of the depth of the subject matter and the potential importance for contributing to the financial requirements for managing the Nature Reserves, additional training and capacity building should be implemented. Subjects include: interpretive ecology in wetlands areas, ecologically sound construction of eco-tourism lodge and facilities, multimedia presentation of the	Classroom training Presentation by national and international ecotourism experts Field visits for lessons learning at best practice ecotourism facilities.	National staff, provincial staff, municipality staff, township staff, reserve staff, farmer leaders, private sector

	local ecology and ecological changes, meeting the requirements of tourists for safe and clean accommodation, marketing of local products at the facility, provision of employment for households which should be moved from ecologically sensitive areas, etc.		

B. Preliminary Training Needs Assessment

1. Wetlands Protection, Restoration and Biodiversity Conservation

Wetlands are of critical importance for supporting the health of natural ecosystems, as well as human welfare. The management of wetlands, especially the wetland nature reserves, is the responsibility of local governments, wetland conservation authorities, NGOs and local communities. To carry out their responsibilities, wetland managers and related stakeholders need to have the requisite expertise in wetland monitoring, planning, wise use of resources, and communications.

Protection/ Conservation Element	**Typical interventions/criteria**	**Level of training given either through formal training or on the job training**	**Has any training given been embedded into trainees ongoing day to day work activities and responsibilities**
Wetland monitoring	Prepare or update a systematic wetland monitoring plan, covering the monitoring indicators, frequencies, location and tools. Wetland monitoring covers water regime (water level, discharge, seasonal variations, etc.), plants, animals (fish, water birds).	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Wetland planning	Prepare or update a wetland master plan, including the core, buffer and experiment zones of the nature reserves, and wetland restoration zones.	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Business plan of wetland NR management	Develop and annually update the business plans of the nature reserves, covering the personnel, budgets and priority actions, to guide the day-to-day nature reserves management.	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No

Protection/ Conservation Element	**Typical interventions/criteria**	**Level of training given either through formal training or on the job training**	**Has any training given been embedded into trainees ongoing day to day work activities and responsibilities**
Wetland co-management	Effective management needs multiple stakeholder involvement, especially the local communities surrounding the wetland nature reserves. co-management requires sustainable use of wetland resources, such as water, biomass and fisheries, etc, which requires active participation of local governments, civil society organizations and local communities.	⦿ High ○ Medium ○ Low	○ Yes ⦿ Partly ○ No
Wetland wise use	The concept of wise use of wetlands was introduced by Ramsar Convention Secretariat. It means the use of wetland resources (such as biomass, fisheries, etc) should not exceed annual natural growth or regeneration. There are some best management practices for wise wetland use.	⦿ High ○ Medium ○ Low	○ Yes ⦿ Partly ○ No
Wetland restoration	Wetland degradation is usually caused by direct threats, such as wetlland reclamation, pollution, over-use of natural resources, change of water regime or legal hunting of water birds and other animals. For wetland restoration, interventions of a structural or non-structural nature may be employed to improve habitat and other environmental values.	⦿ High ○ Medium ○ Low	○ Yes ⦿ Partly ○ No
Wetland health	Maintenance of wetland health requires that no significant detrimental changes occur tha may affect the ecological characteristics and functionality of the wetland. Indicators such as changes in water bird population and structure, could be applied in wetland health monitoring and assessment.	⦿ High ○ Medium ○ Low	○ Yes ⦿ Partly ○ No

Protection/ Conservation Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
CEPA (Communications, Education and Public Awareness)	Introduce or expand public awareness programs for wetland conservation and management through civil society organizations and the media. Introduce wetland management and wise use into school programs to increase wetland knowledge among the youth.	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No

2. Livelihoods

Livelihood Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
Environmentally and economically sustainable livelihoods	What are they? Why are they important in a protected area context? What are environmentally and economically unsustainable livelihoods?	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Participatory needs assessment for sustainable livelihoods	Why is it important? What benefits does it provide? How is it conducted?	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Sustainable livelihoods opportunities assessment	What is it? How is it conducted? Feasibility and cost-benefit analysis. Pilot project design.	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Eco-agriculture	Criteria Methodologies	⊙ High ○ Medium	⊙ Yes ○ Partly

Livelihood Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
	Constraints and overcoming them Marketing	○ Low	○ No
Hydroponics	What it is? How is it done? What are the start-up costs? Potential problems and remedies. Cost benefit and feasibility analysis. Marketing	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Eco-greenhouse agriculture	What is it? How is it done? What are the start up costs? Cost-benefit and feasibility analysis. Potential problems and remedies. Marketing.	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Agroforestry	Agroforestry assemblages for the Sanjiang Plains Management of agroforestry systems Promising species Marketing	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Non-timber forest products	Promising NTFPs for the Sanjiang Plains Research and development Marketing	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Sustainable livestock production	What is it? How is it done?	○ High ⊙ Medium	○ Yes ⊙ Partly

Livelihood Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
	Problems and remedies. Marketing.	○ Low	○ No
Sustainable poultry production	What is it? How is it done? Problems and remedies. Marketing.	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Sustainable fisheries	What is it? How is it done? Problems and remedies. Marketing.	⊙ High ○ Medium ○ Low	○ Yes ⊙ Partly ○ No
Handicrafts production and marketing	Study on local handicrafts and quality assessment. Locally available handicrafts materials and potential. Assessment of local interest. Training on handicrafts production, quality control and marketing.	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Biomass and biogas energy production	Benefits and production methods. Cost benefit and feasibility assessment. Training on system construction. Demonstration and extension.	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Ensuring benefits for the disadvantaged	Why disadvantaged groups are often deprived of access to benefits. How to overcome constraints to benefitting disadvantaged groups. Participatory assessment of livelihood development priorities among the	⊙ High ○ Medium ○ Low	○ Yes ⊙ Partly ○ No

Livelihood Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
	disadvantaged. Pilot projects and extension techniques.		
Microfinance and revolving funds	What are microfinance and revolving funds? How to establish them? Determining appropriate loan amounts, duration and interest rates. Loan groups and social pressure for repayment on loans.	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No

3. Forests and Watersheds[13]

What is IWRM? Integrated water resources management (IWRM) is now recognized across the world as the process to promote the coordinated development and management of water, land and related resources in river basins[1], to maximize the economic benefits and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. The following elements, based on ADB's 25 elements of IWRM in river basins, are widely accepted to be important in introducing integrated water resources management (IWRM) in river basins. Incorporating these elements into institutional reforms, development strategies, and investment projects will make a significant difference for IWRM in the basin. Improvements may also be needed in the enabling environment at the national level.

IWRM element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
River basin organization	Build capacity in new or existing RBO, focusing on the four dimensions of performance (stakeholders, internal business processes, learning and growth, and finance) under the Network of Asian River Basin Organization's	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No

[13] "River Basins", "Catchments" and "Watersheds" are roughly synonymous terms used to describe the whole area upstream receiving rainfall.

IWRM element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
	(NARBO) benchmarking service		
Stakeholder participation	Institutionalize stakeholder participation in the river basin planning and management process including active participation of local governments, civil society organizations (academe, NGOs, parliamentarians, media), and the private sector, and an enabling framework for meaningful stakeholder participation in project specific planning decisions	○ High ⊙ Medium ○ Low	⊙ Yes ○ Partly ○ No
River basin planning	Prepare or update a comprehensive river basin plan or strategy, with participation and ownership of basin stakeholders, and application of IWRM principles in land use planning processes	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Public awareness	Introduce or expand public awareness programs for IWRM in collaboration with civil society organizations and the media	○ High ⊙ Medium ○ Low	⊙ Yes ○ Partly ○ No
Water allocation	Reduce water allocation conflicts among uses and geographical areas in the basin with participatory and negotiated approaches, incorporating indigenous knowledge and practices	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Water rights / licensing in China	Introduce effective water rights or entitlements administration that respects traditional or customary water use rights of local communities and farmers and farmer organizations	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Wastewater permits	Introduce or improve wastewater discharge permits and effluent charges to implement the polluter pays principle	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No

IWRM element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
IWRM financing	Institutionalize models whereby all levels of government contribute budget to IWRM in the basin	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Economic instruments	Introduce raw water pricing and/or other economic instruments to share in IWRM costs, stimulate water demand management and conservation, protect the environment and pay for environmental services	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Regulations	Support the development and implementation of a legal and regulatory framework to implement the principles of IWRM and its financing in the basin, including tariffs, charges, quality standards and delivery mechanisms for water services	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Infrastructure for multiple benefits	Develop and/or manage water resources infrastructure to provide multiple benefits (such as hydropower, water supply, irrigation, flood management, salinity intrusion, and ecosystems maintenance)	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No
Private sector contribution	Introduce or increase private sector participation in IWRM through Corporate Social Responsibility (CSR)-type contributions	○ High ○ Medium ⊙ Low	○ Yes ○ Partly ⊙ No
Water education	Introduce IWRM into school programs to increase water knowledge and develop leadership among the youth, including responsibility for water monitoring in	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No

IWRM element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
	local water bodies		
Watershed management	Invest to protect and rehabilitate upper watersheds in collaboration with local communities and civil society organizations	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Environmental flows	Introduce a policy and implementation framework for introducing environmental flows and demonstrate its application	⊙ High ○ Medium ○ Low	⊙ Yes ○ Partly ○ No

4. Institutional, Policy and Regulatory Aspects

Institutional, policy and regulatory aspects have important implications for the effective management of wetlands. Due to the complexities of wetland management, with various stakeholders carrying out a wide range of activities at multiple levels, the establishment and strengthening of wetland management systems requires significant efforts in the area of government institutional reform and capacity building.

Institutional, Policy, Regulatory Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
Wetland institutional arrangements	Wetland conservation management authorities have been established at national and provincial levels, however, the institutional arrangement at municipal and county levels is still weak in China. Cross-sector coordination has been established at a a regional and national level, through implementation of the terms of the Ramsar Convention. However, wetland conservation and management goals have not been mainstreamed in industrial, agricultural and environmental sectors	⊙ High ○ Medium ○ Low	○ Yes ⊙ Partly ○ No

Institutional, Policy, Regulatory Element	Typical interventions/criteria	Level of training given either through formal training or on the job training	Has any training given been embedded into trainees ongoing day to day work activities and responsibilities
Wetland protected area system	The wetland protected area system (PA system) consists of wetland nature reserves at national, provincial and municipal levels; wetland parks at national level, and Wetlands of international importance (Ramsar sites) and of national importance. The objective of the PA system is to increase the area of critical wetland habitat within PAs, and promote the PA system from lower to higher levels (for example, from provincial level to national level).	⊙ High ○ Medium ○ Low	○ Yes ⊙ Partly ○ No
Wetland conservaton management regulations	Wetland conservation management regulations at the national level have not been passed and promulgated; however, some provinces, including Heilongjiang Province have promulgated such regulations. Some wetland nature reserves have specific regulations for conservation and management. The National People's Congress (NPC) issued a new policy in 2014 to empower more authorities for legislation at provincial and municipal levels.	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No
Wetland zero loss policy	The Central Government of China issued policies to prohibit the reclamation of crop land from wetlands in 1998, following heavy floods in Yangtze River and Songhua river. Despite this, due to urbanization and other economic pressures, large areas of wetland have been lost in the past decade. A new policy for zero loss of wetland (or no net loss of wetland) needs to be developed and implemented.	○ High ⊙ Medium ○ Low	○ Yes ⊙ Partly ○ No

Institutional, Policy, Regulatory Element	**Typical interventions/criteria**	**Level of training given either through formal training or on the job training**	**Has any training given been embedded into trainees ongoing day to day work activities and responsibilities**
Wetland conservation financial policy	There are various financial policies to promote wetland conservation, such as government investment in wetland conservation projects (through NDRC), and government subsidies of wetland PA systems (such as national nature reserves and national wetland park). However, a systematic financial support system for wetland protection, management and conservations has not been established. Payment of ecosystem services (PES) for sustainable financing of wetland conservation is still in the early stage of testing and implementation in PRC.	⊙ High ○ Medium ○ Low	○ Yes ⊙ Partly ○ No

ANNEX C: NOTES OF KEY MEETINGS DURING THE INTERIM PERIOD

This Annex contains notes of selected key meetings conducted during the Interim Period of activities for TA 8541-PRC.

Meeting with Dr. Su Liying, International Crane Foundation

Meeting Date/Location:
Sanjiang Plain TA Office, Harbin, 29 October 2014

Purpose of Meeting:
Discuss issues relating to Sanjiang Plain (SP) management

Key Discussion Points:

- ICF conducting crane research
- 80% of land changed from wetlands to ag land
- Wildlife adaptation to change
- Red-crowned crane (RCC)-largest breeding area for PRC is SP—require large territory
- Siberian crane and RCC more directly dependent on wetlands—but still showing some signs of adapting and using ag fields
- Heilongjiang Wildlife Institute and Natural Resource Institute both did aerial surveys-Naoli river is an important area for cranes
- Management system is complicated
- Did survey in 94-95-very few RCC from 300 down to <100
- Conversion changes:1950's state farms; Cultural Revolution 1970s; economic reform around 2000
- China Forestry Science Academy: 2008/9: recovery of cranes back to 1980s levels – maybe thru adaptation to changed habitat
- By contrast, Swan goose does not make use of agricultural fields as habitat-populationdeclining; for other species that can use agricultural fields no declines or increases observed
- More research needed for impacts of pollution etc
- Jalong—there is heavy pollution-not publicized
- Generally poverty is quite limited in SP, and with less dense human population
- Hunting not used by local people usually more affluent people are doing hunting
- Changchun Institute did water quality monitoring and studied aquatic plants; in natural wetland regimes the hydrology shows a pattern of expansion and contraction
- Water agencies—building more reservoirs
- SP relatively area has simple mgmt., only a few institutions are operating-local govt, state farms, and a few other stakeholders
- There are 6 Ramsar sites in SP 45 in PRC
- HFD made good effort to designate Ramsar sites
- Anbanghe and Dajiahe are top priority for Ramsar candidacy
- Duluhe—possible candidate for restoration—important breeding area in the past

- ICF has grant to do bird counts and invite speakers
- flyway' concept and 'environmental flow' concept should be considered

---

Meeting of the Project Management Office (PMO) Staff and Consultant Team, October 31, 2014

1. **Results of Recent Site Visits to Nature Reserves**

Key points discussed:

- In October, three members of the consultant team conducted site visits, in two separate trips, to the following nature reserves of Sanjiang Plain: Anbanghe, Qixinghe, Dajiahe, Naolihe and Xiaobeihu Nature Reserves
- Resource materials (e.g., documents and photographs) were provided by some of the NRs to the consultants
- Draft reports of the site visits have already been provided to the PMO

Items for further action:

- Consultants to follow up with requests to the NRs to provide additional resource materials

2. **Revision of TA Inception Report; Response to PMO Comments**

Key points discussed:

- PMO had mentioned in a previous meeting (October 20th) that there were comments on the Inception Report that required response
- It was agreed that in the interests of efficiency, it would not be necessary for the consultants to revise the Inception Report per se. Rather, for any sections of the Inception Report identified as requiring updating or correction, the new information would be applied during the preparation of the Knowledge Product. (To finalize the Inception Report, a memo summarizing the consultant team's responses to PMO comments could be attached to the Inception Report as an annex).
- The Consultants requested the PMO to provide written comments on the Inception Report

Items for further action:

- PMO to provide written comments on the Inception Report
- Consultants to provide responses to PMO comments, to be summarized in a memo to be attached to the Inception Report as an annex

3. **Monthly Work Plan for November 2014**

Key points discussed:

- The monthly workplan for November was submitted by the team to the PMO
- The workplan was accepted as submitted

Items for further action:

- No further action required

4. **Knowledge Product Outline**

Key points discussed:

- The consultants prepared a draft outline for the Knowledge Product (KP). The outline was prepared in two formats (i) a simple outline and (ii) an annotated outline. The annotations describe the content and the approach to be taken in presenting information in the Knowledge Product
- It was mentioned that the Knowledge Product would be the primary topic of discussion at the upcoming 'Learning and Reflection' Workshop on November 7th. The workshop participants would be requested to consider the outline, suggest ways in which it could be improved, and also identify their own priorities and preferences for the content and format of the KP.
- Feedback from the PMO on the KP outline was also solicited

Items for further action:

- PMO to review and comment on KP outline
- 'Learning and Reflection' Workshop to be conducted to gather information from stakeholders concerning the development of the KP

5. 'Learning and Reflection' Workshop: November 7, 2014

Key points discussed:

- A draft agenda for the Learning and Reflection Workshop was presented to the PMO
- Mr. Kobayashi has confirmed his availability to participate in the workshop on November 7
- PMO expressed the opinion that it would not be necessary to focus on the inception activities of the TA team during the workshop. The consultants confirmed and agreed, that the main purpose of the workshop would be to discuss the KP, and to obtain ideas from the stakeholders regarding the presentation of information in the KP
- The consultants mentioned the need for good coordination with the PMO in organizing the workshop. Assistance of the PMO is needed especially in:
    - (i) making logistical arrangements (for meeting room, supplies, printing, translation/interpretation, etc.);
    - (ii) inviting an appropriate number of participants (around 40 persons) from relevant agencies and organizations (e.g., provincial government agencies such as DRC, Forestry Department, Water Resource Bureau, Environmental Protection Bureau, Agriculture-State Farms, Tourism, and Nature Reserve staff, professional groups and NGOs);
    - (iii) confirming speaker for making welcome remarks (Deputy Director General of Provincial Forestry Department); and
    - (iv) confirming speakers from two (2) Nature Reserves to make presentations about conservation challenges and achievements within their facilities
- The PMO mentioned that according to previous practice, costs for workshop activities had been incorporated within, and paid for out of the consultants' budget. That is quite different from the current arrangement, wherein the project terms of reference stipulate that ADB will deposit funds for workshop costs directly to an account of the PMO. Because this arrangement was not clearly understood, the PMO had not sent a request for funds and cost estimate for the workshop to ADB.
- PMO was asked to prepare a cost proposal for the workshop, to be submitted to ADB (this was completed immediately following the meeting)

- The consultants mentioned that presentation materials (e.g., Powerpoint slides) would be produced in English and Chinese. However it was agreed that there would still be a need to have an interpreter present to translate the discussion. PMO said they would provide an interpreter.

Items for further action:

- Consultants to coordinate closely with PMO on further workshop planning and finalization of the agenda
- Consultants to identify any additional requirements for the workshop, and communicate these to the PMO
- Consultants to facilitate communications between PMO and ADB regarding release of funds to cover workshop costs

6. Tripartite Meeting (PMO, ADB, and Consultant Team): November 8, 2014

Key points discussed:

- Mr. Kobayashi has confirmed his availability to have the Tripartite meeting on November 8, 2014
- The main purpose of the Tripartite meeting will be to discuss: the progress of work on the TA project by the consultants; any changes to the TOR; future workplan; and implementing requirements. In this regard, among the items proposed for inclusion in the Tripartite discussion will be the following:
  - (i) Work Progress: inception activities completed include research and data gathering, conduct of preliminary training needs assessment, and completion of 'Learning and Reflection workshop
  - (ii) Changes to TOR: several significant changes to the TOR were discussed, and agreed in principle, between the PMO and consultant team. These included (a) a shift in focus from training as a mechanism for capacity building, toward placing stronger emphasis on the KP, as a means to build awareness of the importance of the Sanjiang Plain and the need for continuing wetland conservation efforts; and, as a result, (b) reducing the number of workshops that are required, from an original 6 workshops in the TOR, to 3 workshops (1. 'Learning and Reflection'; 2. Workshop for Draft Knowledge Product; and 3. International Workshop for the roll-out of the KP). It is hoped that ADB will give its consent and agreement for these proposed changes to the TOR
  - (iii) Future Workplan: Scheduling for key activities, after the conclusion of the current field activities (see further description in Item #8, below)
  - (iv) Implementing requirements: discussion of requirements for further consultancy inputs, and funds for completion of the workplan

Items for further action:

- PMO to confirm time, venue for the Tripartite meeting on November 8th
- Determination to be made about protocol for conducting the meeting (according to ADB requirements)
- Agenda for the Tripartite meeting to be agreed and finalized

7. Request for Reference Materials and Further Information

Key points discussed:

- PMO had previously asked the consultant team to consolidate requests for reference materials and information into a single request. This was done and presented to PMO
- PMO expressed full support and willingness to provide requested materials to the team
- PMO expressed willingness to help the consultants to arrange meetings with others who had some of the information being sought

Items for further action:

- PMO to provide listed reference materials to the consultants
- Consultants to specify any other meetings that need to be arranged with other government agency representatives, etc., and PMO to follow up in confirming such meetings

8. Future Workplan (following current field activities ending November 2014)

Key points discussed:

- Due to delays in project start-up, the revised date for completion of the first draft for the KP is early January 2015
- A second stakeholder workshop will be scheduled in late January or early February 2015, for the purpose of presenting and discussing the draft KP
- Budget for participation of international consultant(s) at second stakeholder workshop needs to be clarified
- An interim report is to be prepared immediately following completion of the second stakeholder workshop. The purpose of the interim report is to present the progress made to-date by the TA consultant team, and remaining work to be completed
- Following its finalization, the draft for the KP will be handed over to ADB for layout and production work. This process will be carried out over a period of several months. Mechanisms for coordination between ADB production staff and the consultants are still to be clarified
- Following the completion of the KP, a third and final workshop (International Workshop) will be scheduled for roll-out of the publication. The target date for the International Workshop is June 2015.
- A final report for the TA will be prepared and submitted by August 2015

Items for further action:

- Incorporate the future workplan as one of the items for discussion on the agenda for the Tripartite meeting on November 8th 2014

Meeting Date/Location:
11/11/14-Water Resource Agency, Harbin

Project Personnel:
David Parkin, James Berdach

Persons met:
Ms.Wen Jijuan, Institute of Water Resources Design, Senior Engineer

Meeting Summary-key points:

- Songhua – Liao River Watershed Master Plan, and Songhua – Liao Water Resource Allocation plan; these cover 4 provinces and the collective watershed of the Songhua, Heilongjiang, Wusuli and Liao rivers; the two plans have to be in harmony with one another

- Approved plans are confidential; brief summary information available on their website

- Within the master plan, there are three 'red lines' that must be met:

1. Keeping within ceiling for water use
2. Ensuring Transboundary water quality
3. Ensuring Water use efficiency

- Guidance for lake levels—they have operational guidelines for operating sluice gates—this is to meet water demande for irrigation and also for ecological demand purpose

- A major achievement is that wetlands are now considered as a 'water user' and given consideraton in the Water resource allocation plan

- Each irrigation area needs to have in place measures at outlets to minimize sediments (sedimentation ponds, reed beds to reduce nitrogen etc.)

- Minimum ecological flows: they define this differently—they have standards to secure (1) 95-year water supply for domestic use; (2) 75-year supply for agriculture; and (3) 50-year supply for wetlands

- NR master plans must incorporate the standards set forth in the WS master plan and water resource allocation plan—but she does not have details

- Water quality is measured at various distribution or control points along major rivers etc

- monitoring reports are prepared annually but not released to the public—they are used for monitoring and management purposes but only circuilated to relevant agencies (e.g., environmental management agency)

- water in Sanjiang Plain is not like Harbin area—limited pollution from heavy industry and agri. Fertilizers/persticides not used in high concentrations

- water quality being released to wetland areas is still 'good enough' i.e., Class IV or better—this is the standard for national –level nature reserves; in cases where the WQ is poor they employ interventions such as planting of reed beds to facilitate purification

- long cold winter means that pest problems not so serious; pesticide use is less than other areas

- consultation process: for new projects/actions they do social suitability analysis and EIA; third party does the social analysis; technically-qualified party dies EIA; EIA is posted on website for consultation

- the watershed MP and allocation plan are reviewed and revised every 5 years

---

Wrap-Up Meeting, Project Management Office (PMO) and Consultant Team
November 12, 2014

The following points, which have been under discussion during meetings of October 20th, October 31st, and November 7th (Tripartite meeting), 2014, are for final agreement and further action as needed:

1. **Revision of TA Inception Report; Response to PMO Comments; finalization of Inception Report**

It was agreed at the Tripartite meeting of November 7, 2014 that PMO would provide written comments to the consultant team, for any suggested changes to the Inception Report. In the interests of efficiency, it was agreed that it would not be necessary for the consultants to revise the Inception Report per se. Rather, for any sections of the Inception Report identified as requiring updating or correction, the new information would be applied during the preparation of the Knowledge Product. In lieu of revising the Inception Report, a memo summarizing the consultant team's responses to PMO comments will be submitted separately.

2. **Knowledge Product Outline**

The Knowledge Product (KP) outline was discussed in detail during the 'Learning and Reflection' Workshop on November 7, 2014. The comments of participants have been taken into account and assimilated into a revised outline which has been sent to the PMO. The PMO is invited to submit further comments. The revised KP outline will serve as a guide for the consultant team in carrying out their work in preparing the KP.

3. **Agreements on the TOR**

Several agreements on the TOR, including reaffirmation of some aspects, and modification of others, have been made. The main objectives of the TA project, which are (1) to build capacity and (2) to disseminate knowledge, were reaffirmed. However, the way in which capacity building would be accomplished was shifted somewhat, away from an emphasis on training, and instead focusing on the KP as a tool for building awareness of the importance of the Sanjiang Plain and the need for continuing wetland conservation efforts there. Capacity building could also be achieved through all three project

workshops, during which sharing of knowledge would be implemented. It was also agreed to reduce the number of workshops, from six (6) as originally called for in the TOR, to three (3).

4. Budget, Workplan and Schedule

Based on the information provided by Mr. Kobayashi that additional funds would be available for the TA, and that it was recommended that these funds be so utilized, some proposed changes in the TA workplan and schedule are expected. The proposed changes are summarized as follows:

- Additional allocation of time to be provided for several consultants
- Longer amount of time to be allowed for completion of the draft KP; the expected delivery of the draft is changed from January 2015, and moved to proposed target date of March or April 2015
- Draft KP to be provided to PMO and ADB for review and comment
- Following revisions based on PMO and ADB comments, draft KP circulated among key stakeholders for further review and comment
- Following the circulation of the draft, an interim workshop to be conducted
- Following the workshop, additional field studies to be conducted (in June 2015)
- Additional findings and inputs from the interim workshop and the field studies to be incorporated into the KP draft
- Final manuscript for KP to be submitted to ADB and PMO for acceptance
- KP manuscript to be submitted to ADB for production (editing , layout, printing) by July 2015
- Production of KP completed by ADB, with final International Workshop to be conducted for roll-out of KP by January 2016
- Final Project closure date moved from August 2015 to February 2016

5. Request for Reference Materials and Further Information

Several requests for additional reference materials and information (e.g., maps, reports, photographs) have been made to the PMO, and to-date none have been provided. The receipt of these materials is critical to the development of the KP.

PMO is requested to provide some urgently needed materials. Among the most critical are maps showing the locations and boundaries of all Nature Reserves in the Sanjiang Plain. If it is not possible for the PMO to provide these materials in an timely manner, PMO is requested to direct the consultants to appropriate other sources to obtain them.

Meetings at ADB Headquarters, Manila
May 2015

20 May 2015: Jeffrey Liang, Principal Economist, Office of the Director General, East Asia Department

Jeffrey works in the “Front Office” for the East Asia Department. He is well familiar with ADB’s efforts in Sanjiang Plain, and was involved during the programming of the CDTA. He said that the CDTA was first developed as a means for ensuring that the accomplishments of the SPWPP could be carried forward.

He mentioned that because the Heilongjiang Provincial Development Reform Commission (PRDC) is currently focusing much of its attention on two large loan 'mega-projects' one in agriculture and the other in urban development (each valued $100-150MM) the proposal to give further support to Sanjiang Plain wetlands conservation has not received as much attention as it might otherwise. Mr Cheng has close relationships with several people in the PDRC, and it is largely through his efforts that Sanjiang wetlands protection continues to be considered as an option on the table for further funding and support within the DRC.

Jeffrey indicated his feeling that the KP could possibly be something that could be used for broader knowledge dissemination. He mentioned the Tumen River Initiative, in Jilin Province, with work being carried out there by personnel from Yanbien University. There is a large wetland at the site, and perhaps lessons learned from Sanjiang might be transferred.

21 May 2015: Garrett Kilroy, Evaluation Specialist, Independent Evaluation Department

Garrett requested a meeting to discuss the SPWPP and the CDTA. He had been provided a copy of our draft Knowledge Product by Mr. Kobayashi, reviewed it, and was quite impressed with its quality. He is leading the preparation of the Project Performance Evaluation Report (PPER) for SPWPP (while we were still in Harbin, Mr. Cheng had mentioned to us the fact that ADB was planning to conduct this evaluation). Garrett will be traveling to Harbin in June, to conduct research for the evaluation. The main purpose of the PPER is to evaluate the success of the project and to validate findings through gathering of verifiable evidence. Garrett fielded some general questions about the prior project—the questions were aimed at (i) trying to confirm the reasons why the project has been widely regarded as successful, and (ii) determining what some of the weaknesses of the project may have been, and which areas may require more attention in the future (see list of questions, below)

Garrett also called attention to ADB's recently-published posting on its website, "PRC: Saving a Vital Ecosystem" which focuses on the Sanjiang Plain wetlands. Much of the material used in that product was derived from information gathered by Mr. Kobayashi during his recent interviews with project beneficiaries.

Garret promised to stay in touch as the work on the evaluation progresses.

James Berdach Thursday 21 May 2015

1. PMO active since project completion? "Inter-agency" project steering committee maintained?
2. Relationship between Provincial Agriculture and Forestry Depts?
3. IWRM and wetlands: are wetland water resources plans incorporated into wider RBMPs, how does it work in practice?
4. Afforestation in uplands continuing, inter-cropping/NTFP activities continuing?
5. Water quality (Manganese?) generally poor WQ across the plain? No basin wide water quality management measures, e.g. in river basin plans?
6. Has reduction and degradation of wetlands been halted? Restoration model applied to six additional reserves, successful? Plans to scale up wetland restoration model applications
7. Wetland Monitoring: birds and habitat – monitoring being maintained? Regional data available for comparison outside project? Any Universities/Research Institutes working on monitoring elements? GIS/remotely sensed data, NDVI (normalized difference vegetation index?
8. Capacity of NR staff improved?
9. Alternative livelihoods, sustainable? Still involve affected people as majority or attracting non-APs? Plans to expand ecotourism/greenhouses?
10. Unintended benefits: carbon storage, flood mitigation, pollution control?

ANNEX D: REPORT OF SITE VISITS, OCTOBER 2014

This Annex contains short reports by members of the consultant team about trips they conducted to visit nature reserves in the Sanjiang Plain. The purposes of the trips were to make first-hand observations concerning the biophysical and socioeconomic conditions in and around the nature reserves, and to conduct interviews with NR staff and others living and working in or nearby the NRs.

FIELD REPORT TO NATURE RESERVES IN OCTOBER 2014: ANBANGHE NATURE RESERVE (NR), QIXINGHE NR AND DAJIAHE NR

Purpose of the Field Visit

(1) To analyze the wetland conservation practices and models developed under ADB Project on Sanjiang Plain Wetland Protection, which can be integrated into the Knowledge Product;

(2) To summarize the lessons learned from ADB Project on Sanjiang Plain Wetland Protection, which can be integrated into the Knowledge Product

Date Conducted

21-25 October 2014

Sites Visited

- Anbanghe NR, Sanjiang Plain, Heilongjiang Province
- Qixinghe NR, Sanjiang Plain, Heilongjiang Province
- Dajiahe NR, Sanjiang Plain, Heilongjiang Province

Participating Project Personnel

- James T. Berdach, Wetland nature reserve management specialist and team leader
- Xiubo Yu, Wetland Biodiversity Specialist and Deputy Team Leader

Persons Met

- Jinshi He, Director, Anbanghe NR, Cell:189 4579 4501
- Xudong Zhao, Deputy Director, Anbanghe NR, Cell:189 4579 4503
- Shuxia Huang, Deputy Director, Anbanghe NR, Cell:189 4579 4504
- Zhaozhe Su, Deputy Director, Anbanghe NR, Cell:189 4579 4506, Email: 80422117@qq.com
- Jibo Li, Chief of Monitoring and Research Division, Anbanghe NR
- Ronghua Zhu, Chief of Education and Communication, Anbanghe NR
- Wenfeng Chen, Deputy chair, Northeast Branch, Chinese Traditional Culture Research Association,Cell:155 4241 2122; 138 8469 8371 (museum)
- Yinglai Dong, Director, Qixingha NR, Cell:133 0488 6328;baohuqu@163.com

- Yubo Sun, Deputy Director, Qixinghe NR, Cell:131 0169 0999; Email: bq5200002@163.com
- Guishan Hu, discipline inspection, Qixinghe NR, Cell:153 3184 4009
- Shoubin Cui, Chief of Monitoring and Research Division, Qixinghe NR, Cell:130 6991 88188
- Shengli Wang, Chief of Finance Division, Qixinghe NR, Cell:135 5511 1133; Email:99952345@qq.com
- Zhibo Wu, Chief of Production Division, Qixinghe NR,Cell:150 4684 5066
- Yongsheng Zhao, Administrator, Qixinghe NR,Cell:135 5515 89999
- Chao Wang, Secretary, Qixinghe NR,Cell:150 4683 3311
- Wen Sun(Femal), Science staff, Qixinghe NR,Cell:185 0480 3588; Email: swzlt123@163.com
- Limin Huang (Femal), Science staff, Qixinghe NR,Cell:186 4543 6119; Email: huanglimin 8711@yeah.net
- Qinghua Zhu, Director, Dajiahe NR, Cell:183 4582 1777; Email: gqh2004888@126.com
- Fengshan Zhang, Deputy Director, Dajiahe NR, Cell:137 9639 9606
- Minghu Sun, Deputy Director, Dajiahe NR, Cell:135 5503 5018; Email: rhsmh@163.com
- Huajun Teng, Chief of Research, Communication and Education Division, Dajiahe NR, Cell:150 4574 4666; Email: rhsdj@qq.com

Schedule of Field Activities Conducted

Date	Route	Major activities	Overnight
21 October (Tuesday)	Harbin-Jixian County		Jixian County
22 October (Wednesday)	Anbanghe NR visit (Jixian-Baoqing)	Field visit of Anbanghe NR (3) Experiment zone (4) Core zone of NR (5) Wetland park Focus Group Discussion with Anbanghe NR staff (7) Water bird monitoring program (8) Wetland restoration program (9) Eco-tourism of wetland park (10) Water resource management and non-point pollution control	Jixian County
23 October (Thursay)	Qixinghe NR (Baoqing-Raohe)	Field visit of Qiginghe NR (3) Experiment zone. (4) Core zone of NR Focus Group Discussion with Qixinghe NR staff (6) Alternative livelihood (7) Wetland restoration program (8) Water resource management and non-point pollution control (9) Eco-tourism of wetland nature reserve	Baoqing County
24 October	Dajiahe NR	Field visit of Dajiahe NR (1) Experiment zone. (2) Core zone of NR	Jixian City

Date	Route	Major activities	Overnight
(Friday)		Focus Group Discussion with Dajiahe NR staff (1) NR capacity building (2) Eco-tourism of wetland nature reserve	
25 October (Saturday)	Jixian- Harbin		Harbin

Major findings: Anbanghe NR

General observations

This nature reserve is a provincial level reserve managed by forest sector with an area of 12 095ha, in which 3 980ha as core zone, it is not a big NR in Sanjiang Plain. I has significant as-built infrastructure including a training center, field observation stations, a traditional culture museum, which are in line with the requirement of national wetland park, authorized by SFA in 2011. The NR manager was very proud of the training courses to the surrounding community, as an effective tool to solve the conflicts with local communities.

It is a pilot NR of ADB-GEF project with an investment of about 6 million CNY, in which a half for equipment and facility, and an other half for monitoring and training.

Watershed management

- Restored wetland helps to recover the habitats of water birds, which was financed by national wetland restoration projects of 3.98 million CNY in 2003 (Phase I) and of 6 million CNY in 2006 and finished in 2008, before the ADB-GEF Sanjiang Wetland Protection Project.
- The wetland restoration project was well implemented, not only returning the cropland of 1200ha, but also with the water supplying channels of 20km from Anbang River and reed planting for recovery of water bird habitats.
- The NR is located in the Anbang River watershed, which is a tributary of Songhua river, a new environment pollution control project of 12 million CNY has been approved by environment sector of Heilongjiang Province and is ready to implement to reduce the non-point pollution from agriculture.

Wetland biodiversity monitoring and management

- The NR is an important breeding habitat and stopover site of migratory birds. The the flag species are swan geese, red-crown crane, red-head crane, and white-naped crane and Oriental White Stork. It is very important breeding site for white spoonbill, 104 nests were founded in the summer of 2014.

Training courses for local communities

- Due to the historical reasons, there were sharp conflict between NR and local communities upon the ownership of the NR land, and NR won the sue to High Court. In order to resolve the conflicts with local communities, NRs organized a series of training courses to local communities, middle and primary schools with the ADB-GEF projects funds. It is an effective tool to ease the conflicts between the NR and local communities.

Ecotourism and alternative livelihood

- About 200,000-300,000 visitors to the NR each year with an avenue of 3 million CNY.
- NR also provided opportunities for local communities to participate the NR project implementation and off-farm jobs in the ecotourism activities.

Major findings: Qixinghe NR

General observations

This nature reserve has been well managed as a national level reserve (also a Ramsar site), with good facilities, such as field observation sites, a research institute building, expert building, museum, a 2 000m pave way in the marsh land. The landscape of the NR is still in the good natural state, with natural vegetation and variety of water birds.

Watershed management

- The reserve is located in the Qixing River basin, a tributary of Naoli River, which flows into the Ussuri River, the border river of China and Russia. The NR has built a water retention capacity of 200 million cube meters within the NR to supply enough water during the drought seasons. So, the NR is not troubled with water shortage.
- The NR is somehow affected by the non-point pollution of surrounding area, and the NR has taken some measures of eco-farming and compensation for less pesticide use to local farmers, cooperated with WWF China and Coco Cola Foundation and pesticide research institute of Ministry of Agriculture.
- The NR also implemented a national project on the wetland restoration, returning the cropland of 467 ha to wetland, and it is not a good water bird habitat.

Wetland biodiversity monitoring and management

- The NR is an important breeding habitat and stopover site of migratory birds. The flag species are swan geese, red-crown crane, red-head crane, and white-naped crane and Oriental White Stork. It is very important breading site for white spoonbills, and about 600 juvenile birds (30% of nationwide) are breeding in the NR each year.

Alternative livelihood

- The NR built 40 green houses as an alternatives livelihood pilot project with the finance support of ADB-GEF Sanjiang Wetland Protection Project, 1 million USD from ADB-GEF and 1 million USD from NR as co-finance.

- The greenhouses are used for vegetable farming, each house is 80m long and 50m wide with a working house of 20 square meters. With an innovative design, the green houses can fully use the solar energy for the farming, and 3 crops of vegetable each year (only 1 crop a year without green house facility)

Major findings: Dajiahe NR

General observations

This nature reserve has very large area, but limited staff and facilities. The NR is still at very natural state. It has two important parts, the one part is along the Ussuri River, the other part is along Naolihe River, opposite of Naolihe National Nature Reserve managed by State Farm.

There are strong need for training, including the monitoring, communication, and project design.

Watershed management

- The reserve is located in Ussuri River and Nalihe River basin, a tributary of Ussuri River, the border river of China and Russia. The NR is not troubled with water shortage.
- The Naoli River and Ussuri River are still free-flow rivers.

Wetland biodiversity monitoring and management

- The NR is an important breeding habitat and stopover site of migratory birds. However, the NR does not have field observation sites and bird monitoring capacity.

Alternative livelihood

- No wetland restoration projects have been planned or implemented, so, there are no specific alternative livelihood activities.
- NR is now applying for the National Wetland Park, some eco-tourism activities have been planned along the Ussuri River.

Field Visit Report of Dajiahe NR, Naolihe NR and Xiaobeihu NR

Purpose of the Field Visit

To analyze same nature reserve institutes information for wetland nature reserves in Sanjiang Plain.

Date Conducted

20-29 Oct 2014

Sites Visited

- Dajiahe NR, Sanjiang Plain, Heilongjiang Province
- Naolihe NR, Sanjiang Plain, Heilongjiang Province

- Xiaobeihu NR, Sanjiang Plain, Heilongjiang Province

Participating Project Personnel

- Liu Xiaohai, Training specialist

Persons Met

- Gu Qinghua, director, Dajiahe NR
- Wang Jingwu, director, Naolihe NR
- Ting Cheng, division chief, Naolihe NR
- Ma yun, director, Xiaobeihu NR

Schedule of Field Activities Conducted

Date	Route	Activities	Overnight
20 Oct (Monday)	Harbin to Raohe county,		Raohe county,
21 -22 Oct	Raohe county to Dajiahe	(11) Institute information of management NR (12) Capacity development need (13) Photos collection (14) Field visiting	Dajiahe
23 Oct	Dajiahe NR - Naolihe NR		Naolihe NR
24-26 Oct	Raoihe NR	(15) Institute information of management NR (16) Capacity development need (17) Photos collection (18) Field visiting	Naolihe NR, Fujing city
27 Oct	Raohe county-Anning city		Anning City
28 Oct	Xiaobeihu NR	(19) Institute information of management NR (20) Capacity development need (21) Photos collection (22) Field visiting	Xiaobeihu NR
29 Oct	Xiaobeihu to Harbin		Harbin

Major findings: Dajiahe NR

General observations

This reserve has administration building to be able meet 60 staffs use.

Institute information

- Dajiahe NR management are increased from city level to provincial level approved by the provincial government in September 2004.
- Dajiahe NR management Bureau was set up, which was approved by Shuang Ya Shan City Government in Oct 2006
- There are 11 departments in headquarters and 4 management stations under direction of Dajiahe NR management Bureau
- There 46 staffs in headquarters including 2 staffs with master degree, 18 staffs with college degree, 26 staffs with technical secondary school degree.
- Dajiahe NR management Bureau is reported to Raohe county government.
- Total area of Dajiahe NR 72604ha and is a provincial level NR

Capacity Development Need

Wetland biodiversity monitoring and management facilities are need for Dajiahe NR

Major findings: Naolihe NR

General observations

This reserve has administration building to be able meet 100 staffs use.

Institute information

- Naolihe NR was set up in July 2002.
- There are 2 sub-bureaus including Hongxinglong sub-bureau and Jiansanjiang sub-bureau and 11 management stations under direction of Naolihe NR management Bureau
- There 78 staffs in headquarters including 12 senoir engineers ,21 engineers , 15 technical staffs in the Bureau.
- There are 61 staffs in 11 management stations.
- Naolihe NR management Bureau is reported to Provincial Agricultural Reclamation Bureau
- Naolihe NR across the area of Fujing city, Baoqing county, Raohe county and Fuyuan county.
- The Naolihe NR covers east longitude:132° 22'41〃—134° 10'24〃, north latitude: 46° 30'10〃—47° 22'17〃.
- Total area of Naolihe NR 160595.4ha and is a national level NR

Capacity Development Need

Wetland biodiversity monitoring and management facilities are needed for the Naolihe NR

Major findings: Xiaobeihu NR

General observations

This reserve has administration building to be able meet 40 staffs use.

Institute information

- Xiaobeihu NR was set up in December 2006.
- The management right of the Xiaobeihu NR management Bureau are in process from Anning City to Heilongjiang province
- Departments and staff in the Xiaobeihu NR management Bureau are also in the process of change.
- Xiaobeihu NR management Bureau was reported to Anning city government in past, Xiaobeihu NR management Bureau will be reported to Heilongjiang Province Forestry Bureau in the near future.
- Xiaobeihu NR is located in Anning city.
- The Xiaobeihu NR covers east longitude:128°27′14″～128°49′32″， north latitude: 44°07′08″～44°20′26″.
- Total area of Xiaobeihu NR 66080ha and is a national level NR

Key Issues Finding

- The Land use management rights are under direction of the local land management bureau in Dajiahe NRs, Naolihe NRs and Xiaobeihu NRs, what kind land management rights to the NR Bureaus should be definite.
- The agriculture development is led to the the decrease of wetland area in Dajiahe NRs, Naolihe NRs and Xiaobeihu NRs.
- Non point pollution is led to deterioration of wetland environment

Capacity Development Need

Wetland biodiversity monitoring and management facilities are needed for the Xiaobeihu NR

Final discussion points

- The Directors of three NRs hope for presentation of international and national successful wetland protection cases.

Suggestion

- The investment on the future project can be focus on increase of wetland area from low agriculture product area, control non point pollution in the wetland basin.

ANNEX E: REPORT OF "LEARNING AND REFLECTION" WORKSHOP, 7 NOVEMBER 2014

TA 8541-PRC: Strengthening Capacity for Wetland Protection for Sanjiang Plain
"LEARNING AND REFLECTION" WORKSHOP
7 November 2014, Harbin

Introduction

1. This report summarizes activities undertaken as part of a "Learning and Reflection" Workshop, conducted on November 7, 2014 in Harbin, People's Republic of China (PRC) as part of the Asian Development Bank (ADB) Technical Assistance (TA) project, 8541-PRC: Strengthening Capacity for Wetland Protection for Sanjiang Plain.The implementing agency for the TA, the Heilongjiang Provincial Forestry Department (HPFD), played a key role in supporting and organizing the workshop.

2. One of the main objectives of the workshop was to solicit ideas, recommendations, and opinions from stakeholders, concerning the outline for a proposed "Knowledge Product" (KP) that is planned as one of the key outputs to be produced by the TA. The KP is intended to disseminate information to a wide audience, about the importance of protecting wetlands in the Sanjiang Plain. The entire afternoon of the one-day workshop was devoted to discussion by participants of the KP outline, and consideration of ways in which it could be strengthened and improved.

3. This was the first workshop conducted under the TA. Its two main purposes were to (i) **build capacity** and (ii) **disseminate knowledge**, in order to promote improved management of critical wetlands in the Sanjaing Plain. Titled a "learning and reflection workshop," the "learning" was promoted mainly through presentations made by key speakers, especially, case studies presented by managers from two wetland nature reserves (NRs) in the Sanjiang Plain, while "reflection" was accomplished through in-depth discussions held among the participants, following the presentations.

Attendance

4. The workshop was attended by a total of 37 participants, representing national and provincial government agencies, as well as stakeholders from academia and civil society. The list of participants is provided in Attachment 1. All participants were provided with a set of workshop resource materials, including a brief fact sheet about TA 8541-PRC (Attachment 2)[14], and the draft outline for the KP (Attachment 3).

Program

5. The program for the workshop included a series of presentations in the morning, followed by an open forum-style discussion session in the afternoon. The agenda for the workshop is shown in Attachment 4.

[14] All reference materials for the workshop were prepared in English, then translated into Chinese and provided to the participants.

Addresses and Presentations

6. Following welcome remarks and an introduction by the Director of the Project Management Office (PMO), Mr. Cheng Shaoxia, the participants were briefly addressed by Mr. Wan Jie, Director of the central State Forest Authority (SFA). Mr Wan suggested that often, international projects have better results than projects in China, because adequate attention and support are given to capacity development. Mr. Wan identified two elements that are critical for the successful implementaton of wetlands management projects: (1) convincing and influencing key decision-makers to provide adequate support; and (2) developing capacity among managers and staff of nature reserves. These comments were fully in line with the purposes of the workshop, and particularly, the purposes of the proposed KP to be prepared under TA 8541.

7. The next address was made by Mr. Zhang Xuewu, Deputy Director General of the Heilongjiang Provincial Forestry Department. Mr. Zhang recounted the past support that was provided by ADB for the protection of wetlands in Sanjiang Plain. He asked that ADB consider to continue giving support in the future, for the conservation of these vital ecosystems.

8. Mr. Zhang's comments were followed by a presentation by Mr. Yoshiaki Kobayashi, Senior Water Resources Specialist, ADB, about ADB's past support project, the Sanjiang Plain Wetlands Protection Project (SPWPP). Mr. Kobayashi emphasized the very comprehensive nature of the project, which addressed a wide range of issues including Watershed Management, Wetland Nature Reserve Management, Alternative Livelihood Programs, Education and Capacity Building, and Project Management. Of particular interest in Mr. Kobayashi's presentation was inclusion of a number of quotations, obtained in interviews with local stakeholders, that clearly demonstrated how their lives had been improved as a result of the project.

9. After Mr. Kobayashi's presentation, several short presentations were made by James Berdach, Team Leader, and Dr. Yu Xiubo, Deputy Team Leader, of the TA consultant team.[15] These presentations included introductory information about TA 8541-PRC; a progress report on inception activities of the TA; and an overview of the outline of the proposed KP for Sanjiang Plain.

10. The final two presentations of the morning were case studies presented by senior managers from two of the nature reserves in Sanjiang Plain. In the first of these, Mr. Gu Qinghua, Director General of the Dajiahe Nature Reserve, presented information about the challenges of wetlands management at Dajiahe. Mr. Gu highlighted the relatively intact wetland that is found in Dajiahe. He stated that through recent efforts to restore and protect the ecosystem, the numbers of endangered migratory birds that are using the site have been increasing. He also mentioned that the nature reserve is involved in a number of activities aimed at training staff and raising awareness of local residents about the importance of the wetlands. However, he reported that there are still persistent problems that are the result of insufficient support. Improved roads, and greater capability and better equipment for use in monitoring and patrolling, are urgently needed.

11. The second case study was presented by Mr. He Jingshi, the Director General of Anbanghe Nature Reserve. Mr. He highlighted a number of key accomplishments at Anbanghe. This is one of the smallest nature reserves in the Sanjinag Plain and possibly, in the entire PRC. Of particular interest

[15] The slide sets used for these presentations, as well as the presentation slides for the other speakers at the workshop, are available on request.

at Anbanghe is the very strong program that has been implemented for awareness-raising. The nature reserve has a large educational center, with museum facilities and interactive displays, where members of the public can go to learn about wetlands. The nature reserve has also supported educational programs for school groups, and researchers from various academic institutions regularly visit the reserve.

Open Forum Discussion

12. The featured activity during the afternoon sessions, was an open-forum discussion regarding the draft outline for the KP. The purpose of the discussion was to gather the opinons and views of the participants about the KP outline, to ensure that the final outline would include all relevant topics to be covered in the KP document.

13. Before the discussion was initiated, the participants were asked to complete a short questionnaire (Attachment 5) about the KP outline. By filling up a questionnaire, the participants were made to reflect upon some of the key issues of wetlands management in Sanjiang Plain, and they were guided to consider the same set of questions. This helped to "get the ball rolling" for the discussion that followed. It also helped to ensure that all participants would have an opportunity to provide their inputs, whether in oral discussion or in written form.

14. A total of twenty (20) participants completed the questionnaires. The responses provided by participants on the questionnaires are still to be tabulated and processed.

15. After the questionnaires were completed, stakeholders participated in an animated discussion about the KP, and about the wetlands conservation issues that are relevant to the Sanjiang Plain. The main points from the discussion are presented in Attachment 6. Some of the key issues that were highlighted are summarized below:

- The Sanjiang Plain is a vast area that has critical importance based both on ecological and economic factors. The wetland areas of the Plain are critical to the survival of numerous specis of migratory waterfowl. At the same time its agricultural lands have contributed significantly to the economic growth of the PRC. Thus the key challenge for management of wetlands in the Sanjiang Plain is to find a balance between strengthening conservation and enabling economic activities (especially agricultural activities) to continue.

- While it is possible to seek out examples of best practice for wetlands management from locations outside of China, it will be better if the KP emphasizes examples only from the Sanjiang Plain, since these will be most relevant and applicable.

- Alternative livelihood activities can complement conservation efforts in Sanjiang Plain, and if properly implemented, can help to make them more sustainable. Ecotourism is one type of livelihood activity offering such potential.

- In order to plan for the future of the Sanjiang Plain, it is critical to have a good understanding of its past history, This is one element that can be highlighted in the KP.

- Multi-agency and multi-stakeholder coordination, both at the scale of the larger watershed and at the nature reserve scale, are needed to ensure that planning, especially for the equitable use of water and other resources, will be done in an integrated manner, and that management efforts will be effective.

Conclusion

16. The "Learning and Reflection" workshop successfully brought together a relatively diverse group of stakeholders to discuss matters relevant to the continued implementation of TA 8541-PRC. The inputs of the participants, obtained through completion of questionnaires and exchange of ideas during the discussion session, will be particularly helpful in further developing the Knowledge Product for Sanjiang Plain.

17. The workshop also helped to build capacity, since the information that was shared increased awareness and raised the level of understanding among the participants, regarding the issues and challenges being faced for wetlands conservation in the Sanjiang Plain. At the same time, it enabled the participants, including managers and other personnel from the nature reserves, to start to think about new approaches and innovative ways to address these issues and challenges. This workshop, one of three that are planned for TA 8541-PRC, thus provides a good model that can be followed for the remaining two workshops, so that they can also contribute to the dual objectives of information dissemination and capacity building.

Attachments

Attachment 1. List of Participants

Attachment 2. TA 8541 PRC Project Fact Sheet

Attachment 3. Draft Outline of the Knowledge Product

Attachment 4. Workshop Agenda

Attachment 5. Questionnaire on the Knowledge Product

Attachment 6. Notes of Key Discussion Points on the Knowledge Product

Attachment 1: List of Participants

Asian Development Bank (TA8541-PRC)
Strengthening Capacity for Wetlands Protection for Sanjiang Plain
亚洲开发银行技术援助项目研讨会签到表
Learning and Reflection Workshop, 7 Nov 2014--Attendance Sheet

No.	Name （姓名）	Office/agency （单位）	Title （职务、职称）
1	Fu Hongchen	Sanhuanpao Nature Reserve	Staff Member
2	Gu Qinghua	Dajiahe Nature Reserve	Director General
3	Liu Xiaohai	TTT	Training Specialist
4	Wan Jie	State Forestry Administration	Director
5	Jin Leshan	China Agriculture University	Professor
6	David Parkin	TTT	Watershed Management Specialist
7	Zhang Hongjun	Agriculture Committee	Deputy Researcher
8	Huang Junyang	Wildlife Species Conservation Division, Forestry Department	Deputy Director
9	Li Qingjiang	Planning Division, Tourist Administration	Principal Staff Member
10	Zhang Xuemei	TTT	Livelihood Management Specialist
11	Jiang Weihua	Suibin Liangjiang Nature Reserve	Director General
12	Li Hongpeng	Suibin Liangjiang Nature Reserve	Deputy Director General
13	Ding Cheng	Naolihe Nature Reserve	Section Chief
14	Lu Yunfeng	Environmental Protection Department	Principal Staff Member
15	James Berdach	TTT	Team Leader
16	Yoshiaki Kobayashi	ADB	Senior Water Resources Specialist
17	Sun Yonggang	Office, Forestry Department	Director
18	Yu Zhihao	Development Planning Office, Forestry Department	Director
19	Wang Shengli	Qixinghe Nature Reserve	Section Chief
20	Zheng Zhigang	Sanjiang Nature Reserve	Director General
21	Huang Shuxia	Anbanghe Nature Reserve	Deputy Director General
22	He Jingshi	Anbanghe Nature Reserve	Director General
23	Wang Renchun	Wetland Conservation Center	Director
24	Feng Shangzhu	Xingkaihu Nature Reserve	Director
25	Xue Yongjun	Institute of Agriculture Reclamation Survey and Design	Unknown

No.	Name （姓名）	Office/agency （单位）	Title （职务、职称）
26	Teng Xing	Institute of Agriculture Reclamation Survey and Design	Deputy Director
27	Teng Huajun	Dajiahe Nature Reserve	Principal of Scientific Research and Education
28	Ye Shengxin	Institute of Forestry Survey and Design	Director
29	Zhang Xiguo	Zhenbaodao Nature Reserve	Director General
30	Li Xiaomin	Northeast Forestry University	Professor
31	Liu Yuxiang	Finance Department	Deputy Director
32	Wang Xijun	Provincial Development and Reform Commission	Deputy Director
33	Wen Jijuan	Institute of Water Resources Design	Senior Engineer
34	Peng Hui	Water Resources Department	Deputy Director
35	Andrew Mettelman	TTT	Livelihood Specialist
36	Yu Xiubo	TTT	Deputy Team Leader
37	Cheng Shaoxia	Provincial Forestry Department and PMO	Project Director

Attachment 2: Project Fact Sheet

STRENGTHENING CAPACITY FOR WETLAND PROTECTION FOR SANJIANG PLAIN (ASIAN DEVELOPMENT BANK TA 8541-PRC): A "LEARNING AND REFLECTION" WORKSHOP

BACKGROUND

The Sanjiang Plain wetlands are one of the most important wetland habitats on Earth, and a repository of globally-important biodiversity, as represented by numerous species of threatened and endangered migratory waterfowl and other vulnerable species. In order to reverse continuing trends toward reduction and degradation of the Sanjiang Plain wetlands, and to protect wetland-dependent flora and fauna, a project entitled "Sanjiang Plain Wetlands Protection Project" (SPWPP) was approved in 2005 for loan funding of US$15 million from the Asian Development Bank (ADB), together with grant funding from the Global Environment Facility (GEF) of US$12.14 million, and cofinancing from the government of the People's Republic of China (PRC) valued at US$24.37 million.[16] The project comprised five components: (i) watershed management, (ii) wetland nature reserve management, (iii) alternative livelihood programs, (iv) education and capacity building, and (v) project management. The Heilongjiang provincial government (HPG) was the executing agency.

Under the project, various pilot wetland protection activities were conducted in six model nature reserves of the Sanjiang Plain: Anbanghe, Dajiahe, Naolihe, Qixinghe, Xingkaihu, and Zhenbaodao (Figure 1). Of the project sites, Xingkaihu was listed as a Wetland of International Importance under the Ramsar Convention in 2002 (before the project commenced), and Qixinghe and Zhenbaodao were placed on the Ramsar list in 2011 during project implementation. The lessons learned from Sanjiang Plain were consolidated, together with lessons learned from

[16] Global Environment Facility. July 2004. Project executive summary. GEF Council work program submission.

several other critical lakes and wetlands in PRC, within a special ADB publication, a "knowledge product" (KP) entitled "Reviving Lakes and Wetlands: Lessons Learned from the People's Republic of China."[17]

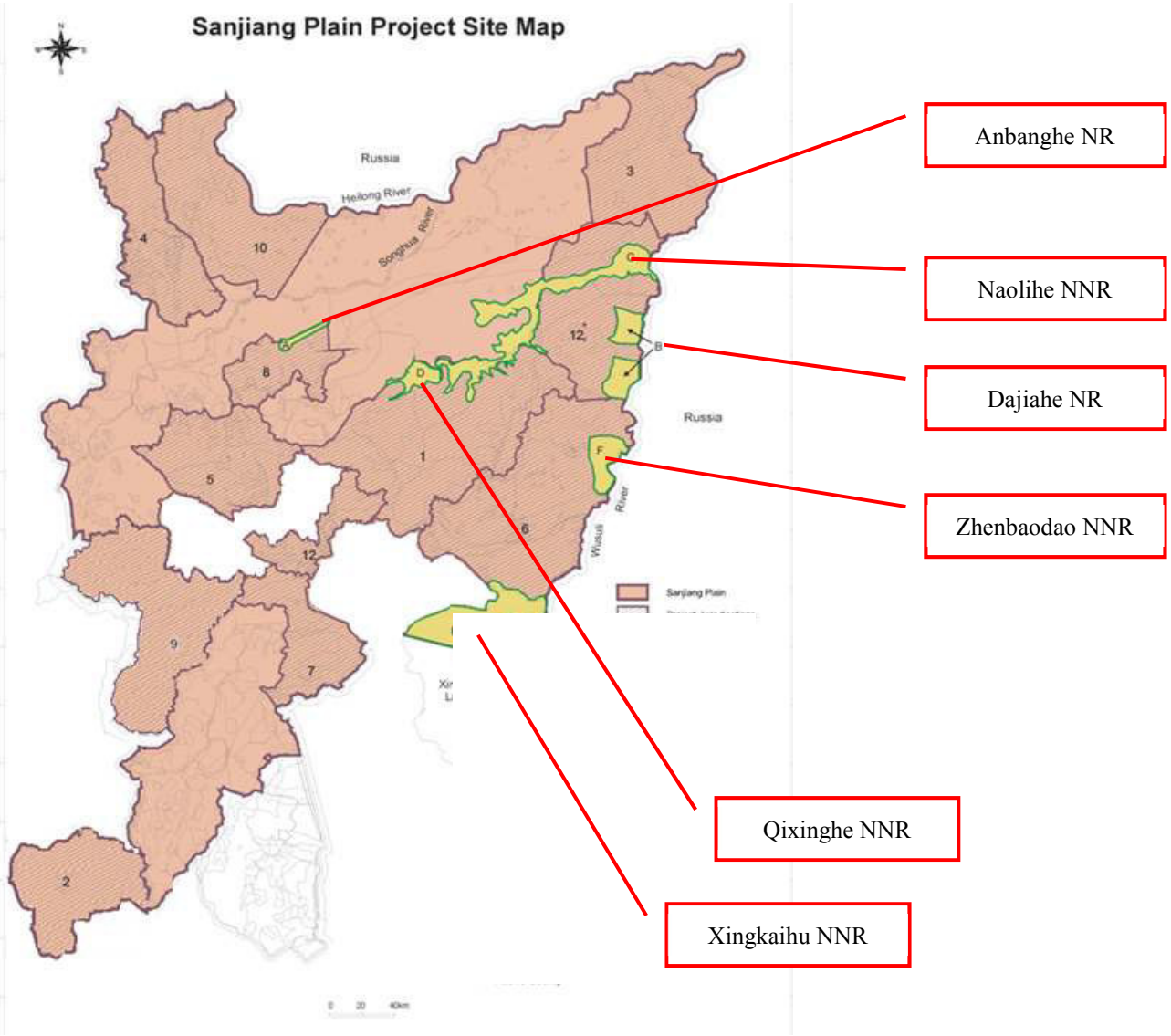


Figure 1. Location of 6 Nature Reserves of the SPWPP

[17] ADB. 2008.

The project was completed in August 2012. In the six model reserves, pilot activities were successfully conducted, including watershed management, wetland restoration, wildlife species recovery, reduction of resource exploitation, and alternative livelihoods development. Eight key globally threatened species in Sanjiang Plain were monitored during project implementation[18]; this is ongoing.

ABOUT THE CURRENT TECHNICAL ASSISTANCE (TA) PROJECT

To expand the successes achieved under the SPWPP to other nature reserves, the HPG requested ADB's continuing support through a small-scale capacity development technical assistance (CDTA) project. The purpose of the current CDTA project, which commenced in July, 2014, is to achieve capacity development through the dissemination of the wetland protection models developed under the previous project, and to share the knowledge accumulated, including information useful for considering future investment projects. The impact of the TA will be improved management of natural resources to protect globally significant biodiversity in Sanjiang Plain. The outcome will be capacity established for continued implementation and expansion of achievements of the Sanjiang Plain Wetlands Protection Project.

THE KNOWLEDGE PRODUCT

Through consultations conducted during the early stages of the TA project inception phase, and following in the footsteps of the earlier ADB KP, it was determined that the most critical output of the TA would be the production of an in-depth KP, that could be utilized for learning and capacity-building. It is envisioned that the KP to be produced under this CDTA will focus specifically on improving the management of the wetlands ecosystems of the Sanjiang Plain. The KP will:

(i) Stress the global importance of the Sanjiang Plain wetlands as an ecosystem that plays a significant role as habitat for numerous species of endangered waterfowl, serves to moderate flooding, and contributes to the economic productivity of the PRC;

[18] The eight key globally threatened species are Baikal teal, hooded crane, lesser white-fronted goose, scaly-sided merganser, oriental stork, red-crowned crane, swan goose, and white-naped crane. As of 31 October 2013, scaly-sided merganser, oriental stork, and red-crowned crane are on the list of endangered species; and hooded crane, lesser white-fronted goose, swan goose, and white-naped crane are on the list of vulnerable species. Baikal teal was moved from the list of endangered to vulnerable species.

(ii) Review past challenges and successes in management of the wetlands of the Sanjiang Plain;
(iii) Identify key constraints that are barriers to improving wetlands management and strengthening wetlands conservation initiatives in the future;
(iv) Discuss international best practices for wetlands management, as drawn from examples in the Sanjiang Plain, from other wetland NRs in China, and from wetland sites internationally;
(v) Incorporate coverage of topics and issues of concern for management of wetlands in the Sanjiang Plain, including watershed management, wildlife species recovery, reduction of harmful resource exploitation, and promotion of environmentally-friendly sustainable livelihoods;
(vi) Consider innovative and practical means for scaling up the past successes of the SPWPP, that can be applied for management of new wetland sites in the Sanjiang Plain; and
(vii) Describe ways in which conservation initiatives in the Sanjiang Plain can be beneficial for, complementary to, and balanced with, ongoing economic development activities in the area.

It is expected that the KP will be a useful resource for managers and other stakeholders/users of the Sanjiang Plain wetlands, and will serve as a tool to promote improved management and conservation of this globally-significant wetland ecosystem. The KP will also constitute a mechanism for linking the past ADB-supported initiative for wetlands protection and conservation, with possible future interventions and investments to scale up and expand more effective wetlands conservation to other areas of the Sanjiang Plain.

"LEARNING AND REFLECTION" WORKSHOP

The purpose of the "Learning and Reflection" Workshop is to gather together key stakeholders from relevant Heilongjiang Provincial Government agencies, from the nature reserves of the Sanjiang Plain, and other interested local stakeholders, to discuss the current TA project and its objectives. Most importantly, inputs, suggestions, ideas, and recommendations will be solicited from participants, to further inform the development of the Knowledge Product for the Sanjiang Plain wetlands. It is hoped that through the discussions that will be conducted during the workshop, a common vision may emerge of the purposes, format, and content of the new KP, thus ensuring that it will be a resource that will be relevant and useful to decision-makers and conservation practitioners, for strengthening and extending into the future, the advances in wetland conservation that have been achieved through the past ADB initiative.

Attachment 3: Outline of the Knowledge Product (for discussion)

THE SANJIANG PLAIN WETLANDS: CHALLENGES AND OPPORTUNITIES FOR THE FUTURE

I. Introduction
II. Background
    A. Location and General Description of the Sanjiang Plain Wetlands
    B. Biodiversity Significance of the Sanjiang Plain Wetlands
    C. Biogeophysical Functions of the Sanjiang Plain Wetlands and Watershed
        1. Rare and Threatened Flora and Fauna and their Habitat
        2. Water Capture and Flood Control
        3. Carbon Sequestration
    D. Sanjiang Plain Land Use, Economic Activities and Livelihoods
III. Key Threats
    A. Land Conversion for Agriculture
    B. Pollution and Industrial Activities
    C. Unsustainable Extraction of Natural Resources
IV. Legal, Institutional and Political Setting
    A. International Conventions: Alignment with the Convention on Biological Diversity (CBD) and Ramsar Convention
    B. PRC and Provincial Policies, Laws and Plans: Legal Basis for Conservation of Wetlands and Biodiversity in the Sanjiang Plain
    C. Role of National and Provincial Government Agencies
    D. Role of Nature Reserve Management
    E. Role of Civil Society: Academia, NGOs, and Communities
    F. Institutional Capacity, Governance and Related Issues
V. Wetlands Management Best Practices
    A. Examples from Other Areas
        1. China Examples
        2. Examples from Other Countries
        3. Ramsar Guidelines
    B. Best Practices in Sanjiang: The Asian Development Bank SPWPP
VI. View to the Future: Strengthening, Scaling Up, and Expansion of SPWPP Accomplishments
    A. Continuing Conservation Efforts in Previous Wetlands NR Implementation Sites
    B. Expanding Conservation Efforts to New Wetlands NRs
    C. Integrated Watershed Management (IWM) Approach: Harmonizing Policies, Plans and Actions in the Greater Watershed Area to Achieve More Effective Conservation Outcomes
VII. Specific Recommended Actions
    A. Policy and Legal Reform: Harmonizing Policies and Plans Across Sectors
        1. Cross-Sectoral Consultations and Advocacy
        2. Drafting of Relevant Policies, Plans and Laws
    B. IWM
        1. Cross-Sectoral Watershed Spatial Planning
        2. Establishing/Strengthening Institutions for IWM in the Sanjiang Plain
        3. Strengthening GIS Database for IWM
        4. Improved Forest Management
        5. Erosion Control
        6. Pollution Control

C. Wetland Nature Reserve Management
    1. Strengthening GIS Database for Wetlands NR Planning Management
    2. Developing NR Zonation Maps and Management Plans
    3. Building Capacity for Improved Wetlands NR Management
    4. Wetlands Restoration and Rehabilitation
    5. Surveys, Monitoring, Protection and Preservation of Endangered Species (migratory waterfowl) and their Habitat
    6. Enforcement
    7. Awareness-Raising Activities
    8. Sustainable Financing for Wetlands NR Conservation

D. Sustainable Livelihoods
    1. Awareness-Raising, Capacity-Building, and Participatory Planning
    2. Developing “Eco-Livelihoods” (agroforestry, on-farm production of economically valuable species, non-timber forest products) and alternative livelihoods
    3. Improving Productivity and Efficiency
    4. Pilot-Testing of Innovative Livelihood Options
        a. Eco-greenhouses
        b. Biomass and biogas energy production
        c. Organic agriculture and marketing
        d. Handicrafts
        e. Organic livestock, poultry and fisheries production
        f. Eco-tourism
    5. Microfinance, Revolving Funds and Nature-Based Credit Facilities

VIII. Conclusion

Attachment 4: Workshop Agenda

Heilongjiang Provincial Forestry Department
Asian Development Bank (TA 8541-PRC)
STRENGTHENING CAPACITY FOR WETLAND PROTECTION FOR SANJIANG PLAIN:
A "LEARNING AND REFLECTION" WORKSHOP
Friday, November 7th, 2014
Zhanwang Building, 58 Ganshui Road, Harbin
AGENDA

Session	Time	Activity	Presenter or Moderator
	08:30	**Registration**	
Part I: Chair: Mr. Cheng Shaoxia, Director, Project Management Office, Heilongjiang Provincial Forestry Department			
	09:00	Introduction of the Consultant Team and Workshop Participants	Mr. Cheng Shaoxia, Director, Project Management Office and Senior Engineer, Heilongjiang Provincial Forestry Department
	09:10	Welcome Remarks	Mr. Zhang Xuewu, Deputy Director General, Heilongjiang Provincial Forestry Department
1	09:20	ADB Support for Wetland Protection in the Sanjiang Plain	Mr. Yoshiaki Kobayashi, Senior Water Resources Specialist, East Asia Department, Asian Development Bank
2	09:30	Introduction to ADB's TA 8541-PRC for Strengthening Capacity for Wetland Protection for Sanjiang Plain	James T. Berdach, Wetland Nature Reserve Management Specialist / Team Leader, ADB TA Consultant Team
3	09:45	Inception Activities of TA 8541-PRC	James T. Berdach, Wetland Nature Reserve Management Specialist / Team Leader, ADB TA Consultant Team
	10:00	**Coffee/Tea Break**	
Part II: Chair: James T. Berdach, Wetland Nature Reserve Management Specialist / Team Leader, ADB TA Consultant Team			
4	10:15	ADB's Knowledge Product on 'Reviving Lakes and Wetlands' in PRC, and Draft Outline for Sanjiang Plain Wetlands Knowledge Product	Professor Yu Xiubo, Wetland Biodiversity Specialist/Deputy Team Leader, ADB TA Consultant Team
5	10:40	Applying Lessons Learned: the Process of Preparing the Sanjiang Plain Knowledge Product	James T. Berdach, Wetland Nature Reserve Management Specialist / Team Leader, ADB TA Consultant Team
	11:00	Q&A and Open Discussion	Facilitated by TA Consultants
Part III: Chair: Professor Yu Xiubo, Wetland Biodiversity Specialist/Deputy Team Leader, ADB TA Consultant Team			
6	11:15	Case Study #1: Lessons Learned for Wetlands Management from Dajiahe Wetland Nature Reserve	Mr. Gu Qinghua, Director, Dajiahe Wetland Nature Reserve
	11:45	Q&A and Open Discussion	Facilitated by TA Consultants
	12:00	**Lunch**	
7	13:15	Case Study #2: Lessons Learned for Wetlands Management from Anbanghe Wetland Nature Reserve	Mr. He Jingshi, Director, Anbanghe Wetland Nature Reserve
	13:45	Q&A and Open Discussion	
Part IV: Chair: Mr. Cheng Shaoxia, Director, PMO, and Senior Engineer, Heilongjiang Provincial Forestry Department			
8	14:00	Guidelines for Further Discussion	James T. Berdach, Wetland Nature Reserve Management Specialist / Team Leader, ADB TA Consultant Team
9	14:10	Open Discussion on the Knowledge Product	Facilitated by TA Consultants
10	14:50	Findings and Summing-Up	Facilitated by TA Consultants
	15:00	Closing Remarks	Mr. Cheng Shaoxia, Director, Project Management Office and Senior Engineer, Heilongjiang Provincial Forestry Department
	15:10	Adjourn	

Attachment 5: Questionnaire

STRENGTHENING CAPACITY FOR WETLAND PROTECTION FOR SANJIANG PLAIN:
"LEARNING AND REFLECTION" WORKSHOP

THE KNOWLEDGE PRODUCT:
QUESTIONS FOR DISCUSSION

1. **The proposed title for the Knowledge Product is, "Reviving Lakes and Wetlands: Best Practices and Prospects for the Sanjiang Plain Wetlands."**

   a. **Do you like the proposed title?** _____

   b. **Do you have any suggestions for a better title?** _____

   _____

2. **It has been mentioned that the Sanjiang Plain wetlands are a critically-important ecosytem for supporting biodiversity, mitigating floods, improving resiliency to climate change, and contributing to the economic growth and development of the nation.**

   a. **Do you agree with this statement?** _____

   b. **Do you have any suggestions or ideas about how the important functions of the wetlands can be effectively emphasized and highlighted in the Knowledge Product?**

   _____

   _____

   _____

3. **The previous ADB project (the SPWPP) was implemented in six (6) Nature Reserves in Sanjiang Plain (Anbanghe, Dajiahe, Naolihe, Qixinghe, Xingkaihu, and Zhenbaodao Nature Reserves).**

a. **In your opinion, which of these Nature Reserves offers examples of good practice in wetlands management?**

   _____

   b. **What are the specific best practices from these Nature Reserves that could be highlighted in the Knowledge Product?**

   _____

   _____

   c. **Which other nature reserves in the Sanjiang Plain would be high-priority sites for strengthening wetlands management in the future?**

   _____

4. **Which of the following topics do you feel are <u>important to include in the Knowledge Product</u>? Please indicate your answer by ticking the appropriate box.**

Topic	Importance for the KP (from 1-10) 1= not important; 10=very important
Significance of Sanjiang Plain wetlands as habitat for biodiversity (for example, migratory birds, rare plant species)	
Significance of Sanjiang Plain wetlands for regulating flood waters	
Importance of appropriate laws and policies in supporting and promoting effective management of the Sanjiang Plain wetlands and watersheds	
Integrating water resource management throughout the watershed, for improved conservation of wetland areas	
Controlling pollution from factories, agricultural lands, and residential development	
Mechanisms for balancing the need to conserve wetland areas, with the need for maintaining agricultural productivity	
Possible role of alternative livelihoods in contributing to the rehabilitation and conservation of the Sanjiang Plains wetlands	
Options for alternative livelihoods (e.g., agrofrestry, non-timber forest products, greenhouse cultivation, ecotourism) in and around wetland areas	
Requirements for building capacity for improved wetlands conservation and watershed management (for example, continuing professional development[CPD], better facilities or equipment, etc.)	
Mechanisms for sharing knowledge and information about Sanjiang Plains wetlands management	

5. **You have been provided with a draft outline of the Knowledge Product. Referring to this outline, do you have any specific suggestions or ideas, about other topics that should be included in the Knowledge Product, that are not already mentioned?**

   _____

   _____

6. **Do you have any information or resource materials that you can share, that could be incorporated into the Knowledge Product (for example, photos, statistical data, reports, management plans, etc.)? If so, please contact the consultants so that this information can be reviewed for use in the Knowledge Product:**

   Mr. James Berdach, Team Leader: jayberd123@gmail.com
   Prof. Yu Xiubo, Deputy Team Leader: yuxb@igsnrr.ac.cn

7. **May we contact you for further information and discussion? If so please write your name and e-mail address (OPTIONAL)**

   _____

THANK YOU VERY MUCH FOR YOUR TIME AND YOUR COOPERATION!

Attachment 6: Discussion Notes

Notes of Open Discussion Session on Knowledge Product (KP)
"Learning and Reflection" Workshop, November 7, 2014

Mr. Jin Leshan, Professor, China Agriculture University

The previous KP covered four areas: strong political leadership; integrated planning; effective management and financing. The new KP should (i) include some new experiences which are different from the previous one; and (ii) focus more on Sanjiang Plain

(i) About new experiences

- From strong political leadership move to management by law. Management by law is the major topic of Fourth Plenary Session Eighteen Central Committee held in October 2014;
- Making plans within laws and regulations. For example, demarcation of NR boundary should legally respect land rights, and villagers' interests
- Strengthening management: building effective mechanism to balance agricultural activities and wetland protection

(ii) About more focus on Sanjiang plain

One of the major points requiring attention in Sanjiang plain is to balance agricultural activities and wetland protection. More attention should be paid to the root causes of the conflict, and based on the causes, to figure out solutions. The solutions for state-owned land and community collective land areould be different.

- For state-owned land. The major objective of using the land is to preserve ecosystem services. Therefore, strengthening management by law, and increasing funding to the NRs might be the solutions;
- For community collective land: ecological compensation, alternative livelihoods, and co-management might be the solutions.
- Identification of options for alternative livelihood should take full consideration of local situation. For example, situation of Xingkaihu NR is good for developing ecotourism, which can be one of the alternative livelihoods. However, it is important to avoid a situation wherein various NRs compete with each other in same and similar tourism activities

About the three key threats in Section III in the KP outline:
It is suggested to re-organize the three key threats, because both extraction of natural resources and drainage belong to using of natural resources. The threats can be classified into two: (1) Agricultural activities, and (ii) pollution.

Ms. Wang Wenjuan, Water Resources Expert, Heilongjiang State Farm (formerly involved in the SPWPP)

About "History of Wetland Reclamation on the Sanjiang Plain" in II-D in the KP outline-

- It is better that development for land for food production is not characterized as "correct" or "incorrect". It should simply be stated that historically, this was an urgent national need during the history of Sanjiang Plain.
- There were essentially 3 main development/conversion periods:
  - National development for self-survival - Major rice expansion and in-migration
  - Agricultural intensification – use of chemicals, expanding irrigation
  - Augmentation - further expansion, intensification, irrigation

In the past, large-scale reclamation of wetland was for grain production, which was suitable for the situation when there were food shortages and many people were hungry. Some assessments in existing documents of the reclamation of wetland are not objective. The KP should state, analyze, and assess the past reclamation of

wetlands historically and objectively. If needed, she has a large number of documents which can be shared with the team.

About multiagency management of wetlands and the wider watershed area
- It is very important to manage the wetland with coordination of various agencies and departments.

- About livelihoods
- Many alternative livelihoods have already be carried out in the SPWPP. Hope more demand-driven alternative livelihoods activities will be figured out in the future

- About awareness-raising on wetland protection
- Wetland protection has to be understood and get support from farmers around the NRs.

Mr. Li Xiaomin, ornthologist, Northeast Forest University

"Knowledge Product" has been translated as ***duben*** in the Chinese translation. Usually ***duben*** in Chinese implies an informative, interesting, non-technical product forpopular consumption. Judging from the current KP outline, the KP may include some technical information. Therefore, he suggested reconsidering use of ***duben*** and possibly selecting another term in referring to the KPe.

About threats in section III in the KP outline:
It is stated in the KP outline that there are three key threats: reclamation, pollution and extraction of natural resources. As said by Mr. CHENG Shaoxia, extraction of natural resources is no longer a big threat. So a detailed analysis of extraction of natural resources is not required in the KP. However, some overview discussion of extraction of natural resources in the KP is needed and appropriate.

Regarding major threats:
- Urbanization and population pressure are increasing in Sanjiang Plain. With more people moving into SP, there will be more pressure on wetlands;
- More roads for good transport will also occupy more wetland;
- Dry-land being converted into paddy land, which consumes more underground water rather than surface water; and
- Widely used wetland for non-ecological function leads to climate change (especially disruption of normal climate and weather patterns): in the past, nine out of ten years were flooded, while more recently nine of ten years are drought.

- About best practices:
- International best practice may provide fewer relevant learning points for Sanjiang plain. International experience should only be noted in cases where it is directly relevant to management in the Sanjiang Plain
- Instead, it is better to summarize best practices from various NRs in Sanjiang plain. The best practices in NRs in Sanjiang plain might not be the best examples in the world, but can be the most appropriate ones for Sanjiang plain. For example, scientific monitoring in Xingkaihu, and community public education in NRs of Sanhuanpao and Qixinghe are best practices that can be replicated and scaled up in other areas.

- About "The Way Forward" (section V of the KP outline):
- Based on the title of this KP, the way forward does not need to touch forestry, it should focus on wetlands
- It is also unnecessary to focs on wetlands in other locations, except Sanjiang
- Biodiversity protection should be highlighted in this part, because biodiversity is the key focal area of the Ramsar Convention, and Sanjiang wetland is one of the most significance sites in PRC providing habitat for biodiversity, especially for birds and fish

Mr. Li, Provincial Tourism Bureau

Ecotourism is one of the most promising alternative livelihood options. However, there are often some conflicts between tourism and wetland protection, e.g., pollution from tourism will negatively affect wetland protection. One specific case where the potential conflicts can be seen is in the "Five Linked Great Pool Lake" nearby Hei River in Sanjiang plain. Applications are being made for two different designations in this area, one as a National Scenic Area and another as a geological park (these are volcanic lakes). The two designations have different requirements. One focuses on use of wetlands and the other focuses on wetland protection. Mechanisms for balancing the two are urgently needed. The Heilongjiang government is in the process of preparing a Provincial Tourism Plan. In the plan, some guiding principles and recommendations will be presented. He suggested that the KP can provide some information that will be helpful in the preparation of the tourism plan, especially as far as development of ecotourism in SP.

Mr. James Berdach, ADB CDTA Team Leader

The Team Leader presented a case from the Philippines, as an example of a situation where ecotourism replaced damaging extractive activities, and led to improvements in habitat for biodiversity (in this case, conservation of coral reefs). Similar principles may apply for conservation of wetland areas in the Sanjiang Plain.

Mr. He Jinshi, Director General, Anbanghe NR

Capacity building should cover many aspects, such as management capacity, monitoring facilities (for example, Dajiahe NR), monitoring technicians but not photographers, patrol capacity, research capacity etc.

Managers of NRs need more capacity building: the managers are continuously changing (move to other places or be promoted) and new managers lack professional knowledge.

He hopes that each NR can be provided with the support needed to prepare suitable management plans.

Mr. Zhang Xiguo, Director General, Zhenbaodao NR

Threats to wetland protection include human activities, such as hunting illegally.

Mr. Gu Qinghua, Director General, Dajiahe NR

Farmer awareness needs to be increased to facilitate their interest in converting farm land to wet land; we need community facilitators to help raise farmers' awareness

Water in Dajiahe is polluted, as evidenced by fish die off. However, no water quality monitoring equipment is available.

Opportunities: the goal of expanding wetlands in China has been repeated many times by XI Jinping. Management actions in Sanjiang plain will help to increase the area of wetlands, and will restrict agricultural uses within wetland areas.
Threats: water withdrawals for agricultural production, and non-point pollution are among the key threats to wetlands in Sanjiang Plain.

Mr Tengxing, Design Institute of Land Reclamation

It is suggested that "Key Threats" in the KP outline should be changed into "retrospective assessment". That is, to assess the situation and impacts historically.

Mr. Huang Junyang, Deputy Director, Wildlife Species Conservation Division, Forestry Department

- The KP should be straightforward and written in plain language, to enable better understanding among staff of NRs (the majority of target readers of the KP)
- Recommendations should be feasible, easily applied, and replicable
- The KP should be distributed to all NRs
- Enhancement activities for species recovery have been effective—e.g., over 100 artificial nests for storks have been constructed, and around 60% of these have been occupied

- Best practices can also include experiences from (i) protection of rare plants in Xingkai Lake and (ii) protection of wetland by law in Sanjiang NR.

- There is some good news for wetland protection:
- NRs will be included in "redline" of ecological protection, that is, no one can change the use of wetlands without central government permission
- The master plan for Heilongjiang province is to include both Sanjiang plain and Songnen plain in the integrated agricultural development program. More money will be inputted into wetland areas.

- **Mr. Yoshiaki Kobayashi, Sr. Water Resource Specialist, ADB**

- The section on best practices is the most imortant section of the KP. A further section should discuss current challenges/ remaining issues; there should be a conclusions section that refers to the section on best practices. The final recommendations (based upon the analysis of best practices in relation to the remaining issues) should put forward specific recommendations for improving environmental management and livelihoods development for the Sanjiang Plains.

- **Other Collected Comments (from various speakers)**

- Water allocation planning is an element that has been incorporated into master plans for Sanjiang Plain and Songhua River
- Water resource management plans are incorporated into each Nature Reserve Management Plan
- Lack of professional staff, and retention of professional staff, are problems—continuous capacity development is needed
- practitioners need to develop "influencing skills" for advocacy with decision makers
- input for capacity building by experts is needed, more dissemination of information, and more public awareness raising are required
- two five year plans have been produced since the last project began (2005)—there is a need to incorporate updated information into the new KP
- it is reported that water levels in wetland areas are receding. This suggests the need for setting minimum allowable levels, as an output from water management plans
- Wetlands are becoming fragmented (through past land conversion for agriculture, and ongoing converson for road construction)
- There needs to be aclear focus on conservation of biodiversity resources in wetlands—not only for waterfowl, but also for fishes, flora etc.
- While tourism offers promise as an option for sustainable livelihood, potentially it also poses a threat—over-development can create more disturbance to the natural environment and damage to sensitive habitat for wildlife

ANNEX F: REPORT OF SITE VISIT, MAY 2015

Xingkaihu Nature Reserve and Wetland

Date
May 6-8, 2015

Consultants
Yu Xiubo, Xiaohai Liu, James Berdach and David Parkin

Purpose of the Visit
The purposes of the visit to Xingkaihu were to (i) observe the wetlands of the Sanjiang Plain during the Spring migratory bird season; (ii) conduct further consultations with Nature Reserve staff; and (iii) generally gather any additional information available that would be useful in the preparation of the Knowledge Product.

Raised Wetland Boardwalk, May 6, 2015
The team arrived at the Nature Reserve (NR) late in the afternoon on 6th May. Accommodations were at the hotel that is operated by the NR. A raised wetland boardwalk had been under rehabilitation during the earlier visit in October 2014. With the wetland boardwalk adjacent to the hotel now complete the team members and Nature Reserve guides walked the 3 km boardwalk which extends up to 150 meters away from the shoreline and gives access to several bird watching platforms. Air temperatures were close to 10° C. Reed vegetation was just starting its early season re-growth. Avifauna on the water was limited, with only a few coots and great grebe observed.

Visit to Core Zone, May 7, 2015
On 7th May the team, accompanied by Mr Liu Ming and other Xingkaihu Nature Reserve staff visited the core zone of the Nature Reserve. Here there is a former fire watchtower 25m in height, which has been converted to a monitoring station with a high resolution CCTV camera. The CCTV camera captures real time video footage of activity of Oriental stork nesting on man-made nesting tripods. One active nest with one (?) chick was observed. NR personnel also played a video recording that had been made the previous season of a particularly successful nest in which 4 chicks are observed being fed by the parent storks.

The team assisted one of Professor Yu's students to set up a time lapse camera for future monitoring recording.

The watershed map for Xingkaihu, [Russian Khanka] shows that only a relatively small part of the total lake watershed {21,766 km^2} is in PRC. Most of the surface inflow to the small Xingkai Lake [Xiao Xingkai] is from the Muling River watershed {15,184 km^2} via the Hubei Sluice gate and a canal (Figure 1). Hence water quality in both the small Xingkai Lake and adjacent wetlands is heavily impacted by agricultural nutrients and pesticides from the Muling river watershed, and urban runoff and treated wastewater from several major cities.

Figure 1

[1]*Source: Lake Xingkai/ Khanka Experience and Lessons Learned Brief*
Jin Xiangcan, Chinese Research Academy of Environmental Sciences, Beijing China; Zhai Pinyang, Heilongjiang Environmental Safeguard Science Academy, Harbin China, February 2006.

The road access to and from the core zone is located on top of a natural sand dune that separates the small and main parts of Xingkai lake. The dune is approximately 35km long, 75 m above sea level, {5-6m above the average lake level}, 10m wide at the top and 60-70m wide at the base with native forest growing vegetation on the dune.

A large scale hydraulic engineering flood diversion sluice (Figure 2) was constructed between the large and small lake in September 1976 making it possible for the Muling River to flow into the main Xingkai Lake via the small Xingkai Lake. On the return journey from the core zone the team inspected this structure.

Figure 2

Afternoon meeting May 7, 2015 between Nature Reserve Staff and Consultants

The team met with Mr Liu Ming and several other NR staff. Among the topics discussed were the following:

- The NR staff expressed their appreciation for the draft KP, which had already been circulated to them
- In this area livelihood replacement is difficult because wetland resources cannot be harvested and used
- An alternative to dune road access being considered
- Electric battery-operated cars are being considered for eco-tourism use, and transport of NR personnel
- Historically, environmental awareness has not been a priority in the school curriculum,aznd not much support has been given
- Issues relating to fishing in the NR were discussed—there is a controversy about whether or not it should be permitted. Fingerlings are being seeded in rivers feeding the lake.
- In the most recent monitoring, 69 species of birds were observed in Xingkaihu NR, representing an increase as compared to previous years
- Mr Liu Ming is interested to obtain HD cameras that could be hard-wired to provide real-time video images to visitors to their nature museum, and over the internet. For days where no nest activity is occurring, previous recordings could be played.. This proposal is seen as a one-time investment for long term benefit.

Visit to Nature Reserve Museum, May 7, 2015

The Consultant Team, accompanied by NR staff, toured the Museum which is substantially complete with static and interactive displays. The team also had the opportunity to view a state of the art 4D video about the Sanjiang Plain wetlands. This was shown in a purpose-build theatre that features movement effects (using movable chairs) air jets, water spray and other effects such as fog, rain, lightning, air bubbles, and smell. It was mentioned by the consultant team leader that similar theaters are operating in museums and public aquaria in the U.S. and elsewhere, and are a source of significant revenue for these institutions.

ANNEX G: REPORT OF KNOWLEDGE PRODUCT REVIEW WORKSHOP, 11 MAY 2015

Heilongjiang Provincial Forestry Department
with support from Asian Development Bank
STRENGTHENING CAPACITY FOR WETLAND PROTECTION FOR SANJIANG PLAIN
(TA 8541-PRC)
Review Workshop for the Knowledge Product,

"Lessons from the Sanjiang Plain:
A Call to Action for Reviving Lakes and Wetlands"

May 11, 2015
Zhanwang Building, 58 Ganshui Road, Harbin

AGENDA

Session	Time	Activity	Presenter or Moderator
	0800-0845	**Registration**	
Chair: Mr. Cheng Shaoxia, Director, Project Management Office, Heilongjiang Provincial Forestry Department			
Introduction			
	0845-0855	Welcome Remarks from HPFD	Mr. Zhang Xuewu, Deputy Director General, Heilongjiang Provincial Forestry Department
	0855-0905	Looking Back and Looking Ahead: ADB's Support for Conservation and Management of the Sanjiang Plain Wetlands	Mr. Yoshiaki Kobayashi, Sr. Water Resources Specialist, Asian Development Bank
Morning Sessions			
1	0905-0915	• Introduction to the Workshop • Introduction to the Knowledge Product (KP) – Purpose of the KP – Structure of the KP	Mr. James T. Berdach, Team Leader, ADB TA 8541-PRC
2	0915-0945	• Presentation of the Knowledge Product – Importance of the Sanjiang Plain Wetlands – Key Threats	Prof. Yu Xiubo, Deputy Team Leader, ADB TA 8541-PRC
	0945-1015	**TEA AND COFFEE BREAK**	
3	1015-1100	• Presentation of the Knowledge Product (cont'd) – Lessons Learned (from SPWPP) – Guiding Principles – Best Practices: "Options for Action"	Prof. Yu Xiubo, Deputy Team Leader, ADB TA 8541-PRC
4	1100-1200	• "The Way Forward": recommendations by Nature Reserve staff for further initiatives to improve management of the Sanjiang Plain wetlands	Nature Reserve staff
	1200-1330	**LUNCH**	
Afternoon Discussion Sessions			
	1330-1340	• Introduction to Afternoon Discussions	Mr. James T. Berdach, Team Leader, ADB TA 8541-PRC
5	1340-1515	• Open Discussion: clarifications on the "Way Forward" for the Sanjiang Plain wetlands, and for harmonization and integration with the Knowledge Product	
	1515-1545	**TEA AND COFFEE BREAK**	
5	1545-1630	• Open Discussion (continued)	
	1630-1645	• Completion of written comments	
	1645-1700	• Closing Remarks and Adjournment	Mr. Cheng Shaoxia, Director, Project Management Office, Heilongjiang Provincial Forestry Department

Notes of KP Review Workshop

The notes offered here, while not presented as a formal report, contain information that is important for gaining insights about the key outcomes of the Knowledge Product Review Workshop that was held in Harbin on 11 May 2015. The notes were shared with Mr. Y. Kobayashi, for incorporation into the Aide Memoire dated 29 May 2015 ("TA 8541-PRC: Strengthening Capacity for Wetland Protection for Sanjiang Plain TA Mid-term Review Mission [11 May 2015]: Aide Memoire").

Morning Session

Mr Kobayashi –ADB-—opening remarks

Sanjiang Plain declared one of China's 10 greatest places (National Geographic 2008)

Continuing challenges-as identified in SPWPP:
--need for wetland protection of efforts to continue
--need for capacity building to continue
--learn lessons from the past ADB-GEF project

(in private discussion):
Finalization process:

- Consultants deliver the final draft
- Kobayashi delivers draft to Department of External Relations (DER)
- DER seeks clarification as needed from Kobayashi
- Kobayashi refers back to consultants for answers to any questions that he cannot answer directly

---

Prof. Ma Zhong-Renmin University

Reclamation in the Sanjiang Plain is a process that has occurred over 100 years
It began in the western part then moved eastward
There is a need for balance between agricultural development and wetland conservation
Previously:
80:20 wetland : agriculture land
Now:
20:80 Wetland : agriculture land

Agriculture in SP receives a huge investment from government; at the same time support is received from the agricultural entities themselves

Pollution was a very serious problem when the SPWPP started in 2005—this is not unique to SP, it is widespread throughout China—China uses 30% of fertilizers used globally

In other areas, pollution is due to two causes: non-point source pollution (NPSP) and livestock production
In SP, mostly NPSP
Pollution in paddy fields is higher due to non-movement of water
Dead fish point to depleted dissolved O2 levels

Habitat fragmentation is another serious problem, resulting in the loss of biodiversity

The government is providing subsidies for crop production—this is a "perverse economic incentive" that creates an obstacle to wetland preservation

It is necessary to make clear the economic importance of wetlands, by showing the many goods and services that they provide—development of payment for ecosystem services (PES) schemes can further this goal –can be supported by economic valuation studies—can also help to achieve better balance between crop production and maintaining functional ecosystem services

Alternative livelihood options are important-ones in the KP are good
--greenhouses
--honey production (prices for honey increasing)
--improved roads, transportation infrastructure increase the potential for tourism development
--there is now more concern about food quality—so this can also be a driver for livelihood (e.g., organic foods)
--he mentioned 'eco-civilization' new government policy with stricter adherence to environmental requirements

For future investment need to look not only at water resources management (e.g. water pricing) but watershed ecosystem management

---

Prof. Jin Le Shan (from China Agricultural University)

The KP can attract the attention of donors for wetland conservation (audience for the KP is not the general public—it is donors and implementing agencies)

Lessons:
Heilongjiang regulation on wetland conservation was first such regulation at provincial level—could be lesson learned to be disseminated in KP

KP needs to be formatted better, logical context, such as:

(1) There is an opportunity to put more emphasis on 'win-win' solutions (e.g., greenhouses, ecotourism)

(2) Also look at trade-offs: there is a need to make sacrifices to improve wetland conservation—this can be brought about equitably through PES

Converting from paddy cultivation to dryland crops can save water—but need funding to facilitate—do pilot testing

An analysis is needed of the different land ownership scenarios that exist within NRs and how these affect management: State Farms, communities, and the NRs are owners in different NRs

The term “KP” on the cover needs to be better translated into Chinese (Xiubo Note: National consultants discussed about the term in Chinese, and consulted with Mr. Quan, former SPWPP manager, we all agreed to use the current Chinese term without changes. Xiaohai already discussed with Prof. Jin directly during the workshop)

The source locations where best practices are being implemented need to be better identified in the KP, some are from Sanjiang Plain, and others are from other areas including other countries.

Ms. Yu Zhi Miao, Provincialf Environmental Protection Bureau

Broad concepts:

- Need to consider short-term vs long-term horizons
- Redline concept for wetland conservation—where is it articulated?
- Balancing conservation and development

Specifics:

How can wetland conservation contribute to improved productivity in agriculture, fisheries, livestock?

Need to consider not just cost of capital or infrastructure improvements but also maintenance costs

---

Ms. Zhang Jie, Provincial Tourism Bureau

On May 25 provincial government will host a forum on tourism development—Governor Lu Hao will address; jointly sponsored by SFA and State Tourism Administration, and wetland ecotourism will be an important topic.

Of 10MM tourist arrivals in Heilongjiang Province in 2014 (the expense is about 1000 CNY each) , 13% were wetland tourists

Revenues generated by wetland tourists are lower than the average for all tourists

As to the importance of SP wetlands:

- to include the environmental education and science education
- to include cultural services, such as the minority group of Hezhe group (who relied on the fishing in Ussuri Rivers), and Niuzhen group.

To improve wetland tourism:

- Need to better inform government officials about the importance of wetlands
- Target improvement of Class IV waters to Class II
- Need for public to understand importance of wetlands
- Need for valuation of wetland ecosystem services
- Need to be aware of and adopt international best practice as appropriate
- Need to develop manual for wetland tourism, and also training for wetland eco-tourism
- There is a difference between wetland eco-tourism and mass tourism, the carrying capacity for tourists needs be assessed, and negative impacts of tourism need to be monitored.
- Need to publish a bird watching book including bird identification and flyway information.

Posed the question, “What if there were no wetlands?”

Mr. Yuan Junyang, Wildlife conservation section, HPFD

Appendix 2, the endangered species in the tables need to add a note to indicate that the water birds are mainly including the birds breeding in SP, not including birds that make short stopovers in SP.

KP presents lessons learned for practices that can be replicated and operative (modified if needed to suit other conditions),

The nature reserves as a collective network are more important than any individual NR, the wetland corridor is an excellent concept to be further explored, and there is a need to manage lands between NRs. Wetland corridor should be a component in future project.

Need to emphasize the program for raising awareness of school children—this should be continued

Use PES as a mechanism to support better management

Add capacity building as a component in the KP, as it was one of the four modules of the SPWPP

Delete floating gardens—not appropriate for SP, past experiences showed:
--growing season too short
--strong winds caused damage
(JB note: Mr. Quan Wuxian of the PMO has a different idea—he feels that constructing floating wetlands could be a useful method of enhancing waterbird habitat, at the same time could also function for nutrient removal—floating wetlands as a concept could still be included in the KP)

Opportunities exist with:

-Organic farming
-Eco-certification
-Regulations and laws
-Should implement bird banding and flyway tracking

Ms. Wen Jijuan, Provincial Water Resource Bureau

Positive comments on KP
Conservation efforts will improve over time.

The KP emphasized the impacts of wetland reclamation (conversion to cropland), and KP needs to mention that the governments already realized the impacts and have made efforts to mitigate the impacts and begun to restore some croplands to wetlands.

The minimum environmental flow has been introduced to the water resource planning in Heilongjiang Province, including the water entitlement of wetlands.

Need to adopt water saving measures for paddy fields, such as controlled irrigation.

Support the idea of eco-corridor.

KP para. 28, last bullet—incorrect (Xiubo Note: agree to delete it)

Workshop Notes-Afternoon Session

Mr. He Jingshi, Director of Anbanghe NR:

Anbanghe One of smaller NRs
Wetland restoration from cropland demonstrated successfully
In Buffer zone – they planted forest
Agrees with vision of consultant team
Past few yrs- PMO played active role in wetland conservation/protection
Effective restoration of wetland from cropland; more birds found there—higher numbers and higher diversity
IEC: several years of activities
Prov. Officials and staff have visited the NR and proud as a leader on restoration and education
20 km water canals
Capacity of NR staff has improved; also physical facilities; transport etc. and museum
Not only WL restoration but also tree planting has provided habitat
Reeds and other veg restored
Public IEC has been strong—raising awareness of surrounding community; tourism activities have proceeded; facilities improved
It is stated in the KP that 80% of wetlands have been converted into agricultural land. This is true, possibly even more than 80%. There are many photos of the reclamation including reclamation tools in the Reclamation museum which allows understanding of history of land conversion—they have made a film showing the process
Has learned a lot from other wetland NRs (Mai Po in Hong Kong)
SP wetlands are unique
Hope that national and provincial governments will give more support for NRs

Suggestions:

Strengthen NR master plan
Capacity building
Training is still needed especially systematic training on scientific wetland management for managers of the NRs

More improvement is possible

Provincial Water, forestry, agriculture and environment departments have all provided some support they proposed Anbanghe to be elevated to national NR but Prof Ma Zhong said too small-suggested ecotourism dev. Instead
2000 ha of cropland in the buffer zone
Also some farmland in experimental zone—suggests that this area could be restored
**Science-based NR management
Systematic training for NR mgrs.
Training for biological monitoring, and awareness/education
If want ecological benefit—choose Dajiahe
If for training—choose Anbanghe
He feels they can complete restoration of several thousand ha more of wetland

---

Prof. Li Xiaomin, Northeastern Forest University –wildlife/ornithology expert—provided written comments on KP

KP Not for general public—it's for experts and donors
Shows success of previous project
Data need to be updated—some old references; the project was completed in 2012. Currently many data are those before the project completion. More post-project data should be presented to show the progress of the wetland condition

Data show how wetland has been destroyed
Should tell the audience what is the state after the project was finished
Some species names not correct
Bird Population has increased a lot—
Ecotourism should not be highly encouraged because there are only 3 to 4 months every year which are suitable for tourism in the Sanjiang Plain
Ecotourism is successful for Anbanghe, not for other sites
Figures in page 38 and page 39 need be corrected.
**Limited info in KP on NR IEC
Add baseline survey data for NRs
**Monitoring approach inconsistent from one NR to another—needs to be coordinated thru Wetl Cons Crtr.
Water quality is a big concern
Fertilizer and pesticide use is high
No one harvesting reeds because paper plant is closed—econoic or envir. Compliance reasons—reeds not growing well they grow better if harvested regularly

**NR network is important
include more background information in the KP because many people have little knowledge on the Sanjiang Plain
dont limit effort to 6 NRs in pilot proj.

suggestions:
the next project, to conduct detailed survey on type and number of the birds, because number of birds provided by the NRs in the beginning of their establishment is smaller than that currently existed in the NRs.
To conduct research on the ways to control usage of fertilizers and agrochemicals.
Strengthening capacity, especially capacity of monitoring workers.

Prof. Li has made some valuable specific comments and suggestions on KP, and most specific suggestions will be adopted, Xiubo will change in Chinese first, and change to English later.

Mr. Wang Renchen-Division Director, Wetland Conservation Center

Center was established after the project was completed
Important for center to understand lessons
Significance of Sanjiang Plain—compare nationally and globally in KP
Regards the various NRs as one NR, highlighting their integration
**NRs-3 belts along 1. Heilongjiang and 2. Naoli and 3. Wussuri
**Emphasize ecosystem services—there is some info for some NRs but not synthesized
May need to develop KP materials for general public
**there is a need to produce reading materials about wetlands for the general public—this can be done in the next project

KP can contribute to wetland conservation for SP, province and nationally
Future project—more loan than grant
Call it 'Wise use of wetlands' (not alternative livelihood)
Conservation center is taking a lead role in drafting ecotourism plan in HLJ province
They do not want to promote tourism development at the expense of wetland conservation
Last yr central government committed 150 MM RMB for wetland conservation in SP—already spent—need to complete the job—so need support, both money and technical assistance, from ADB
There are gaps in monitoring for biodiversity—how can monitoring be done and how can data be used.
At Xingkaihu they are doing good job in monitoring, Honghe Lake also
But wetlands there are seriously degraded—how can data be used to support better management?
Number of birds were separately reported by the NRs in their own records, and their monitoring methods might not be consistent, thus difficult to compare data. Nobody knows exactly how many birds there are (Mr. Cheng: for example how many Oriental Stork) in the Sanjiang Plain
Migration period—NRs should do surveys—need stardardized protocols to coordinate survey activities—synchronize and harmonize

---

Mr. Fu Hong Cheng, San Huan Pao NR

Do not have ownership of NR land
KP—need to update data
Artificial isalnds for shorebirds-to include—prevent nests from being flooded—water levels fluctuate
New tourism concept: guided tours—(eco-tour guide）—guide training
How can NPSP be reduced from surrounding cropland?—farmers may get lower profits if they reduce fertilizer
To change farming model/methods and to develop eco-agriculture and organic products which can improve water quality
Co-management: NR and the around community, for example, co-monitoring.
Need financial support for IEC
Research capacity needs be strengthened

Mr Liu Ming, Xingkaihu NR

achievements of past project already discussed
Their idea for future:
Long-term ecological monitoring sites—multiple functions—
Not only flora and fauna-hydrological readings, ecological status, including water surface area
Also biodiversity monitoring—population and species composition changes
Plant populations in wetlands and surrounding areas
Use remote sensing for mapping
Socioeconomic status-monitoring changes—incl. fishing, agriculture, aquaculture, tourism, etc
Baseline surveys—every five years-also important
Wetland restoration from cropland—very difficult—may require resettlement—requires large investment from govt
e.g., at one proposed restoration site 162 HHs--#29 state farm—huge area
high-tech monitoring—use in NR monitoring
already doing some ecotourism—included in past project
proposes to consider attracting Russian tourists
bird-watching tours
livelihood—fishing and aquaculture: they have been releasing fish fry into the lake—this could be a good component for future project, combine with post-harvest processing (question – where do they get the fry?)
sustainable yields of fish resources is an important issue
working with WWF on organic farming on surrounding farmland
facing difficulties for sales because problem to build marketing channels for organic products
need more assistance—need coordinated branding
oriental stork nests:--building nests is only part of the story—more important is to restore their natural habitat—using GPS log for monitoring of birds –could be flagship for whole SP
red crowned crane breeding site—problem with habitat—so activity not well implemented—nonehteless crane pop has increased
‘long-distance online monitoring’ (refers to cameras at nests connected to transmit imagery to distant sites, e.g., museum so that public can watch)—problem is maintenance cost, high resolution transmission difficult

OJT: cross-visits, lectures etc. for NR staff
Biodiv corridors—cross-border w/Russia

Mr Li Xie Chang, Sanjiang NR

Conservation targets—species and wetland ecosystem
BD importance—flora fauna waterbirds endanged spp etc
Threats/problems--Restoration from cropland: 18,000 ha of farmland in the core area is privately owned;
Long term ecological monitoring sites have already been established
They want training on scientific monitoring—hydrological, meteorological
They only monitor water level—do not have capacity for WQ monitoring
Potential to promote ecotourism to Russian tourists
Plans to build wooden walkways to see the wetland and birds
Hezhe minority—live by fishing in Wussuri river
400,000-500,000 visitors annually—there is a shortage of hotel rooms
June-August
Hope ADB support for monitoring in the NR and conducting baseline survey and every three to five years' following up surveys
Hope more options of livelihood alternatives, because specific conditions of NRs are different from one to another

---

Mr Li Hongheng, Shuibin Liangjiang NR

No land owned by NR
Provincial NR-short of money; high poverty in the county where they are located
Low capacity for monitoring
Hope for support
Their Priority is to build ecotourism facilities
It is better to provide "livelihoods alternative" based on local conditions. Greenhouse is not suitable in the Sanjiang Plain.
IEC and capacity building (management and research) should be an important part of the KP, and which needs be intensively strengthened and be financially supported

---

Mr Wu Zhibo, Qixinghe NR

Para 21 NR management regulation is not applicable to NRs any more –out of date—
Regulatory support for wetland conservation is lacking

Water quality has improved in this NR in last 4 years
Water quantity has also increased a lot. Five of ten years with much water, two of ten years with enough water and lack water in the other three years. Increase of water quantity is benefited from the national natural forest protection project, which enabled good protection of forest in the upstream by Shuangyashan Forestry Bureau

Would like more about restoration of wetlands from cropland—how can it be done

Greenhouses implemented under SPWPP very successful--Next steps: would like to continue—e.g., tourism of greenhouses, improvement and diversification of vegetable species, branding, eco-certification.

Mr Gu Zhuanghua, Dajiahe NR

Have 30 staff
Provincial level NR—small staff but a huge area

1. Ecotourism—prepare guidelines***
2. otherwise will have negative impacts. For example, in some areas, there were birds before ecotourism, and the birds disappeared after the ecotourism due to disturbance from tourists and cars.
3. He is perplexed why the NR staff accepted protection of wetlands while farmers did not. It is important to professionally explain to farmers the relationship between wetland protection and farmers and what benefits to farmers. For example, farmers understand and accept redline of cultivated land, which is for food security, and farmers also need to understand and accept redline for wetland. If quantity/area of wetland is less than the redline, what will happen?
4. Analysis of importance of wetlands to improved crop production (part of economic valuation study)
5. KP lacking description of IEC etc.—they did a lot under project—drawing competitions, speech contest, photo contest etc., student education—want to continue
6. Wants to emphasize uniqueness of the area for bird breeding habitat—large #s of birds sighted
7. Want to do BD monitoring—they have no facilities currently
8. There is illegal hunting going on, they cannot control it but they are trying—short on staff and equipment
9. If they had system to monitoring over the NR, the illegal hunters could be recorded and be caught.
10. Want to make video on wetlands for publicity and education .

Russian perspective—more concern about conservation than China

---

Mr Wang Jinwu, Naolihe NR

NR is owned by State-owned Farm
Correction in NR table—administered by reclamation bureau
2014—wetland restoration ~3000 ha—national govt requirement--subsidized
More could be done in the future but it will be very difficult because there are many households with fishing as their livelihood. developing sustainable alternative livelihoods is needed.

Now 2015--plan to restore cropland in core zone and buffer zone to wetland but need to resolve some problems—no plan for cropland restored to wetland in experimental zone

Promoting ecotourism
Want to do baseline flora/fauna surveys—previous was 10 years ago
Next thing they need to do is to include NR development in Heilongjiang provincial tourism development plan.

Ms. Zhao Yue, Weikinhe NR

Newly established NR (2011)
More training is needed.

J. Berdach comments at the closing:

Highlighted a few key points that were raised by participants:

1. PES and economic valuation of ecosystem goods and services
2. Ecotourism handbook
3. Network of nature reserves
4. Capacity-building-lacking in KP needs to be added

ADDITIONAL COMMENTS:

Mr. Ye Sheng Xin, Forest Monitoring and Planning Institute, HPFD

The wetland in SP is not only in NRs, but also some wetlands outside the NRs, which should be included in the KP.

GIS (Geographic Information System) based technology needs to be used in the future project, such as remote sensing data, plant plot data and bird and other animal monitoring data, these data need to be integrated into GIS system and shared with stakeholders.

Mr. Quan Wuxian, PMO, HPFD

Mr. Quan Wuxian has made some valuable specific comments and suggestions on KP, Dr. Yu Xiubo has talked with him one on one, and most specific suggestions will be adopted, Dr. Yu will change in Chinese first, and change to English later.

(J Berdach) options for capacity building/awareness raising for KP—some specific subjects:

- Tourism (e.g., standards)
- Measuring carrying capacity
- PES, economic valuation
- Continue school programs as done under SPWPP

Attendance Sheet

No.	Name	Organization	Position	Tel.	E-mail
1	Yoshiaki Kobayashi	ADB	Senior water resources specialist		yoshikobayashi@adb.org
2	Andrew Mittelman	TTT	Livelihoods specialist		aj.mittelman@gmail.com
3	Liu Xiaohai	TTT	Capacity specialist	13085394706	lxh@yies.org.cn
4	David Parkin	TTT	Watershed specialist		dtparkin@xtra.co.nz
5	Yu Xiubo	TTT	Deputy team leader	13910602661	yuxb@igsnrr.ac.cn
6	James Berdach	TTT	Team leader		jayberd123@gmail.com
7	Zhang Xuemei	TTT	Livelihood specialist		zhxm@cau.edu.cn
8	Wang Jinwu	Naolihe Nature Reserve	Deputy director-general	13936400350	JKWJW@163.com
9	Gu Qinghua	Dajiahe Nature Reserve	Director-general	18345821777	gqh2004888@126.com
10	Zhang Xiguo	Zhenbaodao Nature Reserve	Deputy director-general	13069815777	
11	Sun Yonggang	Office of Forestry Department	Director		
12	Liu Huajin	Xingkaihu Nature Reserve	Section chief	13946826186	zhgLiuhuajin@126.com
13	Li Weiguang	Sanjiang Nature Reserve	Deputy director-general	13946410888	fudongfeng@163.com
14	Wu Zhibo	Qixinghe Nature Reserve	Section chief	13504642405	
15	Zhao Yue	Wokenhe Nature Reserve		18714641725	
16	Jin Leshan	China Agricultural University	Professor	13683646112	jinls@can.edu.cn
17	Zhang Xuewu	Forestry Department	Deputy director-general		
18	Wang Xiaoming	Development Planning Division, Forestry	Director		

No.	Name	Organization	Position	Tel.	E-mail
		Department			
19	Huang Junyang	Flora and Fauna Management Division, Forestry Department	Deputy director		
20	Zhang Jie	Tourist Administration	Researcher	13503636608 85978623 (0)	zhangjie_1966@163.com
21	Ma Zhong	Renmin University of China	Dean		
22	Fu Hongchen	Sanhuanpao Wetland Nature Reserve		18345461596	2293289829@qq.com
23	Li Hongpeng	Suibin Liangjiang Wetland Nature Reserve	Deputy director-general	18346872777	97666777@qq.com
24	Wang Renchun	Wetland Conservation Center, Forestry Department	Director	13904654065	
25	An Rui	Wetland Conservation Center, Forestry Department	Section Chief	13936444476	
26	Ye Shengxin	Forestry Monitoring and Planning Institution	Director		
27	Liu Yuxiang	Finance Bureau	Deputy director		
28	Wang Jianfeng	Fisheries Bureau, Agriculture Committee	Section Chief	13936566465	
29	Sun Weibin	Flora and Fauna Management Division, Forestry Department	Director		
30	Li Xiaomin	Northeast Forestry University	Professor		
31	Yu Zhimiao	Environmental Protection Department	Section Chief	15124551597	
32	He Jingshi	Anbanghe Nature Reserve	Director-general		
33	Wen Jijuan	Water Resources Design Institution	Engineer		
34	Cheng Shaoxia	PMO, Forestry Department	Director	13503655577	
35	Feng Minxiu	PMO, Forestry Department	Deputy director	15804614707	
36	Wang	PMO, Forestry	Section Chief	13936399138	

No.	Name	Organization	Position	Tel.	E-mail
	Hongbin	Department			
37	Tian Yafang	PMO, Forestry Department	Principal Staff Member	13304639757	
38	Xie Bin	PMO, Forestry Department	Section Chief	15604803366	
39	Li Weina	PMO, Forestry Department	Section Member	13936189757	
40	Sun Shufen	PMO, Forestry Department	Section Chief	13212901756	
41	Han Dongming	PMO, Forestry Department	Section Chief	13804558568	
42	Li Jia	PMO, Forestry Department	Section Member	15904605872	

ANNEX H: KNOWLEDGE PRODUCT

The Knowledge Product (KP) produced under TA-8541 PRC is incorporated here by reference. The full citation for the KP is:

Asian Development Bank. 2016. Reviving lakes and wetlands in the People's Republic of China, Volume 3: Best practices and prospects for the Sanjiang plain wetlands. Asian Development Bank, Mandaluyong City, Philippines.

The document is accessible online at the following link:
http://www.adb.org/sites/default/files/publication/183804/best-practices-sanjiang-wetlands.pdf

ANNEX I: DOCUMENTATION OF THE FINAL WORKSHOP, 19 JUNE 2016

Workshop Agenda

Wetland Restoration Techniques and ADB Strengthening Capacity for Sanjiang Plain Wetland Protection Project Workshop
Location: Sun Island Garden Hotel
2016.6.19

Session	Time	Activity	Presenter or Moderator
Session 1：Strengthening Capacity of Sanjiang Plain Wetland Protection Project Workshop			
1	09:00	Introduction of Participants	Mr. Cheng Shaoxia, Director of Heilongjiang Forestry External Cooperation Division
2	09:10	Presentation of Heilongjiang Forestry Department General Director	Mr. Zheng Huaiyu, Deputy Director General, Heilongjiang Provincial Forestry Department
3	09:20	Presentation of ADB Official	Mr. Yoshiaki Kobayashi, Sr. Water Resources Specialist, Asian Development Bank
4	09:40	The Sanjiang Plain Wetlands: Past, Present and Future Prospects for Conservation	Mr. James T. Berdach，Team Leader, Wetland Nature Reserve Management Specialist Mr. Yu Xiubo, Deputy Team Leader, Wetland Management Specialist
5	10:20	Knowledge Product Launching Ceremony	Mr. James T. Berdach，Team Leader, Wetland Nature Reserve
6	10:30	Tea and Coffee Break	
Session 2：Wetland Restoration Techniques and Farmland to Wetland Project Forum			
7	10:45	Sino-Germany Cooperation: China Wetland Biodiversity Protection Project Introduction	Mr. Luan Shenqiang, Former Director of Sino-Germany Cooperation PMO
8	11:00	Introduction of Heilongjiang Farmland to Wetland Project	Mr. Wang Renchun, Director of Wetland Conservation Centre
9	11:10	Presentation of Experts for Farmland to Wetland	Mr. Lv Xianguo, Mr. Jiang Ming, Professor of Institute of Northeast Geography and Agricultural Ecology, Chinese Academy of Sciences
10	11:25	Case Introduction of Farmland to Wetland Project	Fujin, Naolihe, Dajiahe Nature Reserves
10	12:05	Closing Remarks	Mr. Zheng Huaiyu, Deputy Director General, Heilongjiang Provincial Forestry Department

2016·黑龙江湿地论坛暨夏季生态旅游产品推介会流程表

时间：2016年6月19日下午

地点：太阳岛花园酒店报告厅，松北区冰花路869号

环节	时　间	流　程	嘉宾
签到入场	13:20-13:40	播放《哈尔滨万顷松江湿地》、《黑龙江欢迎您》暖场片	全体嘉宾
领导入场	13:36-13:40	领导入场	—
开场视频	13:40-13:42	开场视频	—
开场	13:42-13:45	主持人开场	路一鸣
领导致辞	13:45-14:00	黑龙江省人民政府致辞	孙尧
领导致辞	14:00-14:15	国家旅游局致辞	魏洪涛
领导致辞	14:15-14:30	国家林业局致辞	陈凤学
黑龙江夏季旅游主题推介	14:30-14:50	黑龙江省夏季旅游品牌、夏季生态旅游产品主题推介	锡东光
醉美龙江大湿地	14:50-15:05	“醉美龙江大湿地”主题分享	杨国亭

哈尔滨夏季旅游主题推介	15:05-15:20	"绿水青山·万顷松江湿地哈尔滨"夏季旅游产品推介	曲磊
十大最美湿地揭晓	15:20-15:30	揭晓2016年度黑龙江十大最美湿地评选结果并颁奖	锡东光、肖建春、获奖单位代表
宣读	15:30-15:40	宣读“黑龙江2015年全国湿地保护先进县奖励名单”、向通过验收的国家湿地公园授牌	马广仁、肖建春、景区代表
主旨推介	15:40-16:30	黑龙江省情介绍	陆昊
茶歇	16:30-16:40	播放《黑龙江旅游宣传片》、《我是龙江人》	—
—	16:40-16:45	宣布下半场开始	路一鸣

主题分享	16:45-17:00	“国际视角下的湿地保护及可持续利用项目”主题分享	小林嘉章
主题分享	17:00-17:15	主题分享	康国明
主题分享	17:15-17:30	“让湿地旅游成为美妙体验”主题分享	高舜礼
主题沙龙	17:30-17:45	“湿地的保护、开发与可持续发展”主题沙龙	路一鸣、刘想、蔡莹、郭立业、赵越
结束	17:45-17:50	致结束词	路一鸣
媒体交流	18:00-18:30	专访室接受媒体访问	侯伟、郑怀玉、张太功、专家

Workshop List of Participants and Attendance Sheets

List of Participants

	Name	Organization	Position	Tel.
1	Zheng Huaiyu	Heilongjiang Forestry Department	Deputy Director-general	
2	Cheng Shaoxia	Heilongjiang Forestry Department	Director of Forestry External Cooperation Centre	13503655577
3	Wang Renchun	Heilongjiang Forestry Department	Director of Wetland Conservation Centre	13904654065
4	Zhang Xiguo	Zhenbaodao Nature Reserve Management Bureau	Deputy Director-general	13069815777
5	Wang Chen	Harbin Forestry Science Institute (responsible for Songbei National Wetland Park)	Dean	13936038018
6	Zou Jihua	Cirbin River Provincial Nature Reserve Management Bureau	Director-general	15045601515
7	Yang Fengying	Sanhuanpao Nature Reserve Management Bureau	Director-general	13904540132
8	Li Yu	Sanhuanpao Nature Reserve Management Bureau	Deputy Section Chief	15046429331
9	Dong Jianmin	Bachadao National Nature Reserve Management Bureau	Deputy Director-general	18245493123
10	Dong Yinglai	Qixinghe National Nature Reserve Management Bureau	Director-general	13304886328
11	Wang Shengli	Qixinghe National Nature Reserve Management Bureau	Section Chief of Finance	13555111133
12	Wu Zhibo	Qixinghe National Nature Reserve Management Bureau	Section Chief	13504642405
13	Yang Yuetao	Shuangchahe Nature Reserve Management Division	Deputy Director	13845581843
14	Tan Zhongdong	Sun Island National Wetland Park Management Bureau	Deputy Director-general	13936423650
15	Qian Bo	Taihu National Wetland Park Management Station	Director	13514651466
16	Huo Zhongwen	Wuyuer River National Nature Reserve Management Bureau	Deputy Director-general	
17	Zhang Na	Jinhewan Wetland Park	General Manager	18945045888
18	Ma Wanmin	Jinhewan Wetland Park	Manager	13796032999
19	Zhu Xueshan	Wuyiling Nature Reserve Management Bureau	Director-general	13845888965
20	Niu Junlong	Hongxing Wetland Nature Reserve Management Bureau	Director-general	13804854703
21	Yang Ruifang	Ganchazi Provincial Nature Reserve Management Bureau	Deputy Director-general	15245697947
22	Wang Jinwu	Naolihe National Nature Reserve Management Bureau	Deputy Director-general	13936400350
23	Ding Cheng	Naolihe National Nature Reserve	Section Chief	18745685778

	Name	Organization	Position	Tel.
		Management Bureau		
24	Yu Zhimiao	Environmental Protection Department	Section Chief	15124551597
25	Wang Weiguo	Jiamusi Wetland Management Bureau	Deputy Director-general	
26	Han Fengquan	Duobukuer National Nature Reserve Management Bureau	Director-general	13846551355
27	Chen Kun	Zhalong National Nature Reserve Management Bureau	Director	13836264966
28	Fu Hongchen	Sanhuanpao Wetland Nature Reserve	Section Chief	18345461596
29	Du Jianxin	Baiyupao National Wetland Park	General Manager	13903659143
30	You Zhiguo	Bei'an Provincial Nature Reserve Management Bureau	Deputy Director-general	18645606277
31	Li Hongpeng	Suibin Liangjiang Nature Reserve	Deputy Director-general	18346872771
32	Wang Ying	Jiayin Ping'an River Nature Reserve	Director	13704589599
33	Cai Xili	Long'anqiao Wetland Park	President	18601949999
34	Man Hong	Light and Shadow Vision Media	Reporter and Editor	18945681875
35	Lv Xianguo	Institute of Northeast Geography and Agricultural Ecology, Chinese Academy of Sciences	Senior Researcher	
36	Jiang Ming	Institute of Northeast Geography and Agricultural Ecology, Chinese Academy of Sciences		
37	Luan Shengqiang	Sino-Germany Cooperation China Wetland Biodiversity Protection Project	Former Director	
38	Wang Zimin	Heilongjiang Forestry Department	Deputy director of Wetland Conservation Centre	
39	Zhao Yue	Wokenhe Nature Reserve	Section Chief	18714641725
40	Ye Shengxin	Forestry Monitoring and Planning Institute	Director	
41	Gu Qinghua	Dajiahe Nature Reserve Management Bureau	Director-general	18345821777
42	Yoshiaki Kobayashi	Asian Development Bank	Senior Water Resources Specialist	
43	James Berdach	TTT	Team Leader	
44	David Parkin	TTT	Watershed Management Specialist	
45	Yu Xiubo	TTT	Deputy Team Leader	
46	Liu Xiaohai	TTT	Capacity Development Specialist	
47	Zhang Xuemei	TTT	Livelihoods Specialist	
48	Feng Minxiu	Heilongjiang Forestry Department	Deputy Director of Forestry External Cooperation Centre	15804614707
49	Han Dongming	Heilongjiang Forestry Department	Section Chief of Forestry External Cooperation Centre	13804558568

	Name	Organization	Position	Tel.
50	Xie Bin	Heilongjiang Forestry Department	Section Chief of Forestry External Cooperation Centre	15604803366
51	Wang Hongbin	Heilongjiang Forestry Department	Section Chief of Forestry External Cooperation Centre	13936399138
52	Li Weina	Heilongjiang Forestry Department	Section Member of Forestry External Cooperation Centre	13936189757
53	Cao Ting	Heilongjiang Forestry Department	Section Member of Forestry External Cooperation Centre	13674634889
54	Bai Yarong	Heilongjiang Forestry Department	Section Member of Wetland Conservation Centre	
55	Li Nan	Heilongjiang Forestry Department	Section Member of Wetland Conservation Centre	13354511550
56	Yan Shentang	Heilongjiang Forestry Department	Section Chief of Wetland Conservation Centre	
57	An Rui	Heilongjiang Forestry Department	Section Chief of Wetland Conservation Centre	13936444476

Attendance Sheets

湿地恢复技术及退耕还湿高峰论坛暨

亚洲开发银行加强三江平原湿地保护能力建设项目研讨会

Wetland Restoration Techniques and ADB Strengthening Capacity for Wetland Protection for Sanjiang Plain Workshop

编号 No.	姓 名 Name	单 位 Organization	职 务 Position	电 话 Tel.	电子信箱 E-mial
1.	张[illegible]	珍宝岛	[illegible]		
2.	[illegible]	[illegible]	副局长		
3.	陈[illegible]	扎龙保护区	处长	13836264966	
4.	董[illegible]	七星河保护区	局长.	13304886328	
5.	[illegible]	[illegible]湿地	[illegible]	13555111133	
6.	[illegible]	八岔岛保护区	副局长		
7.	杨[illegible]	[illegible]保护区	副局长	15245697947	
8.	王英	嘉荫林业局	主任	13704589599	

编号 No.	姓 名 Name	单 位 Organization	职 务 Position	电 话 Tel.	电子信箱 E-mial
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					

编号 No.	姓 名 Name	单 位 Organization	职 务 Position	电 话 Tel.	电子信箱 E-mial
19.					
20.					
21.					
22.					
23.					
24.					
25.					
26.					
27.					
28.					

编号 No.	姓名 Name	单位 Organization	职务 Position	电话 Tel.	电子信箱 E-mial
29.					
30.					
31.					
32.					
33.					
34.					
35.					
36.					
37.					
38.					

编号 No.	姓名 Name	单位 Organization	职务 Position	电话 Tel.	电子信箱 E-mial
39.					
40.					
41.					
42.					
43.					
44.					
45.					
46.					
47.					
48.					

编号 No.	姓 名 Name	单 位 Organization	职 务 Position	电 话 Tel.	电子信箱 E-mial
49.	马冲亚	湿地中心	科长		
50.	何雅琼	湿地中心	科员		
51.	吕宪国	中科院东北地理所	研究员		
52.	姜明	〃 〃	研究员		
53.	宋慎强	原中德合作项目主任			
54.	郑怀玉	黑龙江省林业厅	副厅长		
55.					
56.					
57.					
58.					

Photographs

Participants at the Wetland Restoration Techniques and ADB Strengthening Capacity for Sanjiang Plain Wetland Protection Project Workshop, Sun Island Garden Hotel, Harbin on 19 June 2016

Mr. James T. Berdach and Professor Xiubo Yu present “The Sanjiang Plain Wetlands: Past, Present and Future Prospects for Conservation” during the wetland protection workshop

Formal ceremony for launch of the Knowledge Product

Staff of the PMO and members of the ADB consultant team participate in the launch ceremony for the Knowledge Product

Agenda for "Heilongjiang Wetland Forum—Summer Eco-tourism Promotion Conference"

2016.6.19

Session	Time	Activity	Presenter or Moderator
1	13:30	VIP Participants Admittance	
2	13:45	Remarks of Heilongjiang Provincial Government	Mr. Sun Yao, Vice Governor of Heilongjiang Province
3	14:00	Remarks of ADB Official	Mr. Yoshiaki Kobayashi, Sr. Water Resources Specialist, Asian Development Bank
4	14:15	Remarks of Chairman of China CYTS Tours Holding Co., Ltd	Mr. Kang Guoming
5	14:30	Remarks of President of China Tourism News	Mr. Gao Shunli
6	14:45	Heilongjiang Tourism Product Promotion	Mr. Xi Dongguang
7	15:05	Remarks of General Director of HPD	Mr. Yang Guoting, General Director of Heilongjiang Forestry Department
8	15:20	Themed Salon	
. . .		. . .	. . .
	16:35	Remarks of Governor of Heilongjiang Province	Mr. Lu Hao, Governor of Heilongjiang Province
. . .		. . .	. . .
	17:45	Closing Remarks	
	18:00	Media Communication	

2016·黑龙江湿地论坛暨夏季生态旅游产品推介会流程表

环节	时 间	流 程	参加人员
签到参观	13:00-13:30	签到入场，参观地市展区	全体嘉宾
领导入场	13:30-13:35	领导和重要嘉宾入场	—
开场视频	13:35-13:37	开场视频	—
开场	13:37-13:40	主持人开场	路一鸣
黑龙江夏季旅游主题推介	13:40-14:05	“避暑胜地·畅爽龙江”黑龙江省夏季旅游主题推介	锡东光
黑龙江湿地资源主题推介	14:05-14:20	“醉美龙江大湿地”主题推介	杨国亭
哈尔滨	14:20-14:35	“绿水青山·万顷松江湿地哈尔滨”夏季旅游主题推介	曲 磊
主旨演讲	14:35-14:50	“国际视角下的湿地保护及可持续利用项目”	小林嘉章
主旨演讲	14:50-15:05	“‘湿地+’助黑龙江绿水青山变金山银山”	康国明
主旨演讲	15:05-15:20	“让湿地旅游成为美妙体验”	高绎礼
主题沙龙	15:20-16:00	“当湿地遇上旅游—探索湿地旅游的可持续发展”	路一鸣 蔡 莹 赵 越 于志峰 代和文
十大最美湿地揭晓	16:00-16:10	揭晓2016年度黑龙江十大最美湿地评选结果并颁奖	锡东光 肖建春 获奖单位
奖励名单宣读湿地公园授牌	16:10-16:15	宣读“黑龙江2015年全国湿地保护先进县奖励名单”、向通过验收的国家湿地公园授牌	马广仁 肖建春 获奖单位
茶歇	16:15-16:30	播放暖场片	—
下半场	16:30-16:35	播放《我是龙江人》视频	—
领导讲话	16:35-16:45	国家旅游局副局长讲话	魏洪涛
	16:45-16:55	国家林业局副局长讲话	陈凤学
	16:55-17:15	黑龙江省人民政府副省长讲话	孙 尧
主旨演讲	17:15-17:30	“湿地保护和开发的平衡点”	刘 想
结束词	17:30-17:35	结束词	路一鸣
专访环节	17:40-18:20	省旅发委、省林业厅、哈尔滨旅游局、湿地专家等接受访问	—

ANNEX J: AIDE MEMOIRE, 19 JUNE 2016

TA 8541-PRC: Strengthening Capacity for Wetland Protection for Sanjiang Plain
TA Final Review Mission (19 June 2016)

AIDE MEMOIRE

I. INTRODUCTION

1. The final review mission[19] from the Asian Development Bank (ADB) visited the People's Republic of China on 19 June 2016 to launch the knowledge product (KP) produced under the technical assistance for Strengthening of Capacity for Wetland Protection for Sanjiang Plain (TA) and confirm remaining tasks under the TA. The list of persons met by the mission is in Attachment 1.

2. This aide memoire records the findings and discussions of the mission on various issues and follow-up actions related to the TA with the TA management office (TMO). It should be noted that the understandings herein are subject to review and clearance of higher authorities of the government and ADB. The mission sincerely thanks the officials of the TMO and the consultants for the hospitality and cooperation throughout the review.

II. PROJECT BACKGROUND

3. The TA cofinanced by ADB's TA funding program for $200,000 and by the Multi-Donor Trust Fund under the Water Financing Partnership Facility for $300,000 was approved on 5 December 2013. The TA became effective on 2 January 2014. The contract for consulting services for the TA was concluded between ADB and TTT, New Zealand on 7 July 2014. The TA completion date is 16 March 2016. The impact of the TA will be improved management of natural resources to protect globally significant biodiversity in Sanjiang Plain. The outcome will be capacity established for continued implementation and expansion of achievements of the Sanjiang Plain Wetlands Protection Project. The TA outputs will be (i) expansion of relevant Heilongjiang provincial government staff capacity for wetland protection developed under the Sanjiang Plain Wetlands Protection Project; and (ii) expansion and dissemination of wetland protection models developed under the Sanjiang Plain Wetlands Protection Project and sharing of knowledge developed or accumulated for Sanjiang Plain.

III. MISSION FINDINGS

A. Knowledge Product

4. The English KP was published. The TMO is finalizing the Chinese KP communicating with ADB People's Republic of China Resident Mission (PRCM). A workshop for launching the KP was held in the morning on 19 June 2016 as a side event of Heilongjiang Wetland Forum—Summer Eco-tourism Promotion Conference. The English KP and draft Chinese KP were delivered to the participants. The program of the KP launching workshop is in Attachment 2.

[19] The mission was conducted Mr. Yoshiaki Kobayashi, Senior Water Resources Management Specialist.

B. Remaining Tasks and Follow up Actions

5. **TA completion date.** The TA completion date is 30 September 2016. All activities under the TA should be completed by the TA completion date. Also, the TA should be financially closed within 2016. For that all payments from ADB to the consultants, TMO, and publisher should be completed as early as possible after the TA completion date, but at latest by 30 November 2016.

6. **Chinese KP.** The TMO will finalize the Chinese KP communicating with ADB PRCM, and publish it. The Chinese KP should be published as early as possible, but at latest by 30 September 2016. The TMO will ensure ADB's payments to the publisher at latest by 30 November 2016, by submitting necessary documents (e.g. claims) to ADB.

7. **Expenditures for workshops, conferences, and training.** ADB funds for expenditures for workshops, conferences, and training are directly disbursed to TMO's account. The TMO will submit necessary documents for ADB's disbursements for the workshops, conferences, and training (e.g. claims) and ensure that all necessary ADB's disbursements to the TMO's account are made at latest by 30 November 2016.

8. **Consultants.** The consultants will submit the final report to ADB and TMO at latest by 30 September 2016. The final report will include the English KP as an attachment, and other information such as activities for capacity development. The consultants submit all remaining claims to ADB and ensure all payments from ADB to the consultants are made at latest by 30 November 2016.

Harbin, 19 June 2016

Yoshiaki Kobayashi

Mission Leader

Attachment 1: List of Persons Met

Attachment 2: Program of KP Launching Workshop

ANNEX K: REFERENCES

Following is a complete list of the references utilized as information sources for the preparation of the Knowledge Product, and throughout the course of conducting the TA.

"On Lake Taihu, China Moves To Battle Massive Algae Bloom." 21 July 2011 in Biodiversity Oceans Policy & Politics Water Asia.

"Restoring China's disappearing wetlands", Yu Tianyu (China Daily) Updated: 2009-11-09.

Agarwalaa, Matthew, et al. 2014. Assessing the Relationship Between Human Well-being and Ecosystem Services: A Review of Frameworks. Conservation and Society 12(4): 437-449.

Asian Development Bank (ADB). 2015.Reviving lakes and wetlands in the People's Republic of China, Volume 2: Lessons learned on integrated water pollution control from Chao Lake Basin. Mandaluyong City, Philippines.

ADB. 2014. Together we Deliver: From Knowledge and Partnerships to Results. Mandaluyong, Philippines.

ADB 2013 (December). Capacity Development Technical Assistance (CDTA) Report. People's Republic of China: Strengthening Capacity for Wetland Protection for Sanjiang Plain (Cofinanced by the Multi-Donor Trust Fund under the Water Financing Partnership Facility). ADB: Manila.

ADB 2013 (October). Completion Report: Sanjiang Plain Wetlands Protection Project. Harbin, China.

ADB 2013. (July) Draft Completion Report: Sanjiang Plain Wetlands Protection Project. Harbin, China.

ADB Independent Evaluation Department 2014. People's Republic of China: Sanjiang Wetlands Protection Project. Validation Report. Asian Development Bank: Manila, Philippines.

ADB. November 2006. ADB Water Financing Program 2006-2010 - Helping to introduce IWRM in 25 river basins in the Asia-Pacific region

ADB. November 2006. Innovations and Advances in Basin Management in Asia. Appendix A: ADB's 25 elements of IWRM in river basins.

Aranda, Ismael, Alicia Forner, Barbara Cuesta, Fernando Valladarse. 2012. Species-specific water use by forest tree species: From the tree to the stand. Agricultural Water Management 114: 67-77.

Bai, Xue, et al. February 2008. Differences of ecological functions inside and outside the wetland nature reserves in Sanjiang Plain. Acta Ecologica Sinica, 28 (2): pp. 620-626.

Belote, R. Travis, Matthew S. Dietz, Brad H. McRae, David M. Theobald, Meredith L. McClure, G. Hugh Irwin, Peter S. McKinley, Josh A. Gage, and Gregory H. Aplet. April 2016. Identifying Corridors among Large Protected Areas in the United States. PLOS One website. http://dx.doi.org/10.1371/journal.pone.0154223 http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0154223

CIWEM. November 2013. Policy Position Statement, the Catchment Based Approach in England, the Chartered Institution of Water and Environmental Management

Cui, Lijuan, Changjun Gao, Demin Zhou and Lan Mu 2013. Quantitative analysis of the driving forces causing declines in marsh wetland landscapes in the Honghe region, northeast China, from 1975 to 2006. Environmental Earth Science DOI 10.1007/s12665-013-2542-5.

De Silva, Sanjiv and Senali Senaratna Sellmuttu 2010. Balancing wetlands conservation and development in the Sanjiang Plain. A review of current status and options. International Water Management Institute: Colombo, Sri Lanka.

Gawler, M. (ed.) 2002. Strategies For Wise Use Of Wetlands: Best Practices In Participatory Management. Proceedings of a Workshop held at the 2nd International Conference on Wetlands and Development (November 1998, Dakar, Senegal). Wetlands International IUCN, WWF Publication No. 56, Wageningen, The Netherlands.

Global Environment Facility (n.d) Project Concept Paper: Songhua River Flood and Wetland Management Project, The People's Republic of China.

Guo-dong Wanga, Ming Wanga, Xian-guo Lua, and Ming Jianga, April 2015. Effects of farming on the soil seed banks and wetland restoration potential in Sanjiang Plain, Northeastern China. Ecological Engineering, vol.77, pp. 265–274.

Heilongjiang Environmental Protection Bureau, and Heilongjiang Research Institute of Environmental Protection. 1996. Environmental Impact Assessment of Integrated Agricultural Development and Environmental Protection Planning of Sanjiang Plain. Harbin.

Hongyu Liu, Shikui Zhang, Zhaofu Li, Xianguo Lu; Liu, Xingtu, and Ma, Xuehui, 2002, Natural environmental changes and ecological protection in the Sanjiang Plain, Beijing: Science Press, P60-65; 171-172.

Huang, J., Wang, X, Qui, H (2012) Small-scale farmers in China in the face of modernization and globalization, IIED/HIVOS, London/The Hague (p. 8).

Hunt, Janet. 2007. Wetlands of New Zealand: A Bitter Sweet Story. Random House New Zealand.

Institute of Chinese Materia Medica 1997. Medicinal plants in China: A selection of 150 commonly used species. WHO Regional Publiciations, Western Pacific Series No. 2: China Academy of Traditional Medicine. Geneva, Switzerland: The World Health Organization).

Jian Wu, Jun Jie Wu, Xiaoxia Wang, Ma Zhong. 2012. Securing water for wetland conservation: A comparative analysis of policy options to protect a national nature reserve in China. Journal of Environmental Management, 94.

Jing Chen, Bo-Ming Sun, Dan Chen, Xin Wu, Long-Zhu Guo and Gang Wang. 2014. Land Use Changes and their effects on the value of Ecosystem Services in the small Sanjiang Plain in China. The Scientific World Journal Volume 2014, Article ID 752846.

Kasbohm, J., et al., 2009. Integrated water resources management (IWRM)- an introduction. Journal of Geology, Series B, 33/2009, p. 3-14.

Lambert, John D.H., Per A. Ryden, and Enos E. Esikuri. 2005. Capitalizing on the Bio-Economic Value of Multi-Purpose Medicinal Plants for the Rehabilitation of Drylands in Sub-Saharan Africa. Global Environment Facility Program. The World Bank: Washington, D.C.

Landell-Mills 2012. Reviving Lakes and Wetlands: Lessons learned from the Sanjiang Plain. Sanjiang Plain Wetlands Protection Project: Harbin, China.

Li, Hongyan, and Weifeng Wang. 2005. The significance of returning cropland to wetland programme in Sanjiang Plain, China. (2):1-3 (in Chinese).

Li, R, and Rong L. 2007. Ecotourism carrying capacity of Hangzhou Xixi National Wetland Park in China. Ying Yong Sheng Tai Xue Bao. 2007 Oct;18(10):2301-7.

Liu, Hong-Yu, and Zhao-Fu Li. 2008. Spatial Characteristics of wetland water quality and land use impacts at spring (time) in the small Sanjiang Plain, China. China Environmental Science, 28(10): 933-937.

Liu, Hong-yu, Lu, Xian-guo, Liu, Zhen-quin 2000. Landscape planning and ecology construction of wetland comprehensive protected area system in the Sanjiang Plain. Journal of Environmental Sciences, Vol. 12, No. 3: 361 – 366.

Liu, Hongyu, Shikui Zhang, Zhaofu Li, Xianguo Lu and Qing Yang. 2004. Impacts on Wetlands of Large-Scale Land-Use Changes by Agricultural Development: The Small Sanjiang Plain. Ambio, Vol. 33, No. 6 (Aug., 2004), pp. 306-310.

Liu, Xingtu, and Ma, Xuehui, 2002. Natural environmental changes and ecological protection in the Sanjiang Plain. Beijing: Science Press (in Chinese), adapted in Zongming Wang, Kaishan Song, Wenhong Ma, et al., Loss and Fragmentation of Marshes in the Sanjaing Plain, Northeast China, 1954-2005. Wetlands. 31:945-954.

Ministry of Environmental Protection (MEP). 2010. China National Biodiversity Conservation Strategy and Action Plan (2011-2030).

Mittelman, Andrew, Chun Lai, Neil Byron, Genevieve Michon and Ester Katz 1997. Non-wood Forest Products Outlook Study: Towards 2010. Bangkok: FAO Regional Office for Asia and the Pacific.

National Environmental Protection Agency (China). May 1994. China Biodiversity Conservation Action Plan. Beijing: http://www.cbd.int/doc/world/cn/cn-nbsap-01-p1-en.pdf

NZ Environmental Code of Practice for Plantation Forestry (E-CoP) http://maxa.maf.govt.nz/sff/about-projects/search/02-038/nz-environmental-code-of-practice-for-plantation-forestry.pdf (Accessed 18 August 2014).

Poverty Environment Program, ADB 2004. Development of Sustainable Alternative Livelihoods and Community Participation in the Management of Wetland Resources in the Sanjiang Plain: A Proposal for the Poverty and Environment (PEP) Fund. ADB: Manila, Philippines.

Qing Yang. 2004. Impacts on Wetlands of Large-Scale Land-Use Changes by Agricultural Development: The Small Sanjiang Plain. Ambio, Vol. 33, No. 6 (Aug., 2004), pp. 306-310).

Ramsar 2012. Liquid Assets: 40 Years of the Convention on Wetlands. Gland, Switzerland: The Ramsar Secretariat.

Ramsar Convention Secretariat, 2010. Managing wetlands: Frameworks for managing Wetlands of International Importance and other wetland sites. Ramsar handbooks for the wise use of wetlands, 4th edition, vol. 18. Ramsar Convention Secretariat, Gland, Switzerland.

Romanowski, Nick 2006. Sustainable freshwater aquaculture : the complete guide from backyard to investor. Sydney, Australia. University of New South Wales Press

Rounds, R.A., R. Michael Erwin, and John H. Porter. 2004. Nest-site selection and hatching success of waterbirds in coastal Virginia: some results of habitat manipulation. Journal of Field Ornithology, 75(4):317-329.

Sanjiang Plain Wetlands Protection Project. July 2013. Completion Report, Project Implementation Office of Sanjiang Plain Wetlands Protection Project.

Secretariat of the Convention on Biological Diversity 2009. Sustainable Forest Management, Biodiversity and Livelihoods: A Good Practice Guide. SCBD: Montreal, Canada.

Song, Kaishan, et al. 2008. Land Use Change in Sanjiang Plain and its Driving Forces Analysis Since 1954. Acta Geographica Sinica 63(1): 93-104.

State Forestry Administration (SFA/PRC). 2009. Seventh National Forest Resource Inventory Report (2004-2008).

Theobald, David M., Sarah E. Reed, Kenyon Fields, and Michael Soulé. April 2012. Connecting natural landscapes using a landscape permeability model to prioritize conservation activities in the United States. Conservation Letters 5/2, pp. 123–133, April 2012. Accessible at http://onlinelibrary.wiley.com/doi/10.1111/j.1755-263X.2011.00218.x/full

Tong Shouzheng, Guo-dong Wanga, Ming Wanga, Xian-guo Lua, and Ming Jianga. April 2015. Effects of farming on the soil seed banks and wetland restoration potential in Sanjiang Plain, Northeastern China. Ecological Engineering, vol.77, pp. 265–274.

US Environmental Protection Agency. Compensatory Mitigation for Losses of Aquatic Resources, 40 CFR Part 230 Subpart J and 33 CFR Part 332

White, C.L., et al. May 2005. Nesting Island Creation for Wading Birds. CIR1473, Wildlife Ecology and Conservation Department, UF/IFAS Extension.

White, Leann, Peter C. Frederick, Martin B. Main, and James A. Rodgers, Jr. May 2005. Nesting Island Creation for Wading Birds. CIR1473, Wildlife Ecology and Conservation Department, UF/IFAS Extension. http://edis.ifas.ufl.edu/uw223

Zhang, Qingfeng et al.2010a. An eco-compensation policy framework for the People's Republic of China: challenges and opportunities. Mandaluyong City, Philippines: Asian Development Bank.

Zhang, Qingfeng et al.2010b. Payments for ecological services and eco-compensation: Practices and innovations in the People's Republic of China. Proceedings from the International Conference on Payments for Ecological Services, Ningxia Hui Autonomous Region, People's Republic of China. 6–7 September 2009. Mandaluyong City, Philippines: Asian Development Bank.

Zhang, Qingfeng, Yoshiaki Kobayashi, Takafumi Kadono, with Robert Crooks and Zhong Ma 2008. Reviving Lakes and Wetlands: Lessons Learned from the People's Republic of China. The Asian Development Bank: Manila, The Philippines.

Zhaoqing Luan, and Demin Zhou. 2013. Impacts of Intensified Agriculture Developments on Marsh Wetlands. The Scientific World Journal, Volume 2. Article ID 409439, 10 pages. http://dx.doi.org/10.1155/2013/409439. Hindawi Publishing Corporation.

Additional websites:

3DRobotics Inc., 2015. "About 3D Robotics. 3DR Drone and UAV Technology." 3DRobotics, Inc., Berkeley, CA., USA. http://3drobotics.com/about/?_ga=1.106412224.2110359423.1437701234

Ali, Mansoor, WEDC Water Engineering and Development Centre; Loughborough University UK; 2004, Sustainable Composting, Case Studies and Guidelines for Developing Countries. http://www.sswm.info/sites/default/files/reference_attachments/ALI%202004%20Sustainable%20Composting.pdf

American Botanical Council 2011. "Global Prices of Traditional Chinese Herbs Rising." HerbalEGram: Volume 8, Number 2, February 2011. American Botanical Council, Austin Texas, USA. http://cms.herbalgram.org/heg/volume8/02February/TCMpricesrising.html?t=1296580896

Asian Development Bank 2012. "People's Republic of China: Saving the Sanjiang Wetlands." ADB, Manila, Philippines. http://www.adb.org/results/peoples-republic-china-saving-sanjiang-wetlands

Asia-Pacific Agroforestry Network 2004. "Systematizing the local ecological knowledge of M'Nongs in Vietnam's central highlands." APAN, FAO Regional Office for Asia and the Pacific. Bangkok, Thailand. http://www.fao.org/docrep/008/af336e/af336e02.htm

Auckland (New Zealand) Council website. Hauraki Gulf Forum. http://www.aucklandcouncil.govt.nz/EN/AboutCouncil/representativesbodies/haurakigulfforum/Pages/home.aspx; and http://gulfjournal.org.nz/

Australian Centre for International Agricultural Research (ACIAR),2014. "Development of timber and non-timber forest products' production and market strategies for improvement of smallholders' livelihoods in Indonesia." ACIAR, Australia. http://aciar.gov.au/project/fst/2012/039

Badiou, P., C. Edwards, M. Gloutney (2010) TEEBcase: Wetland restoration for carbon sequestration in Prairie Canada, http://doc.teebweb.org/wp-content/uploads/2013/01/Wetland-restoration-for-carbon-sequestration-in-Prairie-Canada.pdf

Bay of Plenty (N.Z.) Regional Council website. Live monitoring. (website provides real-time access to water quality data and other parameters sourced from various monitoring stations) http://monitoring.boprc.govt.nz/MonitoredSites/cgi-bin/hydwebserver.cgi/districts/details?district=3

Berk, Ali 2013. "Processor Driven Integration of Small - Scale Farmers into Value Chains in Turkey." Food and Agriculture Organization of the United Nations Regional Office for Europe and Central Asia, Sub-regional Office for Central Asia. Ankara, Turkey. http://www.fao.org/fileadmin/user_upload/Europe/documents/Publications/PDI/Turkey_en.pdf

Caribbean Natural Resources Institute (n.d). "Guidelines for Participatory Planning." CANARI: Trinidad, West Indies. http://www.canari.org/documents/guidelines4-guidelinesforparticipatoryplanning.pdf (See also: Convention on Biological Diversity, 2012. "Ensuring Inclusive Societal Engagement in the Development, Implementation and Updating of NBSAPs." CBD: Montreal, Canada. https://www.cbd.int/doc/training/nbsap/b5-train-stakeholder-nbsap-revised-en.pdf

Center for International Forestry Research (CIFOR) 2007. "Towards Well-being in Forest Communities: A Sourcebook for Local Government. Why is Participatory Planning Useful." CIFOR, Bogor, Indonesia. http://www.cifor.org/sourcebook/part_two_tools/pp_why_is_pp_useful.html

Chew, Siew Tuan 1989. "Agroforestry Projects For Small Farmers: a project manager's reference." A.I.D. evaluation special study no. 59, Bureau for Program and Policy Coordination, U.S. Agency for International Development, Washington, D.C. USA. http://pdf.usaid.gov/pdf_docs/PNAAX212.pdf

Conservation Corridor website. "Identifying a nationwide corridor system for the United States." http://conservationcorridor.org/2016/05/identifying-a-nationwide-corridor-system-for-the-united-states/

Conservation Drones Organization. 22 May 2015. Use of drones for conservation and environmental research. http://conservationdrones.org/2015/05/22/publications-page/

Diver, Steve 2004. "Greenhouse and Hydroponic Vegetable Production Resources on the Internet." National Center for Appropriate Technology. US Department of Agriculture, Washington, D.C., USA. http://www.agrisk.umn.edu/cache/arl01481.htm

Eagle Bluff Environmental Learning Center (n.d.) "Cold Climate Greenhouse Resource: A guide for designing and building a cold-climate greenhouse." University of Minnesota Extension, Center for Urban and Regional Affairs, Center for Sustainable Building Research. Minnesota, USA. http://www.extension.umn.edu/rsdp/community-and-local-food/production-resources/docs/cold-climate-greenhouse-resource.pdf

Emmanuel Neba Ndenecho, 2011. "Local Livelihoods and Protected Area Management Biodiversity Conservation Problems in Cameroon." Project MUSE, Baltimore, Maryland, USA. Accessed at: http://muse.jhu.edu/books/9789956717460

Environment 360, 2011. "On Lake Taihu, China moves to battle massive algae blooms." Yale University School of Forestry and Environmental Studies, New Haven, Connecticut, USA. http://e360.yale.edu/feature/on_lake_taihu_china_moves_to_battle_massive_algae_blooms/2429/

Euro-bagging 2011. "Compost bagging machines, closed composting system." Euro-bagging, The Netherlands and The Czech Republic. http://www.eurobagging.com/en/composting-technology

Expert Group for Technical Advice on Organic Production EGTOP/6/13 European Commission Directorate General for Agriculture and Rural Development, Directorate H. 2013. "Sustainability and Quality of Agriculture and Rural Development. Final Report on Greenhouse Production." European Commission, Brussels, Belgium. http://ec.europa.eu/agriculture/organic/eu-policy/expert-advice/documents/final-reports/final_report_egtop_on_greenhouse_production_en.pdf

Food and Agriculture Organization of the United Nations (n.d). "Extension Methods." FAO Corporate Document Repository, Rome,. Italy. http://www.fao.org/docrep/t0060e/T0060E07.htm

Food and Agriculture Organization of the United Nations 2014. "Non-wood Forest Products." FAO, Rome, Italy. http://www.fao.org/forestry/nwfp/85449/en/

Food and Agriculture Organization of the United Nations 2015. "Organic Agriculture." FAO Inter-departmental Working Group on Organic Agriculture, Rome, Italy. http://www.fao.org/organicag/oa-faq/oa-faq7/en/

Foppes, Joost and Souvanpheng Phommasane, 2005. "Experiences with Market Development of Non-Timber Forest Products in Lao PDR: Market Development for Improving Upland Poor's Livelihood Security." The Centre for Community Development Studies (CDS), Kunming, China P.R.C. http://search4dev.nl/download/284094/116258.pdf

Golja, Tea, Sanja Dolenc and Vladimir Marinkovic 2012. "How to make agriculture production in protective areas profitable? - project idea on the example of Republic of Croatia." From: Economics of Agriculture 2/2012, UDC: 631.147(497.5), accessed at: http://ageconsearch.umn.edu/bitstream/127118/2/8%20-%20Golja,%20Dolenc,%20Marinkovic.pdf

Grandi, Cristina and Alessandro Triantafyllidis 2010. "Organic agriculture in Protected areas: The Italian experience." Food and Agriculture Organization of the United Nations (FAO). Rome. Italy. http://www.fao.org/3/a-al412e.pdf

Greenhouse crops and floriculture program, Center for Food and the Environment, College of Natural Sciences 2015. "Hydroponic Greenhouse Production Resources". University of Massachusetts Extension, Amherst, Massachusetts, USA. http://extension.umass.edu/floriculture/fact-sheets/hydroponic-greenhouse-production-resources

Greenpeace Archive, Sustainable Aquaculture. http://www.greenpeace.org/international/en/campaigns/oceans/sustainable-aquaculture/

Hodgson, J. C. et al. 2016. Precision wildlife monitoring using unmanned aerial vehicles. Sci. Rep. 6, 22574; doi: 10.1038/srep22574. Accessible at: http://www.nature.com/articles/srep22574

Hoogendoorn, Coosje 2012. "NTFP's contribution to pro-poor Green Growth." International Network for Bamboo and Rattan, Beijing, China. http://www.globalhort.org/media/uploads/File/DOC%20Net/5%20INBAR%20presentation%202012.pdf

IFOAM, January 2012, Position Paper on Organic Greenhouse Production. http://www.ifoam-eu.org/sites/default/files/page/files/ifoameu_reg_greenhouse_production_position_201201.pdf

India Department of Scientific and Industrial Research (n.d). "Global Herbal Market." DISR, Ministry of Science and Technology, New Delhi, India. http://www.dsir.gov.in/reports/ittp_tedo/ism/ISM_AS_Market.pdf

International Federation of Organic Agriculture Movements (IFOAM). Principles of Organic Agriculture. http://www.ifoam.org/en/organic-landmarks/principles-organic-agriculture

Kpierekoh, Jonas 2011. Participatory Planning: Fostering Stakeholder Engagement in Sustainable Land Management. (experiences in participatory planning approaches from Iceland and Ghana). http://www.silc.com.au/wp-content/uploads/2012/04/Presentation-Jonas-18-9-2011-Read-Only.pdf

Kusler, Jon. "Common questions: Wetland, climate change, and carbon sequestering." Association of State Wetland Managers, Inc. in cooperation with The International Institute for Wetland Science and Public Policy. http://www.aswm.org/pdf_lib/11_carbon_6_26_06.pdf

Mekong Institute, Capacity Development for Regional Cooperation and Integration; accessed 26 July 2015, Rural Development for Sustainable Livelihoods. http://www.mekonginstitute.org/rural-tab-menu.html

Merrifield, Matt, and Rodd Kelsey 2014. "Of Drones and Cranes: UAV Technology Aids California Bird Conservation. Cool Green Science." The science blog of the Nature Conservancy. TNC, Washington, D.C., USA. http://blog.nature.org/science/2014/03/06/drones-uav-sandhill-cranes-california-wetlands/#sthash.QEMfil2P.dpuf

Nature. 2009. "An Unseen Carbon Sink." Nature Reports—Climate Change. Published 26 November 2009. http://www.nature.com/climate/2009/0912/full/climate.2009.125.html

Nichols Mike & Christie Bruce January/February 2008 Greenhouse production in Japan. www.hydroponics.com.au/issue-98-greenhouse-production-in-japan/

Pemsl, D.E., and M. L. 2008. Recommendation Domains for Pond Aquaculture. Country Case Study: Development and Status of Freshwater Aquaculture in Henan Province, China. World Fish Center Studies and Reviews No. 1873. The World Fish Center, Penang, Malaysia. http://www.aquaticcommons.org/1849/1/9789832346715.pdf

Pugliese, Patrizia 2001. "Organic Farming and Sustainable Rural Development: A Multifaceted and Promising Convergence." Sociologia Ruralis, Vol 41, Number 1, January 2001: 112-130. European Society for Rural Sociology. Athens, Greece. http://www.devab.org/moodle/pluginfile.php/1626/mod_resource/content/1/ABILE_organic_farming_and_sustainable_developpment.pdf

Ramsar Convention. 1971. The Ramsar Sites Criteria, The nine criteria for identifying Wetlands of International Importance. http://www.ramsar.org/sites/default/files/documents/library/ramsarsites_criteria_eng.pdf

Ramsar Organization. 9 July 2015. The Convention on Wetlands. www.ramsar.org

Richardson, J.G. 2003. "On-farm demonstrations: consideration factors for their success and viability as an extension teaching tool." South African Journal of Agricultural Extension Vol.32 2003: 114-124. Grahamstown, South Africa. http://www.ajol.info/index.php/sajae/article/view/3653

Rounds, R. A., R. Michael Erwin, John H. Porter 2004. "Nest-site selection and hatching success of waterbirds in coastal Virginia: some results of habitat manipulation." Journal of Field Ornithology, 75(4):317-329. 2004. Association of Field Ornithologists, USA. Accessed at: http://www.bioone.org/doi/full/10.1648/0273-8570%282004%29075%5B0317%3ANSAHSO%5D2.0.CO%3B2

Rouse, Jonathan.2008. Marketing Compost, A Guide for Compost Producers in Low and Middle-Income Countries. Swiss Federal Institute of Aquatic Science and Technology. http://www.sswm.info/sites/default/files/reference_attachments/ROUSE%20et%20al%202008%20Marketing%20Compost.pdf

Schneider, Keith 2012. "Scarcity of Water and Land Shifts Geography of Food Production and Irrigation Networks to China's Northeast." Circle of Blue, Minnesota, USA. http://www.circleofblue.org/waternews/2012/world/scarcity-of-water-and-land-shifts-geography-of-food-production-to-chinas-northeast/

SCION, Crown Research Institute, Forestry Sector, Forest Science. http://www.scionresearch.com/research/forest-science

Sherman, Rhonda. (n.d.). Large- Scale Composting. Biological & Agricultural Engineering Department; North Carolina State University. https://www.bae.ncsu.edu/extension/ext-publications/waste/composting/ag593-large-scale-composting.pdf

Trently, Allan J. November 2014. Old Forest State Natural Area Management Plan, State of Tennessee. Department of Environment and Conservation, Natural Areas Program. http://www.overtonpark.org/wp-content/uploads/2015/01/OF-Mgmt-Plan-SNA-Nov2014.pdf

UNEP, Division of Technology, Industry and Economics. (n.d.) The Components of Successful Ecotourism. http://www.unep.fr/shared/publications/other/WEBx0137xPA/part-two.pdf

UNESCO World Heritage. 2001. "Best practice" poverty alleviation intervention. Nam Ha Ecotourism Project, Lao National Tourism Administration (LNTA). http://www.unescobkk.org/culture/wh/namha-ecotourism-project/

University of California Extension 2015. "Marketing and Specialty Foods." University of California, Small Farm Program, Division of Agriculture and Natural Resources, California, USA. http://sfp.ucdavis.edu/marketing/

USAID MACH project (n.d.) "Community-based Wetland Co-management in Bangladesh." Management of Aquatic Ecosystems through Community Husbandry (MACH). USAID, Dhaka, Bangladesh. http://pdf.usaid.gov/pdf_docs/Pnadl272.pdf

Watson, Bob (n.d.). How to Assist the Small-Scale Farmer. UK Department of Environment, Food and Rural Affairs. http://www.un.org/en/ecosoc/docs/statement08/robert_watson.pdf

Wheeling Walks (n.d.), Benefits of the Participatory Planning Approach, Training Manual. http://www.wheelingwalks.org/WW_TrainingManual/CHPP_TrainingManual/chpp4/chpp4.asp

World Agro-Forestry Centre, (n.d.) On-farm productivity. http://www.worldagroforestry.org/research/agroforestry-systems/projects

World Bank. 5 February 2014. Topics, Environment Sustainable Aquaculture. http://www.worldbank.org/en/topic/environment/brief/sustainable-aquaculture

Wunder, Sven 2000. "Ecotourism and economic incentives — an empirical approach." Ecological Economics 32 (2000) 465 – 479. Centre for Development Research, Copenhagen, Denmark. Accessed at: http://cmbc.ucsd.edu/content/1/docs/wunder.pdf

Wurts, William A. 2009. "Sustainable Aquaculture: Concept or Practice." Biotechnology Vol. X , Encyclopedia of Life Support Systems (EOLSS), UNESCO: Paris, France. Sustainable Aquaculture: Concept or Practice. http://www.eolss.net/Sample-Chapters/C17/E6-58-09-09.pdf

Yeomans, Michelle 2012. "Global beauty market to reach $265 billion in 2017 due to an increase in GDP." Cosmetics Design.com, USA. http://www.cosmeticsdesign.com/Market-Trends/Global-beauty-market-to-reach-265-billion-in-2017-due-to-an-increase-in-GDP

ANNEX L: PERSONS CONSULTED

Presented here is a complete list of persons consulted during the course of the team's work on TA-8541 PRC, including participants at all three project workshops.

#	Name		Position/Title	Organization
1	Rui	An	Section Chief	Wetland Conservation Center, Forestry Department
2	Yarong	Bai	Section Member of Wetland Conservation Centre	Heilongjiang Forestry Department
3	James	Berdach	Wetland Nature Reserve Management Specialist/Team Leader	TTT
4	Xili	Cai	President	Long'anqiao Wetland Park
5	Ting	Cao	Section Member of Forestry External Cooperation Centre	Heilongjiang Forestry Department
6	Kun	Chen	Director	Zhalong National Nature Reserve Management Bureau
7	Shaoxia	Cheng	Director of Forestry External Cooperation Centre	Heilongjiang Forestry Department
8	Cheng	Ding	Section Chief	Naolihe National Nature Reserve Management Bureau
9	Jianmin	Dong	Deputy Director-general	Bachadao National Nature Reserve Management Bureau
10	Yinglai	Dong	Director-general	Qixinghe National Nature Reserve Management Bureau
11	Jianxin	Du	General Manager	Baiyupao National Wetland Park
12	Minxiu	Feng	Deputy Director of Forestry External Cooperation Centre	Heilongjiang Forestry Department
13	Shangzhu	Feng	Director	Xingkaihu Nature Reserve
14	Hongchen	Fu	Section Chief	Sanhuanpao Wetland Nature Reserve
15	Ruirui	Gao	Project Director	Green Longjiang
16	Qinghua	Gu	Director-general	Dajiahe Nature Reserve Management Bureau
17	Dongming	Han	Section Chief of Forestry External Cooperation Centre	Heilongjiang Forestry Department
18	Fengquan	Han	Director-general	Duobukuer National Nature Reserve Management Bureau
19	Jingshi	He	Director General	Anbanghe Nature Reserve
20	Junyang	Huang	Deputy Director	Wildlife Species Conservation Division, Forestry Department
21	Shuxia	Huang	Deputy Director General	Anbanghe Nature Reserve
22	Zhongwen	Huo	Deputy Director-general	Wuyuer River National Nature Reserve Management Bureau
23	Ming	Jiang		Institute of Northeast Geography and Agricultural Ecology, Chinese Academy of Sciences
24	Weihua	Jiang	Director General	Suibin Liangjiang Nature

#	Name		Position/Title	Organization
				Reserve
25	Leshan	Jin	Professor	China Agriculture University
26	Mr.___	Kang	ornithologist	
27	Garrett	Kilroy	Evaluation Specialist	ADB Independent Evaluation Department (IED)
28	Yoshiaki	Kobayashi	Senior Water Resources Specialist	ADB Environment, Natural Resources, and Agriculture Division (EAAE), East Asia Department (EARD)
29	Hongpeng	Li	Deputy Director General	Suibin Liangjiang Nature Reserve
30	Jia	Li	Section Member	PMO, Forestry Department
31	Jinling	Li	Chief of Communication and Education Division	Xingkai Lake NR
32	Nan	Li	Section Member of Wetland Conservation Centre	Heilongjiang Forestry Department
33	Qingjiang	Li	Principal Staff Member	Planning Division, Tourist Administration
34	Weiguang	Li	Deputy director-general	Sanjiang Nature Reserve
35	Weina	Li	Section Member of Forestry External Cooperation Centre	Heilongjiang Forestry Department
36	Xiaomin	Li	Professor/Ornithologist	Northeast Forestry University
37	Yu	Li	Deputy Section Chief	Sanhuanpao Nature Reserve Management Bureau
38	Jeffrey	Liang	Principal Economist	ADB Office of the Director General, East Asia Department (EARD)
39	Huajin	Liu	Section chief	Xingkaihu Nature Reserve
40	Tao	Liu		Green Longjiang
41	Xiaohai	Liu	Capacity Development Specialist	TTT
42	Yuxiang	Liu	Deputy Director	Finance Department
43	Yunfeng	Lu	Principal Staff Member	Environmental Protection Department
44	Shengqiang	Luan	Former Director	Sino-Germany Cooperation China Wetland Biodiversity Protection Project
45	Xianguo	Lu	Senior Researcher	Institute of Northeast Geography and Agricultural Ecology, Chinese Academy of Sciences
46	Wanmin	Ma	Manager	Jinhewan Wetland Park
47	Zhong	Ma	Dean	Renmin University of China
48	Hong	Man	Reporter and Editor	Light and Shadow Vision Media
49	Andrew	Mittelman	Alternative Livelihoods Specialist	TTT
50	Junlong	Niu	Director-general	Hongxing Wetland Nature Reserve Management Bureau
51	David	Parkin	Watershed Management Specialist	TTT

#	Name		Position/Title	Organization
52	Hui	Peng	Deputy Director	Water Resources Department
53	Bo	Qian	Director	Taihu National Wetland Park Management Station
54	Wuxian	Quan	staff	TA Management Office, HPG
55	Liying	Su	Director	International Crane Foundation
56	Shufen	Sun	Section Chief	PMO, Forestry Department
57	Weibin	Sun	Director	Flora and Fauna Management Division, Forestry Department
58	Yonggang	Sun	Director	Office of Forestry Department
59	Zhongdong	Tan	Deputy Director-general	Sun Island National Wetland Park Management Bureau
60	Huajun	Teng	Principal, Scientific Research and Education	Dajiahe Nature Reserve
61	Xing	Teng	Deputy Director	Institute of Agriculture Reclamation Survey and Design
62	Yafang	Tian	Principal Staff Member	PMO, Forestry Department
63	Fuqiang	Wan	Chief of Communication and Education Division	Zhenbaodao NR
64	Jie	Wan	Director	State Forestry Administration
65	Chen	Wang	Dean	Harbin Forestry Science Institute (responsible for Songbei National Wetland Park)
66	Hongbin	Wang	Section Chief of Forestry External Cooperation Centre	Heilongjiang Forestry Department
67	Jianfeng	Wang	Section Chief	Fisheries Bureau, Agriculture Committee
68	Jinwu	Wang	Deputy Director-general	Naolihe National Nature Reserve Management Bureau
69	Renchun	Wang	Director, Wetland Conservation Centre	Heilongjiang Provincial Forestry Department
70	Shengli	Wang	Section Chief of Finance	Qixinghe National Nature Reserve Management Bureau
71	Weiguo	Wang	Deputy Director-general	Jiamusi Wetland Management Bureau
72	Xiaoming	Wang	Director	Development Planning Division, Forestry Department
73	Xijun	Wang	Deputy Director	Provincial Development and Reform Commission
74	Ying	Wang	Director	Jiayin Ping'an River Nature Reserve
75	Zimin	Wang	Deputy director of Wetland Conservation Centre	Heilongjiang Forestry Department
76	Jijuan	Wen	Senior Engineer	Institute of Water Resources Design
77	Chunchen	Wu	Chief of Administration Office	Xingkai Lake NR
78	Zhibo	Wu	Section Chief	Qixinghe National Nature Reserve Management Bureau
79	Bin	Xie	Section Chief of Forestry	Heilongjiang Forestry

#	Name		Position/Title	Organization
			External Cooperation Centre	Department
80	Yongjun	Xue	Unknown	Institute of Agriculture Reclamation Survey and Design
81	Shentang	Yan	Section Chief of Wetland Conservation Centre	Heilongjiang Forestry Department
82	Fengying	Yang	Director-general	Sanhuanpao Nature Reserve Management Bureau
83	Ruifang	Yang	Deputy Director-general	Ganchazi Provincial Nature Reserve Management Bureau
84	Yuetao	Yang	Deputy Director	Shuangchahe Nature Reserve Management Division
85	Shengxin	Ye	Director	Forestry Monitoring and Planning Institute
86	Zhiguo	You	Deputy Director-general	Bei'an Provincial Nature Reserve Management Bureau
87	Wentao	Yu	Chief of Research Institute	Xingkai Lake NR
88	Xiubo	Yu	Wetland Management Specialist/Deputy Team Leader	TTT
89	Zhihao	Yu	Director	Development Planning Office, Forestry Department
90	Zhimiao	Yu	Section Chief	Environmental Protection Department
91	Fulin	Zhang	Chief of Conservation Division	Zhenbaodao NR
92	Hongjun	Zhang	Deputy Researcher	Agriculture Committee
93	Jie	Zhang	Researcher	Tourist Administration
94	Jingdong	Zhang	Staff of Conservation Division	Zhenbaodao NR
95	Na	Zhang	General Manager	Jinhewan Wetland Park
96	Qingfeng	Zhang	Director	Environment, Natural Resources, and Agriculture Division (EAAE), East Asia Department (EARD), Asian Development Bank
97	Xiguo	Zhang	Deputy Director-general	Zhenbaodao Nature Reserve Management Bureau
98	Xuemei	Zhang	Alternative Livelihoods Specialist	TTT
99	Xuewu	Zhang	Deputy director-general	Forestry Department
100	Yue	Zhao	Section Chief	Wokenhe Nature Reserve
101	Huaiyu	Zheng	Deputy Director-general	Heilongjiang Forestry Department
102	Zhigang	Zheng	Director General	Sanjiang Nature Reserve
103	Xueshan	Zhu	Director-general	Wuyiling Nature Reserve Management Bureau
104	Jihua	Zou	Director-general	Cirbin River Provincial Nature Reserve Management Bureau