E4564 V3 REV

Irrigation and Drainage Component

Under

Climate SMART Staple Crop Production

Environmental Codes of Practice

Entrusted by: PMO for Technology Education Department of the Ministry of Agriculture

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Table of Contents

1. General

1.1 Project Background

As the international community is attaching more and more importance to climatic variation, greenhouse gas emission reduction and grain safety, unprecedented attention is given to the study of the technology of carbon sequestration and GHG emission reduction of farmland soil. China's weather conditions, land resources and cropping systems are all obvious in regional characteristics, therefore, technology of carbon sequestration and GHG emission reduction have different requirements and effects in various regions and some management measures are difficult to popularize because they would reduce yield. Wheat, rice and corn are three main grain crops in China. Their total yield accounts for over 85% of China's grain yield. North China, Northeast China, East China and other major grain producing areas are very important in ensuring food safety with 63% grain crops planting area and 67% grain yield of the whole China. Meanwhile, major grain producing areas are facing with realistic needs for there are serious losses in organic carbon, urgencies in sequestrating carbon, overuse of nitrogenous fertilizer and huge potential in greenhouse gas energy conservation and emission reduction. Therefore, to promote energy conversation and carbon sequestration technology in major grain producing areas on the premise of ensuring grain yield, and to demonstrate and evaluate the effect of GHG emission reduction not only can enhance the fertility and productivity of the soil, slow down the greenhouse gas emission in the soil, but also is the strategic option to ensure sustainable development of China's agriculture.

This project conforms to the goal of the fifth operation plan of GEF (to overcome barriers in improving energy efficiency and conserving energy). Through promoting technologies of saving main input in agriculture, sequestrating carbon and increasing carbon sinks in agricultural soil, it will encourage the transformation of China's agriculture production model and realize the efficient reduction and use of main agricultural input, by which the emission of N_2O and other greenhouse gases in

agriculture will be reduced. Activities in this project aim to improve the GHG emission reduction, increase carbon sequestration and carbon sinks in the soil, and generalize the use of technologies for reducing emission and increasing carbon sinks. This project will complement the on-going policy of Energy Conservation and GHG Emission Reduction in Agriculture and Rural Areas of the Chinese government. It will coordinate well with organizations of central and local governments who are involved in the researches and development of agricultural energy-saving and carbon-sinks-increasing technologies and the policy designing of agricultural energy-saving and emission-reducing technologies. Besides, it will also coordinate will with technology research institutes such as Chinese Academy of Agricultural Sciences, China Agricultural University and National Agricultural Technology Extension Station.

1.2 Objective of This ECOP

The Objective of preparing this ECOP is to develop a set of detailed, technically feasible and practicable, financially viable environmental countermeasures to mitigate potential adverse impacts to be potentially brought about by the engineering; to make institutional arrangement among constructors, supervisors, environmental administrators to implement the mitigation measures during project construction and operation phases to eliminate or reduce the adverse environmental impact to the acceptable level. The specific objectives are to:

1. Define obligations of relevant departments in managing environment

Each project management, design units and EIA units should check and verify environmental protection targets in details, to put forward practical environmental prevention and mitigation measures in the light with environmental features in the project region and construction site, and are to ensure that the prevention and mitigation measures be incorporated into the project engineering designs and contracted responsibility of constructors and operators, to minimize the impact on the environment, to minimize the impact on the environment.

2. Be the operational directory for environmental management

The ECOP defines the environmental management system and each unit’s

responsibilities and roles in the environmental management system of the project. This ECOP will be provided to construction supervisors, as an important basis for its engineering design, while providing for construction units that act as guide of environmental management on the construction, which can effectively ensure its proposed environmental mitigation measures can be implemented smoothly.

1.3 Relevant Laws & Regulations and WB Safeguard Policies

1. *Environmental Protection Law of People's Republic of China*, Dec.26, 1989.
2. *Noise Pollution Prevention and Control Law of People's Republic of China*, Mar.1,1997
3. *Atmosphere Pollution Prevention and Control Law of People's Republic of China*, Revised in Sep.1,2009
4. *Water Pollution Prevention and Control Law of People's Republic of China*, Revised in Feb.28, 2008
5. *Solid Waste Pollution Prevention and Control Law of People's Republic of China*, Revised on Apr.1, 2005
6. *Regulation on the Implementation of the Land Administration Law of the Peoples Republic of China,* Aug. 28, 2004.
7. Agriculture Law of the People's Republic of China ,Mar.1,2003
8. *Law of the Peoples Republic of China on Protection of Cultural Relics,* Dec. 29,2007
9. Basic Farmland Protection Regulations, the State Council Order No. 257 ,1998
10. *Environmental Impact Assessment Law of People's Republic of China*, September 1, 2003.
11. Interim Measures for Public Participation for Environmental Impact Assessment [2006] No. 28;
12. Quality standard for surface water（GB3838-2002）;

13. Ambient Air Quality Standard (GB3095-2012);

14. Acoustic environmental quality standards（GB3096-2008）;

15. *Regulation on Environmental Protection Management of Construction Projects of the Peoples Republic of China,* 1998

16. *Water and soil conservation law of the people's Republic of China,1993*

17. Drinking Water Sanitary Standard（GB 5749-2006）;

18. *Urban Drinking Water Source Environmental Regulations of Anhui Province , July 28, 2001 ;*

19. *Basin Water Pollution Prevention Act of Huai River in Anhui Province , September 1993 ;*

20. *National Irrigation Water Quality Standards (GB5084-92);*

21. Drinking water sources Environmental Protection Plan in Henan Province 2008-2020

22. Urban centralized drinking water source protection Plan in Henan Province Dec. 20,2007 ;

23. *World Bank Safeguard Policies.*

24. *World Bank Safeguard Policies environmental assessment requirements of the business policy OP4.01*

25. *World Bank Group 's EHS " IFC's Environmental, Health and Safety Guidelines*

1.4Main Activities

The main activities in Huaiyuan County Anhui Province and Ye county Henan Province are summarized in Table 1-1. Geographic location of the Project activities are also shown in Figure 1-1 and Figure 1-2 attached in this ECOP.

Table 1-1 Main Works

Areas	Main construction works	Project county/city and town
Huaiyuan County ,Bengbu	1. Optimizing paddy irrigation and drainage system in zhuanqiao village(deepen and broaden which is	Wangfu Town and Lanqiao Town

City ,Anhui Province	based on the original), 2. Irrigation and drainage engineering	
Ye county, Pingdingshan City, Henan Province	Irrigation and drainage engineering	Longquan Town and Yeyi Town

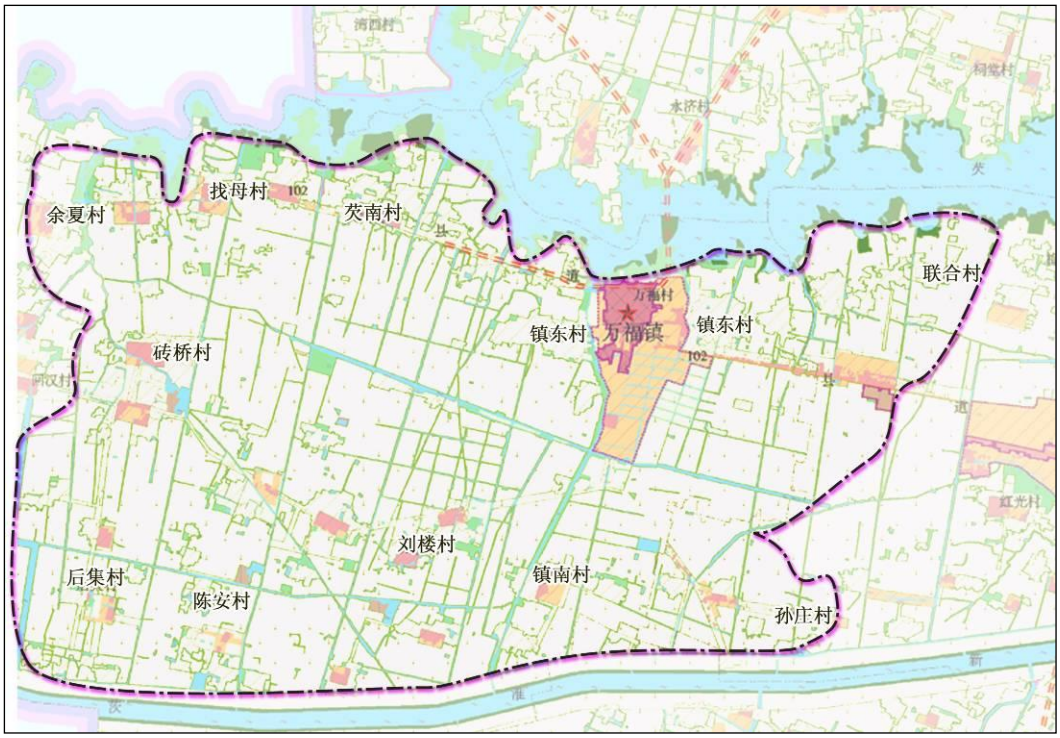

Figure1-1 Scope of the project area in Huaiyuan County Anhui Province

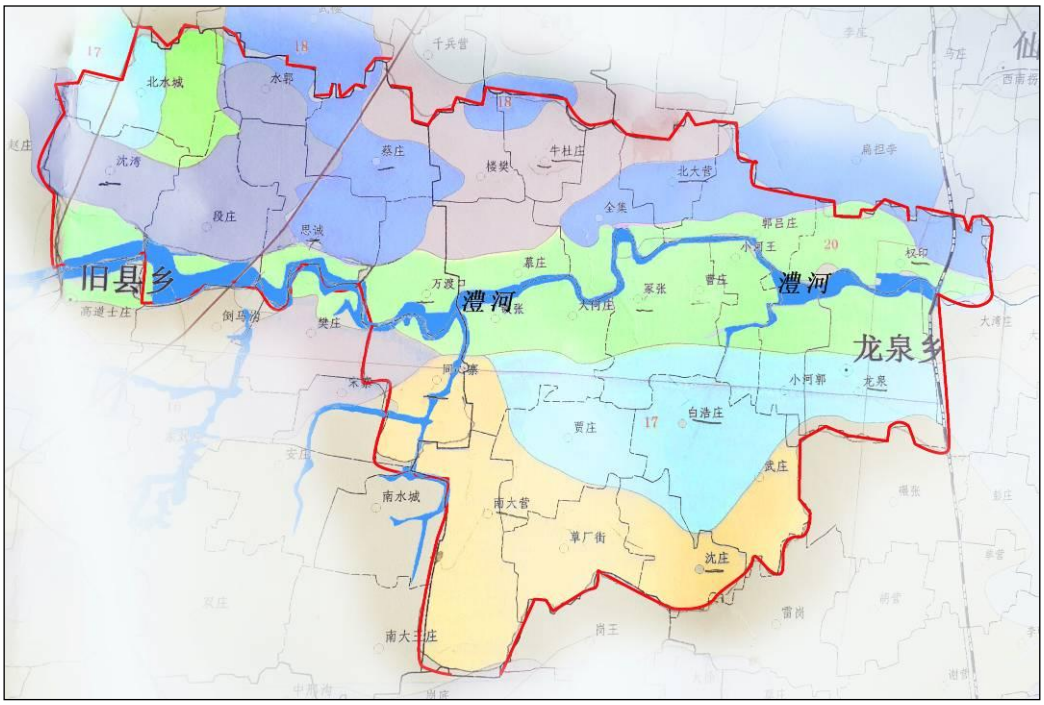

Figure1-2 Scope of the project area in Ye County Hennan Province

1.5Applicability

In viewing of the type of project activities, locations, sensitivities, scales and potential environmental impact, this project is categorized as “Category B” according to screening and categorization required by the World Bank safeguard policy on environmental assessment (OP 4.01). There is a need to establish environmental management mechanism, prevention and mitigation measures to minimize negative environmental impacts during construction and operation phases.

According to the World Bank's environmental assessment requirements, we should prepare<Environmental Codes of Practice>(ECOP), this ECOP will be applicable to the irrigation and drainage engineering in Huaiyuan County Anhui province and Ye County Henan province.

2. ECOP Management System

2.1 Project Implementation Arrangement

This project is financed by GEF funds with the World Bank as its executive agency, Technology Education Department of the Ministry of Agriculture being responsible for the specific implementation management and deputy director of this department as National Project Director (NPD). Under the leadership of NPD, Project Management Office (PMO) will be founded and a chief technical advisor will be appointed to provide support for PMO and NPD. To guarantee project management and implementation, organize and coordinate among various interest parities, project steering committee, national expert group, provincial expert group, project management offices at province and county levels, leading groups and project implementation units at county level as well as subcontractor organizations will be set up. Figure 2-1 is the organization framework of Climate Smart Agriculture Project by GEF.

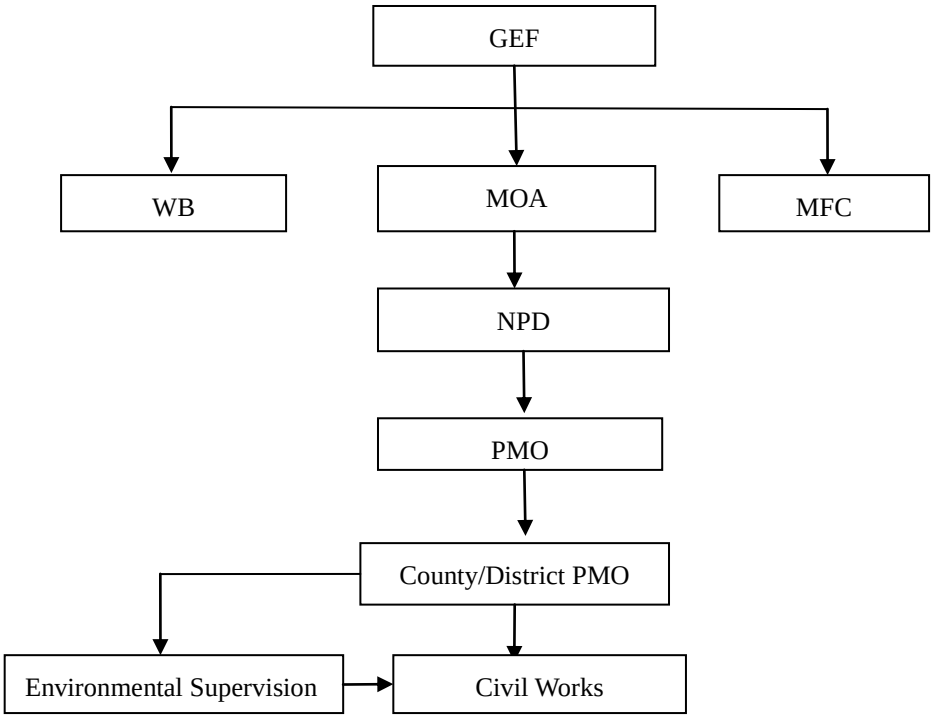

Figure 2-1 ECOP Management System

1. **Project steering committee：** The Ministry of Agriculture takes the lead in the foundation of this committee and acts as its director. The leading group for poverty alleviation and development in the state council, National Development and Reform Commission, Ministry of Finance, Ministry of Science and Technology and Ministry of Environmental Protection will each designate one middle-ranking representative as a member of the steering committee. The committee will hold a meeting in Beijing every year, listening to project progress reports, examining & ratifying the work plan of next year and deliberating on important adjustments during the project implementation process.
2. **National Project Director (NPD)：** On behalf of the Ministry of Agriculture, NPD is responsible for the implementation of the project. As a key responsible party in the project implementation process, NPD has to make sure that all the project investments promised by the government arrive on time, examine and approve personnel employment, project funding paid in advance and financial reports.
3. **Project Management Office (PMO)：** Under the leadership of NPD, PMO is in charge of daily administrative work during the project implementation process, responsible for supervising the implementation of project contraction activities and coordinating relevant parties of different interests. In the meanwhile, PMO will submit project reports according to the requirements of GEF and WB and receive audit from National Auditing Administration and assessment from GEF and WB. PMO will also be responsible for coordinating national supporting funds and ensuring the practicability of supporting projects. The director of PMO is also held by NPD. There are 4 deputy directors and other main members include monitoring officers, purchasing officers, financial and project assistants.
4. **PMOs at county level：** The project supports the foundation of leading groups by the local county governments in each project area. The deputy county magistrate in charge of agriculture acts as headman and the members of project management offices should include related departments such as Agriculture Department, Finance Department, Water Conservancy Bureau, Poverty Relief Office and Women's Federation etc. The main responsibility is to supervise and coordinate the project implementation in each county, provide necessary support and make sure the promised supporting funds, programs be implemented as planned. The

rural energy offices at county level are responsible for coordinating and putting the decisions made by leading groups into practice.

5. **Civil Works Contractors**：Organizing and implementing the environmental protection measures within the construction area, and checking, recording, archiving the implementation of environmental protection measures, accepting environmental supervision and levels of management, supervision and oversight bodies.
6. **Environmental Supervision**：Preparation of environmental supervision plan, regulations on supervision content, according to the requirements of environmental protection measures program implementation and effectiveness of the supervision and inspection of environmental protection measures and timely solutions to emerging environmental problems, and archiving.

World Bank acts as international executive organization of the project while WB (China Office)is responsible for supervising the project implementation, examining and ratifying annual plan and budget of the project, allocating funds to project offices according to needs, providing the project offices with support for recruiting international experts and organizing international communication activities, organizing assessment on the project and submitting reports according to the requirements of GEF.

2.2 Project ECOP Management System

To meet the requirement of WB environmental safeguard policies and to execute this ECOP, an environmental management organizational structure is proposed to be responsible to environmental management and supervision. It is proposed that PMO of Anhui province and the County PMO and their technical consultants, The CS as ES will act as external monitoring & regulatory agencies.

It is also proposed that the PPMO and County/District PMOs should designate staff to be responsible for environmental management and to establish an environmental management system shown in Table 2-1.

Table 2-1 Agencies in ECOP Management System

Nature of agency	Name of Agency	Tasks of the agency
Management agency	PMO	Be responsible for overall project coordination and management
	PPMO and County PMO	To implement and manage their respective project activities
Supervision agency	WB	To supervise and check the implementation of ECOP
	County EPBs	Govt. agencies responsible for environmental administration and approval of EIAs
Implementation bodies	Constructors (contractors)	Implementation bodies, responsible for carrying out mitigation measures proposed in ECOP
Consulting service agency	Project Environmental Experts	Be entrusted by environmental administration agencies to conduct review, consultation and technical support to environmental issues related to the project
	Construction Supervisors, concurrently be the Environmental Supervisors	The channel that receive and issue formal letters/documents between supervision engineer (SE) and constructors/contractors,
	EA institute	To conduct independent EIAs to the project activities, provide technical support to the design issues related to environmental protection, prepare ECOP
	Design Institutes	To prepare feasibility studies, preliminary designs, construction drawings, bid documents for the project

2.3 Main Responsibly of Agencies in ECOP Management System

In the ECOP management system, there are project management institutions, supervisory authority, implementing agencies and consulting service agencies .These agencies will constitute a comprehensive environmental management system. But they have different jobs and responsibility.

Project carried out under the organization of PMO and County PMOs. EA institute and design Institutes accept the commission from MOA and WB's PMO to provide advisory services，ES must supervise the civil works contractor for the construction of environmental protection measures. WB environmental experts, relevant departments must supervise the project according to the law to ensure the construction of the project in line with the relevant provisions of China and the World Bank's work program. The main responsibilities of these agencies are shown in Table 2-2.

Table 2-2 Main Responsibilities of Environmental Management Agencies

Agencies	phases	Main environmental responsibility
PMO	preparation	Be responsible for the project plan, design ensure to comply with national and WB procedures/policies on environmental protection
	construction	Coordination, supervision, overall monitoring & reporting, find solutions to the key project issues
County/District PMOs	preparation	① Be responsible for issues related environmental management during project design and preparation, ② Raise fund for environmental protection actions ③ Liaison and Coordinate with PPMO in implementing ECOP
	construction	Designate staff responsible for environment, ensure the implementation of ECOP, monitoring and

Agencies	phases	Main environmental responsibility
		reporting the implementation of ECOP. Promptly coordinate contractors and ES to take environmental management actions, accept and deal with environmental complaints if any.
Design Institute	preparation	① Ensure that the design of works that minimize environmental adverse impact; ② Incorporate various environmental protection measures proposed in FSR, preliminary design into their technical specifications and the project cost estimation.
EA Institute	preparation	① Preparation of EIAs; ② Preparation of ECOP
County EBPs	preparation	Govt. agencies responsible for environmental administration and approval of EIAs
CS	Construction and operation	External regulatory agencies, oversee the implementation of environmental supervision and management.
WB	construction	Field project supervision mission twice a year to supervise the project implementation progress, the implementation of project legal documents and the implementation of EMP
Constructors /Contractors	construction	Before construction, verify the site environment against respective EIA Report, ECOP implementation, protect environmental quality
ES（CS be ES concurrently）	construction	① Conduct weekly site environmental inspection and keep inspection checklist for filing ② When breach of regulation or nonconformity are

Agencies	phases	Main environmental responsibility
		inspected, issue notice sheet for correction actions to be taken by contractor and then supervise ,

2.4 Environmental Management Staffs and Their Duties

To perform better responsibility, it is proposed that the relevant agencies designate their staff responsible for environmental management as shown in Table 2-3.

Table 2-3 Staffing for Environmental management

Agencies for environmental management	Environmental staff	Staff duties

Agencies for environmental management	Environmental staff	Staff duties
PMO	1 staff in charge of environmental management, can be main director concurrently 1 project environmental manager : should have relevant professional title of senior environmental studies	① Ensure the project planning, design and environmental protection project meet the World Bank and domestic requirements in the environmental assessment process; ② Establishing and coordinating between various departments; ③ Inspecting and guidancing the implementation of environmental protection measures
PPMO and County/District PMOs	1 staff in charge of environmental management, can be director/deputy director concurrently; 1 environmental	①Preparation and implementation of environmental plans and annual plans;②Supervise, inspect and acceptance the implementation of environmental protection measures ; coordinate and implement environmental management issues ;③ Supervise environmental protection measures from ECOP to be implemented;④Responsible for recording, sorting the complaint, reporting to the Head, and address public complaints.

Agencies for environmental management	Environmental staff	Staff duties
	specialist	
contractors	1 environmental management coordinator	① implement mitigation measures proposed in ECOP during construction; checking, recording and archiving the implementation of environmental protection measures, accept the supervision from ES and others. ② promptly report to staff in charge of environmental management of County/District PMO when environmental emergency occurs
ES	1 ES, can be CS concurrently	① conduct weekly environmental inspection, keep site inspection checklist for filing ② When breach of regulation or nonconformity are inspected, issue notice sheet for correction actions to be taken by contractor and then supervise ,

3. General Requirement of ECOP

In the project implementation phase, contractors will play key role in environmental management, pollution control, mitigation measures at the construction sites. To implement ECOP, this chapter sets out the general requirements that are applicable to the main agencies related to construction environmental management. Contractors will be required to implement various environmental protection measures under the coordination of county towns and under external supervision and management.

3.1 Environmental Protection Measures to be Incorporated into Design Drawings and Bidding Documents

In the project implementation phase, construction works will be procured and implemented in accordance with the WB procurement guideline.

Under the coordination, guidance and supervision of the WB Loan Project Management Office, government organizations of Huaiyuan County which participate in the project should require the documents-bidding agencies and drawings-designing unit to implement the mitigation measures again the potential adverse environmental impacts of the environment practices to the technical specifications of the documents and the various stages of construction design. In the bidding document, the bidders will be required to promise to follow environmental management requirement that would be included into contracts for land construction and contract:

1. The construction design unit should propose mitigation measures during the various stages of the construction design for the potential adverse environmental impacts, in the stage of studying feasibility, should analysis and evaluate the environmental impact and work out the environmental practice; in the preliminary design stage, should implement the environmental protection measures proposed in the environmental impact assessment and environmental practice; in the stage of design construction should make some engineering design of environmental protection according to the audited views of the preliminary design;

2. Each land construction project constructor should designate 1 to 2 site environmental engineers to be responsible for the implementation of environmental protection/mitigation measures to ensure that its or its sub-contractor's (if any) construction activities are compliance with the requirements of the practice and all necessary environmental protection/mitigation measures are well taken;

3. During construction, contractors must communicate and consult with local people in project area and set up a bulletin board at the entrance to each construction site to keep them informed of the specific activities and during of construction. The contractor should also provide contacts and telephone number to receive public's inquiring, comments and suggestion;

4. Contractors should actively cooperate with ESs Commissioned by the owners during the construction;

5. Before the construction commencement order to be issued by ES, contractor should prepare its "site EMP" and incorporate it into its construction scheme;

6. Contractor should strictly follow regulations on safety and honorable construction;

7. Contractors and construction supervision engineer are required to be trained on environmental protection and management before construction;

8. If environmental accident occurs due to nonconformity with mitigation measures, ES and EMC should take timely remedial measures and immediately notify the government's project organization of the city or town, project organization should supervise and assist the contractors to take remedial measures, the contractors must implement the measures to be recorded, and report to the ES and the project organization of the town. Meanwhile, reporting to the located EPA for on-site guidance and inspection in 24 hours.

9. The contractor will retain a proportion (around 3%) of contract value as deposit for the fulfillment of environmental protection assignment.

3.2 Environmental Readiness before Construction

After the bids are awarded and before improving irrigation and drainage commencement, the County PMOs should provide the ECOP to contractors.

Contractors should conduct field environmental investigation to verify EIA results and indentify environmental limit factors and develop the “site EMP as required in the contract. In accordance with the contract to the environmental management requirements, including is shown in annex 1 of this ECOP. In addition if new environmental sensitive issues are identified, corresponding mitigation measures should also be proposed and included in contractors site EMP. No construction should be commenced until the approval of ES on site EMP.

3.3 Environmental Management on Construction Sites

During the construction of irrigation and drainage improvement works, the contractor should be supervised by the ES agency which is commissioned by the organization of Huaiyuan County. The contractor should implement the environmental protection measures according to the requirements of the contract and the ECOP and EIA table licensed by ES. The implement of environmental protection measures of the contractor should be directly supervised by the ES agency, the located administrative department of environmental protection, environmental monitoring agencies and related public.

Throughout the construction, the contractor shall actively cooperate with the ES agencies and fulfill their duties with ES agency, the responsibilities of ES agencies are list in the 2.3 the responsibilities of EMS in detail.

Construction units should work closely with local government departments and other departments to ensure compliance with the requirements of Chinese policies and regulations, specific environmental protection measures detailed in Chapter 4 to 13.

During construction, contractors should cooperate closely with local relevant agencies to ensure the compliance with government policies and regulations. Contractors should disclose sufficient information to people to be affected, especially those information on construction activities potentially affecting public interests and securities, affecting sensitive zones, temporary stockpile, and so on. Local EBPs may selectively examine environmental behaviors of contractors. Local EPBs may receive and review the site “Environmental Supervision Report” from the project

County/District PMO and administrate any environmental issue raised from "Environmental Supervision Report" and take responsive measures if abnormal environmental accident occurs.

Contractors should place posters, including contractor's name, its EMC name, contact phone number(s), possible environmental impacts and their mitigation measures, estimated duration of construction impact, easily visible by public and local residents. Contractors should offer transparent approaches for public to participate, such as hot lines, website, forum etc. to receive public consultation, suggestions and complaints. Prompt investigation or reaction to public arguments should be made by contractors.

3.4 Corrective Measures for not Meeting the Requirements of Environmental Protection Practice

Contractors and their subcontractors (if any) must comply with the requirements of environmental protection practice, if they do not do this and lead to pollution accidents:

1. The contractor should immediately take measures, start the environment pollution emergency plans, eliminate the pollution sources and handle the occurred environmental pollution.
2. The contractor should immediately notify the ES agencies and project management agencies, the project management agencies should help and guide the construction unit to take remedial measures to reduce or eliminate environment impacts and report to the located EPA(or the county's environmental monitoring unit) for on-site inspection and guidance to minimize the impact.
3. The contractor should record the implement of the control measures of the pollution, propose corrective measures and submit to ES and project organization agencies for filing and then the project organization will inform the implement of the remedial measures to the PMO.
4. The contractor should deeply analysis the causes of the environmental pollution, develop preventive measures and improve the construction to prevent similar

incidents, the measures must be approved by ES and project organization agencies, for the record.

Project organization agency should make some processing and punishment to the contractors according the nature of the pollution incident, the scope and extent of the impact and implement of the corrective measures .Then report the situation to the county's EPA.

4. Environmental Rules of Preparation of Construction Sites

4.1 Areas of Construction Sites

Areas of Construction Sites include major construction areas, temporary roads and relevant borrow pits.

1. Major Construction Areas: including reform on former irrigation and drainage system, which deepens the canals to 20-30cm and broadens to 30-40cm in zhuanqiao village, optimizing irrigation and drainage main system on the basis of the original in Huaiyuan County, Anhui Province; optimizing irrigation and drainage system in Ye County, Hennan Province and other areas which put all kinds of machinery, prefabricated field, production material .
2. Temporary roads：occupying temporary roads to facilitate the construction
3. Borrow pits：including temporary dumps for topsoil、debris field and so on.

The engineering is on the basis of the original, so there is no new permanent occupation.

Temporarily occupied lands will bring such social and environmental effects as follows:

1. Temporarily modify the form of land use.
2. Construction will damage plants, disturb soil and aggravate water and soil loss.
3. Construction may bring few effects on agriculture and decrease incomes of farmers.

4.2 Select Construction Sites

To save land resource and prevent the side effect of unnecessary land occupation, such environmentally friendly measures are needed during the preparation of construction sites before constructing:

The construction that flats soil to save water won't occupy lands permanently.

Principles of temporary land occupation:

1. Give priority to wastelands, abandoned land, higher lands and other inferior lands

instead of farmland, forest lands canals.

2. Temporary roads of construction should take advantage of current roads, being away from environmentally sensitive sites.

4.3 Environment Protection Measures

1. Construction period should avoid rainy season to alleviate water and soil loss.

2. The temporary occupied lands should avoid the consequence on the lives of nearby residents.

3. The temporary occupied lands should be restored after construction. Reclamation can erase the effect on ecosystem.

5. Management of Ambient Air Quality

5.1 Analysis on Impact on Ambient Air Quality

Fly dust and tail gases emitted from vehicles may be the main elements to impact ambient air quality during construction.

5.1.1 Fly dust from Construction

Fly dust may be generated from road, stockpiles, materials mixer and civil works site, cleanness and moisture of road surface.

Fly dust from roads is to be originated from the driving vehicles carrying construction materials. Many factors contribute to fly dust, including driving speed of vehicles, wind speed, the wind speed，wind power would impact transmission distance of fly dust. Loose road surface, such as construction on-going un-compacted road surface will easily generate fly dust if vehicles pass through.

Materials stockpiles, depending on their types, wind speed, may generate fly dust. The smaller specific gravity and smaller particulate material will easily be disturbed and generate fly dust. Fly dust from stockpiles including wind-born dust, fly dust during from materials loading, unloading and secondary fly dust from roads coursed by driving cars, etc. fly dust will impact on ambient air quality.

Mixing materials will generate certain fly dust, one of the main dust pollution sources in during construction. Normally during construction, road-mix or station-mix methods are used. Road mix method is will be more difficult to close the site due to its easy mobility, and therefore will generate larger scope of pollution and lasting longer. While station-mix method will be easily take closure measures due to its fixed location. It is recommended to apply station-mix method which is relatively easy to take closure management measure.

In windy days with no control measures, excavation, backfilling will generate fly dust pollution. It is reported that earthwork operation at wind speed of 3m/s, TSP concentration at 100 m away from the source can be as high 20mg/m^3 or more. Fly dust from earthwork loading and unloading will also cause larger scope of impact.

Fly dust is the main environmental problem during engineering, The largest fly dust time is in the earthmoving phase, especially around the construction site and some downwind areas.

5.1.2 Tail Gases from vehicles and Equipments

Another potential source that impact ambient air quality would be tail gases from vehicles and mechanical equipments during construction. Main pollutants will be CO, CO_2, NO_2, and hydrocarbons. Since the duration of irrigation and drainage facilities construction will be shorter, the tail gases are to be emitted intermittently and in smaller volume, their impact on ambient air quality will be rather minimal.

5.2 Mitigation Measures to Manage Air Environment

In order to minimize the impact of various mechanical equipments on ambient air, mitigation measures to different sources are to be strengthened.

5.2.1. Fly Dust

The closer the construction site, the greater fly dust will be, most of the fly dust can be controlled within 150m, dust pollution is mainly within the range of 200m of production point.

1. Pioneer roads to make use of the existing road and be watered periodically to reduce fly dust;
2. Fine particulate materials are to be stored in closed containers or covered before stockpiling, and be watered if materials' property is tolerant to effectively restrain fly dust.
3. When passing through environmental sensitive point, the construction activities should be fenced;
4. Management of haulage vehicle should be strengthened. Vehicles carry dusty materials should be covered with tarpaulins;
5. The dusty working areas should be sheltered and be watered;
6. Temporary earthworks from construction site should be stockpiled and covered. Haulage vehicles should not be overloaded to avoid materials tossing;

7. The dusty working areas should be sheltered and be watered;
8. Materials and casting/shuttering should be stockpiled tidy and stable. Construction sites should be kept clean and promptly sprayed with water;
9. Incinerating of wastes is prohibited;
10. Consideration should be given to the predominant wind directions and environmental protection targets around the construction site when locating fine particulate materials stockpiles, which should be 300 m at leeward of the environmental protection targets.

Construction, material handling, loading and unloading are staged operations, the impact of dust on the surrounding atmosphere also come to an end with the end of construction.

5.2.2 Tail Gases from Vehicles

1. Mechanical equipments and vehicles in good operation status should be selected for project construction;
2. Fuel-powered equipments and vehicles must be operated under normal condition to ensure their emission comply with discharging standards.
3. Rational use of equipments with strengthened maintenance and repairment of equipments

6. Management on Acoustic Environment

6.1 Analysis on Impact on Acoustic Environment

Noises during construction can be classified as noise from mechanical equipment, noise from construction activity, and noise from vehicles. Noise from mechanical equipment are point noise sources; noise from construction activity is to be generated from scat, slash of loading and unloading and yo-heave-ho, etc , which are momentary noise; Noise from vehicles are traffic noise.

6.2 Mitigation Measures to Manage Acoustic Environmental Quality

During construction noises from different sources may course different impact on acoustic environment. Mitigation measures are to be taken and strengthened to minimize the impact.

1. Quite and advanced equipments should be selected as much as possible;
2. Construction working hours are to be 8:00~20:00.
3. Noise from haulage vehicles may impact to environmental sensitive points. Therefore, contractors should improve its worker' environmental awareness, get to know folk-custom of local people, arrange appropriate haulage time. When passing through local residential quarters and environmental sensitive point, drives should reduce the driving speed and stop whistling to prevent and reduce noise impact.
4. All equipments should be effectively maintained periodically to keep them in goon working conditions for the purpose of extended operation life and reduced noise.
5. The requirements in the management of construction, machinery and vehicle operators, procedures and others must be strictly.

7. Management on Surface Water Quality

7.1 Analysis on Impacts on Surface Water Quality

Wastewater during construction includes construction wastewater and domestic wastewater. Construction wastewater may be generated from vehicle washing, sands & stone washing. The volume of such wastewater will be minimal, but contains some oils and silt. If they are to be discharged without pre-treatment, they will course pollution impact on soil, surface, ground water, particularly the greater impact on surface water during storm season.

The time that build irrigation system, waterproof system and channel repairing should avoid rainy season and irrigation season to protect agricultural production and water system.

7.2 Mitigation Measures to Manage Surface Water Quality

1. Wastewater from vehicle washing, site cleansing, building materials cleansing, concrete curing, sands & stone washing should be collected, directed to a sedimentation trap after dilution. The treated effluent should be fully recycled for various cleansings at the site;
2. Management on construction site should be strengthened, soil conservancy measures should be well taken at stockpile site to avoid impact of erosion from stockpiles on environment.
3. Strengthened education to construction workers on environmental protection awareness to prevent them from littering and illegal discharging of wastewater.

All in all, containment water from this construction only produce at the construction time. Compare with others, the time is brief. We can control the containment to the surrounding environment with the management.

8. Management on Solid Wastes

8.1 Analysis on Impact of Solid Wastes

Sources of solid waste during construction come from construction debris, which are excavated soil, broken bricks and other materials. If construction debris is not properly managed during construction, on the drying and windy conditions, it will easily generate fly dust.

8.2 Mitigation Measures to Manage Solid Wastes

Following the relevant laws & regulation, construction debris and domestic solid wastes mush be properly collected and disposed of.

1. Construction debris, together with other components, should be comprehensively utilized. Surplus of them should be stockpiled and, based on the construction schedule, transferred to the town landfill sites for final disposal;
2. Closed containers should be used to transfer construction debris. Construction debris should be sorted according to relevant simulations and transferred and disposed of promptly;
3. Before transferring, construction debris should be sprayed with water;
4. Excavated soil during irrigation engineering：a part of the earth including large percent of the organic matter can be used to flatten somewhere .The other part can be used to flatten both side of the channel. It also can be used to the desert area which is near the project area to planting trees;
5. The excavated soil which can not be used should be put into proper land. the Land should be flatten and re-cultivate when the project is over;
6. Temporary facilities should be removed in time when the project is finished.

9. Management on Ecological Conservation and Soil Conservation

9.1 Analysis of Impacts on Eco-Environment

The project mainly locates at the flatland. It may affect the environment such as water and soil loss. But working time is short and the area is decentralized. If we make a good management, the damage can be avoided.

1. Some environmental effect such as roads and construct can not be avoided. It may change the structure and the nature of the soil and makes the recultivation more difficult and causes water and soil loss.
2. The project will not addle permanent land, just have some temporary land using. When the project ends, the land will be what it used to be. The loss of the organism will be small.
3. Noise from mechanical equipment and workers activities may be one of the factors impacting wildlife. Mechanical equipment, such as haulage vehicles, may generate noise. Thought such noise is intermittent, there are relatively concentrated. According the field survey, the project region has no large-sized wild animals expect small-sized birds and rats.

9.2 Mitigation Measures to Conserve Ecological Resources

Some measure should be taken to prevent the water and soil loss ,this measure should be consider with the detail of the project. Including plant measure, temporary measure and prevent measure.

1. Rationale optimization of the construction site layout to reduce the scope of construction activities and reduce the extents of site vegetation destruction;
2. Construction materials to be purchased outside, such as stone, sands, cement etc. should occupy land as less as possible to minimize vegetation destruction; when the works are completed, the site should be cleaned promptly and recovered with vegetation as much as possible;
3. At the pre-conditions of construction quality ensurence, contractor should keep its

construction duration as shorter as possible to minimize the scope of construction disturbance;

4. The organization has to educate the workers to avoiding the damaging to the crops to reduce economic losses.

10. Safety and Health during Construction

10.1 Analysis of Safety and Health during Construction

Contractors and regulatory agencies have responsibility to take every measure to ensure safety of workers and structures around the construction sites and to prevent them from accidental damages. Contractors with capacity of safeguard their workers occupational health and safety should be selected. Provisions on risk management should be included in the bid document and contract. Management safety, health under irrigation and drainage facility covers design and operation of general facilities, communication, training, and supervision risk to peoples.

10.2 Safety and Health Measures during Construction

Contractors should have responsibility to obey by national and local regulation and requirement on safety, to avoid accidental event, and to ensure their workers' safe and health.

1. Contractors should ensure the provision of up to the mustard first aids. Tools for first aids should be provided.
2. Training on occupational health and safety to the new construction workers should be provided to introduce to them the basic working rules, personnel protection rules, and ways to prevent themselves or others from being hurts;
3. Contractors should furnish their workers with personnel protective equipment.;
4. The construction site should be equipped with sunstroke supplies, reasonable arrangements for rest time, when high-temperature operation；
5. Procedures and systems for recording and reporting occupational accident, diseases, risks should be established by contractors.

11. Public Participation

Public participation is two-way exchange between the units about project construction, project evaluation and the residents in the place where the construction project is located. We make a public inquiry in the area around the project so that the project can be fully known by the public to find out the public proposal and requirements about the environmental protection work of the project construction. Since public participation is conducive to the project to maximize environmental and economic benefits, help the public learn more about the project content. Therefore ,we can make the planning and design of the project further more completed and reasonable through solving some focused problem of public concern, so that construction projects can minimize the impact on the local environment and get more understanding and support from the local population Meanwhile, the implementation of public participation in the process of the environmental impact assessment can improve the effectiveness of the evaluation, raise public awareness of environmental protection, promote the improvement of the environmental impact assessment system, improve environmental quality and can ensure the implementation of the sustainable development strategies.

Public participation is an indispensable part in environmental assessment. In the project construction, we should take the views, suggestions and requests of the groups, communities and local non-governmental public organization (NGO) that are planning to establish projects into full consideration.

11.1 General Requirement to Public Participation

General requirements to public participation include disclosure of environmental information and call for public's opinions. Construction organization or mandated EIA institute, environmental administration should disclose relevant EIA results to public, in compliance with relevant binding regulation and legislation, applying easy and simple means of information disclosure. The information can be released on local media, giving out free leaflets and other easy access for public to access to the

information.

Construction organization or mandated EIA institutes should adopt means of public consultation, forum, workshop and public hearing following release of brief report of EIA on the project to further consult public opinions. Public could feedback in written by letter, fax, email or other stated means to project owner, mandated EIA institutes, or environmental administrations that is responsible for review of EIA report, after receiving released information on the project. The original documents of public's feedback should be filed by those three parties for record and post review.

Principles of information disclosure should be timely, appreciative to affected individuals, groups and organization. In accordance with environmental policies of the World Bank, two public consultations should be delivered.

11.2 Public Participation and Investigation Requirements

After the project site area determined, some forms of public participation like field investigation, farmers visit, seminar, publicity online and notices post should be carried out, as detailed in the annex of public participation. Adjust the project site and environmental protection measures according to the public feedback to meet the wishes of public nearby.

12. Cultural Heritage

Based on the field survey conducted by relevant agencies, there are no cultural relics in Huaiyuan County and Ye county project areas. Cultural relics involved in the project are the possible during construction.

During construction, the construction units should implement the heritage conservation measures seriously, before the beginning, public awareness and education about a heritage of knowledge for construction workers should be held. Cultural relics are owned by the State, any unit or individual is allowed to steal private, otherwise it will violate the law.

However, if there are any chance found or suspected to be cultural relics, contractors should follow requirement stipulated in *Law of the People's Republic of China on the Protection of Cultural Relics*to protect the site , reporting to local Cultural Relics Bureau for identification and addressing immediately. No construction works could be resumed until the site is treated with by and approval of cultural relic bureau. Procedures to report cultural heritage are shown in Figure 12-1.

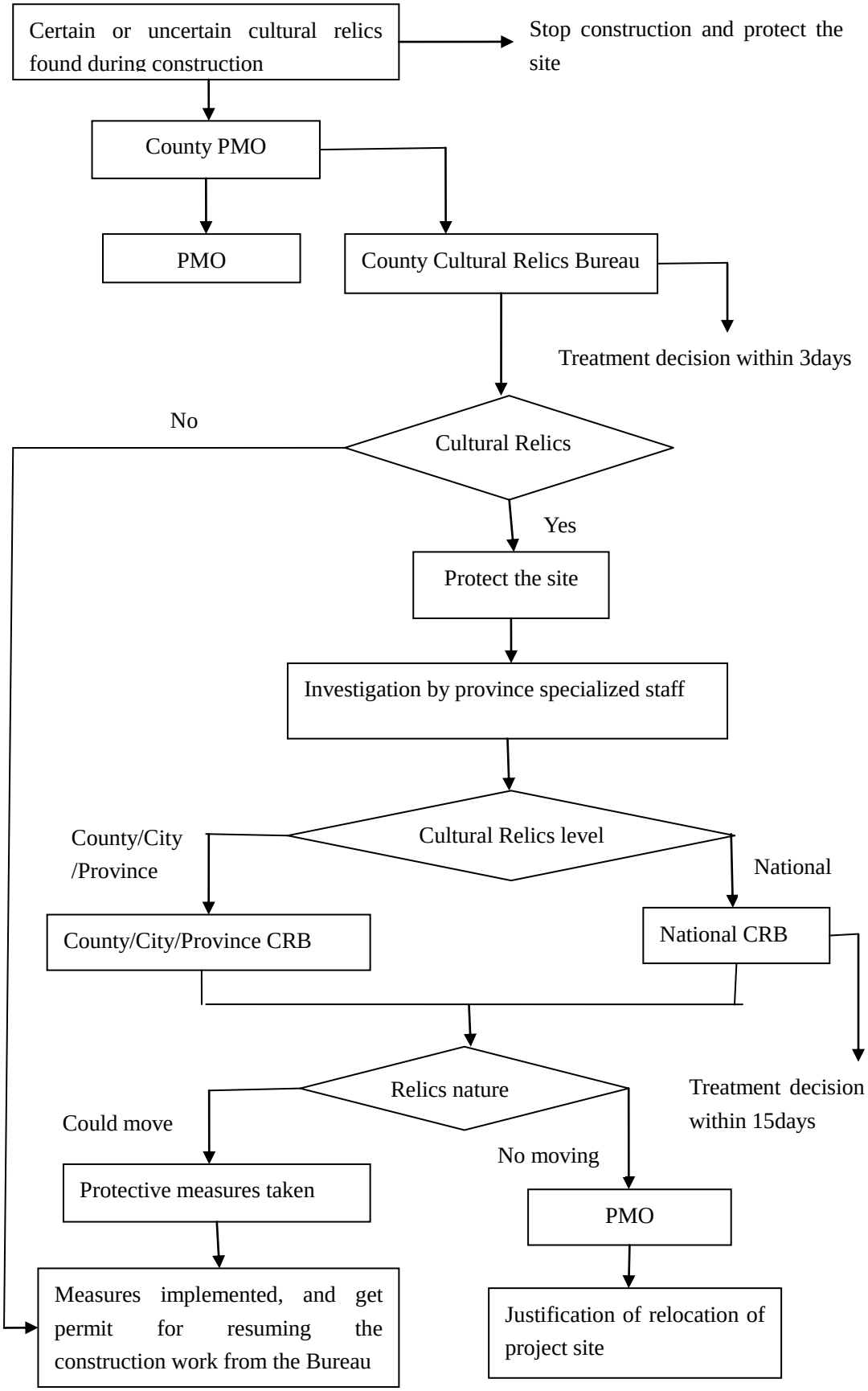

Figure 12-1 Procedures for Reporting Cultural Heritage

13. Training & Education

Climate SMART Staple Crop Production will conclude many activities. The propose including , improve the local operating environment, improve soil fertility and increase agricultural production, increase farmers' income and improve rural livelihoods in the project area, in order to promote the integration of urban and rural construction process effectively, stimulating the sustainable development of the town and surrounding areas all demonstrate social, economic, environmental .

To make the project started in time and achieve what we need, technology assistance, training and education activities are necessary. In this project, technology assistance, training and education activities have taken a large proportion. When the project beginning, we will make some special investigates and some research to discover some ideas that can improve country’s development. Have some communication between each level of the mangers to enhance their abilities. Having technology assistance to make the people familiar with the project and make the farmland more efficiency. Thus boosting the sustainable development of agriculture in the region, enhance the project management and implementation capacity greatly , give full play to demonstrate the effectiveness of the project and will directly affect the achievement of project objectives.

This project will list some details about technology assistance, training and education activities according to what they need. The assistance will including research, exchange of experience and learning seminars, study tours, farmers' associations and farmers, practical technical training. Training time is a combination of periodic and immediate, by technicians training and farmer practical technology literacy training; training content, the numbers and location determined by local conditions.

Annex 1 Summary of the Project Environmental Supervision and Management

No	Management item		Mitigation Measure	Implementation agency	Supervision agency
During design					
The location principle& Environmental protection measures	The location principle		1.Give priority to wastelands, abandoned land, higher lands and other inferior lands instead of farmland, forest lands canals. 2.Temporary roads of construction should take advantage of current roads, being away from environmentally sensitive sites.	Design institutes Assessment institutes	PMO,PPMO, County/District PMOs, County EPBs
	Environmental protection measures		1.Construction period should avoid rainy season to alleviate water and soil loss. 2. The temporary occupied lands should avoid the consequence on the lives of nearby residents. 3.The temporary occupied lands should be restored after construction. Reclamation can erase the effect on ecosystem.	Design institutes Assessment institutes	
During construction					
1	Air Pollution	Fly Dust	1.Pioneer roads to make use of the existing road and be watered periodically to reduce fly dust; 2.Fine particulate materials are to be stored in closed containers or covered before stockpiling, and be watered if materials' property is tolerant to effectively restrain fly dust. 3.When passing through environmental sensitive point,	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs

No	Management item		Mitigation Measure	Implementation agency	Supervision agency
			the construction activities should be fenced; 4.Management of haulage vehicle should be strengthened. Vehicles carry dusty materials should be covered with tarpaulins; 5.The dusty working areas should be sheltered and be watered; 6.Temporary earthworks from construction site should be stockpiled and covered. Haulage vehicles should not be overloaded to avoid materials tossing; 7.The dusty working areas should be sheltered and be watered; 8.Materials and casting/shuttering should be stockpiled tidy and stable.Construction sites should be kept clean and promptly sprayed with water; 9.Incinerating of wastes is prohibited; 10.Consideration should be given to the predominant wind directions and environmental protection targets around the construction site when locating fine particulate materials stockpiles, which should be 300 m at leeward of the environmental protection targets. 11.Construction, material handling, loading and unloading are staged operations, the impact of dust		

No	Management item		Mitigation Measure	Implementation agency	Supervision agency
			on the surrounding atmosphere also come to an end with the end of construction.		
		Tail Gases	1.Mechanical equipments and vehicles in good operation status should be selected for project construction; 2. Fuel-powered equipments and vehicles must be operated under normal condition to ensure their emission comply with discharging standards. 3. Rational use of equipments with strengthened maintenance and repairment of equipments.	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs
2	Construction Noise		1. When making contraction, to make sure its main machinery and equipment used for are the low-noise; 2. Construction working hours are to be 8:00~20:00. 3. Construction management department should strengthen the construction site noise management, construction companies have to deal with construction noise discipline, to avoid construction disputes due to noise. 4. Reduce man-made noise, operate machinery and equipment according to the provisions. 5. Building and construction unit should also build good relationship with residents and units around the	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs

No	Management item	Mitigation Measure	Implementation agency	Supervision agency
		construction site, make them understand the construction schedule and noise reduction measures in time, and achieved our common understanding.		
3	Surface Water Pollution	1.Wastewater from vehicle washing, site cleansing, building materials cleansing, concrete curing, sands & stone washing should be collected, directed to a sedimentation trap after dilution. The treated effluent should be fully recycled for various cleansings at the site; 2.Management on construction site should be strengthened, soil conservancy measures should be well taken at stockpile site to avoid impact of erosion from stockpiles on environment. 3.Strengthened education to construction workers on environmental protection awareness to prevent them from littering and illegal discharging of wastewater.	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs
4	Solid Wastes	Construction debris, together with other components, should be comprehensively utilized. Surplus of them should be stockpiled and, based on the construction schedule, transferred to the town landfill sites for final disposal; Closed containers should be used to transfer construction debris. Construction debris	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs

No	Management item	Mitigation Measure	Implementation agency	Supervision agency
		should be sorted according to relevant simulations and transferred and disposed of promptly; Before transferring, construction debris should be sprayed with water; Excavated soil during irrigation engineering：a part of the earth including large percent of the organic matter can be used to flatten somewhere .The other part can be used to flatten both side of the channel. It also can be used to the desert area which is near the project area to planting trees. The excavated soil which can not be used should be put into proper land. the Land should be flatten and re-cultivate when the project is over, Temporary facilities should be removed in time when the project is finished.		
5	Ecological Conservation	1.Rationale optimization of the construction site layout to reduce the scope of construction activities and reduce the extents of site vegetation destruction; 2. Construction materials to be purchased outside, such as stone, sands, cement etc. should occupy land as less as possible to minimize vegetation destruction; when the works are completed, the site should be cleaned promptly and recovered with vegetation as much as	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs

No	Management item	Mitigation Measure	Implementation agency	Supervision agency
		possible. 3.At the pre-conditions of construction quality ensurence, contractor should keep its construction duration as shorter as possible to minimize the scope of construction disturbance. 4.The organization has to educate the workers to avoiding the damaging to the crops to reduce economic losses.		
6	Construction sefety and Health	1. Contractors should ensure the provision of up to the mustard first aids. Tools for first aids should be provided. 2.Training on occupational health and safety to the new construction workers should be provided to introduce to them the basic working rules, personnel protection rules, and ways to prevent themselves or others from being hurts; 3. Contractors should furnish their workers with personnel protective equipment.; 4.The construction site should be equipped with sunstroke supplies, reasonable arrangements for rest time, when high-temperature operation; 5. Procedures and systems for recording and reporting occupational accident, diseases, risks should be established by contractors.	Constructors, Contractors	PMO,PPMO, County/District PMOs, County EPBs, Environmental experts, ESs
7	Others	1.Safety supervisor(s) should be desinated at construction	Constructors, Contractors	PMO,PPMO, County/District

No	Management item	Mitigation Measure	Implementation agency	Supervision agency
		sites; 2.If cultural relices are chance found, construction activiites should be suspended immediately. The case should be reported to local cultrual relics authorities. No construction activities can be rexumed until the completion of appriasial and protection actions taken by cultural relics authority; 3.Physical examination on construction workers should be carries out periodically to provent incidence of epidemic diseases		PMOs, County EPBs, Environmental experts, ESs

Annex 2 Site Inspection Checklist

Sub-project Name : Site Location：

Name of Construction Site: Weather:

Inspected by: Inspection Date:

No	Environmental Issue	Yes	No	N/A	Remark/Proposed actions
1	Are there any natural habitats or physical cultural resources that are very sensitive to local residents in the project area?				
2	Are there important vegetation, trees within the project area range?				
3	Whether the project occupy basic farmland?				
4	whether the Project construction would have a significant impact on agricultural production of local residents				
5	Whether there will be floods during the rainy season?				
6	Are there any known archeological, historical, cultural heritage? (e.g. tumulus, mausoleum)				
7	Are there any endangered species (aquatic or terrestrial) in the project area?				
8	Are there any wetlands, saturated soil zone (permanent or temporary) in the project area?				
9	Are there any existing power supply facilities (cable, electric poles, transforms)?				
10	Are there any traffic conflict between construction shortcut (to be borrowed from municipal road) and local traffic?				

11	Whether gas, oil pipeline below Project construction site?				
12	Others (please specify)				

Annex 3 Environmental Site Inspection Checklist

GEF No.

Climate-smart agriculture project Date

Note: This form is designed for general use and may not be exhaustive. Modifications and additions may be necessary to suit individual projects and to address specific environmental issues and mitigation measures

Sub-Project Name Contract No. and description

Site Location

Construction stage

Inspection Date Inspection Time

Weather

Inspected by

Inspection Items	Implemented?		N/A	remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions
	yes	No*		
1. Air pollution control				
1.1Are the construction sites used the existing road and watered to minimize dust generated?				
1.2 Are the dusty working areas sheltered and watered?				
1.3. Are environmental sensitive points fenced when construction pass through/by?				
1.4. Are vehicles carry dusty materials covered with tarpaulins?				
1.5 Are construction spoils hauled in closed container?				

Inspection Items	Implemented?		N/A	remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions
	yes	No*		
1.6 Are the vehicle cleaning guaranteed before construction entrance?				
1.7 Are earthworks stockpiled and watered?				
1.8 Are there any incinerations?				
1.9 Are building materials and larger frameworks stockpiled tidy and stable?				
1.10 Others (please specify)）				
2．Water Pollution Control				
2.1 Are wastewater collected and directed to a sedimentation trap after dilution, and use again?				
2.2Are measures provided to properly direct effluent to silt removal facilities?				
2.3 Are strengthened the education to construction workers on environmental protection awareness?				
2.3Others (please specify)				
3．Noise Control				
3.1 Are the low-noise main machinery and equipment used for?				
3.2 Are silenced equipments utilized?				
3.3 Control the construction time strictly?				
3.4 Are building and construction unit				

Inspection Items	Implemented?		N/A	remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions
	yes	No*		
should also build good relationship with residents and units around the construction site, make them understand the construction schedule and noise reduction measures in time, and achieved our common understanding?				
3.5Others (please specify)				
4. Waste Management				
4.1Are construction debris comprehensively utilized together with other constructions in parallel?				
4.2Are surplus construction debris stockpiled in designated site and promptly transferred to the town landfill for disposal promptly?				
4.3Are the comprehensive utilization of waste soil?				
4.4 Are temporary facilities removed in time when the project is finished?				
4.5Others (please specify)				
5. Ecological Conservation Management				
5.1. Is rationale optimization of the construction site layout to reduce the scope of construction activities and reduce the extents of site vegetation destruction?				

Inspection Items	Implemented?		N/A	remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions
	yes	No*		
5.2 Whether construction materials to be purchased occupy land as less as possible to minimize vegetation destructions?				
5.3. Whether contractor keeps its construction duration as shorter as possible, to minimize the scope of construction disturbance at the pre-conditions of construction quality ensurence.				
5.4 Whether making related education to construction workers to avoid the stampede of arable land, destruction of crops and other cash crops in the construction process, resulting in cuts and other losses?				
5.6 Others (please specify)				
6. Emergency Preparedness and Response				
6.1 Is the site furnished with appropriated first aid tools?				
6.2 Is training on occupational health and safety to the new construction workers?				
6.3 Whether construction workers furnished with appropriate personnel protective tools by contractor?				
6.4 Is the construction site equipped with sunstroke supplies, reasonable arrangements for rest time, when				

Inspection Items	Implemented?		N/A	remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions
	yes	No*		
high-temperature operation?				
6.5 Is reporting, recording system established by contractor for occupational accidents, incidence of daises and accidents?				
6.6 Others (please specify)				
7. Cultural Heritage				
7.1 Are certain or uncertain cultural relics found during construction?				
7.2 If found cultural relics, ensure appropriate measures taken to preserve it?				

Any "No" recorded represents the potential breach of regulation or improvement needed. ES should immediately issue "A notice sheet for correction actions to be taken by contractors" and such issuance code number in the **Remarks, the details of corrective actions taken by contractor should be recorded separately.*

Signature of Site Inspector Date

Reviewed by Environmental Supervisor Date

Annex 4 Environmental Supervisor's Notice Sheet for Correction

Actions to be Taken by Contractors

Name of Subproject Contract Name and location

Construction Site

Status of Construction

Main issues inspected:：
Contractor's analysis on the root course of the issue and proposed correction measure：
Comments from Local EBP (if necessary)
Issued by (name of ES) date deadline for correction： accepted by(name of contractor) date

Conclusion of re-inspection：   Re-inspected by date

Annex 5 Checklist for Post Approval and Acceptance of Environmental Measures

GEF No

Climate-smart agriculture project Date

Instruction to filling-out the template: this is formalized template for Integrated Economic Development of Small Towns Project under GEF Climate –smart agriculture project to carry out environmental supervision. It is focused on the local environmental conditions and project content, as well as environmental measures associated. Adding of information or adjustment can be made when needed.

Name of subcomponent： Contract No and Project Site：

Name of construction site：

Current phase of construction：

Date of environmental supervision： Detailed timing：

Daily weather conditions：

Inspector：

Inspection Items	**Implemented?**		**N/A**	**remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions**
	Yes	**No**		
1. Have the waste aggregates generated from construction site cleaned?				
2. Is Temporary occupation of				

Inspection Items	**Implemented?**		**N/A**	**remark (i.e. problem observed, possible cause of nonconformity and/or proposed corrective/preventative actions**
	Yes	**No**		
the channel cleaned up properly?				
3. Have eco-recovery measures applied to the temporary borrow pits?				
4. Whether the land reclamation making?				
5.Is temporary equipment all removed?				
6. If process the waste timely after construction				
7. Is protective measures taken to protect sound-sensitive targets?				
8. Whether training and education programmes are delivered among project areas?				
9. How satisfied is the public in local region with the construction project?				

Any "No" recorded represents the potential breach of regulation or improvement needed. ES should immediately issue "A notice sheet for correction actions to be taken by contractors" and such issuance code number in the ***Remarks,*** *the details of corrective actions taken by contractor should be recorded separately.*

Signature of Site Inspector Date

Reviewed by Environmental Supervisor Date