

NAREE



CATALOG

2019-2020

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Fujian Farmland Sustainable Utilization and Demonstration

Client: Asian Development Bank
Duration: 2015-2016
Location: Fujian Province, PRC
Contract Value: USD 578,154
Loan Project Value: USD 175.13 million



Project Description

The Project Preparatory TA aims at defining the scope and design of the project and preparing relevant documents that respond to the government's needs and comply with ADB's requirement. The project will promote cooperation among PPEs, cooperatives, and farmers. Impacts of different cooperation mechanisms will be examined to incorporate mutually beneficial cooperation mechanism into the project design. This will help Fujian's agriculture become more sustainable, productive, and market-oriented. It will also facilitate quality control throughout the value chain as Fujian promotes certified green and organic products, which fit with the organic and reduced chemical-use farming that the project will promote. The project will strengthen climate change adaptation by addressing climate change impacts on production systems via the Climate Smart Agriculture approach. The project will focus on 16 project counties where townships will be selected in consideration of poverty rate and/or degree of environmental degradation. The project outputs included: (i) productive farmland established; (ii) sustainable farming technology and practices adopted; and (iii) institutional capacity strengthened.

Services Provided by NAREE

NAREE provided the preparation technical assistance (PPTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and social. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the PPTA includes the followings:

- ◆ Assessment of the project's technical, economic, and financial feasibility
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment, relevant action plan and others according to ADB's requirements
- ◆ Project documents preparation according to ADB's requirements
- ◆ Assistance of FPG in revising domestic feasibility studies and improving safeguard documents in line with ADB's and the government's requirements; and
- ◆ Training and capacity development

Building Ecological Security System for the National Core Grain Growing Area of Henan Province

Client: Asian Development Bank
Duration: 2015-2017
Location: Henan Province, PRC
Contract Value: USD 282,284



Project Description

The technical assistance (TA) was to increase contribution from Henan grain production systems to national food security. The main objective was to support the Henan provincial government to build an ecological security system that can safeguard and improve grain production in the core grain growing area of the Henan province to maintain national food security and promote the sustainable use of the province's agricultural land and forests. The TA had three outputs: (i) agroforestry best practices in technical management recommended; (ii) strategy for agroforestry development drafted; and (iii) government and community capacity to implement agroforestry activities enhanced.

Services Provided by NAREE

Improved Agroforestry Strategy – NAREE developed an improved agroforestry strategy which include, (i) establishing and strengthening inter-institution coordination and strategic linkages and partnerships with public institutions, communities, farmers and other stakeholders such as traders (agricultural value chains); (ii) availability and sustainability of delivery of agroforestry inputs – seeds, seedlings, tools, etc.; (iii) improving policies for sustainable agroforestry development and management including incentives for adoption of agroforestry and ecological security; (iv) enhancing farmers' own experimentation capacities; (v) improving and adding value to agroforestry products through market-based instruments (certification, labelling, including carbon labelling) and market access to derive greater socioeconomic benefits; and (vi) monitoring and impact studies needed to persuade policy makers that agroforestry deserves their support.

Current Situation Study and Field Survey – NAREE conducted a comprehensive background and current information study, and organized site visits to six counties, 18 villages and 360 households have be surveyed, including existing counties, villages, farm cooperatives and agricultural and forestry state farms managers.

Climate Change Impacts Assessment – NAREE conducted an assessment to describe climate change, related environmental hazards and threats affecting crop production in the core grain area of Henan. Based on this analysis, climate change scenarios were developed and their potential impacts on crop production were assessed.

Economic and Financial Analysis – The financial analysis prepared by NAREE assessed the economic profitability of agroforestry existing models, including both farmland protection forests models and intercropping models. A preliminary cost-benefits analysis pertaining to the implementation of the Forestry-related Action Plan underlining the Ecological Security Action Plan has also been prepared.

Ecological Security Strategy and Action Plan –The forestry-related Action Plan has been structured around six main goals that need to be implemented in an integrated fashion, and those goals should lead to a wider adoption and maintenance of forestry-related investments for ecological security.

Innovative Mechanism for Open Agricultural Investment

Client: Asian Development Bank
Duration: 2017-2018
Location: PRC
Contract Value: USD 279,828



Project Description

This technical assistance (TA) built on previous studies on agricultural modernization and foreign investment in the PRC, which found that the main constraints to agricultural investments were the lack of a partnership exchange platform and supporting policies. This TA built upon this previous work to study and propose pilot activities for innovative agricultural partnerships in the PRC, to stimulate agricultural investments and promote rural development. The design of the proposed TA assumed that the government was committed to pursuing the market economy approach and opening the agriculture sector to attract private investment and engage in partnerships, and therefore was willing to assess the role of the public sector as an important strategy to achieve agricultural modernization. To address the risk of limited government commitment, the TA project design included awareness raising and capacity building for government agencies to implement open investment and partnerships in agriculture.

Services Provided by NAREE

Agriculture sector diagnostic assessment – NAREE conducted a diagnostic assessment, covering (i) technical issues; (ii) legal, regulatory, and policy frameworks; (iii) institutional and capacity status; and (iv) commercial, financial, and economic issues. The diagnostic assessed the status quo and identified gaps and weaknesses in implementing agricultural partnerships. Stakeholder consultation was adopted as a key component of the diagnostic assessment.. The assessment allowed the government to evaluate its current environment for partnerships and will be the basis for determining what activities are required to promote agricultural partnerships.

Recommendations for the design and implementation of an open investment mechanism – Using the diagnostic assessment, NAREE developed a strategy to guide the direction for an investment road map. The strategy set out how proposed partnerships can help achieve sector goals and will describe the steps to be taken to prepare for and implement partnerships. The investment road map clarified the operating environment to private sector operators and the required commitment from the government. The final product will be the agricultural partnership road map.

Policy recommendations for open investment and partnerships in agriculture – NAREE assisted the creation of an enabling environment where policies and regulations are in place for supporting the implementation of the proposed open investment and partnerships. This output was an integral component of the road map and proposed recommendations for policy and regulatory requirements that would support the implementation of various partnerships to increase agricultural investments.

Awareness about and capacity to implement open investment and partnerships in agriculture – Stakeholder understanding, buy-in, and acceptance of various forms of partnerships, including PPPs, are crucial to implement partnerships successfully. NAREE organized a range of workshops to engage stakeholders, seek their input and feedback on analytical work, and introduced them to the role and benefits of various forms of agricultural partnerships. The findings of the TA research were also presented at a conference to raise awareness and build capacity, and were captured in a knowledge product report.

Gansu Internet-Plus Based Socialized Agricultural Service System Development

Client:	Asian Development Bank
Duration:	2017-2019
Location:	Gansu Province, PRC
Contract Value:	USD 400,386
Loan Project Value:	EUR 175.13 million



Project Description

Through adopting internet-plus policies, the PRC government aims to apply rural ICT solutions to rural development approaches, thereby improving services in rural areas and better integrating the agricultural sector into the wider economy. Government-led supply and marketing cooperatives in rural areas represent the backbone of agricultural services and have therefore been identified as the primary vehicles for providing internet-plus services and for accelerating the modernization and integration of the agricultural sector.

The Gansu Provincial Supply and Marketing Cooperative (GPSMC) has requested an ADB loan to promote agricultural sales and technical services as part of its poverty alleviation and rural development program. The loan project will support rural development and improve agricultural production and sales by implementing agricultural modernization and value chain promotion approaches. There are three main outputs: (i) comprehensive information service and management platform developed; (ii) agricultural production, processing, storage, and marketing modernized; and (iii) capacity of GPSMC improved.

Services Provided by NAREE

NAREE provided the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Baseline study and sector assessment
- ◆ Feasibility Study Report review and project design optimization
- ◆ Economic and financial due diligence
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment, relevant action plan and review framework development
- ◆ Financial and procurement risk assessment of the EA/IA, and risk management planning
- ◆ Investment plan and procurement plan preparation
- ◆ Institutional capacity building
- ◆ Loan project documents preparation and loan negotiation facilitating

Yangtze River Green Ecological Corridor Comprehensive Agriculture Development Project

Client:	Asian Development Bank
Duration:	2017-2018
Location:	Hubei, Hunan, Sichuan, Guizhou and Yunnan Provinces, Chongqing Municipality, PRC
Contract Value:	USD 410,603
Loan Project Value:	USD 506.8million



Project Description

The Yangtze River Economic Belt (YREB) covers nine provinces and two specially administered cities within the Yangtze River Basin. Based on its demographic and geographic assets, the PRC government has earmarked YREB as one of the three key growth engines to ensure the PRC's future economic development. However, development and economic growth in the middle and upper reaches of the YREB are still undermined by (i) slow transformation into green development and economic diversification; (ii) limited integration of waterways, ports, and intermodal logistics; (iii) increasing pollution and pressure on natural resources; and (iv) weak institutional coordination for strategic planning.

The PRC Government requested the Asian Development Bank (ADB) to support and strengthen efforts in the environmental protection and rehabilitation of the YREB through a strategic framework approach to lending support. The support was broadly based, including project loans and technical assistance to promote ecosystem conservation and green development through integrated river basin ecosystem management to reduce pollution and degradation of natural resources, promote environmental protection and rehabilitation, stimulate sustainable economic growth, and apply integrated water resource management. This Loan project expected three main outputs: (i) modern farming systems constructed; (ii) waste and environmental management systems strengthened; and (iii) institutional, technical, and management capacity and coordination strengthened.

Services Provided by NAREE

NAREE provided the project preparatory technical assistance (PPTA) to the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the PPTA:

- ◆ Baseline study and sector assessment
- ◆ Feasibility Study Report review and project design optimization
- ◆ Economic and financial due diligence
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment, relevant action plan and review framework development
- ◆ Financial and procurement risk assessment of the EA/IA, and risk management planning
- ◆ Investment plan and procurement plan preparation
- ◆ Institutional capacity building
- ◆ Loan project documents preparation and loan negotiation facilitating

Support to Public Finance and Finance Sector Reform in Henan Province

Client: Asian Development Bank
Duration: 2018-2020
Location: Henan Province, PRC
Contract Value: USD 487,863



Project Description

In 2007, Henan Province was included in the agricultural insurance subsidy pilot program by the Central Government. In the same year, Henan Province issued the Pilot Program of Policy-based Agricultural Insurance in Henan Province. Since then, agricultural insurance in Henan has been rapidly developed. Although the agricultural insurance sector has been rapidly developed in PRC and Henan Province in the last decade, there are still many challenges and problems. The available types of insurances are limited and do not meet the demands of modern agriculture. Also, there exist low awareness of agricultural insurance and its benefit among farmers and herders, high transaction cost associated with agriculture insurance and heavy premium subsidy burden on the public finance. This technical assistance (TA) aims to assist the Henan Provincial Finance Department to review the agricultural insurance sector in Henan province to understand agriculture risk, propose risk management strategies which includes insurance and how best subsidies can be used to promote sector resilience and alleviate financial burden on the province.

Services Provided by NAREE

Assessment of agricultural supply chain risk and risk management – NAREE conducted the assessment to understand the risk exposure of agricultural supply chain participants and to identify improved risk management strategies for selected commodity systems. The assessment included risks identification, risk exposure, the severity of potential losses, constraints and options for risk management by either supply chain participants or by third parties.

Diagnostic assessment of agriculture sector insurance – NAREE undertook a number of assessments on institutional arrangements, agriculture insurance policies and operation, cost benefits analysis of insurance and insurance subsidy. Domestic and international best practices in safeguarding against agriculture risks and high-level technology adopted in agriculture insurance were also reviewed. Based on the diagnosis, policy recommendations were raised by NAREE to create an enabling environment for improved institutional arrangements, mechanisms for addressing and safeguarding against agriculture risk that includes transformation of the direct agriculture subsidy to a more innovative financial subsidy mechanism, use of high-level technology and improving access to credit.

Development of agriculture insurance solutions – New solutions, agriculture insurance, access to credit, technology and improved production practices and insurance products, were proposed by NAREE to fit the need for safeguarding agriculture risk and demand from within the supply chain, awareness enhancement about and capacity to implement open investment and partnerships in agriculture.

Preparing the Climate-Resilient Livestock Sector Development Project

Client:	Asian Development Bank
Duration:	2019-2020
Location :	Ulaanbaatar City, Mongolia
Contract Value:	USD 528,000
Loan Project Value:	USD 30.3 million



Project Description

The project aims to improve the efficiency and sustainability of climate-resilient livestock production systems by encouraging policy-level changes, improving livestock, pasture, and water management, and strengthening local meat and dairy value chains.

The project will have three outputs: (i) Livestock sector policy, regulatory framework, and capacity enhanced. This output will support the Ministry of Food, Agriculture, and Light Industry (MOFALI) and the Livestock Policy Implementation and Coordination Department strengthen its capacity and policies for developing a more climate-resilient and competitive livestock sector; (ii) Climate resilience of livestock, pasture, and water management improved. This output aims to ensure the climate resilience of the livestock sector development; and (iii) Meat and dairy value chains strengthened. This output will support the development of competitive meat and dairy value chains in Mongolia, with the aim of improving productivity, market access, and quality in livestock-based production systems at the soum level.

Services Provided by NAREE

NAREE provides the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Ensure the project design is suitable for ADB financing through identifying the most appropriate project components and providing innovative ideas, concepts, management approaches and technology to enhance project impacts
- ◆ Review proposed project components based on detailed due diligence assessment of technical, economic and financial, governance, social and environmental safeguards, and project risk and mitigation measures
- ◆ provide training to the executing agency, implementing agencies, their project implementing units, and other relevant stakeholders
- ◆ Coordinate the project activity at all levels;
- ◆ Maintain high quality of project design and reporting;
- ◆ Maintain firmly the schedule and project processing milestones and
- ◆ Prepare project documents, including feasibility study reports, safeguard documents, and ADB's draft report and recommendations of the president (RRP).

Agriculture Green Production and Waste Management Project – Subproject I

Client: Asian Development Bank
Duration: 2020-2021
Location: Shandong and Heilongjiang Provinces, PRC
Total Contract Value: USD 742,640



Project Description

The overall project will support sustainable agriculture production and waste management by developing green agriculture production models for grain-producing areas of Heilongjiang and Shandong provinces experiencing soil and land degradation, proposing new models for the effective treatment and management of rural and agriculture organic waste in key grain producing areas, and supporting Qinghai Province in implementing the Strategic Plan for Rural Vitalization, 2018-2022. The TA's outputs are: (i) knowledge of natural resource use and models for green agriculture production developed; (ii) New models for the proper treatment, usage, and management of rural organic waste proposed; and (iii) knowledge and understanding of key constraints to, and priorities for, rural vitalization in Qinghai Province generated. This TA comprises three subprojects. Each subproject will respectively deliver one output of this project. All three outputs will generate new knowledge and awareness on sustainable agriculture development and support the Strategic Plan for Rural Vitalization, 2018-2022 in the PRC.

Subproject I - Promote County-level Green Agricultural Development in Support of the Rural Vitalization Strategy: Research on Green Development Models in the PRC's Major Grain-producing Areas - aims to develop new knowledge of natural resource use and models for green agriculture production.

Services Provided by NAREE

Research on natural resource use and models for green agriculture production - NAREE will support the PRC in identifying improved models for green agriculture production in two key grain-producing areas experiencing soil and land degradation: Heilongjiang and Shandong provinces. In specific, we will assess the state and usage of natural resources and animal and/or crop production systems in the two provinces; analyze policies influencing natural resource use, chemical fertilizer and/or pesticide application, and agriculture production systems overall; and assess the social dimensions of production systems; propose climate-friendly models for animal production and crop cultivation that incorporate food safety and quality issues; undertake a cost-benefit analysis of the new green production models relative to current practices

Policy recommendation - Based on the previous research, NAREE will prepare policy recommendations for provincial and national governments on how to use natural resources more efficiently and balance agriculture production with environmental priorities.

Hebei Small Cities and Towns Development Demonstration Sector Project

Client: Hebei Provincial Foreign Debt Management Center, PRC
Duration: 2015-2017
Location: Hebei Province, PRC
Contract Value: CNY 1,633,890
Loan Project Value: USD 235.60 million
Funding: Asian Development Bank



Project Description

This TA facilitated the implementation of ADB funded loan project - Hebei Small Cities and Towns Development Demonstration project, which focuses on supporting sustainable urban development and consist of a number of sector interventions primarily targeted to support industrial development, tourism, job creation, and environmental protection in Hebei Province.

The main focused sectors were water and wastewater, solid waste management, upgrading and greening of rivers, and district heating. The subsectors involve (i) increases in the capacity to supply potable water and coverage of distribution networks, and provision of sewerage systems with associated wastewater treatment facilities; (ii) river and lake improvement works to reduce the risk of seasonal flooding and increase the capacity to impound water for industrial, irrigation, and other uses; (iii) provision of modern solid waste collection equipment, development of engineered waste disposal sites, and strengthening of operational management; and (iv) provision of centralized heating plants and the associated heat distribution networks. .

Services Provided by NAREE

Preparation of required reports – NAREE prepared reports meeting the ADB requirements for the loan project, including progress reports, resettlement monitoring reports, environmental monitoring reports, project performance monitoring reports, project completion report, and Integrated assessment report.

Project implementation and management support – Along the loan implementation, NAREE provided solid support to the PMO, including (i) review of cash reimbursement; (ii) review of contract variation; (iii) providing suggestions for project commissioning and project operation, improvement of operation management manual, and improvement of the operating conditions of the facilities; and (iv) providing financial management training.

Operation management support – In order to smoothly facilitate the implementation process, NAREE assisted PMO in managing facilities operation, preparing operation and maintenance plan, comprehending the implementation situation, and providing improvement suggestions for operation management.

China Water Program - Partner Bank Advisory Service Project

Client: International Finance Corporation
Duration: 2015-2016
Location: Nanjing City, Jiangsu Province, PRC
Contract Value: USD 38,900



Project Description

IFC China Water Program is designed to provide technical advisory services to industrial clients as well as partner banks to facilitate investment in cost-effective projects that conserve valuable water resources. The goal of this Advisory Services Project is to help Bank of Jiangsu (BOJS) to further develop the green credit business, enhance internal capacity and create green finance branding.

Services Provided by NAREE

Advice on forming marketing channels and strategy for the wastewater market, and prioritizing high-potential clients based on the initial client list – NAREE conducted desktop analysis of current situation of the wastewater (both municipal and industrial park, sludge, and wastewater reuse) and waste-to-energy industry through market investigation in key geographical regions to form an initial overview of the target market. Recommendations were made on sources of market information and potential sector-level partners and key players, based on which to assist in establishing contact with selected organizations and developing a holistic marketing strategy thereby form channels for sustainable new project pipelines.

Project due diligence and appraisal tools/templates for BOJS – NAREE worked closely with IFC team and BOJS to develop a series of document templates to be used for BOJS with respect to the collection of client information, due diligence and project appraisal for key sub-sectors within the water/wastewater/wastes fields.

Credit guidelines for wastewater treatment and waste-to-energy sectors – NAREE provided major inputs with regards to sector related knowledge and eligibility criteria, technical and financial key parameters for project analysis, and templates for supporting credit decision-makings.

Trainings to BOJS staff in Nanjing as well as two on-site coaching on actual project assessments – Two training sessions on water/wastewater and waste-to-energy sectors were organized on general introduction, business models, typical legal and financial arrangement and case studies. NAREE also helped BOJS to conduct site investigations on two pilot projects identified in the top list of task a or recommended by BOJS, as an on-site coaching to BOJS staff.

Strategy for Inclusive and Green Development of Small Cities, Towns, and Villages in Jiangxi Province

Client: Asian Development Bank
Duration: 2016-2018
Location: Nanchang City, Jiangxi Province, PRC
Contract Value: USD 346,950



Project Description

Jiangxi Province's general development lags behind other provinces in the PRC with significant poverty in rural areas, despite a robust agriculture sector. This TA provided support to the Jiangxi Provincial government to meet its New-type Urbanization Plan, 2014–2020; its objectives include (i) assessing and developing policies for urban–rural integration and rural vitalization; (ii) improving coordinated planning and systematic medium- and long-term investment programming, and integration of housing, economic, and industrial development in small cities, towns, and villages; (iii) enhancing economic development; create jobs; promote farm upscaling; improve produce quality (i.e., green food); integrate value chains, food processing, and light industry; and develop the service sector in small cities, towns, and villages; (iv) upgrading infrastructure, public services, and links between and among small cities, towns, and villages; (v) reforming the dual hukou system and rural land policy to enable farm upscaling and land market development; (vi) improving ecosystem planning and management through environmental protection, reduction of pollution from chemical fertilizers and pesticides, water source protection and water safety, and wastewater and solid-waste management; (vii) promoting self-administration through enhanced management systems within local communities and governments; (viii) coordinating equitable public service delivery for health, education, technical and vocational training, social security, poverty alleviation, and cultural facilities and institutions; and (ix) improving the public finance mechanism and raise funds for infrastructure, and promote enabling environments for private investments and small and medium-sized enterprises.

Services Provided by NAREE

Preparation of a province-wide inclusive and green economic development strategy – NAREE identified the challenges and proposed solutions to address a pressing need of vitalizing the rural areas and their villages and towns and linking them with small, medium, and large cities systemically through infrastructure and services, value chains, and job opportunities. The prepared development strategy included assessments and planning for (a) basic public and social infrastructure, such as roads and public transport, transport safety, education, health and elderly care, and convenient public service stations; (b) environmental infrastructure and ecosystem services, such as water supply, wastewater management, solid-waste management, river rehabilitation and flood risk management, reforestation, and urban–rural partnership mechanisms, including eco-compensation; and (c) an enabling environment for private sector development, including urban–rural supply chain integration, local value addition including farm upscaling and product processing, green food production, light industry and service sector development, and rural finance;

Preparation of policy recommendations and a framework – For the selected three pilot areas, NAREE conducted comprehensive assessment to formulate strategy and policy recommendations, and capacity development plans, covering specific land use, infrastructure, green space, institutional strengthening and public services.

Xinjiang Hetian Comprehensive Urban Development and Environmental Improvement

Client: Asian Development Bank
Duration: 2017-2018
Location: Hetian city, Xinjiang Autonomous Region, PRC
Contract Value: USD 622,880
Loan Project Value: USD 168.1 million



Project Description

Hetian city, located in the southernmost part of the Xinjiang Uygur Autonomous Region (XUAR) is a growing (the city's 2015 population of 331,400 exceeds planning estimates) ethnic (87% Uygur) city, whose urban infrastructure and services are struggling to keep up with population growth. At the same time, the city faces (i) an arid climate (almost no rainfall), (ii) dependency on constrained water resources, and (iii) an encroaching desert. The boundaries for urban expansion, limited by the desert, lead to intensified urban development. Preserving Hetian's unique cultural heritage while addressing challenges associated with growth-driven urban development is a difficult, but necessary task.

To improve the environmental and social conditions in western China and achieve a well-off and harmonious society in Hetian city, XUAR Government requested an ADB loan to make the urban development in Hetian inclusive for all residents and climate resilient. The project delivered five outputs: (i) water supply, wastewater, and reclaimed water infrastructure renovated and expanded; (ii) environmental solid waste infrastructure and equipment improved; (iii) urban transport infrastructure constructed; (iv) public transportation system and equipment improved; and (v) capacity developed and skills built.

Services Provided by NAREE

NAREE provided the PPTA to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the PPTA includes the followings:

- ◆ Baseline study and sector assessment
- ◆ Feasibility Study Report review and project design optimization
- ◆ Economic and financial due diligence
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment, relevant action plan and review framework development
- ◆ Financial and procurement risk assessment of the EA/IA, and risk management planning
- ◆ Investment plan and procurement plan preparation
- ◆ Institutional capacity building
- ◆ Loan project documents preparation and loan negotiation facilitating

Kaili East Green Public Transport Hub PPP Project (Phase 1)

Client: Asian Development Bank
Duration: 2017-2018
Location: Kaili City, Qiandongnan Miao and Dong Autonomous Prefecture, Guizhou Province, PRC
Contract Value: USD 327,450



Project Description

Before this proposed project, Kaili had only one integrated passenger transport hub located in the West of the city, which could only provide limited services due to the planning restriction. The Kaili Public Transport Company (KPTC) was responsible for managing and operating this service. Therefore, the proposed Kaili East Green Public Transport Hub Project was expected to fulfill the following strategic objectives for the city: (i) provide modern and high quality short, medium and long-distance passenger intercity transport service for Kaili from the East; (ii) provide a modern and high quality city bus terminal station and depot that serves all the city's buses; (iii) establish an integrated public bus terminal with sufficient parking space to cater for self-driving tourists and that links with bus day-tour programs to villages around Kaili; (iv) relocate vehicle trade, repair and maintenance shops that are currently scattered around Kaili to the transport hub to improve the efficiency, safety and environment of key transport corridors; and (v) take advantage of passenger and tourist traffic at the transportation hub to establish a commercial center and hotel. In addition, the Kaili Transportation Bureau (KTB) and KPTC decided to adopt the PPP model in this project, NAREE was recruited to facilitate the PPP project preparation, including the determination of PPP model and the development of implementation plan.

Services Provided by NAREE

Review, Refinement and Validation – To refine the project engineering design and commercial layout, NAREE reviewed the master plan of Kaili transport development, the forecasts of tourism demand, travel modality, passenger trip growth and long-distance transport demand growth, the existing feasibility study report and design documents of Kaili East Green Public Transport Hub; then, designed and conducted a market survey for the local and regional market demands evaluation.

PPP Model Development and Market Testing – NAREE developed a PPP framework based on relevant national PPP guidelines and requirements that enables the Transport Hub's operational strategy to be realized. This PPP framework encompassed the PPP model, financial calculation, value for money assessment, financial affordability assessment, PPP implementation plan, and performance evaluation and management framework. NAREE also prepared the market testing materials and completed preliminary market testing with potential investors. Their feedbacks were summarized and provided for Government's further decision making.

Capacity Building – NAREE organized a series of formal and informal capacity building activities from workshops to face-to-face discussions with local government and project owners throughout the course of the project. These capacity building activities intended to share knowledge and experience of PPP (and particularly transport hub PPP) project design and implementation.

Consulting Service of Non-revenue Water Reduction, Energy Conservation, and Performance Management

Client: Liaoning Urban Rural
Construction and Renewal
Project Management Company
Limited

Duration: 2019-present

Location: Liaoning Province, PRC

Contract Value: USD 881,666

Loan Project Value: USD 386.29 million

Funding: World Bank



Project Description

The high leakage and energy consumption of the water supply systems and pipe networks affect not only the economic benefits and long-term development of the Water Supply Companies (WSCs), but also reflects problems such as poor management, loose institutional arrangement, and low efficiency. It is also a waste of resources and energy. The improvement of the organization and the effectiveness of management will also contribute to the reduction of NRW and energy consumption of WSCs.

Both technical and management approach will be used to improve the NRW management and energy- consumption level of the water supply systems in the Liaoning province. This project was supported by \$250 million World Bank loan in association with \$136.29 million domestic counterpart fund, so as to achieve the objectives of water quality improvement and operational efficiency of selected five water supply utilities.

Services Provided by NAREE

Non-revenue water reduction plan – NAREE prepared a comprehensive NRW reduction plan for the WSCs and followed up with each WSC on the implementation progress of the plan. Along the implementation process, NAREE also provided technical advice to the WSC on better implementing the plan, including organized the Hydraulic Model Training to help WSCs adopt the advanced approach for better management.

Energy conservation plan – Based on the current circumstances of the equipment and pump station in service, NAREE prepared the energy conservation plan to assist WSCs to achieve energy saving targets. The energy conservation plan is prepared based on energy consumption assessment and discussions with different departments in WSCs. The energy conservation plan included specific actions and recommendations customized for each WSC.

Establishment of a benchmarking system among WSCs in Liaoning – NAREE will collect business and financial information of 90% of WSCs in Liaoning Province according to the International Benchmarking Network (IBNET), to form a solid foundation of comprehending WSCs' performance. It is not only to expand the influencing scope of the project but also to improve the provincial performance in NRW reduction by providing a platform to exchange their experiences and technologies.

Technical Assistance on Project Management and Non-Revenue Water Reduction Program

Client:	Jiangyuan District Urban Construction and Investment Company
Duration:	2019-present
Location:	Jilin Province, PRC
Contract Value:	EUR 350,750
Loan Project Value:	EUR 69.2 million
Funding:	Agence Française de Développement (AFD)



Project Description

The project will improve water and sanitation services in the district of Jiangyuan and in the urban center of Jiangyuan city in particular. 20,000 additional people are expected to benefit from access to a safely managed potable water supply service and 120,000 people should benefit from an improvement in the quality of their sanitation service in Jiangyuan city. In Shiren and Wangou alone, 96,000 people should gain access to a safely managed sanitation system. This project will also contribute to protecting water resources in the Changbai Mountains (located between China and North Korea), where two major rivers originate: the Songhua River and Yalou River. The Project has five components: (i) Construction of a new water treatment plant (20,000 m³ per day as a first phase) to supply the urban center of Jiangyuan and implement a non-revenue water reduction program; (ii) Upgrade of the existing Jiangyuan City Wastewater treatment plant (WWTP) (20,000m³ per day) and building of new infrastructure for wastewater reuse (15,000 m³ per day); (iii) construction of a sewage sludge treatment plant (30 ton per day); (iv) construction of a WWTP with a capacity of 5,000 m³ a day in Shiren Town; and (v) construction of a WWTP with a capacity of 5,000 m³ a day in Wangou Town.

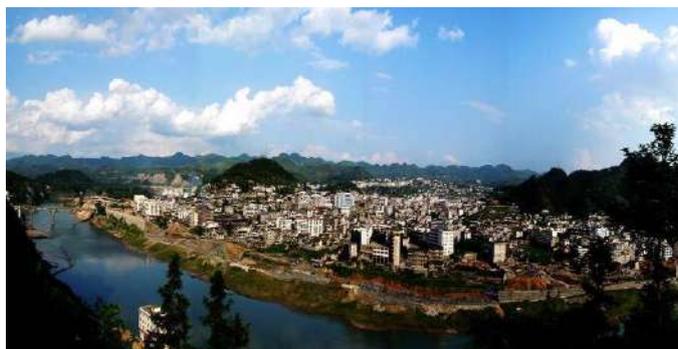
Services Provided by NAREE

Management of project components – NAREE assists the client in the initial project planning and project implementation co-ordination, supports the client in managing and overseeing the environmental, health and safety aspects for construction and operation of the project, and assists the client to meet its first reporting duty to AFD by providing assistance and training.

Support on Jiangyuan Water Company (JWC) staff in reducing non-revenue water – NAREE provides comprehensive technical assistance and training for reducing non-revenue water (NRW) under Water Supply Component of the project. NAREE completes the baseline survey, formulates an NRW Reduction Strategy relevant to the company's context and resources with a plan of actions over several years, including required capital investment plan and associated schedules based on the targeted NRW reduction for near-, mid-, and long-term; assists JWC in the implementation of the most urgent steps described in the NRW Reduction Strategy, and in particular in the preparation of the tender documents related to AFD's NRW Investment Reserve; and formulates a capacity building development plan to enable the JWC to execute the subsequent actions outlined in the NRW Reduction Strategy.

Shandong Jiaxiang Smart Water Sector Development Project

Client:	Asian Development Bank
Duration:	2020-present
Location:	Jiaxiang County, Jining City, Shandong Province, PRC
Contract Value:	USD 360,000
Loan Project Value:	USD 200 million



Project Description

This project aims to improve urban–rural integration and strengthened rural infrastructure services, which are key priorities in the PRC’s national strategies. This project is also a demonstration of support for study on how a poor county can leverage international best practices and an innovative mix of financing to achieve urbanization and rural vitalization objectives, effectively implement national policies or formulate actions to address basin-wide and cross-sector water resource management issues, improvement for unreliable water sources problem and poor water service deliveries due to significant infrastructure deficits and inadequate financing, as well as water sector reform and enhance infrastructure development.

Services Provided by NAREE

Strengthening of water sector strategies and operations—NAREE will carry out several interventions to bridge the policy and institutional gaps in Jiaxiang County’s water sector. Specifically, tranche1 will (i) support the creation of an integrated water management plan; and (ii) pilot integrated administrative functions for the water sector within a designated entity to increase management efficiency and coordination. Tranche 2 will (i) improve the efficiency and sustainability of state-owned water utility operations in Jiaxiang County by integrating urban–rural water and wastewater services in one utility company under a performance-based contract, while providing necessary capacity building measures through south-south knowledge sharing activities with regional water operators; and (ii) develop measures to build an environment conducive to sustainable financing, including tariff review and a road map for private sector participation. Both tranches will include capacity building activities for concerned stakeholders in this reform agenda, especially capitalizing on good practices from relevant ADB projects and strategic knowledge partnerships.

Improvement of smart water supply services — NAREE will use a smart system using metering and data algorithm for improved monitoring of water extraction, treatment, and distribution will be combined with the wastewater treatment monitoring system for urban and rural areas to fully integrate service delivery for the whole county.

Improvement of sustainable wastewater management services – NAREE will complement policy actions and investments under Outputs 1 and 2 to improve quality of water sources, specifically surface water, by (i) developing or improving sewage treatment stations in rural towns and villages, and (ii) upgrading antiquated combined sewer overflow pipelines to separate sewer and drainage pipelines in prioritized urban areas. NAREE will design a community engagement program to involve and build capacity for rural communities to operate and maintain sewage treatment stations, including an awareness campaign on proper solid waste disposal.

Agriculture Green Production and Waste Management Project – Subproject III

Client: Asian Development Bank
Duration: 2020-2021
Location: Qinghai Province, PRC
Total Contract Value: USD 742,640



Project Description

The overall project will support sustainable agriculture production and waste management by developing green agriculture production models for grain-producing areas of Heilongjiang and Shandong provinces experiencing soil and land degradation, proposing new models for the effective treatment and management of rural and agriculture organic waste in key grain producing areas, and supporting Qinghai Province in implementing the Strategic Plan for Rural Vitalization, 2018-2022. The TA's outputs are: (i) knowledge of natural resource use and models for green agriculture production developed; (ii) New models for the proper treatment, usage, and management of rural organic waste proposed; and (iii) knowledge and understanding of key constraints to, and priorities for, rural vitalization in Qinghai Province generated. This TA comprises three subprojects. Each subproject will respectively deliver one output of this project. All three outputs will generate new knowledge and awareness on sustainable agriculture development and support the Strategic Plan for Rural Vitalization, 2018-2022 in the PRC.

Subproject III- Research on the Implementation of Rural Vitalization Strategy in Qinghai Province – aims to generate knowledge on the key constraints to, and opportunities for, rural vitalization in Qinghai Province.

Services Provided by NAREE

Research on key constraints to, and priorities for, rural vitalization in Qinghai Province – NAREE will generate new knowledge on the key constraints to rural vitalization in Qinghai and propose recommendations for addressing challenges in agriculture modernization, environmental protection, rural-urban integration, rural infrastructure and service delivery, and governance and/or institutional challenges; and develop strategies and technical recommendations on how to promote livable ecological villages in Qinghai, addressing issues such as solid waste and wastewater management.

Policy recommendation – NAREE will also provide recommendations on how to improve coordination within provincial government agencies and between provincial and national agencies for the purposes of rural vitalization

Mongolia Sustainable Tourism Development Project (Phase 2)

Client: Asian Development Bank
Duration: 2020-2021
Location: Bayan-Ulgii, Khovd, and Uvs,
Mongolia
Contract Value: USD 779,000



Project Description

The Sustainable Tourism Development Project (Phase 2) (the project) will support the development of sustainable tourism within the three aimags of western Mongolia, Bayan-Ulgii, Khovd, and Uvs.

The project will have four outputs: (i) inclusive planning and capacity for local tourism businesses enhanced; (ii) enabling infrastructure for tourism constructed; (iii) sanitation and waste management improved; and (iv) management of cultural heritage sites and protected areas strengthened. These outputs will result in the following project outcome: sustainability and inclusiveness of ecotourism in western Mongolia is increased.

Services Provided by NAREE

Enhance inclusive planning and capacity for local tourism businesses. NAREE will strengthen the institutional framework for tourism planning and increase the number of local beneficiaries from tourism. NAREE will (i) prepare the first tourism master plan for western Mongolia; (ii) strengthen aimag tourism plans to integrate targets for livelihoods, conservation, and risk management for disease outbreaks and natural hazards, aligned with parallel ADB projects on disaster risk management, border control, and health screening; (iii) extend to western Mongolia the tour camp operational guidelines and certification program designed under phase 1; (iv) establish local tourism councils at key sites; (v) construct two tourist streets in the Khovd and Uvs aimag centers, including women-led tourist stalls; and (vi) implement a pilot tourism business development scheme for small- and medium-sized enterprises (SMEs) and communities.

Construct enabling infrastructure for tourism. NAREE will (i) construct the first tourism center in western Mongolia, the Uvs tourism complex (UVTC); (ii) establish supporting infrastructure for the UVTC, including car parking, an access road, and the extension of the aimag power line to the site; (iii) strengthen the protection of key cultural heritage sites and protected areas by establishing traffic management plans, installing barrier gates, and upgrading selected access roads and car parks, to control public access and halt off-road vehicle damage; and (iv) develop institutional arrangements for operation and maintenance (O&M) of the project facilities.

Improve sanitation and waste management improved. NAREE will (i) facilitate the installation of low-cost and gender-sensitive toilet systems at tour camps, campsites, and project-funded car parks at key protected areas and cultural heritage sites; (ii) establish waste collection and disposal systems for key cultural heritage sites, protected areas, and the project facilities under outputs 1 and 2; and (iii) implement a water, sanitation and hygiene program.

Strengthen management of cultural heritage sites and protected areas. NAREE will (i) construct the first rock art and nomadic culture research center in Mongolia; (ii) establish small management facilities at key cultural heritage sites and protected areas; (iii) strengthen the management plans of selected sites, to integrate O&M procedures for the project facilities and the management of revenue streams and disaster risk; and (iv) train local agencies to implement the revised plans.

China Hebei Clean Heating Project

Client:	Hebei Provincial Foreign Debt Management Center, PRC
Duration:	2014-2016
Location:	Hebei Province, PRC
Contract Value:	CNY 3,140,700
Loan Project Value:	USD 248.33 million
Funding:	World Bank



Project Description

Hebei Province is facing tremendous pressure to mitigate environmental impacts of its economic growth. Hebei is a key center for manufacturing, including energy intensive heavy industry. In an effort to combat local air pollution, neighboring municipalities, especially Beijing, continue to transfer energy intensive and polluting industries to Hebei Province. As a result, Hebei is a source of major air pollution in the Jin-Jing-Ji airshed (the region covering Tianjin, Beijing and Hebei). This project assists Hebei WB project management office to prepare the Hebei Clean Heating Project by using the domestic fund. The Loan project has identified four sub-project areas as Chengde City, Zhangjiakou City, Xingtai City and Pingshan County for helping evaluating and optimizing their projects' scope to meet the requirements of WB policies.

The Hebei Provincial Government has applied financing from the World Bank, and the project has the following two components: (i) District Heating Subprojects. This component will finance the construction and rehabilitation of district heating facilities in the four project cities (four subprojects) with a total heating area of 38.7 million m², including 13.5 million m² of new buildings. Each subproject is tailor fit to the needs of the participating city, but will also have common features aiming to modernize operations and make them more efficient. (ii) Institutional Capacity Building and Project Management Support, including: (a) project management support to the HPMO and the four heating companies; (b) capacity building support to the heating companies in district heating management, operation and maintenance, and World Bank project implementation procedures; (c) training, workshops and study tours to exchange and learn about good practices in the DH sector; and (d) technical assistance activities to tailor fit the needs of project's companies.

Services Provided by NAREE

NAREE provided the project preparatory consulting service to prepare the loan project, undertaking due diligence in technical, economic and financial, environment and social development. NAREE ensured the project in compliance with the domestic and WB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the preparatory consulting service includes the followings:

- ◆ Baseline study and sector assessment
- ◆ Feasibility Study Report review and project design optimization
- ◆ Economic and financial due diligence
- ◆ Safeguards due diligence, including environmental, social and resettlement assessment, relevant action plan and review framework development
- ◆ Financial and procurement risk assessment, Investment plan and procurement plan preparation
- ◆ Assistance PMO in preparing and submitting the Foreign Capital Utilization Plan to NDRC for approve
- ◆ Institutional capacity building

China Climate Technology Needs Assessment (TNA) Project- International Best Practice Mitigation and Adaptation Technologies

Client:	National Development and Reform Commission, PRC
Duration:	2015-2016
Location:	PRC
Contract Value:	CNY 900,000
Funding:	Global Environment Facility / World Bank



Project Description

The TNA Project was funded by the International Bank for Reconstruction and Development and International Development Association (the “World Bank”), acting as administrator of grant funds provided by GEF Trust Fund. The objective of the project was to support China’s efforts to assess climate mitigation and adaptation technology needs and to adopt corresponding global best practices. This assignment was to be implemented as a complement to the “technology assessments at the sectoral level” of the TNA Project, which will provide an overall picture of international best practices of selected mitigation (12 sectors) and adaptation (4 sectors) technologies. The assignment was designed to help technology demander to understand the technology development trends in the world and identify potential transferors. The catalogue of international best practice mitigation and adaptation technologies helped support national decision-making in technology transfer mechanisms, international development cooperation, relevant fiscal and taxation policies.

Services Provided by NAREE

Review of current adaptation and mitigation technologies and their application – NAREE conducted overview of the technology status of 12 mitigation and 4 adaption sectors in China, including technical mechanism, technical characteristics, production flow, main indicators, scope of application, industrialization status; understood the technology needs from the output of the sectoral technology needs assessment in Component 2 of TNA Project, including priority technologies, technology gaps, and barriers to technology transfer in 12 mitigation and 4 adaption sectors of TNA Project.

Study on international best practices of mitigation and adaptation technologies – NAREE identified the international best practices of mitigation and adaptation technologies in 16 sectors. Compile a preliminary technology catalogue including about 120 technologies, 6-10 for each sector, which have potential for technology transfer and can be commercialized extensively in China; conducted an in-depth analysis of the technical principle, technical characteristics, process flow, specification, scope of application, industrialization status of each technique. Selected 100 techniques from the preliminary technology catalogue based on its abatement potential and economic viability; finalized the catalogue of international best practices of mitigation and adaptation technologies. The catalogue should include the technical content, case study of pilot project, and the owner of each technology.

Consultation with the stakeholders – NAREE organized two stakeholder consultation meetings with invitation of experts from enterprises, industrial associations and research institutes; conducted a survey of stakeholders for each sector to examine the preliminary technology catalogue. Design a questionnaire, which should include key information, such as, the practicability of the catalogue, the coverage of the catalogue, the accessibility to the potential transferors; analyzed the survey result and prepared a survey report.

Accelerating Investment in Distributed Energy in Rural Qingdao

Client: Asian Development Bank
Duration: 2015-2017
Location: Qingdao City, Shandong Province, PRC
Contract Value: USD 308,150



Project Description

While it is costly and difficult to convert to a natural gas-based district heating system or to extend the heating pipelines from existing centralized district heating networks (located in the cities) to rural cluster communities due to the small population and long distances, the TA explores the application of distributed energy for heating supply using locally available renewable resources, such as biomass, shallow-ground geothermal, wind, solar, and waste-to-energy. The TA will help the Qingdao municipal government increase its readiness for investment in a distributed energy project in rural Qingdao. It will (i) select a pilot area in rural Qingdao for deployment of distributed energy; (ii) undertake cost-benefit analyses; (iii) propose a cost-effective solution to providing reliable energy for pilot cluster communities; (iv) identify investment needs; (v) review and assess existing policies and standards, and identify gaps; and (vi) recommend an appropriate business model to promote a distributed energy-based heating supply.

Services Provided by NAREE

Cost-benefit analysis and cost-effective solution provided – NAREE performed a cost-benefit analysis for each solution (including wind, solar, biomass, geothermal, waste-to-energy and wastewater treatment) as well as a comparison of the cost of using a natural gas system versus a renewable energy-based distributed energy heating system. An affordability and willingness-to-pay analysis of beneficiaries was also conducted. The most cost-effective technical solution for rural Qingdao based on cost-benefit analyses was selected.

Identification of investment need – Considering the local conditions, NAREE prioritized the investment needs in the short-, mid- and long term for the selected technical solutions. We identified possible financing sources and provided suggestions to increase private sector participation.

Assessment of existing policies and standards – NAREE assessed existing national and local policies and standards for implementing distributed energy projects in rural Qingdao, policy gaps and provided recommendations for changes.

Recommendation on an appropriate business model – NAREE developed the appropriate business model for sustainable implementation of distributed energy in rural Qingdao. The model made use of advantages from both the private and public companies to optimize project operation.

Clean Heating in Northern China - International Practice and Experience Study

Client: Chinese Academy of Environmental Planning
Duration: 2018-2019
Location: PRC
Contract Value: CNY 200,000



Project Description

Based on the air pollution and haze control strategy, China's clean heating work in the northern region is an important reform measure of people's livelihood that attracts international attention. Due to considerable coverage of this reform, this topic mainly focuses on the role of the latest practice and experience of heating systems in advanced countries in promoting the process of clean heating in China. Therefore, the main content of this project includes: i) summarized and went through the obstacles in the cleaning and heating work in the northern region, based on which the related international practice cases was focused; ii) the development status of heating systems in a series of historical processes was systematically reviewed; iii) in terms of international practice, NAREE paid attention to the practice and application of renewable energy heating in developed rural areas, mainly including woody biomass energy combustion, biomass gasification, groundwater and heat pump; iv) focused on business models in international practice, including: public business model, private business model and hybrid model.

Services Provided by NAREE

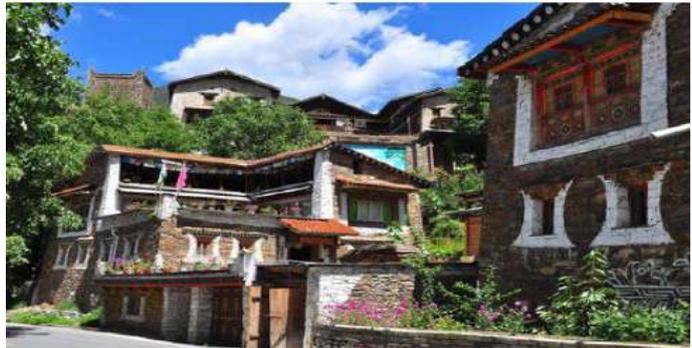
Identification of obstacles to clean heating in northern China – NAREE conducted literature review, data collection, consultations with stakeholders, as well as identified the major challenges for promoting clean heating in northern region of China. According to the similarity analysis of technology and social and economic development, four countries or regions of the United States, Denmark, United Kingdom and Germany were selected. The main obstacles facing clean heating in China at the present stage are closely connected, and the advantages of its system, policy, technology, funds and cases are sorted out to collect data and data in depth.

Experience learning in dealing with the development obstacle of heating in the world – For the four selected countries, the present situation and characteristics of heating in each country were analyzed, then NAREE focused on 6 dimensions, including driving factors of the energy structure, clean heating technology, energy-saving management policy, price subsidy mechanism, financing model, industry regulation and legislation, and other six dimensions. NAREE conducted in-depth analysis and summary of the advanced practices and experience, case studies of various countries.

Summary of the enlightenment from advanced countries in Europe and America to China's clean heating work – By comparing heating situations in north China and developed countries, NAREE put forward suggestions for further research on sustainable heating, suggested that clean heating work in north China area should focus on cross demand analysis when making the top-level design, improvement of upper law of heating and national tools, efforts to promote energy conservation assessment reform and measuring work, promotion on the reform of clean heating performance testing, as well as further distinction between urban and rural heating from the planning, techniques, capital and other dimensions.

Advanced Renewable Energy Technology Demonstration

Client: Asian Development Bank
Duration: 2019-present
Location: Barkam, Aba Tibetan and Qiang Autonomous Prefecture, Sichuan Province, PRC
Contract Value: USD 605,546



Project Description

The knowledge and support technical assistance (TA) increases the readiness of the Government of Aba Prefecture for investments in climate-resilient distributed heating based on renewable energy in Barkam County in Sichuan Province. The TA will assist the local government in developing knowledge about and preparing a pre-feasibility study on renewable energy-based climate-resilient distributed heating systems. The renewable energy-based distributed heating solution is the first of its kind in high-altitude regions in the People's Republic of China (PRC), with a large potential to be scaled up and duplicated to other regions in the country, particularly providing valuable experience to existing heating system renovation in the northern PRC.

This project is to develop a renewable energy-based distributed heating system, which seeks technically feasible, commercially viable, affordable, and sustainable solutions for renewable energy-based distributed heating with adequate degree of flexibility and robustness that allows for future adaptation to uncertainties related to climate change and socioeconomic development. The two project outputs are: (i) pre-feasibility study report on renewable energy-based climate-resilient distributed heating prepared; and (ii) capacity building on renewable energy-based climate-resilient distributed heating system.

Services Provided by NAREE

Assessment of heating sector in Barkam county – NAREE conducts a geo-referenced household survey, electricity supply and pricing analysis, building thermal energy audit, and heat demand analysis to understand the status quo of building thermal energy use and heating sector in Barkam.

Pre-feasibility study of renewable energy-based climate-resilient distributed heating – Based on the sector assessment, NAREE develops the technical and business model design for Barkam, and prepares pre-feasibility study for the designed project, including technology option identification for renewable energy-based distributed heating system, climate-resilient solutions development, financial and economic assessment, environmental and social impact assessment, PPP model selection.

Capacity building – NAREE organizes awareness enhancing workshops for local communities to disseminate the benefit of clean heating. To strengthen the executing and implementing agencies' capacity on renewable-based climate-resilient distributed heating systems, NAREE facilitates one overseas training in Europe and one national study tour in eastern to learn lessons from successful distributed heating projects.

Air Quality Improvement in the Greater BTH Region—Shandong Clean Heating and Cooling Project

Client: Asian Development
Duration: 2019-present
Location: Shandong Province, PRC
Contract Value: USD 393,660



Project Description

The project responds directly to the urgent national, provincial, and municipal government priorities to reduce coal consumption and improve air quality by introducing more efficient methods and advanced technology for heat production, through coal substitution and utilizing cleaner sources of energy such as natural gas and renewable energy, and reducing raw coal burning among households. The proposed project is well aligned with the priorities on managing climate change and environment in ADB's Country Partnership Strategy (2016 - 2020) and will support the government's priorities in realizing an ecological civilization, articulated in its 13th Five Year Plan. The expected outcome of this TA is to reduce emissions of pollutants and carbon dioxide in Shandong Province, and achieve improved public health in the BTH region.

Services Provided by NAREE

Development of rural clean heating road map – As living standards have been improved in the rural areas, households have transitioned from direct burning of traditional, low-quality fuel: straw, fuelwood, and other biomass—to raw coal in household stoves and heating facilities. Raw coal combustion, especially low-quality coal combustion, produces a large amount of particulate matter less than 2.5 micrometers in diameter and carbon monoxide. Therefore, NAREE will assist loan borrower in developing a road map to help rural residents' transition to clean heating which is important to address air pollution in northern PRC.

Measurement of air pollution reduction – By using ADB loan, the implementing agencies will procure appropriate portable air quality monitoring devices and train local women residents in their operation and maintenance. NAREE provides technical assistance to support measure and report indoor air pollution reduction in the rural households before and after the installation of clean heating systems in the project areas. NAREE also checks and verifies if there is a coalition between the air quality and solid fuel when using of the solid fuel as supplementary.

Involvement of wider audience – Base on the social survey about baseline information and residents' willingness/ability to pay, lack of awareness and knowledge of the health and environmental impacts of air pollution, willingness, and access to cleaner and energy efficient technologies could be obstacles to the adoption of cleaner heating, especially in rural areas. NAREE will design and implement an awareness-raising program on the impacts of air pollution and the environmental and health benefits of clean heating, which will support gender mainstreaming by ensuring that at least 40% of participants are women. NAREE will conduct a participant feedback survey after the clean heating systems installed to verify the benefits of clean heating and the residents' satisfaction with the heating supply, including time savings in the preparation of household energy for heating.

Hebei Elderly Care Development Project – Project Preparatory Technical Assistance

Client: Asian Development Bank
 Duration: 2016-2017
 Location: Hebei Province, PRC
 Contract Value: USD 377,570
 Loan Project Value: USD 180.11 million



Project Description

The project is the first elderly care (EC) project for Asian Development Bank (ADB) and will have a demonstrative effect on other provinces in the PRC and developing member countries in the Asia and Pacific region facing similar aging problems. It includes development of (i) an integrated EC system, linking the three tiers of care in urban and rural areas; (ii) EC service models, including public-private partnership (PPP), for replication; and (iii) a human resources training system to support improved quality and expansion of care services.

The impact of the project is aligned with the Government's goal that a three-tiered EC system (home, community, and institutional) is established. The Project will include nine subprojects covering urban and rural areas. Indicative project outputs are Output 1: Community and home care services improved: (i) improve community care centers and rural communal homes services and facilities; (ii) develop information technology (IT) networks that link home and community services to the elderly; (iii) create support networks with EC institutions to improve services; (iv) build capacity for home, community providers, and government to implement service quality regulations; and (v) use universal design promoting access for all. Output 2: Institutional EC service capacity increased and quality improved: (i) develop selected EC institutions to be run by the government and private sector, which provide services for elderly at various stages of need (i.e., assisted living, nursing, dementia, and rehabilitation); (ii) establish links to health facilities to support a continuum of care; and (iii) serve as models for EC services management and human resources development. Output 3: EC planning, human resources, and industry capacity improved: (i) develop a training center and programs to create human resources for caregivers and management, (ii) establish EC planning methods and systems, and (iii) design quality assurance and monitoring systems.

Services Provided by NAREE

NAREE provided the preparation technical assistance to prepare the loan project, undertaking due diligence in technical, economic and financial, social and environmental safeguards. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks include the followings:

- ◆ Baseline study and sector assessment
- ◆ Feasibility Study Report review and project design optimization
- ◆ Economic and financial due diligence, investment plan and procurement plan preparation
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment relevant action plan and review framework development
- ◆ Financial and procurement risk assessment of the EA/IA, and risk management planning
- ◆ EC-ICT service development
- ◆ Institutional capacity building
- ◆ Loan project documents preparation and loan negotiation facilitating

Jiaozuo National Pilot Project for Standardization of Public Employment Services

Client: Asian Development Bank
Duration: 2016-2018
Location: Jiaozuo City, Henan Province, PRC
Contract Value: USD 210,250



Project Description

Jiaozuo, a resource-exhausted municipality in Henan Province, is implementing a national pilot project for the standardization of public employment services to improve the quality and effectiveness of these services across the PRC, particularly between urban and rural areas. As of February 2016, the Jiaozuo Labor Exchange Center (LEC) has developed 179 standards. Despite the significant progress, the national pilot project faces the following challenges: (i) the service standards developed are mostly procedural, without specifying service results and performance characteristics; (ii) standards concerning the profiling of clients and the targeting of measures, two of the techniques to improve the match between jobseekers and employers, are almost non-existent; (iii) the management system standards developed, on the other hand, fail to cover quality control systems; (iv) standards for district and/or county centers, township, and village stations have yet to be developed. The objective of this project is to assist the LEC of the Jiaozuo Municipal Bureau of Human Resources and Social Security in upgrading and developing standards for public employment services and training public employment service staff at all levels.

Services Provided by NAREE

Development of a complete set of standards for public employment services – NAREE assisted the LEC in improving the existing standards and developing new standards for public employment services, including (i) collected and reviewed all national and local legislation, requirements, and standards relevant to public employment services; (ii) reviewed profiling and targeting techniques used in the PRC and abroad; (iii) upgraded existing service standards by specifying service results and performance characteristics; (iv) developed new service standards; (v) reviewed quality control systems used in public and private sector organizations in the PRC and abroad; (vi) upgraded existing management system standards; (vii) reviewed records and document management systems in the PRC and abroad; (viii) upgraded existing standards concerning records and documents of registered job seekers at public employment services agencies; (ix) reviewed public employment services and developed standards for agencies at each level.

Establishment of standards application and quality control systems for public employment services – NAREE supported the training of service staff at the municipal, district and/or county, township, and the application of the standards at village levels. NAREE supported the development of an IT platform for public employment services (software, databases, web portal), which will be integrated with social security information systems.

Strengthening Knowledge about the standardization of public employment services – NAREE organized a workshop with Shandong Jinan Human Resource and Social Security Bureau to share knowledge about, and experiences with, the standardization of public employment services.

Study on Gradual Rural-Urban Migration and Urban Settlements Development in Chuxiong Yi Autonomous Prefecture

Client: Asian Development Bank
Duration: 2017-2018
Location: Chuxiong Yi Autonomous Prefecture, Yunnan Province, PRC
Contract Value: USD 376,540



Project Description

The technical assistance (TA) supported the government's efforts to safeguard and improve living standards through people-centered urbanization. It was directly linked to ADB's country partnership strategy, 2016–2020 for the PRC, which emphasizes inclusive economic growth by reducing poverty and inequality. The TA created synergy with the ongoing loan in Chuxiong Prefecture, and complemented other TA projects in the PRC for urban–rural linkages and balanced urban and regional planning, and more efficient land use in small cities and towns, as well as ADB's urban sector knowledge work on balanced urbanization for inclusive cities development. The objective of the assignment was to carry out a study on negative and positive factors and develop policy recommendations for enabling gradual rural-urban migration and urban settlements development in Chuxiong Yi Autonomous Prefecture (Chuxiong) in consultation with the Policy Research and Legislative Advisory Office of the Chuxiong Government.

Services Provided by NAREE

Desk review – NAREE conducted reviews on the institutional arrangement, and regulatory frameworks for creating enabling environments for rural migrant integration into urban areas. NAREE also studied the legal, policy, and regulatory frameworks on three areas' development, including (i) agro- and non-farming industries and enterprises, labor market, taxes, research and development, human resource development; (ii) urban and rural land management at local and central levels; and (iii) employment, labor protection and activation, and social security at local and central levels.

Case study – NAREE identified good practices and prepared three case studies: (i) the development of agro- and non-farming industries and small towns based on non-farming industries to ensure stable employment for rural migrants, (ii) the land valuation system and unified land market between urban and rural areas, and (iii) the reform of the household registration system and the urban–rural equalization of basic public services by establishing a unified labor market and social security systems and sustainable financing mechanisms.

Development of policy recommendation – Based on the case studies, NAREE organized a seminar, involving relevant bureau and institutions, to develop policy recommendations, and subsequently presented it to local and provincial government.

Capacity building – NAREE assisted the delegation from EA and IA to organize an international study tour, which provided insights into urbanization with voluntary migration. Moreover, NAREE facilitated a capacity building event in Beijing with 30 participants from Chuxiong.

Hubei Yichang Comprehensive Elderly Care Demonstration Project

Client:	Asian Development Bank
Duration:	2018
Location:	Yichang City, Hubei Province, PRC
Contract Value:	USD 17,047
Loan Project Value:	USD 305.1 million



Project Description

The loan project aimed to support the development of a three-tiered elderly care system (ECS) in Yichang Municipality, Hubei Province by improving the coverage and utilization of home-based, community-based, and residential-based elderly care services. The project is aligned with the following impact: a three-tiered ECS (home-based, community-based, and residential-based care services) established. The project had four outputs included (i) home-based and community-based care services and facilities improved, (ii) elderly care service capacity increased and its support system improved, (iii) facilities and services supporting the integration of healthcare and elderly care established, and (iv) capacity of elderly care management and project management support developed.

Services Provided by NAREE

NAREE provided project preparatory technical assistance (PPTA) to prepare the loan project by overall coordinating among project team members, the government counterparts, including the executing and implementing agencies, and other relevant stakeholders. Detailed tasks conducted by NAREE includes the followings:

- ◆ Closely worked with the ADB team, the consultant team, and the executing and implementing agencies.
- ◆ Coordinated inputs from the government counterparts, other relevant stakeholders, and all project team consultants, and assisted in the preparation of project preparation.
- ◆ Collected, coordinated inputs, and ensured consistency and quality from the government counterparts, other relevant stakeholders, and all project team consultants on project related data;
- ◆ With international consultants, collected needed data and information, and related policy documents for project preparation, such as sector analysis and affordability analysis.
- ◆ Ensure the quality of all PPTA outputs in conformity with ADB requirements; translated the relevant documents to the missions, such as mission agenda, memorandum of understanding, and presentation slides.
- ◆ Coordinated all activities during TA implementation including all consultant missions and inputs, all workshop and training, all data collection activities, and communications with the executing and implementing agencies.
- ◆ Assisted the team leader in all aspects of project management and maintain a consistent presence in the field.

Hebei Elderly Care Development Project – Consulting Services of Project Implementation Support

Client:	Hebei Provincial Foreign Debt Management Center
Duration:	2018-present
Location:	Hebei Province, PRC
Contract Value:	USD 1,920,220
Loan Project Value:	USD 180.12 million
Funding:	Asian Development Bank (ADB)



Project Description

The project comprises six subprojects, five of which will create integrated three-tier elderly care (EC) services in local cities and counties dissipated across Hebei Province and one provincial level subproject with Yanshan University that will strengthen EC sector human resources and conduct specialized research relevant to the sector. The five cities and counties that will create the integrated EC services are Shuangluan District, Chengde Municipality; Li County, Baoding Municipality; Xinji City (provincially governed); Julu County, Xingtai Municipality; and She County, Handan Municipality. The project will have four outputs: (i) improved community and home care services, will support creating quality home and community-based care (HCBC) services. (ii) increased residential EC service capacity and improved quality, will support the development of facilities. (iii) improved development of human resources and industry capacity, will help address the EC human resources shortages and quality by supporting Yanshan University. (iv) improved capacity of EC sector organizations, will build the capacity of stakeholders and local civil affairs bureaus in planning, EC management, assessment, and quality assurance and monitoring.

Services Provided by NAREE

Implementation support for construction and management of the required EC infrastructure – NAREE regularly updates project implementation plans, monitors physical progress, routinely submits project progress reports to ADB, participates at ADB supervisory and review missions, and supports HPMO in the preparation of the borrower project completion report. Regarding procurement management, NAREE monitors procurement plans and procedures, supports and reviews bidding document preparation and advises on contractual issues. As for construction management, NAREE assists in progress tracking, reviews contract variations and claims, and establishes project accounting and financial reporting systems.

Implementation support to the implementing agencies to help operationalize the EC services – NAREE advises and supports the implementation of the agreed program of pilot initiatives, helps in dissemination of the results of pilot initiatives and rolls out across all implementing agencies, provides advice, guidance, and supports on the detailed planning and execution of the roll out of each implementing agencies' HCBC services, prepares and updates the operational business plans of the implementing agencies.

Organization of an EC training program – NAREE organizes international study, about an advanced EC system in place comparable with best international practices, and delivers part-time residential care training modules over 18 months–2-year period, with implementing agency managers and staff as the main targets. HCBC training includes: HCBC management training, home safety assessment training, and contractor training for home adaptations.

Guangxi Modern Technical and Vocational Education and Training Development Program

Client: Asian Development Bank
 Duration: 2018-present
 Location: Guangxi Zhuang Autonomous Region, PRC
 Contract Value: USD 315,590



Project Description

The economic structure of Guangxi Zhuang Autonomous Region (GZAR) has undergone significant changes since 2000, supported by steady economic growth. Yet GZAR remains one of the poor provinces, with 9.9% of the population living below the poverty line. However, concern is growing that shortages of skilled labor could constrain socioeconomic development in GZAR. Although technical and vocational education and training (TVET) has been one of the sources of skilled labor, being supply-driven and under-resourced, GZAR's TVET system lags in quality and relevance, failing to address developmental challenges effectively. This TA aims to strengthen the capacity of the TVET in GZAR to develop and implement the key interventions initiated with the adoption of the Modern TVET System Development Plan.

Services Provided by NAREE

Improve the mechanisms for ensuring the quality of TVET – NAREE assists TVET institutions in establishing an internal quality assurance system; additionally, we review the existing institutions and mechanisms for training TVET teachers at the national, provincial, municipal, and county levels, in particular those for practical and in-company training, to obtain dual qualifications. Based on findings, NAREE provided recommendations for improving practical and in-company training mechanisms for TVET teachers, especially in rural counties, will be developed.

Develop measures to strengthen TVET groups and modern apprenticeship programs – To strengthen the governance, functions, and capacity of TVET groups in facilitating school–enterprise cooperation and employer and industry engagement in the development and delivery of TVET, NAREE reviews the policy, legal, and regulatory frameworks and financing for TVET groups, and examines the governance structure and operating procedures of different types of TVET groups through questionnaires and interviews. For weaknesses identified, NAREE developed the capacity development plans of selected TVET groups, as well as recommendations for preparing detailed operational guidelines for modern apprenticeship programs.

Develop new cooperation models between TVET institutions and enterprises in GZAR and ASEAN countries – NAREE takes stock of existing policies, cooperation activities, financing mechanisms, institutional arrangements and other experiences of TVET institutions and enterprises in both GZAR and ASEAN countries. Based on findings, NAREE develops concepts and procedures to establish new cooperation models.

Strengthen the capacity of TVET administration – NAREE strengthen the capacity of regional, municipal, and county education department and bureaus in GZAR to provide guidance and supervision for TVET institutions, and to manage the program, upgrades the Procedures and criteria for screening and approving proposals, requirements for planning and reporting, and monitoring and evaluation mechanisms for the program

Shanxi TVET Development Demonstration

Client:	Asian Development Bank
Duration:	2018-present
Location:	Shanxi Province, PRC
Contract Value:	USD 304,580
Loan Project Value:	USD 200 million



Project Description

Xinzhou is one of 11 prefecture-level municipalities comprising resource-rich Shanxi Province located in northern part of PRC. Recording the lowest GDP per capita among the 11 municipalities in 2015, Xinzhou lags in urbanization and industrialization, and its traditional resource-based industries need urgent upgrading. To address these challenges, the government has been promoting industry development-oriented poverty alleviation, focusing on the development of non-traditional industries and job creation, especially in urban areas, along with the development and reform of technical and vocational education and training (TVET) to meet the needs of priority industries and reduce poverty.

To address the demands for skilled workforce in the priority industries (equipment manufacturing, agricultural products processing, tourism) and the challenges facing the TVET system in Xinzhou, the proposed project will support a set of physical investments, capacity development, and pilot initiatives. There are three main outputs: (i) Priority industry development strategies and action plans incorporating skills development introduced. (ii) TVET institutions offering majors in line with needs of priority industries established. (iii) TVET system reform pilots implemented.

Services Provided by NAREE

NAREE supports the preparation of the project through technical, sector and industry assessments, economic and financial analyses, financial management and procurement capacity assessments, and poverty, social, and gender analysis, and to build the capacity of the Xinzhou Municipal Government and TVET institutions to implement the ensuing project. Detailed tasks conducted by NAREE includes the followings:

- ◆ TVET sector assessment
- ◆ PPP feasibility assessment
- ◆ Financial management and procurement capacity assessments
- ◆ Industry assessments
- ◆ Social, poverty, and gender analysis
- ◆ Economic and financial analyses
- ◆ Project documents preparation (PAM, RRP and other linked documents) and loan negotiation facilitating
- ◆ Capacity development and advance procurement actions

Consulting Firm for Assessment and Improvement of Core Competency Development and Rural-Urban Disparities

Client: Asian Development Bank
Duration: 2019-present
Location: Lanzhou City, Gansu Province, PRC
Contract Value: USD 211,520



Project Description

The PRC Ministry of Education (MOE) in 2014 initiated a new round of curriculum reform that emphasized the comprehensive individual development of each student with a sense of responsibility and practical and innovation skills instead of focusing strictly on subject knowledge and examination scores. Integrated practice activities have also been introduced to primary education. The reform has further prioritized the development of instructional resources through the use of information and communication technology (ICT), transforming teaching–learning methods into student-centered and problem- and project-based. The proposed knowledge and support technical assistance (KSTA) from Asian Development Bank will increase enhanced teaching, learning, and support systems and instructional resources using ICT to develop students' core competencies and reduce rural-urban disparities in primary education in Gansu Province, People's Republic of China (PRC) through policy advice, capacity development, and research.

Services Provided by NAREE

Assessment of existing teaching, learning, and support systems and instructional resources, and use of information and communication technology in primary education – NAREE will develop a gender-inclusive framework and tools for assessing existing systems, resources as well as the use of ICT, and support and guidance in data collection and analysis for the assessment to be conducted by the six advanced urban primary schools. A presentation of findings of the assessment at workshops and seminars with all the stakeholders will be organized.

Introduction of national and international good practices and lessons in building students' core competencies and addressing rural-urban disparities in primary education through the use of ICT – NAREE will prepare a call for papers nationally and internationally for a conference where case studies and research papers dealing with the development of core competencies and reduction of rural–urban disparities and gender gaps in primary education will be presented. Preparation of national and international tour for education administrators, primary school principals and teachers, and teacher training and research institutes in Lanzhou.

Pilot action of new or improved ICT-enabled teaching, learning, and support systems and resources in primary education – By supporting and guidance in preparing the concept, methodology, and work plan of two or three action research projects (of which at least one is gender-inclusive), NAREE will serve this pilot study as an example for other projects of primary education in Lanzhou or even Gansu province.

Preparing the School Education Reform Sector Development Program

Client: Asian Development Bank
 Duration: 2020
 Location: Bishkek, Kyrgyz Republic
 Contract Value: USD 550,700



Project Description

The outcome of the project will be improved learning outcomes of public school students. The program will be aligned with the following impact: Equitable and quality education system focused on (i) raising a harmoniously developed personality, (ii) full realization of the genuine talents of each person, and (iii) formation of practical skills and competencies

Services Provided by NAREE

Improvement of curriculum quality and relevance – The technical assistance of NAREE will ensure (i) proper oversight, an updated and comprehensive regulatory framework, and clear procedures for the process of curriculum development, periodic review, approval, and implementation; (ii) good coordination between this process and textbook procurement, teacher training reform, and financing; and (iii) support for approval of subject curricula for science, technology, engineering and mathematics (STEM). NAREE will also support revising STEM curricula, guidelines, and programs to ensure their alignment between levels, grades, subjects, and topics to enable the practice of multi-disciplinary teaching approaches in STEM subjects in schools.

Improvement of teaching and teacher training quality – NAREE will ensure the policy-based grant support amendments to the legislation and the charter of the Republican Teacher Training Institute so that the institute will be responsible for coordinating the diversified in-service teacher training (INSETT) program with multiple service providers. INSETT programs will be based on a detailed training needs assessment and be aligned with national school and pre-service teacher training curricula. NAREE will help MOES to reform pre-service teacher training in universities. This output will support ADB's Strengthening Education System Sector Development Program by raising teaching quality, specifically related to STEM education. Pre-service programs will be closely aligned with the reformed school curricula and encourage multi-disciplinary approaches in teaching. The project will also encourage training more female teachers to handle STEM subjects and serve as models for gender-inclusive STEM-oriented education.

Strengthening of the Future Schools network – Future Schools will be a national program open for any public school demonstrating genuine excellence in school management, teaching STEM, extracurricular activities, and community work. NAREE will ensure the program policy component support legislative changes to provide Future Schools with the necessary academic, financial, and administrative freedom to effectively pursue innovation and excellence in teaching practice. The investment project component will help MOES develop a comprehensive operational concept for the Future Schools program, implement the program, develop clear school enrollment procedures, and upgrade the infrastructure of schools. Innovations successfully piloted in those schools both in teaching and school management will be rolled out to the wider system, while Future Schools would serve as resource centers.

Preparing Urban and Social Development Projects - Xi'an Early Childhood Education

Client: Asian Development Bank
Duration: 2020
Location: Xi'an City, PRC
Contract Value: USD 331,970



Project Description

Xi'an has made notable progress in developing early childhood education (ECE) especially over the past decade while there are several constrains in the current ECE, including insufficient kindergarten seats, geographically imbalanced distribution of high quality public kindergartens, a shortage of qualified ECE teachers and insufficient in-service training opportunities, a need for better financing and cost-sharing mechanisms, lack of regulation and supervision of ECE, a deficiency of innovation in the curriculum, etc. This is a results-based lending (RBL) program, which is a particularly appropriate model for promoting high quality ECE development and large-scale systemic teacher training as shown from other RBL experience. The program will deepen Xi'an's ECE institutional reforms and enhance the development impact and sustainability through capacity development and systematic improvement. The program is also aligned with ADB strategy 2030 focusing on addressing remaining poverty, reducing inequalities and accelerating progress in gender equality.

There are four outputs (or components) of this project: (i) access to climate-friendly inclusive kindergartens increased, (ii) ECE teaching and management capacity developed, (iii) ECE financing, regulation, and supervision mechanisms strengthened, (iv) innovation to improve ECE quality promoted and disseminated.

Services Provided by NAREE

Several detailed assessments will be prepared and the due diligence will be undertaken to prepare an ECE results-based lending program in China. Two individual consultants engaged by ADB will closely coordinate with other TA team specialists. In particular, seven assessments will be prepared by a team of international and national specialist for the proposed RBL program, including

- ◆ program soundness assessment
- ◆ program results assessment
- ◆ program expenditure and financing assessment
- ◆ program monitoring and evaluation system assessment,
- ◆ program fiduciary system assessment
- ◆ program safeguard systems assessment and
- ◆ poverty, social and gender assessment.

Strengthening Social Protection in the Pacific - Aged Care Assessment

Client: Asian Development Bank
Duration: 2020-2021
Location: Tonga
Contract Value: USD 319,550



Project Description

The purpose of this Knowledge and Support Technical Assistance on Strengthening Social Protection in the Pacific (TA) is to strengthen the social protection in Pacific developing member countries (DMCs) to reach out to the vulnerable groups. Key priority areas include social insurance, social assistance and labor and employment. The TA outputs include (i) gender responsive social protection policies and investments identified and prioritized; (ii) capacity in building social protection systems and delivery of social protection services for vulnerable groups improved; and (iii) knowledge production and partnerships on social protection strengthened. These outputs will result in the following outcome: social protection systems and programs strengthened in selected Pacific DMCs. The TA will be aligned with the following impact: enhanced government capacity and leadership in social protection development in selected Pacific DMCs. The focus of this assignment will be on Tonga.

Services Provided by NAREE

Assess existing aged care status, needs and demands. NAREE will undertake a comprehensive assessment of the aged care in Tonga including undertaking relevant workshops, consultations and surveys with relevant stakeholders. The assessment will also draw from the outputs of the Regional TA: Strengthening Developing Member Countries Capacity in Elderly Care specific to Tonga in identifying the current status of aged care and collect necessary field data to fill key information gaps.

Assess the needs and support required for family carers in Tonga. NAREE will undertake a feasibility study of cash transfers, such as carers' allowance and/or personal allowances and personal budgets for family carers in Tonga to provide social protection for older persons with support and care needs and including other people with disabilities. Assessment will likewise include all existing budgetary support and allowances for elders and other persons with disability to rationalize personal care allowance and its likely sustainability. NAREE will particularly examine possible financial framework including an evaluation of different financing options based on budget requirements, government budgetary and administrative capacity and overall sustainability. Gender assessment will be integrated into the analysis to ensure gender responsive approaches and maximize equal benefits to both men and women.

Identify and design an integrated aged care project in Tonga. NAREE will identify the scope and design of a feasible aged care project suitable in the context of Tonga that would respond to the long-term care needs of the elders. NAREE will provide several innovative options and the final option/design will be determined based on stakeholder workshop and other consultation workshops aimed at getting feedback from key government agencies and other relevant stakeholders including elders and potential service providers.

Greater Mekong Subregion: Capacity Development for Economic Zones in Border Areas

Client: Asian Development Bank
Duration: 2017-2018
Location: PRC, Vietnam, Laos
Contract Value: USD 15,430



Project Description

The TA focused on the following 17 border points prioritized by the Greater Mekong Subregion (GMS) Task Force on Urban Development. These border areas are critical points along the GMS corridors and are considered important links between the countries. Partnered with PM Group, NAREE provided consulting services to the Asian Development Bank, which included: (i) reviewing the governments' policies and plans for development of border areas including border economic zones (BEZs); (ii) identifying challenges and opportunities for the development of urban centers at border points and BEZs in terms of urban planning and infrastructure development in each participating country; (iii) proposing improvements in the future GMS corridor towns development approach with an increased focus on border areas; (iv) developed a pipeline of the fifth, sixth, and seventh phases of the GMS CTDP; (v) conducting regional seminars to increase awareness and capacity on urban, border area, and BEZ development; and (vi) pre-feasibility studies for the fifth GMS CTDP.

Services Provided by NAREE

Desk Review – NAREE conducted the policies, strategies, and plans for border area development of each of the participating governments as well as the existing conditions of 17 priority border points; assessed the challenges and opportunities for the development of urban centers at border points and BEZs in terms of urban planning and infrastructure development; and prepared notes on the policy framework of the GMS corridor towns development initiative.

BEZs development issues analysis – NAREE Identified the issues and difficulties common to all participating countries as well as the country specific issues and difficulties that impede effective development and management of the BEZs; and assessed the country specific needs for awareness raising and capacity development.

Seminar organization – Based on the lesson learnt from the field study, NAREE assisted to design seminars on the issues and difficulties common to all participating countries with a focus on spatial planning, urban management, operation and maintenance of urban infrastructure, and sustainable municipal service delivery in the border areas.

Study of China-Pakistan Economic Corridor: Status of Implementation and Future Prospects

Client: World Bank
Duration: 2018-2019
Location: PRC, Pakistan
Contract Value: USD 61,000



Project Description

This TA's main purpose was to produce a comprehensive review of the status of implementation of current projects and an analysis of future opportunities presented by CPEC, and through the process also to enhance the counterparts' capacity to foster informed policy dialogue related to CPEC between economic actors. The Study will serve to inform Pakistani, Chinese, and World Bank stakeholders about possible steps to maximize the potential economic benefits under CPEC, including by understanding and mitigating potential risks to the initiative. The Study, completed jointly by NAREE and our Pakistani partner CTC, served as the basis for policy recommendations to both governments on how to effectively maximize the benefits of CPEC.

Services Provided by NAREE

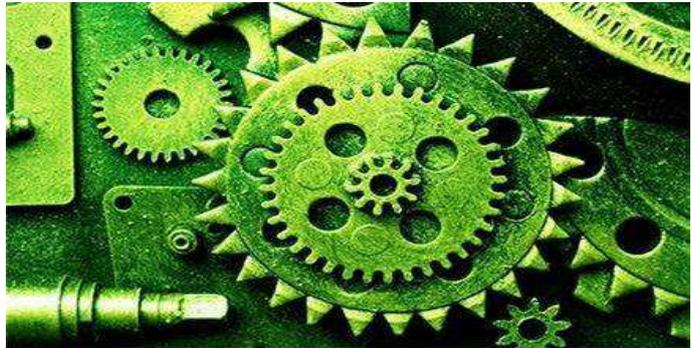
Review and Policy recommendations – NAREE provided background assessments of and policy recommendations on key aspects of CPEC to foster an inclusive and informed public dialogue. NAREE produced strategy notes on six topics: (i) stocktaking of current CPEC projects and their economic, social, and environmental impacts; (ii) assessment of hardware/infrastructure connectivity and the process of prioritizing future projects; (iii) identification of near-term trade and investment opportunities connecting the demand and supply sides; (iv) assessment of financial sustainability, debt management, and capacity building; (v) leveraging special economic zones and learning experiences from other countries; and (vi) assessment of microeconomic effects, including local job creation, skills development, and livelihood improvement in Pakistan.

Capacity building for better informed policy dialogue about CPEC, and fostering South-South knowledge exchange on regional connectivity and development opportunities – Together with CTC, NAREE fostered a constant and collaborative knowledge exchange between the government agencies (including think tanks) in China and Pakistan for informed policy dialogue on CPEC investments. We organized a series of knowledge exchange/learning activities for Chinese and Pakistani government officials/think tanks on potential infrastructure development opportunities and regional connectivity opportunities (using analytical studies, exposure tours, knowledge events).

Creation of a platform for private sector dialogue series to inform and influence a critical mass of influential actors at different levels of government and private sector from both participating countries – Together with CTC, NAREE convened private sector interactions in Pakistan and in China between business groups from the two countries.

EU-China Ecodesign and Standards Cooperation Project

Client: European Union
Duration: 2018-present
Location: PRC, Belgium
Contract Value: EUR 31,385



Project Description

This project's main purpose is to enhance the ability of the Chinese administration to work with the EU approach, policies and standard in order to improve competitiveness, productivity as well as resource and energy-efficiency and to better address climate change-related challenges. The proposed action aims to promote EU product policy and test standardization approaches and measures in China to mitigate climate change, promote energy-efficiency and enhance environmental protection. It will therefore contribute to improving the sustainable competitiveness of both EU's and China's economy.

The project has three major outputs, including (i) Expanding the scope of influence of EU Eco-design and Energy Labelling requirements and European measurement standards, and increasing the reach of EU product policy measures globally; (ii) Improving through framework actions- the competitiveness of EU exporters and reducing market entry barriers and costs for EU manufacturers entering the Chinese market for products where regulations are under development in China. (iii) Improving the compliance rates of imported Chinese products placed on the

Services Provided by NAREE

A training toolkit on EU Ecodesign policies and standardization – Together with our partner IBF, NAREE developed a bilingual English-Chinese toolkit to support the Green Goods Policy of China, including all the necessary resources on the EU Eco-design and Energy Labelling Policy framework to prepare the different seminars. The toolkit focuses on key products, and develops techniques and examples for building an understanding of the policies and processes of related documents (directives, regulations, methodologies and analytical approaches, test standards).

Three capacity building training seminars – NAREE and IBF organized three training seminars on the EU Ecodesign and Energy Labelling regulatory processes, including product measurement standards aimed at familiarizing Chinese officials to the EU system. We provided tailored, learner-centric support to training participants, supervise and guide assigned exercises, and overall ensure an optimal outcome. This transfer of expertise supported the Chinese administration in designing their national policies and standards by taking into account the European processes, policy measures and measurement standards.

Two policy reports – NAREE and IBF developed: a report with lessons learnt on the implementation of the action and recommendations on how the EU and Chinese product policy and standardization systems can continue to collaborate and work better together in the future; and a report on Chinese standards and regulations in the area of Eco-design and Energy Labelling, or equivalent, and their possible options for future evolution addressed the EU industries and EU standardization organizations.

Agriculture and Rural Development Project

Client: Asian Development Bank
Duration: 2019-present
Location: Ulaanbaatar City, Mongolia
Contract Value: USD 40,500



Project Description

Mongolian agro-processing enterprises find it difficult to make products of a quality that meets the standards of international and national high-value markets. The key bottlenecks are two-folds: the enterprises' limited access to quality raw materials and their limited capacity to improve the quality of their products. To capture domestic and international high-value markets, project participating enterprises (PPEs) need to ensure stable supply and procurement of quality raw materials as well as improve their technical capacity to process these raw materials into high-quality products.

This capacity development technical assistance aims to: (i) improve the technical and marketing capacity of agro-enterprises and cooperatives of project target subsectors; (ii) improve the technical and marketing capacity of other agro-enterprises and cooperatives in the target subsectors selectively and the technical capacity of primary producers and processors who provide raw materials to those subsectors; (iii) establish a process for brand development and management that is sustainable and replicable by institution(s), charged with managing the process through a demonstration effect with enterprises in the sectors of high export potential, and involving other enterprises in the longer-term; and (iv) facilitate the matchmaking between selected Mongolian enterprises and International brands, and establish brand partnership agreements between project participating enterprises and international brands.

Services Provided by NAREE

Promoting Mongolia as supplier of organic/ grass-fed meat to target markets – Together with our local partner Monconsult, NAREE helps meat processing companies and exporters of Mongolia to define and develop strategies and plans to promote Mongolia meat products in China. Detailed tasks include: identify gaps and obstacles limiting Mongolia's access to export markets for meat and meat products; assesses the current status of progress towards achieving unrestricted meat export to potential international markets and make a recommendation including the specific steps to achieve goals; and studied on barriers to meat market entrance to China (consumer preferences, regulatory mechanisms and legal and other requirements).

Capacity building for project participating enterprises (PPEs) – NAREE helps PPEs and meat exporters of Mongolia to define and develop strategies and plans to promote as supplier of organic /grass-fed meat to target markets; provides assistance to identify potential importers for PPEs and to assist at least two PPEs to establish supply agreement with international buyers and enterprises; identifies and ranked priority constraints for PPEs and their suppliers for establishing trust among importing partners by focusing on value added supply chain to enable them to increase consistent supply and competitive advantage; and designs and delivers tailor-made trainings for relevant actors in the chain to bring desired improvements.

Beijing-Tianjin-Hebei Regional Air Pollution Control

Client: Asian Development Bank
Duration: 2016-2017
Location: Beijing City, Tianjin City and Hebei Province, PRC
Contract Value: USD 278,725



Project Description

The technical assistance TA introduced international experience on regional air quality management and conduct expert review and consultations to support the preparation of the regional air pollution prevention and control aspects of the above master plans. The TA conducted specific surveys on Hebei Province's Baoding, Langfang, Tangshan, and Cangzhou cities to provide recommendations on technical and financial cooperation mechanisms with Beijing and Tianjin Municipality.

The project impact was the improved air quality in Beijing – Tianjin – Hebei (BTH). The outcome was the promotion of coordinated regional approach for air pollution prevention and control in BTH.

Services Provided by NAREE

Road map and policy recommendations for BTH regional air pollution prevention and control in the medium to long term formulated – NAREE introduced the international experience on regional air quality management and conducted expert review to support the preparation of the master plan for BTH regional air pollution prevention and control. A detailed road map and related policy recommendations has been developed to specify the paths and policies needed to put the master plan in practice. The report covered unified emission standards, regional pre-warning and joint emergency response, and consistent emission monitoring and coordinated reduction actions, among others, and examined the technical, institutional, economic, financing, and legal aspects for establishing the regional mechanisms.

Mechanisms and measures for joint air pollution prevention and control in the key cities of BTH developed – NAREE analyzed the pollution status, existing control measures, and the economic development of Beijing, Tianjin, and Hebei Province's Baoding, Cangzhou, Langfang, and Tangshan. Then, proposed detailed cross-city cooperation mechanisms and policies applying the framework developed under the medium- to long-term road map.

Capacity building on air quality management for BTH local environmental protection agencies – NAREE integrated the technical, monitoring, and management capacities of the local environmental protection agencies in BTH. Provided a series of training workshops to the selected local environment bureaus, as well as explored and mobilized additional resources from line agencies.

Hubei Huanggang Urban Environment Improvement Project- External Environmental Monitoring

Client:	Huanggang Project Management Office
Duration:	2016-2020
Location:	Huanggang City, Hubei Province, PRC
Contract Value:	USD 43,900
Loan Project Value:	USD 252.60 million
Funding:	Asian Development Bank



Project Description

The Government of the People's Republic of China (PRC) has received a loan of \$100 million from Asian Development Bank (ADB)'s ordinary capital resources to help finance Hubei Huanggang Urban Environment Improvement Project. The project aims to promote environmentally sustainable and socially inclusive urbanization in Huanggang, Hubei Province by improving the urban environment. The project will improve the lakes and rivers' water quality, flood-retention capacity, and aesthetic value contributing to economic prosperity and enhanced livability in the lakeside urban area.

The Huanggang project management office (HPMO) engaged an experienced external environmental monitoring entity to provide assistance to Huanggang municipal government (HMG) (the executing agency), HPMO, and Huanggang Urban Construction Investment Company (HUCIC) (the implementing agency) in monitoring project implementation in compliance with the environmental management plan (EMP) and ADB's safeguards policy; verifying the project's environmental performance; identifying the necessary corrective actions, and reflecting them in a corrective action plan.

Services Provided by NAREE

NAREE was engaged to provide the external environment monitoring for the entire duration of project implementation. The external environment monitoring work includes:

- ◆ Conduct independent verification of EMP implementation status and environmental monitoring conducted by the Huanggang environmental monitoring station (HEMS), to verify that issues reported in the internal environmental monitoring report and semiannual environmental progress report are in compliance with ADB's safeguard policy statement and PRC policies;
- ◆ Make recommendations to resolve any issues or problems on implementing the EMP and provide advice to HPMO and HUCIC;
- ◆ Compare the predicted with the actual environmental impacts, assess the effectiveness of the mitigation measures, and suggest enhancement measures, as required; and
- ◆ Submit external environmental monitoring verification report to ADB and HMG with quality acceptable to ADB on semiannual basis during project implementation period in both Chinese and English.

Study on National Resource Asset Appraisal and Management System for the National Key Ecological Function Zones Project

Client: Asian Development Bank
Duration: 2017-2018
Location: Beijing City and Shaanxi Province, PRC
Contract Value: USD 371,959



Project Description

The policy and advisory technical assistance (PATA) aimed to assist the Ministry of Ecology and Environment (MEE) in improving the accessibility and reliability of environmental information, and provided central and local governments with the tools and approaches necessary to gauge the quantity and quality of the national key ecological function zones' (NKEFZ) natural resource assets in a consistent and standardized framework. It also enhanced MEE's national and local capacity to monitor the NKEFZs' natural resource assets and ecosystem services;; design and implement management interventions that ensure sustained provision of ecosystem services in the NKEFZs; and evaluate the performance of institutions and officials responsible for the NKEFZs' environmental management. NAREE assisted MEE to (i) review gaps; (ii) consolidate ongoing efforts, including those with other PRC agencies; and (iii) develop an environmental information system by supporting the development of a national-level methodology and guidelines that are consistent with international best practice for natural resource asset appraisal, accounting, monitoring, and management.

Services Provided by NAREE

Development of framework and methodology for natural resource asset appraisal in the NKEFZs – NAREE reviewed the existing information and data gaps on natural resources in the NKEFZs, including international practices and work by other PRC agencies; developed a draft list of accounts and prepared draft technical guidelines to include targeted assets, assessment tools, indicators, valuation, and data analysis; technical workshops and expert group meetings were conducted to discuss and refine the methodology.

Demonstration of approach to compiling natural resource accounts through completion of the Qinba Biodiversity Ecological Function Zone (QBEFZ) pilot study – NAREE conducted workshops with sector agencies and local and provincial counterparts in the QBEFZ to discuss the pilot studies methodology and approach; conducted the natural resource asset appraisal in the QBEFZ in collaboration with MEP, and local and provincial counterparts; prepared detailed technical reports on the results and implementation challenges; national and local workshops to discuss the pilot study findings were organized.

Preparation of policy recommendations for applying natural resource asset appraisal methodology and results for the management of NKEFZs – NAREE assessed and provided recommendations on institutional, administrative, and resourcing requirements at provincial and national levels for natural resource appraisal and monitoring; assessed and provided recommendations on how the natural resource asset appraisal framework can be used to improve design and effectiveness of financing mechanisms (i.e. eco-compensation) in key NKEFZs, including market-based mechanisms, transfer payments, ecological damage penalties; developed recommendations for using the proposed natural resource asset appraisal framework and its results for end-of-office auditing of natural resources management officials

Improving Ecological Protection and Poverty Alleviation Outcomes of the Rare-Earth Sector in Jiangxi Province

Client: Asian Development Bank
Duration: 2018-2019
Location: Ganzhou City, Jiangxi Province, PRC
Contract Value: USD 399,300



Project Description

The knowledge and support technical assistance (TA) supported the integration of poverty alleviation and ecological protection efforts in Jiangxi Province, China. It explored the influence of the rare-earth mineral sector on poverty alleviation and environmental outcomes in Jiangxi Province, and prepared policy recommendations for improved integration of poverty alleviation and ecological protection efforts in the province, with Ganzhou Prefecture as a focal area. China requested TA from the Asian Development Bank (ADB) for research on improving ecological protection and poverty alleviation outcomes of the rare-earth (RE) sector in Jiangxi. The TA is included in the country operations business plan for the PRC, 2017–2019.

Services Provided by NAREE

A systematic and in-depth understanding of the current remediation of RE abandoned mines in Jiangxi Province (Ganzhou) and the opportunities to improve local residents living and health conditions – After consultation with relevant bureaus of Ganzhou Prefecture, NAREE collected scattered information, most pointing out environmental protection issues but less related to residential livings. In addition, NAREE systematically analyzed issues of current remediation of abandoned mines and identified opportunities to improve local residents’ livings and livelihoods.

An in-depth summary and cost-effectiveness of the existing remediation model of abandoned RE mines in Jiangxi Ganzhou – As RE abandoned mines is completely different from other abandoned mineral resources, NAREE analyzed the environmental economic benefits and applicability of various remediation models. Meanwhile, Ganzhou Prefecture was selected as the pilot area, since it has already initiated to remedy some abandoned mines.

Summary of experiences of abandoned mines remediation – Current abandoned mine remediation mainly focused on the technical side, while social and economic aspects were less involved. NAREE analyzed socio-economic benefits of different remediation models of abandoned mines, summarized and promote these experiences throughout the province, to facilitate the understanding of economic development and poverty alleviation potential of abandoned mine remediation among relevant departments in Jiangxi Province.

Development of a set of effective remediation mechanisms and a series of policy recommendations proposed – Based on the problem analysis, the technology was no longer the main problem, while the participants, fund source and benefits of remediation were the main problems. However, the implementing agency of the abandoned RE mines remediation in China was the government, and the funds came from financial allocations. Obviously, it is hard to solve large number of abandoned mines in this way. Therefore, NAREE analyzed current remediation models and proposed a set of effective remediation mechanisms and a series of policy recommendations to the beneficiary, including implementing agency, participants, funding sources, and benefit sharing mechanism.

Public Private Financing Mechanism for Chishui Watershed Protection

Client: Asian Development Bank
Duration: 2019-present
Location: Guizhou Province, PRC
Contract Value: USD 311,290



Project Description

In 2014, the Guizhou Provincial Government issued the “Working Plan for the Pilot Reform of the Ecological Civilization System in the Chishui River Basin of Guizhou Province”, which includes 12 tasks including establishing an ecological compensation mechanism and exploring innovation in investment and financing mechanisms. More and more environmental protection projects are encouraged to seek private sector participation and multi-channel financing to ensure the sustainability of the project. Chishui river basin has always attracted attention and support from each level of governments and international development organizations, including Asian Development Bank. As a follow-up project of the previous stage supported by ADB, this knowledge and support technical assistance (KSTA) project intends to further help Guizhou province establish a pilot project using the public-private investment and financing mechanism, and explore a workable model. Also, the project is expected to establish a project library containing investable projects to provide a basis for the implementation of the public-private investment and financing mechanism.

Services Provided by NAREE

Development of a public-private financing mechanism for sustainable environmental protection – As the foundation of the public-private financing mechanism establishment, NAREE reviewed and analyzed the current constraints and requirements of environmental protection work, so as to deliver the diagnostic assessment of the financing part, including regulations, policies, financing sources and institutional and capacity settings which are essential to establish a public-private financing mechanism. In terms of exploring financing sources for environmental protection popularized around the world, NAREE reviewed national and international cases, especially those involving both public and private sectors. In addition, attitudes, preferences, and willingness of stakeholders to participate in public-private financing mechanisms will form the basis of the proposed public-private financing mechanism. This would supplement the diagnosis work based on the effective interaction between the team and local stakeholders.

Establishment of the evaluation and selection toolkit for screening the projects – The toolkit developed by NAREE outlined the guidelines on the evaluation and selection process. The core idea is that environmental protection projects in Chishui River Basin should not only be supported by the public fund but also seek for investment from private sectors. By utilizing the toolkit, potential market-oriented projects will be assessed and selected, so a project portfolio will be prepared listing qualified projects. A roadmap was also designed for implementing the financing mechanism which will be supported by the project selection and evaluation toolkit.

Pilot study – By selecting one pilot project from the project pipeline, this will support the preparation of the financial management plan, as well as the selection of relevant financial instrument which is required by the financing mechanism. This will serve as an example for other projects in the preparation of their project proposals.

Study on the Comprehensive Eco-Compensation Mechanism

Client: Asian Development Bank
Duration: 2019-present
Location: Chongqing Municipality, PRC
Contract Value: USD 379,970



Project Description

Eco-compensation is a package of different mechanism, such as financial subsidies, project assistance, constructive policies, and other measures, to adjust the relative benefits and costs of ecological services provision among stakeholders. However, the financial transfer among the central, provincial, and local levels was often overlapped in China. Multi-channel arrangement of compensation funds, lack of effective coordination system, and ineffective evaluation methods of ecological compensation make it difficult to improve the efficiency of fund utilization. According to the 13th Five-Year Plan, it prioritizes the ecology and green development in the Yangtze River Economic Belt (YREB) and emphasizes the importance of the robust ecological protection and compensation mechanism. Recently, Chongqing developed and piloted numerous eco-compensation projects and approaches as an incentive for ecological conservation and environmental protection, especially in response to the ecological protection priorities of the YREB. Therefore, ADB provided this TA to develop the national and provincial policy and legislative framework for eco-compensation and was instrumental in facilitating the necessary policy and legal reforms.

Services Provided by NAREE

Preparation of a policy study on improving the effectiveness of eco-compensation – NAREE reviews the Chongqing Municipal Government's (CMG's) existing policies and programs, as well as international- and domestic-level eco-compensation or environmental fiscal and/or incentive instruments that could be integrated into CMG's eco-compensation programs. Based on the desk review, NAREE provided recommendations on improving the coordination and effectiveness of CMG's eco-compensation policies and programs in the Chongqing Municipality, and thereby also contributing to the improvement of the national-level eco-compensation policies and programs.

Establishment of an implementation plan for a comprehensive eco-compensation mechanism – After the selection of three pilot counties through discussions with relevant departments, NAREE conducts review of existing eco-compensation policies, projects, and programs in each of the three selected pilot counties, and identifies respective policy or institutional barriers for improving the efficiency of eco-compensation mechanisms under a comprehensive eco-compensation approach. The gross ecosystem product method of environmental accounting is chosen to pilot test monitoring and assessment mechanism of the impacts of eco-compensation programs.

Dissemination of knowledge product – By summarizing experience and lessons from selected county pilot case studies, NAREE prepares a knowledge product which captures and summarizes the experience and lessons from the county pilot case studie. The dissemination supports the capacity building efforts for strengthening the design and application of comprehensive eco-compensation mechanisms in other counties and provinces. These experiences complement other policy mechanisms to achieve the targeted environmental objectives for the Chongqing Municipality and the broader YREB.

Preparing the Silk Road Ecological Protection and Rehabilitation Project

Client:	Asian Development Bank
Duration:	2019-present
Location:	Gansu, Shaanxi, and Qinghai Provinces, PRC
Contract Value:	USD 574,800
Loan Project Value:	USD 348 million



Project Description

Addressing ecological degradation is at the core of the Government of PRC's agenda with the Thirteenth Five-Year Plan, prioritizing the protection and restoration of ecological security barriers in key regions. The project areas in Gansu, Shaanxi, and Qinghai provinces straddle four of these priority ecoregions—the Loess Plateau, the northeastern margins of the Qinghai-Tibet Plateau, the northern desertification-prevention belt, and the Qinba mountains. The three provinces have a high proportion of poverty-stricken counties that are ecologically vulnerable and where up to 28% of the rural population live below the poverty line. Climate change is a major risk as increasing climate variability has precipitated extreme weather events resulting in a very fragile eco-environment, and induced losses in agricultural production and yield. In the drier regions of Gansu and Qinghai, forest cover is low and wetlands are rare and generally degraded. The area was the principal route of the ancient Silk Road that had its starting point at Chang'an (modern day Xi'an).

This TA supports the three project provinces in preparing the Silk Road ecological protection and rehabilitation. This TA supports the continuing partnership between the PRC and ADB on addressing knowledge cooperation and institutional and governance reform. This TA is aimed at arresting and reversing degradation of forests, wetlands and grasslands in the loess areas, which has the fragile ecosystem, to maintain the stability of the regional environment and achieve the integrated governance in key regions crucial to national ecological security. This TA will include forestry recreation, wetland rehabilitation and restoration to potentially attract green investments and increase jobs and incomes among rural and pastoral areas in the three project provinces along the Silk Road.

Services Provided by NAREE

NAREE provides the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Sector assessment and baseline study
- ◆ Feasibility study report review and project design optimization
- ◆ Economic and financial due diligence
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment, and relevant action plan
- ◆ Financial and procurement risk assessment of the EA/IA, and risk management planning
- ◆ Investment plan and procurement plan preparation
- ◆ Institutional capacity building
- ◆ Loan project documents preparation and loan negotiation facilitating

Henan Xichuan Integrated Ecological Protection and Environmental Improvement Project

Client:	Asian Development Bank
Duration:	2019-present
Location:	Xichuan City, Henan Province, PRC
Contract Value:	USD 419,980
Loan Project Value:	USD 405 Million



Project Description

Being located in the forefront of the Danjiangkou Reservoir and recognized as national key ecological functional areas by the central government in 2017, XCG has a huge pressure to adopt green growth approach, address the environmental degradation arising from poverty and climate change, and prevent the pollution to the Danjiangkou Reservoir. As part of the rural vitalization objective set by the PRC Government to enhance livelihoods, attract investments, and accommodate the growing population, XCG will support local towns, and villages in development planning and implementation. Xichuan County in the middle Yangtze River Basin, being nestled in the mountains of less-developed region, can demonstrate an environmentally sustainable growth model that can be replicated in other part of the basin and in the PRC.

The impact of the project will be: rural vitalization in the Yangtze River Economic Belt (YREB) realized (YREB Development Plan, 2016–2030). The outcome of the project will be water quality and sustainability of agricultural production systems in Xichuan County improved. There are three outputs under the project: 1) soil and water conservation practices improved, 2) rural water service improvement measures implemented, and 3) resource management capacity enhanced.

Services Provided by NAREE

NAREE provides the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensures the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Assessment on the technical feasibility of the project
- ◆ Due diligence on the economic and financial feasibility of the project
- ◆ Review of safeguard requirements
- ◆ Social survey and consultations
- ◆ Capacity development of the project management of XCG
- ◆ Project document preparation, including feasibility study reports (FSRs), safeguard documents, and ADB's draft report and recommendations of the President (RRP)
- ◆ Institutional capacity building

Hunan Xiangxi Rural Vitalization and Special Industry Development Project

Client:	Asian Development Bank
Duration:	2019-present
Location:	Xiangxi City, Hunan Province, PRC
Contract Value:	USD 569,955
Loan Project Value:	USD 405,600,000



Project Description

This project aims at supporting the Xiangxi Tujia and Miao Autonomous Prefectural Government (XPG) to enhance its rural living environment and industrial productivity through improvement of rural waste and sanitation management, development of local featured agricultural products, and improvement of agricultural value chain. The key considerations for the project include proposing innovative and sustainable solutions that are tailored to local conditions and innovative arrangements like public-private partnership (PPP) mode and the integration of first, secondary and tertiary industries. The project also provides demonstration effect and facilitate knowledge sharing to other developing member countries of ADB. There are three outputs under this project: (i) rural waste and sanitation management facilities and services in Xiangxi improved; (ii) local featured agricultural products in Xiangxi developed; and (iii) agricultural value chain in Xiangxi improved through industrial integration.

Services Provided by NAREE

NAREE provides the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensures the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Assessment on the technical feasibility of the project
- ◆ Due diligence on the economic and financial feasibility of the project
- ◆ Review of safeguard requirements
- ◆ Social survey and consultations
- ◆ Capacity development of the project management of XPG and implementing agencies
- ◆ Project document preparation, including feasibility study reports (FSRs), safeguard documents, and ADB's draft report and recommendations of the President (RRP)

Hunan Miluo River Disaster Risk Management and Comprehensive Environment Improvement

Client:	Asian Development Bank
Duration:	2019-present
Location:	Pingjiang County, Yueyang City, Hunan Province, PRC
Contract Value:	USD 467,995
Loan Project Value:	USD 350.00 million



Project Description

The project TRTA aims to demonstrate rural vitalization and environmental improvement in Pingjiang County, and contribute to the People Republic of China's (PRC) development goals of inclusive and sustainable growth consistent with (i) the PRC's Thirteenth Five-Year Plan, 2016- 2020, which aims to eradicate extreme poverty and balance development of rural and urban areas; (ii) the Yangtze River Economic Belt (YREB) development plan, 2016-2030 and the rural vitalization strategy, which promotes poverty reduction, rural development, and green and inclusive growth; and (iii) the Asian Development Bank's (ADB) Strategy 2030, and country partnership strategy for the PRC, 2016 2020; and 2021 2025, which both support the development of global and regional public goods and more inclusive development by managing climate change and the environment; building climate and disaster resilience, reducing poverty and inequalities; promoting rural development, improving institutional coordination and governance reform, and knowledge sharing with other developing member countries.

Four main outputs will result in the outcome of rural living environment in Pingjiang County improved, which are (i) water-related disaster risk management in Pingjiang County improved; (ii) rural waste and sanitation management in Pingjiang County improved; (iii) integrated water resources management planning and decision support capacity enhanced; (iv) green procurement and ecological farming practices piloted.

Services Provided by NAREE

NAREE provided the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and socials. NAREE ensured the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Technical feasibility assessments and assess innovative financing models
- ◆ Social and safeguard analysis and documentation, including survey and field study, environmental, social and resettlement assessment, relevant action plan and review framework development
- ◆ Investment plans and procurement packages, including economic, financial, and government due diligence
- ◆ Improved project management capacity of the executing and implementing agencies by carrying out an institutional analysis and providing relevant training in procurement, safeguards etc.
- ◆ Management and coordination of the tasks and activities relating to the TA design, implementation, management, monitoring, and reporting

Fujian Mulan River Basin Integrated Ecological Restoration and Management Project

Client: Asian Development Bank
Duration: 2020-present
Location: Xianyou County, Putian City, Fujian Province, PRC
Contract Value: USD 419,930
Loan Project Value: USD 485.0 million



Project Description

This transaction technical assistance (TRTA) carries out necessary activities in support of processing ADB's financing for the proposed Fujian Mulan River Basin Integrated Ecological Restoration and Management Project (the proposed project). This TRTA supports the preparation for ADB's financing for the proposed project, ensuring the ADB loan ready for approval by ADB's Boards of Directors. The project will promote financial innovation and an integrated approach for rural vitalization and will bring direct benefits to inclusive development, environmental conservation, and ecological preservation, while targeting global and public goods, and inclusive growth. The project will be aligned with the following impact: quality of rural life enhanced.

The project will promote financial innovation and an integrated approach for rural vitalization and will bring direct benefits to inclusive development, environmental conservation, and ecological preservation, while targeting global and public goods, and inclusive growth. The project will have three outputs: (i) innovative financing mechanism piloted, (ii) institutional capacity for environmental management strengthened, (iii) flood management, ecological restoration, sanitation, and water resources improvement implemented.

Services Provided by NAREE

NAREE provides the transaction technical assistance (TRTA) to prepare the loan project, undertaking due diligence in technical, safeguards, economic and financial, and poverty and social. NAREE ensures the project in compliance with the domestic and ADB's requirements and incorporation of international best practices in the project design. Detailed tasks conducted by NAREE during the TRTA includes the followings:

- ◆ Baseline study and sector assessment
- ◆ Feasibility study report review and project design optimization
- ◆ Economic and financial due diligence
- ◆ Safeguards due diligence, including survey and field study, environmental, social and resettlement assessment, relevant action plan and review framework development
- ◆ Financial and procurement risk assessment of the EA/IA, and risk management planning
- ◆ Investment plan and procurement plan preparation
- ◆ Institutional capacity building
- ◆ Loan project documents preparation and loan negotiation facilitating

Agriculture Green Production and Waste Management Project – Subproject II

Client: Asian Development Bank
 Duration: 2020-2021
 Location: Heilongjiang and Hubei Provinces, PRC
 Total Contract Value: USD 742,640



Project Description

The overall project will support sustainable agriculture production and waste management by developing green agriculture production models for grain-producing areas of Heilongjiang and Shandong provinces experiencing soil and land degradation, proposing new models for the effective treatment and management of rural and agriculture organic waste in key grain producing areas, and supporting Qinghai Province in implementing the Strategic Plan for Rural Vitalization, 2018-2022. The TA's outputs are: (i) knowledge of natural resource use and models for green agriculture production developed; (ii) New models for the proper treatment, usage, and management of rural organic waste proposed; and (iii) knowledge and understanding of key constraints to, and priorities for, rural vitalization in Qinghai Province generated. This TA comprises three subprojects. Each subproject will respectively deliver one output of this project. All three outputs will generate new knowledge and awareness on sustainable agriculture development and support the Strategic Plan for Rural Vitalization, 2018-2022 in the PRC.

Subproject II - Study on the Technology Integration and Policy Mechanism of Resource Utilization of Agricultural Organic Waste and Rural Clean Energy Development - aims to propose new models for the proper treatment, utilization, and management of rural organic waste.

Services Provided by NAREE

Study on the Technology Integration and Policy Mechanism of Resource Utilization of Agricultural Organic Waste and Rural Clean Energy Development – NAREE will assist the PRC in better understanding the current usage and management of crop straw residue in key grain-producing areas, and in identifying the technologies and models required for the effective reuse of crop straw. This output aims to undertake an assessment and situation analysis of crop straw usage and management; evaluate policies, incentive structures, and mechanisms that contribute to the lack of social capital for efficient resource use and clean energy development; summarize domestic and international best practices and technologies for the effective reuse of crop straw; and propose new models for the effective reuse of crop straw tailored to the PRC context; and identify the necessary financial, institutional, and market requirements to pursue these technologies.

Policy Recommendation – Based on the previous research, NAREE will prepare policy recommendations and action plans for provincial and national governments on how to effectively use rural organic waste for agriculture and clean energy development purposes.