



Technical Assistance Report

Project Number: 49399-001
Policy and Advisory Technical Assistance (PATA)
July 2016

People's Republic of China: Rural Economic Transformation and Upgrading by the Integration with Internet Plus

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 11 July 2016)

Currency unit	–	yuan (CNY)
CNY1.00	=	\$0.1495
\$1.00	=	CNY6.6881

ABBREVIATIONS

ADB	–	Asian Development Bank
NDRC	–	National Development and Reform Commission
PRC	–	People's Republic of China
TA	–	technical assistance

NOTE

In this report, "\$" refers to US dollars.

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POLICY AND ADVISORY TECHNICAL ASSISTANCE AT A GLANCE

1. Basic Data		Project Number: 49399-001	
Project Name	Rural Economic Transformation and Upgrading by the Integration with Internet Plus	Department /Division	EARD/EAER
Country	China, People's Republic of	Executing Agency	Department of Rural Economy, NDRC
2. Sector		ADB Financing (\$ million)	
✓ Agriculture, natural resources and rural development	Agricultural policy, institutional and capacity development		0.20
	Agro-industry, marketing, and trade		0.20
		Total	0.40
3. Strategic Agenda		Climate Change Information	
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive	Climate Change impact on the Project	Low
4. Drivers of Change		Gender Equity and Mainstreaming	
Governance and capacity development (GCD)	Institutional systems and political economy	No gender elements (NGE)	✓
Knowledge solutions (KNS)	Knowledge sharing activities		
Private sector development (PSD)	Conducive policy and institutional environment		
5. Poverty Targeting		Location Impact	
Project directly targets poverty	No	Rural	Medium
		Urban	Medium
6. TA Category:	B		
7. Safeguard Categorization Not Applicable			
8. Financing			
Modality and Sources		Amount (\$ million)	
ADB		0.40	
Policy and advisory technical assistance: Technical Assistance Special Fund		0.40	
Cofinancing		0.00	
None		0.00	
Counterpart		0.00	
None		0.00	
Total		0.40	
9. Effective Development Cooperation			
Use of country procurement systems		No	
Use of country public financial management systems		Yes	

I. INTRODUCTION

1. The Government of the People's Republic of China (PRC) requested technical assistance (TA) from the Asian Development Bank (ADB) on Rural Economic Transformation and Upgrading by the Integration with Internet Plus.¹ The TA is included in ADB's country operations business plan for the PRC, 2016–2018.² ADB fielded a reconnaissance mission to Beijing on 15–18 March 2016 and held discussions with the National Development and Reform Commission (NDRC) to clarify and agree on the TA's scope, impact, outcome, outputs, implementation arrangements, cost, and financing arrangements.³ The design and monitoring framework is in Appendix 1.

2. The TA will review international and national practices and policies of internet plus agriculture business models. The TA will also identify constraints and opportunities for participation of farmers and farmer organizations in internet plus economy. In addition, a policy note will be prepared comprising regulatory and investment recommendations to develop PRC's internet plus economy in the agriculture sector. The TA also aligns with ADB's core area of operations and the strategic priorities outlined in the Midterm Review of Strategy 2020.⁴ Supporting inclusive economic growth is a focus of ADB's country partnership strategy for the PRC, 2016–2020, which supports rural development by promoting good practices to strengthen agriculture productivity and value chain participation of rural households.⁵ Improved value chain linkages and enhanced food safety are key priorities of ADB's Operational Plan for Agriculture and Natural Resources. It is envisaged to achieve these priorities through ADB operations support for the application of information and communication technology in agriculture and food value chains.⁶ The ADB lending program in the PRC provides support to agriculture value chain development including by linking agribusinesses and local entrepreneurs with poor farmers.⁷

II. ISSUES

3. Although agriculture has been developing and making substantial contributions to the PRC's overall economic development since 1978, agricultural production and rural livelihoods have lagged behind industrial production and urban livelihoods. The agricultural infrastructure is insufficient and fragile, technological development and adoption levels are low, and constraints on natural resources and the environment intensify challenges to agricultural development. There is also an urgent demand for the sector to upgrade to modern technology and business models to boost production scale, develop value chains, and improve product safety.

4. Agricultural modernization is regarded as a fundamental way to ensure food security, develop the rural economy, and close the income gaps between rural and urban areas. One priority of the Fifth Plenary Session of the 18th Central Committee of the Communist Party of China, held in Beijing on 26–29 October 2015, was for the PRC to improve its food security capacity. The integration of the agricultural sector into the wider economy is identified as a

¹ Internet plus refers to the enhancement of agricultural economy through improved information and communication technology and infrastructure. It includes mobile internet, internet of things, cloud computing, and big data.

² ADB. 2016. *Country Operations Business Plan: People's Republic of China, 2016–2018*. Manila.

³ The TA first appeared in the business opportunities section of ADB's website on 13 May 2016.

⁴ ADB. 2014. *Midterm Review of Strategy 2020: Meeting the Challenges of a Transforming Asia and Pacific*. Manila.

⁵ ADB. 2016. *Country Partnership Strategy: Transforming Partnership: People's Republic of China and Asian Development Bank, 2016–2020*. Manila.

⁶ ADB. 2015. *Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020*. Manila

⁷ ADB. 2008. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the People's Republic of China for Dryland Sustainable Agriculture Project*. Manila.

strategy to boost agricultural productivity. The internet has shown to be a great advantage in integrating, transforming, and upgrading agriculture value chains. In the PRC, the need for the combination of internet and agriculture is urgent to rebuild the information and distribution channels, and to coordinate value chain actors' practices in agricultural production, supply, and sales systems. High production costs and farmers' disadvantaged status against market competition are a few characteristics of the existing complex agricultural and food value chain. In addition, negative externalities, such as non-point source pollution and food safety problems, are often a result of a lack of coordination, aligned incentives of value chain actors, and traceability of environmental and public health sensitive inputs and production practices.

5. The PRC is already implementing the so-called internet plus policies for the integration of agriculture value chains into secondary and tertiary industries. Several pilot projects have been initiated for enhancing the use of internet technologies to transform and integrate the rural economy. In 2014 and 2015, the Ministry of Commerce selected 256 counties to pilot e-commerce in rural areas, and each pilot county will receive CNY10 million in funding support from the central government for rural logistics, an e-commerce service station, and primary processing facility development, as well as quality control systems and brand establishment. The implementation of pilots to develop internet plus agriculture has shown many challenges and constraints regarding non-defined roles for government institutions in coordinating with the private sector, insufficient information and communication infrastructure in rural areas, data standards, and insufficient participant incentives. This TA will focus on analyzing the challenges and constraints of internet plus development from the perspective of farmers and farmer organizations. Farmers and farmer cooperative organizations are not aware of the potential benefits of internet technology use and also lack the necessary capabilities and skills. Further research, targeted at farmers and farmer organizations, is required to analyze farmers' internet technology knowledge, awareness, and practices.

III. THE POLICY AND ADVISORY TECHNICAL ASSISTANCE

A. Impact and Outcome

6. The impact will be a successfully restructured rural economy. The outcome will be facilitated inclusive agriculture transformation. This will be achieved through NDRC's adoption of internet plus agriculture policy recommendations.

B. Methodology and Key Activities

7. The TA will deliver three main outputs: (i) review of international and national practices and policies of internet plus agriculture business models; (ii) identification of constraints and opportunities for participation of farmers and farmer organizations in internet plus economy; and (iii) formulation of policy, regulatory, and investment recommendations to develop PRC's internet plus economy in the agriculture sector.

8. **Output 1: Review of international and national practices and policies of internet plus agriculture business models.** The review of international and national policies will summarize national and international best practices in applying internet technologies, e-commerce, and other internet plus policies in the agriculture sector. The review will identify the required policy interventions to maximize farmers' potential benefits from using internet technologies along specific food and agriculture value chains.

9. **Output 2: Identification of constraints and opportunities for participation of farmers and farmer organizations in internet plus economy.** The study report will be based on case studies for internet plus business models and the application of internet technologies along food and agriculture value chains. It will mainly focus on constraints and opportunities for farmers and farmer organizations in the internet plus rural transformation and integration. Constraints and opportunities for other internet plus economy stakeholders will also be assessed to identify a balanced incentive structure for active participation.

10. **Output 3: Formulation of policy, regulatory, and investment recommendations to develop the People's Republic of China's internet plus economy in the agriculture sector.** The policy note will synthesize and highlight policy implications from outputs 1 and 2 and propose policy options for accelerating penetration of internet technologies with increased benefits for farmers and farmer organizations. This will include identifying public and private sector investment gaps for the application of internet technologies in agriculture.

11. For NDRC to adopt and turn the TA outputs into reformulated national policies that facilitate inclusive agriculture transformation, it is assumed that NDRC will communicate the proposed internet plus policy changes to stakeholders in agriculture and food value chains. As a risk, however, failure to align incentives of public and private stakeholders for more integration of internet technologies in agriculture and food value chains may weaken inclusive agriculture transformation.

12. Activities to achieve the outputs include (i) reviewing literature to draw lessons from national and international experiences on internet plus policies and ascertain business models for rural transformation and integration; (ii) organizing two international study tours to the United States and New Zealand, where successes in internet business model application to agriculture and food value chains may be applicable to the PRC; (iii) conducting field visits and consultations with stakeholders—such as local governments, enterprises, and farmers—in counties in the PRC's eastern (Zhejiang and Shandong), central (Hubei), and western (Yunnan) provinces; (iv) collecting and analyzing data on farmers' and farmer organizations' participation in internet business models and the impact of internet plus policies on rural development; and (v) organizing TA workshops (inception, interim, and final) and an international conference to present and discuss the project's framework, methodology, and periodic results, and to disseminate TA findings.

C. Cost and Financing

13. The TA is estimated to cost \$450,000, of which \$400,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF-other sources). The government will provide counterpart support in the form of staff time, data source access, administrative and coordination support, and other in-kind contributions. The cost estimates and financing plan are in Appendix 2.

D. Implementation Arrangements

14. The NDRC's Department of Rural Economy will be the executing agency. A TA management office will be established to coordinate with ADB, providing guidance on project implementation issues and ensuring intra- and inter-departmental coordination. The researcher (deputy director level) of the Department of Rural Economy's Comprehensive Division will serve as the TA management office chair and be responsible for day-to-day operational matters among ADB, consultants, and government agencies. The office will establish a leading group

comprising agriculture and e-commerce agencies and representatives from the relevant departments of the ministries of finance, agriculture, industry and information technology, and commerce.

15. The TA will be implemented for 18 months, from 1 July 2016 to 31 December 2017. The TA will require 2 person-months of international and 23 person-months of national consulting services, as well as one international resource person.⁸ One international specialist (agricultural economist) and three national specialists (team leader and rural development specialist, deputy team leader and agricultural economist, and agriculture information and communication technology specialist) will be required for implementation. The outline terms of reference for the consultants are in Appendix 3. ADB will engage the consultants following the Guidelines on the Use of Consultants (2013, as amended from time to time) through individual consultant selection.⁹ This is considered the most efficient method, as individual experience and qualifications are main requirements and collective responsibility is not. TA funds will be disbursed following the *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).

16. The TA will follow the standard monitoring and supervision procedures for ADB-administered TA projects. ADB will carry out monitoring and review missions at the project's inception, interim, and final phases. During these missions, ADB, the executing agency, the consultants, and stakeholders will review the project's technical progress and provide feedback to improve the TA. Progress will be measured against the targets and indicators in the design and monitoring framework (Appendix 1) and the consultants' terms of reference, and reported in TA progress reports. ADB and local experts will review progress reports to provide additional feedback and guidance. TA outputs will be presented and discussed with national stakeholders and during an international conference on internet agriculture. In addition, all TA reports will be made available on ADB's webpage.

IV. THE PRESIDENT'S DECISION

17. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance not exceeding the equivalent of \$400,000 on a grant basis to the Government of the People's Republic of China for Rural Economic Transformation and Upgrading by the Integration with Internet Plus, and hereby reports this action to the Board.

⁸ One resource person will be hired for specific expertise and separately from the consulting entity for 10 days. The resource person will not be part of the consultant team, but will work closely with the team to provide additional expertise and support that is not available within the team.

⁹ Lump sum payments and/or output-based contracts will be considered for consulting services in line with Midterm Review Action Plan Nos. 2.9.2. and 2.10.2.

DESIGN AND MONITORING FRAMEWORK

Impact(s) the Project is Aligned with			
Rural economy successfully restructured (Decisions of the Third Plenary of the 18th Central Committee of the Communist Party of China).			
Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
Outcome Inclusive agriculture transformation facilitated	By May 2018 a. Internet plus agriculture policy recommendations for inclusive transformation of the rural economy adopted by NDRC. (2016 baseline: 0; target: 2)	a. Project report reviews Annual activity report by NDRC's Department of Rural Economy	Public and private stakeholders lack incentives and understanding for more integration of internet in agriculture value chains. NDRC does not effectively communicate the proposed internet plus policy changes to stakeholders in agriculture value chains.
Outputs 1. International and national practices and policies of internet plus agriculture business models reviewed 2. Constraints and opportunities for participation of farmers and farmer organizations in internet plus economy identified	1a. A report on international best practices and policies of internet plus agriculture business compiled by month 5. (2016 baseline: 0; target: 1) 1b. A booklet on existing national policies and programs compiled by month 10. (2016 baseline: 0; target: 1) 1c. Typical internet plus agriculture models in the PRC identified and presented at final TA workshop by month 18. (2016 baseline: 0; target: 1) 2a. A report with identified gaps in policies, institutional arrangements, and public goods to support priority areas for developed, intermediate, and underdeveloped regions submitted to ADB by month 12. (2016 baseline: 0; target: 1) 2b. A report with identified underdeveloped internet plus services by private and public sector for different segments of agriculture value chains submitted to ADB by month 12. (2016 baseline: 0; target: 1) 2c. A report with identified business	1a–1c. TA review missions and reports Consultant technical report from study Quarterly dialogue and/or feedback from NDRC 2a–2d. TA review missions and reports Consultant technical report from study Quarterly dialogue and/or feedback from NDRC	Public and private stakeholders lack incentives for collaboration with the field research team.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting	Risks
	<p>opportunities and challenges for farmers and farmer organizations submitted to ADB by month 12. (2016 baseline: 0; target: 1)</p> <p>2d. A report with identified capacity building needs for farmers and farmer organizations submitted to ADB by month 12. (2016 baseline: 0; target: 1)</p>		
3. Policy, regulatory, and investment recommendations to develop the PRC's internet plus economy in agriculture sector formulated	3a. A policy note submitted and shared by month 15. (2016 baseline: 0; target: 1)	3a. Relevant reports and public communications of NDRC's Department of Rural Economy	

Key Activities with Milestones

1. International and national practices and policies of internet plus agriculture business models reviewed

- 1.1 Conduct necessary literature review (Q4 2016).
- 1.2 Conduct inception workshop to consult ministries on available policies (Q4 2016).
- 1.3 Conduct an international study tour to countries that have good models of internet agriculture (Q1 2017) (G/CD).
- 1.4 Review existing internet plus agriculture models in PRC and present them at final TA workshop (Q4 2017).
- 1.5 Prepare a draft report and register a public account on internet plus agriculture in social network "WeChat" to disseminate findings of output 1 (Q2 2017) (KNS).
- 1.6 Revise the report to be included in the draft final report (Q3 2017).

2. Constraints and opportunities for participation of farmers and farmer organizations in internet plus economy identified

- 2.1 Conduct necessary literature review (Q4 2016).
- 2.2 Undertake a scoping mission in one province to design the research (Q4 2016).
- 2.3 Develop research strategy, study framework, and establish data requirements (Q4 2016).
- 2.4 Conduct field visits, collect data, and consult with relevant government agencies (Q1 2017).
- 2.5 Prepare a draft report to be included in the interim report (Q2 2017).
- 2.6 Revise the report to be included in the draft final report (Q3 2017).
- 2.7 Present the report at the international conference on internet plus agriculture (Q4 2017) (KNS).
- 2.8 Finalize the report (Q4 2017).

3. Policy, regulatory, and investment recommendations to develop the People's Republic of China's internet plus economy in agriculture sector formulated

- 3.1 Prepare a draft synthesized policy note based on draft outputs 1 and 2 (Q2 2017).
- 3.2 Organize an international conference on internet agriculture (Q3 2017) (G/CD).
- 3.3 Present the policy note at the international conference on internet plus agriculture (Q4 2017) (KNS).
- 3.4 Finalize the policy note (Q4 2017).

Project Management Activities

Mobilize team of experts (Q3 2016).
Develop study framework, prepare inception report, and organize and conduct inception workshop (Q4 2016).

<p>Key Activities with Milestones</p> <p>Prepare interim TA report and conduct interim workshop (Q2 2017). Prepare draft final TA report (Q3 2017). Hold a final TA workshop alongside an international conference on internet plus agriculture (Q4 2017) (KNS). Finalize the TA outputs (Q4 2017).</p> <p>Note: All consultant and TA reports will be submitted in English to ADB.</p>
<p>Inputs</p> <p>ADB: \$400,000</p> <p>Note: The government will provide counterpart support in the form of staff time, data source access, administrative and coordination support, and other in-kind contributions.</p>
<p>Assumptions for Partner Financing</p> <p>Not applicable.</p> <p>ADB = Asian Development Bank, G/CD = governance and capacity development, KNS = knowledge solutions, NDRC = National Development and Reform Commission, PRC = People's Republic of China, Q = quarter, TA = technical assistance.</p> <p>Source: Asian Development Bank estimates.</p>

COST ESTIMATES AND FINANCING PLAN

(\$'000)

Item	Amount
Asian Development Bank^a	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	40.0
ii. National consultants	160.0
b. International and local travel	30.0
c. Reports and communications	5.0
2. Training, workshops, and conferences	
a. Resource person	20.0
b. Workshops and conference	30.0
c. International study tour	60.0
3. Surveys	20.0
4. Miscellaneous administration and support costs ^b	5.0
5. Contingencies	30.0
Total	400.0

Note: The technical assistance is estimated to cost \$450,000, of which contributions from the Asian Development Bank are presented in the table above. The government will provide counterpart support in the form of staff time, access to data sources, administrative and coordination support, and other in-kind contributions. The value of the government contribution is estimated to account for 11% of the total technical assistance cost.

^a Financed by the Asian Development Bank's Technical Assistance Special Fund (TASF-other sources).

^b Includes interpretation and translation costs.

Source: Asian Development Bank estimates.

OUTLINE TERMS OF REFERENCE FOR CONSULTANTS

A. Introduction

1. It is estimated that the technical assistance (TA) will require 2 person-months of international, 23 person-months of national consulting services, and 10 days of resource person inputs. One international specialist (agricultural economist) and three national specialists (team leader and rural development specialist, deputy team leader and agricultural economist, and agriculture information and communication technology specialist) will be required for implementation. The Asian Development Bank (ADB) will engage the consultants following ADB's Guidelines on the Use of Consultants (2013, as amended from time to time) through individual consultant selection. Table A3 provides a breakdown of the required expertise.

Table A3: Breakdown of Consulting Expertise

International Position	Person-Months	National Position	Person-Months
Agricultural economist	2	Team leader and rural development specialist	10
		Deputy team leader and agricultural economist	9
		Agriculture information and communication technology specialist	4
Total:	2		23

Source: Asian Development Bank estimates.

B. Terms of Reference

2. **Agricultural economist** (international, 2 person-months). The consultant should have a postgraduate degree in agricultural economics or other relevant fields and 10 or more years of experience in agricultural development, value chain development, and/or agricultural policy analysis. Demonstrated project-related experience in the People's Republic of China (PRC) is desirable. The specialist will undertake the following tasks:

- (i) provide substantial inputs to the development and refinement of the study framework, methodology, and outlines of TA reports;
- (ii) provide substantial inputs to TA reports, including inception, interim, and final reports and their revised versions, focusing on internet plus services for the development of and integration with agriculture value chains;
- (iii) conduct a comprehensive review of international policies, best practices, approaches, and experiences in enhancing agricultural economy through improved information and communication technology and infrastructure, such as mobile internet, internet of things, cloud computing, and big data;
- (iv) identify the applicability of internet plus international best practices for the conditions in the PRC;
- (v) provide substantial inputs to the policy note on internet plus comprising regulatory and public investment recommendations;
- (vi) prepare a report on international best practices and policies of internet plus agriculture business;
- (vii) participate and present the study findings in the TA final workshops and international conference; and
- (viii) carry out other related work assigned by the team leader.

3. **Team leader and rural development specialist** (national, 10 person-months). The consultant should have a postgraduate degree in rural development, agricultural policy, or other relevant fields and 15 or more years of experience in agricultural and rural development. The specialist must be fluent in English and have prior work experience with international organizations. Demonstrated project-related experience such as leading agricultural and rural development research in an international team is desirable. The specialist will be responsible for the final TA outputs, as well as for the daily coordination and supervision of the TA team. Specifically, the specialist will undertake the following tasks:

- (i) develop the detailed framework and methodology in consultation with the executing agency, key stakeholders, and other experts;
- (ii) develop outlines of the TA inception, interim, and final reports and assign work to respective specialists in the team;
- (iii) compile and finalize various TA reports, including inception, interim, and final reports and their revised versions;
- (iv) manage and ensure timely implementation of TA activities, including coordinating team member inputs, organizing inception, interim, and final TA workshop, and supporting the executing agency to organize an international conference on inclusive agricultural transformation via the use of internet plus policies;
- (v) conduct a comprehensive review of internet plus and related rural development policies, including ADB's TA projects on this topic;
- (vi) conduct a field investigation in selected internet plus case study areas, and collect data and information on the impact of internet plus on rural development;
- (vii) consult leaders in case study areas, experts, and policy makers on the study approach and outcomes, and revise the draft based on the comments received;
- (viii) review consultant reports, and provide feedback for revision;
- (ix) lead the preparation of a policy note on regulatory and public sector investment recommendations to develop the PRC's internet plus economy in the agriculture sector;
- (x) moderate the interim and final TA workshop and the international conference;
- (xi) invite the international resource person to the TA workshops and international conference;
- (xii) present the TA study results and findings in the interim and final TA workshops and international conference;
- (xiii) prepare an interim and final TA report, and share the reports with the international resource person for comments;
- (xiv) prepare a study report with identified international and national best practices and policies of internet plus agriculture business;
- (xv) prepare a study report with identified constraints and opportunities for better participation of stakeholders in the internet plus economy, especially farmers and farmer organizations;
- (xvi) prepare a report on identified gaps in policies, institutional arrangements, and public goods to support priority areas for developed, intermediate, and underdeveloped regions;
- (xvii) prepare a report on capacity building needs of farmers and farmer organizations; and
- (xviii) carry out other related work assigned by the ADB project officer.

4. **Deputy team leader and agricultural economist** (national, 9 person-months). The consultant should have a postgraduate degree in agricultural economics, agricultural policy, or other relevant fields; 10 or more years of experience in agricultural economics, value chain

analysis, and policy analysis; and satisfactory competence in English. Demonstrated project-related experience is desirable. The specialist will undertake the following tasks:

- (i) provide substantial inputs to the development and refinement of the study framework, methodology, and outlines of TA reports;
- (ii) provide substantial inputs to TA reports, including inception, interim, and final reports and their revised versions;
- (iii) conduct a comprehensive review of literature on internet plus policies for rural economy transformation and integration in the PRC, and identify typical internet plus agriculture models;
- (iv) design and conduct field investigation on policy gaps, institutional arrangements, and missing public goods to support rural economy transformation with internet plus business models and related internet services, as well as on business opportunities for farmers and farmer organizations;
- (v) provide substantial inputs to the policy note on internet plus comprising regulatory and public investment recommendations;
- (vi) prepare a report on existing internet plus national policies and programs, and prepare a booklet for publication based on the report;
- (vii) prepare a report on typical internet plus agriculture models in the PRC;
- (viii) contribute to the report on policy gaps, institutional arrangements, and public goods gaps to support priority areas in developed, intermediate, and underdeveloped regions;
- (ix) prepare a report on business opportunities for farmers and farmer organizations;
- (x) assist in organizing and participate in the TA workshops and international conference, and present the study findings; and
- (xi) conduct other related work assigned by the team leader.

5. **Agriculture information and communication technology specialist** (national, 4 person-months). The consultant should have a graduate degree in information and communication technology or other relevant fields; 5 or more years of experience in the application and analysis of information and communication technology in agriculture value chains; and satisfactory competence in English. Demonstrated knowledge on agricultural e-commerce and agricultural logistics and project-related experience is desirable. The specialist will undertake the following tasks:

- (i) provide substantial inputs to the development and refinement of the study framework, methodology, and outlines of TA reports;
- (ii) provide substantial inputs to TA reports, including inception, interim, and final reports and their revised versions;
- (iii) design and conduct field investigation on internet plus services for different segments and actors of agriculture value chains;
- (iv) provide substantial inputs to the policy note on internet plus comprising regulatory and public investment recommendations;
- (v) prepare a report on underdeveloped internet plus services by the public and private sector for different segments of the agriculture value chain;
- (vi) assist in organizing and participate in the final TA workshop and international conference, and present the study findings; and
- (vii) conduct other related work assigned by the team leader.

6. **Resource person on information technology application in agriculture and food value chains** (international, 10 person-days). The resource person should hold a position in institutions or environments relevant to information technology application in agriculture and food value chains, such as in an agriculture research institution, consulting entity, government

agency, or agriculture e-commerce company. The resource person will comment on the field study design and data collection tools, prepare workshop interventions, and participate in interim and final TA workshops. The resource person will provide insight to national and international good practices and lessons learned on internet technology in agriculture and food value chains, as applicable to the PRC context.