

# CHINA PLASTIC WASTE REDUCTION PROJECT (SHAANXI) (P176989)

## Implementation Support Mission, March 19-27, 2024

### AIDE MEMOIRE

#### A. Introduction

1. The World Bank<sup>1</sup> carried out an implementation support mission for the China Plastic Waste Reduction Project (Shaanxi) (“the Project” thereafter) in Shaanxi Province between March 19 and 27, 2024. The objectives of the mission were to: (i) review overall project implementation status, (ii) carry out site visits to review the technical design and environment and social assessment of “Batch 2” activities, and (iii) discuss and agree on actions needed to address key issues to ensure timely and satisfactory implementation of the project activities.

2. The mission would like to express its gratitude for the support and collaboration received from Provincial Program Management Office (PPMO), Provincial Development and Reform Commissions (DRC), and Provincial Department of Finance (PDOF), as well as the relevant line agencies in Ankang, Hanzhong, and Weinan Municipalities in Shaanxi.

3. The main findings and recommendations discussed and agreed upon with provincial and local authorities during the mission are summarized in this Aide Memoire which has been endorsed by the WB management. Annex 1 presents the list of persons met during the mission and Annex 2 includes the mission agenda.

#### B. Summary of Main Issues

4. The Project Agreement was signed by the provincial government on July 20, 2023. But the project didn’t become effective until February 19, 2024, due to the delay in receiving the legal certificate from the Ministry of Foreign Affairs. To make up for the lost time of about six months, the PPMO and project counties/districts are advised to expedite the project implementation. To do so, the mission highlighted the following issues:

- ***Signing of on-lending agreements.*** Various on-lending agreements need to be signed between the Ministry of Finance (MoF) and the provincial government, as well as between the provincial government and each of the local governments of project counties and districts. Several sub-projects are almost ready to sign contracts, for which initial disbursement is needed. The mission urged the governments to ensure the on-lending agreements to be signed as soon as possible.
- ***Proposed changes in project activities.*** The mission was informed that the local governments have proposals for changes in some project investment activities, such as the number and

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<sup>1</sup> led by Mr. Jian Xie (Task Team Leader/ Senior Environmental Specialist) and Mr. Guangming Yan (Co-Task Team Leader/Senior Urban Development Specialist, participated remotely) and comprise Mr. Songling Yao (Senior Social Development Specialist), Mr. Yongli Wang (Senior Environmental Engineer, participated remotely), Ms. Yuan Wang (Senior Procurement Specialist, participated remotely), Ms. Fang Zhang (Senior Financial Management Specialist, participated remotely), Mr. Changrong Yan (Sr. Agricultural Plastic Waste Management Specialist/Consultant), Mr. Eddie Hum (Sr. Municipal Engineer/Consultant), Mr. Xueming Liu (Sr. Economist/Consultant), and Ms. Xiaonan Bai (Team Assistant, participated remotely).

location of transfer stations and recycling centers. For this to happen, the PPMO needs to provide details of and economic justification for the changes to the agreed implementation plan and Procurement Plan, as per the World Bank’s Procurement Regulations, referenced in the Loan Agreement. The changes in procurement plan must obtain the World Bank’s no objection prior to preparation for their bidding.

- **Preparation of Batch 2 activities.** Despite some changes proposed by local governments, the mission confirmed with the PPMO that at this stage all the remaining activities would be prepared under Batch 2 for the Bank review, including their engineering design and environmental and social assessment documents.
- **Land issues.** While the mission appreciated the progress made in land acquisition of some project sites, there are some transfer stations and waste processing centers for which land is not yet acquired, with provincial or local government approval still pending of the local land-use spatial plan. Meanwhile, the legacy land issues for the closure of two landfills, Majiagou and Yaotou, mentioned in the agreed Environmental and Social Commitment Plan (ESCP) still need to be resolved by the PMO and relevant local governments. Until these issues are resolved, the landfill closure investment cannot progress. Close attention to land use approval for other facility sites is also needed to enable the infrastructure construction moving forward.

### C. Project Data

Board Approval Date	March 23, 2023
Effectiveness	February 19, 2024
Loan Amount	USD 250 million
Total disbursed	0
% disbursed	0
Closing date	December 31, 2029

### D. Progress Review and Technical Issues by Component

5. **Speedy signing of on-lending agreements.** The mission was informed that PDOF and MOF have discussed the on-lending agreement and PDOF expects to sign the agreement as soon as its final version is available from MoF. PDOF also indicated that the designated account for the project will be one of existing bank accounts currently managed by PDOF. Regarding the on-lending agreements between the PDOF and the local financial bureaus (LFBs) of participating counties and districts, PDOF indicated that the drafts have been discussed with LFBs and can be signed after the MoF and PDOF sign their on-lending agreement. The mission hopes that the signings can be done as soon as possible as well as the initial disbursement.

6. **PPMO and PIU strengthening.** As already agreed in the last mission, PPMO will need to hire individual environmental management specialist, social development specialist, and SWM specialist as well as consulting firms for project management support, external environmental monitoring, and external social monitoring. The PPMO have provided their Terms of Reference (ToRs) and obtained no objection from the World Bank. The PPMO will carry out their procurement as soon as possible, as any delay in the hirings would cause a slowdown in the implementation of both batches. It was also agreed during last mission that PPMO will help the PIU of each project county/district hire an environmental and social (E&S) coordinator who will support local PIU and project implementing entities to prepare necessary E&S documents. As these

coordinators will be hired by PMO through WB loan, the mission expects the hiring process should start as soon as the completion of the first disbursement of the WB loan.

7. **Consulting services for technical assistance (TA).** Among TA activities, the first batch may include PPMO management information system, agricultural plastic waste reduction pilot (in two of seven project counties), provincial planning of integrated urban-rural SWM, cost-sharing mechanisms for integrated urban-rural SWM, agricultural plastic pollution residue monitoring, and provincial information management platform for SWM. The ToRs for the first two were drafted and reviewed by the Bank. The rest are under preparation.

## **Component 2A - Integrated Urban-Rural Waste Management**

8. **Proposals for changes in investment activities.** The Bank team again heard some proposals from local PIUs for changes in their project activities, especially the number and location of transfer stations and recycling facilities, during the mission. The mission understood the need of local governments for changes due to their evolving situation and demands and indicated that in principle the Bank is willing to accommodate the proposed changes. But the mission expected PPMO to consolidate and provide a good justification for proposed changes in writing as well as its request for updating the implementation plan and the procurement plan.

9. **Batch preparation of activities.** The project adopted the framework approach to prepare its activities in batches. At the project appraisal, the Bank team and PPMO agreed to group project activities into two batches. Despite potential change and possible preparation delay of some activities, the mission confirmed with PPMO that all remaining activities would continue to be prepared under the second batch for the time being. The mission expected local governments to speed up the on-going engineering design and preparation of E&S documents of all remaining activities under the second batch for the Bank's review by the end of August 2024.

10. **Integrated Urban-Rural SWM.** The mission reiterated the importance of the urban-rural integration principle to the planning and design of SWM systems in project counties and districts. Considering each county or district has their own unique situation of handling their rural waste collection and transportation, local PIUs have proposed different models. The most integrated model is where the county/district (such as Linwei District) plans to take the responsibility for collecting SW from village trash collection points to regional transfer stations and then to SW disposal facilities (namely waste incineration plants in most of counties or districts). The implementing agency can be the county sanitation center or commercially hired SWM service companies. However, there are counties planning to have towns or even villages take the responsibility for transporting SW from village collection points to township or regional transfer stations (such as Pucheng County which has built transfer stations in almost all the towns) and then county sanitation center being responsible for further transporting SW from transfer stations to SW disposal facilities. The mission acknowledged the different situations facing the project counties / districts and agreed with PPMO to pilot different models of SWM collection and transferring based on local situation. Financial arrangements and sustainability of the different models are the key to the success of the pilots. The PPMO is requested to review the progress of the pilots periodically, assess their performance in terms of cost-effectiveness, and propose necessary adjustment and improvement. The mission also emphasized that the piloting wouldn't cause delays in the overall project implementation.

11. **Pilot to promote waste separation and recycling in remote villages.** While the project encourages cross-town, cross-county/region waste collection and transportation to shared facilities

and reduction of transportation costs, there are remote and mountainous villages where cost to collect and transport all their SW to a transfer station or a disposal site is very high and infeasible. The mission has agreed with PPMO and PIUs to select a couple of remote villages to pilot waste separation at source and recycling and find feasible and cost-effective solutions to handle their SWM and minimize the amount of SW to be transported to a transfer station or a disposal facility. PPMO will start to prepare the ToRs for the pilot as soon as possible.

**12. *Siting and design of transfer stations and recycling facilities.*** Minimizing transportation and treatment costs is essential to the success of the project in a long run. PIUs are requested to further optimize the siting and design of proposed SW transfer stations according to the latest information and possible changes in location in order to reduce transit times and costs of solid wastes from respective drop-off points to transfer stations, and from transfer stations to final disposal facilities. This optimization should align with recommendations outlined in approved feasibility study reports.

### **Component 2B – Agricultural Plastic Film Waste Management Pilot**

**13.** Component 2B focuses on managing the pollution caused by agricultural plastic waste, including greenhouse film, plastic mulch film, and reflective film. Spanning seven counties and districts, this initiative has established local PMOs and PIUs dedicated to waste management and launched awareness campaigns on national standards, application techniques, and pollution prevention policies. Local government efforts are underway to develop county-level recycling and management schemes for plastic mulch film. Moreover, addressing agricultural film pollution demands concerted efforts, strategic planning, and collaboration across various stakeholders.

**14.** The mission held discussions with local technical staff from local Bureaus of Agriculture and Rural Affairs and Agricultural Technology Extension Centers and visited several enterprises. Discussion led to key conclusions and recommendations outlined below, with further details provided in **Annex 3**.

- ***Pilot Implementation.*** To better target agricultural plastic waste problems and find effective solutions for wider adoption, PPMO has proposed to first pilot the implementation of the subproject in Baishui and Pucheng counties only (two of seven project counties). The mission has endorsed the pilot approach and look forward to reviewing the progress during the next mission.
- ***Accelerating Consultation Services.*** Addressing data gaps and conducting comprehensive policy research are critical. The Shaanxi PPMO has advanced in preparing consultancy services for integrated implementation schemes and monitoring agricultural film residues. The TOR has been prepared and reviewed by the Bank expert. The mission expects timely implementation of these tasks as their results will be useful to guide the pilot.
- ***Performance-Based Incentives.*** Designing incentive mechanisms for phasing out low quality plastic films must consider the long-term impacts of plastic mulch film and economic circumstances of users. Incentives for recycling should aim at the performance results and be implemented by county government agencies with the policy and technical guidance of provincial government and PPMO and exit strategies for subsidies should be well developed and implemented to maximize the environmental impacts of the financial scheme of the project.

- **Coordinated Efforts.** Enhanced collaboration with national and local agricultural film projects is vital for learning good practices and optimizing resource utilization. Ledger establishment for plastic mulch and reflective films should align closely with the agricultural sector, leveraging existing data platforms to avoid duplication and inconsistencies.

15. **GHG Accounting and Economic Consideration.** GHG reduction contributes to global public goods and forms a significant component justifying a project's economic viability. While initial GHG accounting was done at the project's appraisal stage, it is imperative to revisit major assumptions, such as population growth, and incorporate changes in project interventions at the county level to accurately re-estimate GHG reduction. The World Bank task team will offer technical guidance to the project M&E team in collecting data for the revised GHG accounting and economic assessments, ensuring alignment with the overarching M&E framework.

## **E. Environment and Social Risk Management**

### ***Environmental***

16. Environmental performance overall is deemed satisfactory. Local PIUs have allocated staff for environmental management in accordance with the ESCP. Key priorities include:

- Submitting the first bi-annual implementation report to the World Bank by September 30, 2024,
- Completing environmental and social documents for the second batch of sub-projects,
- Preparing Environmental and Social Framework (ESF) documents for existing transfer stations, and
- Engaging social consultants/experts for internal and external environmental and social monitoring activities and report submissions.

### ***Social***

17. **Land Use Plan and Acquisition.** During the mission, visits were conducted to four transit stations, two landfills, and two villages in Nanzheng District and Hanbin District. In Hanbin District, the mission assessed the Hanbin urban landfill, Xincheng and Yinghu transfer stations, and Tianruiyuan Agricultural Company. Notably, land use approval was secured for the Xincheng transfer station, and no land compliance issues were identified at the landfill. Additionally, the use and collection of mulch at the company were found to be appropriate.

18. In Nanzheng District, the mission inspected the Nanzheng landfill, two transfer stations, and the garbage collection point in Shuanglong Village. Project activities entail the construction or enhancement of eight transfer stations and the closure of one landfill. Land acquisition for two upgraded transfer stations has been completed, while six new constructions await approval from the provincial government as part of the county land use plan. The landfill has obtained a land certificate, and efforts are ongoing to expedite county land use plan approval and design progression. To optimize the construction of the transfer station in Huangguan Village, increased consultation with villagers is recommended.

19. **Project Implementation Progress.** As indicated in the Project Data, although civil construction activities have not yet commenced since the project became effective in February 2024 and on-lending agreements are not signed yet, project implementation organizations and

management personnel are in place. Overall, social implementation progress is deemed satisfactory.

20. *Project Implementation Update.* The first batch of sub-projects remains at various stages of implementation, ranging from preliminary design to procurement bidding, with no civil construction activities initiated yet. The Environmental and Social Commitment Plan (ESCP) underscores the importance of ensuring land use compliance, providing adequate compensation for villagers, and establishing clear social evaluation and closure design measures before initiating bidding, especially for the closure of the two landfills at Majiagou and Yaotou in Batch 1. Despite the recent approval of the provincial land use plan in January 2024, delays in the county-level plan review persist, hindering land use approvals for numerous activities and delaying the social assessment for the second batch.

21. Local PIUs should utilize their consulting technical and/or E&S teams to document and present project progress using standardized technical terms and accurate data.

## **F. Fiduciary**

### **Procurement**

22. As of the current mission timeframe, no procurement activities have commenced. The Mission underscores adherence to the following requirements:

- The procurement plan for Batch 1 investment, as agreed upon by the World Bank during project negotiation on February 1, 2023, must be strictly adhered to. Any adjustments or changes necessitated should be in accordance with the Bank's technical, social, and environmental requirements, and must be approved by the Bank prior to modifying the agreed procurement plan.
- Acknowledging the need for adjustments based on the current project implementation status, it has been decided that any revised procurement plan for Batch 1 investment, along with a detailed rationale for the adjustments, must be submitted to the World Bank for review via email. Following the World Bank's review, the procurement plan should be formally submitted to the World Bank for approval through the designated platform, STEP, no later than April 15, 2024. For civil works contracts, such as landfill closure and the construction of solid waste transfer station, compliance with the World Bank's social and environmental requirements is mandatory before initiating procurement procedures.
- Specifically concerning the contract for the closure of the Linwei Majiagou landfill, a comprehensive timetable encompassing technical design, environmental and social readiness, preparation of procurement documents, and procurement scheduling must be formulated and presented to the World Bank for review and approval by April 15, 2024.
- The selection process for the project management consultant, external environmental monitoring agency, and external social monitoring agency should be initiated expeditiously to ensure their timely engagement and provision of services.
- These measures are essential to ensure compliance with regulatory standards, effective project management, and timely execution of procurement activities in alignment with the project's objectives.

### **Financial Management**

23. The Mission urged the PPMO to expedite the signing of On-lending Agreements with the Ministry of Finance (MoF); and completing the opening of the designated accounts in order to initiate disbursement. The first interim unaudited financial report (IFR) as of June 30, 2024 is supposed to be submitted to the Bank by August 30, 2024. The mission encouraged the PPMO to closely monitor and guide the local implementing agencies to set up the project accounting system according to requirements of Circular#13 and the project specific chart of account as well as the need of financial reporting as addressed in the financial management manual. The Bank team would provide technical support for capacity building if it's needed.

### G. Monitoring and Evaluation (M&E)

24. Effective project M&E is integral to the tasks of the PPMO and local PMOs, as it serves as a cornerstone for analyzing project impact and ultimately assessing the achievement of the PDO. The establishment of a dedicated Project M&E team is paramount and should be prioritized by the PPMO, and each county PMO should also assign a project staff. The World Bank task team stands ready to assist in reviewing Terms of Reference (TORs) for the M&E team as needed. Technical assistance from the World Bank task team will support the recruited M&E team in defining data parameters, identifying sources, determining collection frequency, and validating collected data.

### H. Agreed Actions

25. A list of key actions has been discussed and agreed with PPMO and shown in the table below. The next implementation support mission is tentatively scheduled in **October 2024**.

No	Actions	Responsible Unit	Due Date
1	Signing On-lending Agreements with the Ministry of Finance.	PPMO	As soon as possible
2	Completing opening of the designated accounts in order to initiate disbursement.	PPMO	As soon as possible
3	Initiating the selection process for the project management consultant, external environmental monitoring agency, and external social monitoring agency.	PPMO	As soon as possible
4	Recruiting an environmental specialist and a social development specialist to further strengthen its environmental and social management capacity	PPMO	As soon as possible
5	Recruiting an environmental and social (E&S) coordinator in each district/county-level PMO	PPMO and Local PMOs	As soon as possible
6	Moving forward with calling for bidding and commence construction of the first batch sub-projects	Local PMOs of the First Batch	As soon as possible
7	Updating the list of sub-projects across the two batches of implementation, along with their respective preparation statuses, and	PPMO and Local PMOs	June 30, 2024

	submit them to the World Bank task team		
8	Contracts for the closure of the Linwei Majiagou landfill presented to the World Bank for review and approval	PPMO & local PMOs	by May 30, 2024
	Preparing and submitting the first bi-annual implementation report to the World Bank	PPMO & local PMOs	September30, 2024
10	Completing environmental and social documents for the second batch sub-projects.	PPMO & local PMOs	August 31, 2024
11	Tracking and reporting the E&S actions of Majiagou and Yaotou landfill closure to ensure compliance with ESCP.	PPMO & local PMOs	September 30, 2024
12	Submitting revised procurement plan of batch 2 through STEP.	PPMO	June 30, 2024
13	Submitting the first consolidated IFR covering the period ended on June 30, 2024.	PPMO	August30, 2024
14	Submitting the first audit report for the period ended on December 31, 2024.	PPMO	June 30, 2025



### Annex 1. Persons met during the mission

序号	姓名 Name	单位及职务 Organization and position
<b>省级部门 Provincial government</b>		
1	郝艳红	省外贷办（项目办）副主任 PPMO Executive Deputy Director
2	张锋利	省外贷办（项目办）副主任 PPMO Deputy Director
3	段 镡	省外贷办（亚行中心）副主任 PPMO Deputy Director
4	李 鹏	省财政厅对外合作处二级调研员 PFB Deputy director
5	刘 江	省发改委外资处三级调研员 PDRO deputy director
6	史 凌	省外贷办三级调研员
7	陈 罡	省外贷办干部
8	崔静海	省外贷办干部
9	党 菲	省外贷办干部
10	李 鹏	省外贷办干部
11	张 艳	省外贷办干部
12	宋伯麒	省外贷办干部
<b>宝鸡市 Baoji Municipality</b>		
13	张蓉国	宝鸡市世行项目办副主任、市城管执法局副局长 Deputy Director of PMO and City Management Bureau
14	侯晓卫	宝鸡市世行项目办
15	闫 超	宝鸡市世行项目办
16	田桢荣	宝鸡市财政局主任科员
17	陈惠玲	金台区城管执法局副局长、项目办副主任
18	叶俊杰	金台区项目办招标采购专员
19	李应生	金台区项目办环境和社会管理专员
20	郭洪敏	渭滨区城管执法局副局长
21	张 涛	渭滨区垃圾管理服务中心副主任
22	李 洋	渭滨区世行贷款专班项目组成员

23	王晓峰	陈仓区副区长
24	杨新伟	陈仓区城管执法局副局长
25	张贤	陈仓区城管执法局科长
26	李丙孝	凤翔区项目办副主任
27	景新智	凤翔区环卫站站长
28	李鹏	凤翔区项目办干事
<b>咸阳市 Xianyang Municipality</b>		
29	屈波	泾阳县农业农村局副局长
30	张永峰	泾阳县农业农村局股长
31	李靖	泾阳县农业农村局股长
<b>渭南市 Weinan Municipality</b>		
32	冯歌兴	渭南市发改委党组成员、市秦岭办副主任
33	王洋	渭南市发改委财金科科长
34	杨红全	渭南市财政局对外合作科副科长
35	阮光民	临渭区副区长
36	朱锋	临渭区环卫中心党组书记、主任
37	李波	临渭区环卫中心副主任
38	李甲伟	临渭区发改局副局长
39	袁文卫	临渭区农业农村局农技中心副主任
40	李小宝	临渭区环卫中心市政办主任
41	刘向东	临渭区环卫中心
42	刘晶晶	临渭区环卫中心
43	吴永军	蒲城县政府副县长
44	吴刚	蒲城县发改局副局长
45	闫赵媛	蒲城县发改局财金股股长
46	窦全庆	蒲城县财政局债务办股长
47	李斌	蒲城县自然资源局副局长
48	雷飞	蒲城县农业农村局农技中心副书记
49	刘涛	蒲城县城管执法局党组副书记
50	杨剑	蒲城县党睦镇二级主任科员

51	李卓	蒲城县环境卫生管理中心主任
52	安歌	蒲城县环境卫生管理中心建设股股长
53	阮超	蒲城县环境卫生管理中心填埋场市容管理所所长
54	张满英	蒲城县环境卫生管理中心财务股股长
55	郑张明	澄城县诚辉建设投资开发有限公司董事长
56	王建民	澄城县诚辉建设投资开发有限公司项目管理员
57	李杰	澄城县诚辉建设投资开发有限公司项目招标采购员
58	金毅飞	澄城县诚辉建设投资开发有限公司项目联络员
59	雷兴锋	白水县城市管理执法局副局长
60	王振峰	白水县城市管理执法局项目办主任
61	侯向阳	白水县城市管理执法局项目办副主任
<b>汉中市 Hanzhong Municipality</b>		
62	李江波	汉中市政府投资项目代建服务中心副主任
63	李晓蓉	汉中市发改委金融科干部
64	邓记书	汉中市财政局财金科副科长
65	王继成	南郑区常务副区长
66	张鼎	南郑区金融办主任
67	朱汉文	南郑区城管局局长
68	李保汉	南郑区城管局副局长
69	阙彬	南郑区市政处主任
70	杨天春	南郑区项目办副主任
71	陈鹏	南郑区市政处环卫所所长
72	张笛	南郑区市政处干事
73	黎顺海	南郑区市政处干事
74	余方文	南郑区市政处干事
75	曹宏	南郑区市政处干事
76	蔡继伟	汉中市自然资源局南郑分局
77	岳新彦	汉中市生态环境局南郑分局副局长
78	陈思科	南郑区汉山街道办主任
79	王程	南郑区牟家坝镇镇长
80	陈俊	南郑区黄官镇镇长
81	张骁	南郑区梁山镇镇长

82	徐亚飞	南郑区圣水镇镇长
83	张永胜	南郑区新集镇镇长
84	姜浩	南郑区青树镇镇长
<b>安康市 Ankang Municipality</b>		
85	张立	安康市财政局债务科
86	陈祎	安康市重点项目储备统建中心副主任
87	刘玲	安康市发改委财金科科长
88	朱林	安康市发改委财金科副科长
89	晏清泉	汉滨区常务副区长
90	李杰伟	汉滨区委常委、副区长
91	白云飞	安康市城管局副局长、汉滨城管分局局长
92	赖家尚	汉滨区城管分局副局长
93	田彬	汉滨区发改局办公室主任
94	何睿	汉滨区发改局
95	王丹丹	汉滨区财政局农村发展财务中心副主任
96	杨帆	汉滨区城管分局办公室主任
97	韩荣铎	汉滨区城管分局垃圾处理收费中心副主任
98	孙江清	汉滨区城管分局垃圾处置中心
99	胡鹏	汉滨区城管分局干部
100	张洁	汉滨区城管分局计划财务股股长
101	董天强	汉滨区城管分局
102	曾宏	汉滨区住建局
103	汪欣	汉滨区两厂站
104	闵斌	汉滨区自然资源分局
105	杨涛	汉滨区自然资源分局
106	李亮亮	汉滨区自然资源分局
107	陈国强	汉滨区农业农村局副局长
108	陈辉强	汉滨区农业农村局生产管理股股长
109	何志伟	汉滨区生态环境分局
<b>庆华公司（可研） Design Institute for FS</b>		

110	刘倩	陕西省庆华工程咨询公司副总经理
111	毋云伟	陕西省庆华工程咨询公司工程师
112	王妙青	陕西省庆华工程咨询公司工程师
113	张磊	陕西省庆华工程咨询公司
<b>中圣公司（环评）EIA consultant</b>		
114	雷芬	中圣环境科技发展有限公司部长
115	孙蕊	中圣环境科技发展有限公司
116	李层	中圣环境科技发展有限公司
<b>科社公司（社评）SIA consultant</b>		
117	方海韵	陕西科社咨询公司首席专家
118	徐新明	陕西科社咨询公司调研员
119	杨凯	陕西科社咨询公司调研员
<b>中国城建院西北分院 Design Institute for engineering design</b>		
120	高瀚	中国城市建设研究院西北分院
121	刘畅	中国城市建设研究院西北分院
122	李建宏	中国城市建设研究院西北分院
123	李晓杰	中国城市建设研究院西北分院

## Annex 2. Mission Program Agenda

时间 Date and time		活动 Activities	参加单位和人员 Participating Units	备注 Note
3月18日 (周一) Monday		世行检查团一行从北京抵达安康市汉滨区。 Arrive in Hanbin District, Ankang Municipality	省发改委、省财政厅，项目环评、社评和设计单位等。	住汉滨
3月19日 (周二) Tuesday	9:00-12:00	与汉滨区政府座谈并现场考察。Meetings in Ankang	世行代表团，省级相关部门和咨询机构等。	住汉滨
	14:00-18:00	现场考察汉滨区项目。Site visit		
3月20日 (周三) Wednesday	8:30-12:00	继续在汉滨区现场考察。Site visit	同上	住南郑
	下午	从安康市汉滨区赴汉中市南郑区。Leaving for Hanzhong		
3月21日 (周四) Thursday	9:00-12:00	与南郑区政府座谈并现场考察。Meetings and site visit in Nancheng District	世行代表团，省级相关部门和咨询机构等。	住南郑
	14:00-18:00	现场考察南郑区项目。Site visit		
3月22日 (周五) Friday	8:30-12:00	继续在南郑区现场考察。Site visit	同上	
	下午	从汉中市南郑区返回西安市。Leaving for Xian		
3月23日 (周六) Saturday		Rest		
3月24日 (周日) Sunday	8:00-9:00	世行团从西安赴渭南市临渭区。Leaving for Linwei District	世行代表团，省级相关部门和咨询机构等。	住蒲城
	9:00-12:00	与临渭区政府座谈并现场考察。Meetings and site visit		

	13:00-17:00	现场考察临渭区项目。Site visit		
	17:00-18:30	从临渭区赴蒲城县。Leaving for Pucheng		
3月25日(周一) Monday	9:00-12:00	与蒲城县政府座谈并现场考察。Meetings and site visit in Pucheng County	同上	
	13:00-17:00	现场考察蒲城县项目。Site visit		
	17:00-19:00	从蒲城县返回西安。Return to Xi'an		
3月26日(周二) Tuesday	9:00-12:00	未现场考察的县区在西安进行汇报(宝鸡市本级、金台、渭滨、陈仓、凤翔、澄城、白水、泾阳)。Meeting with rest of counties and districts	世行代表团, 省级相关部门和咨询机构等。	西安钟楼亚朵S吴酒店四楼会议室
	下午	世行检查团准备备忘录。		
3月27日(周三) Wednesday	9:00-12:00	世行检查团总结会。Wrap-up	世行代表团, 省级相关部门和咨询机构等。	同上
	下午	世行代表团一行离陕。		

### Annex 3. Enhancing Agricultural Plastic Film Management in Shaanxi Province

1. Efficient management of agricultural plastic waste, including greenhouse film, plastic mulch film, and reflective film, is a crucial aspect of sustainable farming practices in Shaanxi Province. This proposed activity addresses this challenge across seven counties and districts.
2. To tackle this issue comprehensively, PMO and PIU have been established in each participating county and district. PMO and PIU have launched awareness campaigns to educate stakeholders on national standards regarding plastic mulch film usage, application techniques, and pertinent policies for pollution prevention and control. Moreover, they are actively formulating county-level recycling and management schemes specifically tailored to the local context.
3. The World Bank task team examined agricultural plastic film usage and its pollution control management in Hanbin District, Nanzheng District, Linwei District, and Pucheng County. Through fruitful discussions with local technical personnel from local Agriculture & Rural Affairs Bureaus, as well as Agricultural Technology Extension Centers, and visits to various enterprises, valuable insights were gleaned. Key findings and recommendations stemming from this implementing support mission include:

#### **Main Findings.**

4. *Usage and Disposal of Agricultural Plastic Films.* Agricultural plastic films, including greenhouse film, reflective film, and plastic mulch film, are widely used in the project area. Greenhouse film and reflective film generally meet national standard requirements, but there are issues with plastic mulch film compliance, such as subpar thickness and tensile strength. While over 90% of used greenhouse film is effectively recycled and reused, plastic mulch film and reflective film encounter challenges in recycling and safe disposal. There is inadequate collection of plastic mulch films, leading to abandonment in fields and at field edges, posing significant environmental problems. Effectively processing used plastic mulch film and reflective film remains a considerable challenge due to technical and economic difficulties.
5. *Unique Use of Reflective Film in Shaanxi Province.* Reflective film is extensively used in Shaanxi, particularly in some project-implementing counties, with an annual consumption of nearly 2,000 tons. It is primarily used for enhancing the coloration of apples, resulting in improved apple quality, increased commercial rate, and enhanced economic benefits. However, there are no established practices for the reuse or safe disposal of reflective film after use. Most areas dispose of it in ditches and at field edges without proper recycling or disposal methods.
6. *Emergence of Recycling Enterprises.* Enterprises involved in recycling and repurposing agricultural plastic films are emerging, albeit on a modest scale. Weinan Baiwang Company and Pucheng Wuyou are two high-yielding enterprises contributing to addressing local issues with greenhouse films and generating favorable economic returns. However, plastic mulch film is not being recycled at these enterprises due to thinness and high contamination rates, which result in excessive processing costs. Technical and economic difficulties hinder the treatment of recycled plastic film for re-granulation, posing challenges to effective recycling.

#### **Main Processes.**

7. *Preparation and Submission of Project Documents.* PMO? in Shaanxi Province has completed background documents and TORs for consulting service for the Shaanxi Integrated Agricultural



Film Implementation Scheme and is preparing for the Agricultural Film Residue Monitoring Task Document. The TOR has been submitted to and accepted by the World Bank, with the procurement of the consultant expected to conclude by July 2024.

8. ***Establishment of Leadership Working Groups and Publicity Campaigns.*** Seven counties and districts involved in the agricultural film sub-project have formed leadership working groups dedicated to waste agricultural plastic film disposal. Publicity campaigns regarding national standards for plastic mulch films, their application, and pollution control policies have been initiated. These regions are also developing county-level plastic mulch film recycling and management plans.
9. ***Implementation of Subsidy Program.*** Participating counties and districts have plan to utilize the World Bank loans for provision of temporary and guiding subsidies for the use and recycling processing of plastic mulch films. The initiative aims to promote the use of compliant and recyclable plastic mulch films and encourage their collection, transfer, and treatment. Consideration is given to designing an exit mechanism for the subsidy program, reflecting the improving economic status of users.
10. ***Procurement Model Development.*** In one participating county (Linwei), local government agencies have developed a feasible subsidy procurement method for plastic mulch film. The model involves government departments conducting competitive bids to identify qualified suppliers, issuance of special invoices, and inclusion of subsidy amounts in the payment list of the County Finance Bureau and farmers' payment system.

#### **Main Recommendations.**

11. ***Intensifying Research and Refine Measures.*** It is recommended that the PPMO conduct further research on plastic mulch film-related issues, including baseline data confirmation and volume estimation, as well as the measures related to waste management and recycling.
12. ***Implementing Integrated Approach.*** Adopt an integrated approach for plastic mulching management, encompassing the entire plastic mulch film production chain, focusing on product quality, sales, and collection, transportation, recycling, and disposal of used films.
13. ***Addressing Reflective Mulch Films. Local governments should also pay*** attention to the recycling and safe disposal of reflective mulch films, considering their unique properties and safety concerns during processing.
14. ***Finalizing Implementation Schemes.*** Finalize soon the implementation plan for pilot agricultural film projects in Pucheng and Baishui to bridge the gap toward full implementation readiness.
15. ***Enhancing Coordination and Utilization of Data Platforms.*** Coordinate with national and local agricultural film projects and management organizations to maximize resource efficiency. It should also aim to establish a ledger system for plastic mulch films and reflective films in project-implementing regions, collaborating closely with agricultural departments and utilizing existing data platforms to prevent redundancy and discrepancies.