



Completion Report

PUBLIC

Project Number: 51158-001
Technical Assistance Number: 9391
August 2022

Indonesia: Leveraging Information and Communication Technology for Irrigated Agricultural Information

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TECHNICAL ASSISTANCE COMPLETION REPORT

TA Number, Country, and Name: TA 9391-INO: Leveraging Information and Communication Technology for Irrigated Agricultural Information		Amount Approved: \$2,000,000	
		Revised Amount: Not applicable	
Executing Agency: National Development Planning Agency (BAPPENAS)	Source of Funding: Japan Fund for Prosperous and Resilient Asia and the Pacific (formerly Japan Fund for Poverty Reduction)	Amount Undisbursed: \$12,208.30	Amount Used: \$1,987,791.70
TA Approval Date: 27 September 2017	TA Signing Date: 23 November 2017	TA Completion Date	
		Original Date: 30 September 2020	Latest Revised Date: 30 September 2021
		Financial Closing Date: 3 January 2022	Number of Extensions: 2
TA Type: Knowledge and support TA	Nature of Activity: Capacity development	TA Arrangement: Not applicable	

Description

This knowledge and support technical assistance (TA) was intended to improve the delivery of information to farmers in order to help enhance their livelihoods. The TA strengthened the existing use of information and communication technology (ICT) to deliver low-cost, timely, and actionable extension information to smallholder farmers. It concentrated on information that was specific to their needs and would increase their ability to improve yields.¹ The TA built on and strengthened the outcomes of the loan for the Integrated Participatory Development and Management of Irrigation Program in order to maximize investments in infrastructure development and value chain services, improve the delivery of extension information to farmers, and build the capacity of extension workers.² The TA locations overlapped with those of the Integrated Participatory Development and Management of Irrigation Program and featured crops and strategic value chains with high potential to improve production, increase profitability, and boost incomes for smallholders. The TA was aligned with the priorities of the Asian Development Bank (ADB) country partnership strategy for Indonesia, 2016–2019, and was included in ADB's country operations business plan, 2017–2019 for Indonesia.³

Expected Impact, Outcome, and Outputs

The TA was aligned with Indonesia's National Medium-Term Development Plan 2015–2019 and Long-Term National Development Plan 2005–2025. It had the following impact: rural incomes, food security, and livelihoods improved. The intended outcome was: management of agricultural extension information services in three districts in rural Indonesia improved. The TA had two planned outputs. Under output 1, a model and strategy would be developed using ICT for agricultural information exchange. Under output 2, context-specific, low-cost, timely, and actionable extension information (the ICT model) would be implemented in districts covered by the TA.⁴

Implementation Arrangements

The executing agency was the Directorate of Water Resources and Irrigation of the National Development Planning Agency (BAPPENAS). Activities were coordinated with the Ministry of Agriculture, Ministry of Public Works and Housing, Ministry of Home Affairs, and provincial and district agencies.⁵ ADB's Indonesia Resident Mission led the implementation of the TA. During the TA implementation, 11 person-months of international and 151 person-months of

¹ Agricultural extension refers to the application of scientific research and knowledge to agricultural practices to increase productivity through dissemination of information, provision of technical support, and education to farmers.

² ADB. 2017. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Republic of Indonesia for the Integrated Participatory Development and Management of Irrigation Program*. Manila. The program was approved by the Board on 18 May 2017.

³ ADB. 2016. *Country Partnership Strategy: Indonesia, 2016–2019: Towards a Higher, More Inclusive and Sustainable Growth Path*. Manila.

⁴ The original TA design covered three districts, which were later expanded to four ("Conduct of Activities" section).

⁵ The district and provincial agencies were in Pasaman Barat District (West Sumatera Province), Lombok Timur District (West Nusa Tenggara Province), and the neighboring districts of Sukabumi and Garut (West Java Province).

national consultants were engaged through one international consulting firm using quality- and cost-based selection, and 20 person-months of international and 70 person-months of national consultants were engaged using the individual consultant selection method. The TA also recruited 8.95 person-months of resource persons.

Conduct of Activities

The TA required more time than anticipated to find the qualified candidates for the principal coordinating firm.⁶ Consequently it was extended by 8 months to 31 May 2021 (approved on 1 August 2018). The locations, crops, and value chains were confirmed with the executing agency and national project implementation unit of the Integrated Participatory Development and Management of Irrigation Program at the Ministry of Agriculture. Based on these consultations and the TA's needs assessment, the project locations were initially expanded from the original three districts to four: Pasaman Barat District (West Sumatera province), Lombok Timur District (West Nusa Tenggara Province), and the neighboring districts of Sukabumi and Garut (West Java Province), with a special focus on rice, maize, and horticulture crops.⁷

Coordination with the Embassy of Japan and the Japan International Cooperation Agency (JICA) were conducted during TA implementation. The embassy and JICA were involved in all the workshops conducted by the TA (Appendix 3). JICA, through its Public–Private Partnership Project for the Improvement of the Agriculture Product Marketing and Distribution System, the TA team, and the Irrigation Digital Ecosystem Applications (IDEAS) team also held meetings and exchanged ICT experiences, including on precision farming, as the JICA project and the TA focused on the same crops (rice, maize, and horticulture).⁸

The coronavirus disease (COVID-19) pandemic severely disrupted the project's implementation, causing delays throughout 2020 and 2021. The project responded to COVID-19 and the corresponding travel restrictions by employing digital capacity building using simple user online training, customer support services, and online webinars. Accordingly, the TA was extended for another 4 months to 30 September 2021 (approved on 29 April 2021). The two extensions resulted in a cumulative extension of 12 months from the original completion date of 30 September 2020, with a total implementation period of 3 years and 10 months.

The ICT forum, conducted at the initial phase of the TA, brought additional insight into the types of solutions available to smallholder farmers. These include new startups and applications that had emerged before the TA started. On 16 October 2019, a minor change in implementation arrangements was approved for the TA to enable it to partner with the existing mobile application providers, instead of creating a new application (as intended under the original TA design). Partnering with private ICT providers would also increase the sustainability of the TA outputs. Following consultations with the executing agency, the TA partnered with three private sector ICT providers: eight villages (recently relaunched as “JaDe”), MSMB, and MicroAid, collectively branded by the TA as IDEAS, to leverage ICT for farmers, mobile information services, and online transactions.

All the activities planned under the TA were conducted and completed, with a resulting positive outcome on management of agricultural extension information services and impact on rural farmers' income and livelihoods.

Output 1. Model and strategy for using ICT for agricultural information exchange developed (achieved). An ICT and mobile application model covering technological, institutional, financial, economic, and gender aspects was developed and endorsed by the executing agency and is functioning in the four project locations. A farmer-centered digital ecosystems (DES) strategic model was designed to leverage ICT in these locations. DES helps irrigation smallholders use their mobile phones for their agricultural technology needs, daily communications, and business transactions. As of 30 September 2021, the DES had been functioning in the four TA project locations, involving three IDEAS and four government institutions: Agro-climate and Hydrology Research Institute, Ministry of Agriculture; Center for the Study and Development of Agricultural Technology (BBP2TP), Ministry of Agriculture; Meteorological, Climatological, and Geophysical Agency; and Bank Indonesia.

Under output 1, the TA: (i) conducted an ICT forum on the types of solutions available to smallholder farmers in Indonesia; (ii) conducted a needs assessment through stakeholder discussions in the field and online by the consultant team at the four project locations; (iii) facilitated community organization participatory field workshops and online webinars attended by field officers; (iv) initiated collaboration with IDEAS on agriculture-based mobile applications in information supply, product marketing, precision farming and community social engineering (instead of building a new application); (v) facilitated government information services system integration through information sharing agreements

⁶ Mercy Corps (MC), United States, was finally selected as the principal coordinating firm.

⁷ The TA was expanded to two neighboring districts of Sukabumi and Garut. As the TA considered the two neighboring districts to be one location, no request for a change in scope was made.

⁸ However, the four locations chosen by the executing agency did not coincide with those of the JICA project.

and the development of application program interfaces between the public information providers and IDEAS;⁹ (vi) provided capacity building training to IDEAS so that their products and approach were aligned with and customized to achieve the outputs and objectives of the TA; (vii) facilitated workshops and online virtual meetings, at which private sector stakeholders in rural supply chains, national and local government stakeholders, and staff from IDEAS analyzed and planned the structure of the most appropriate online interactions needed to leverage ICT for both extension workers and the farmers; (viii) facilitated supply chain re-engineering, placing the farmer at the center of the supply chain rather than being just a direct end user, in each location; (ix) developed financial modelling for the different business systems and business case studies for IDEAS; and (x) established indigenous cloud-based open and closed digital ecosystems in both physical (closed loop) and cloud (open community lead farmers) ICT environments.

Output 2. Context-specific, low-cost, timely, and actionable extension information provided (achieved). All the intended targets under output 2 had been achieved by the end of the project. First, context-specific, and updated extension information was provided online at least weekly by farmers, extension workers, and other stakeholders. As of 30 September 2021, context-specific and updated extension information disseminated included crop calendars; weather predictions; advisory services through articles, videos, social media, WhatsApp groups, and webinars; a farmer's forum; soil fertility; market prices; access to financial services; social networking; market access through digital business cards and the marketplace; an irrigation report and complaint handling; water level information; pest and disease identification; and recommendations on active content. Second, 73% of farmers (48% of whom were female) in TA areas were reached through ICT and mobile extension services.¹⁰ Third, a functioning value chain stakeholders' mobile platform was established. Closed and opened digital ecosystems were established in both physical and cloud ICT environments. A closed loop model for horticulture crops in two project locations (Garut and Sukabumi) was established.¹¹ New online connections and transactions were coordinated through the DES but were created by farmers for farmers in the four project locations. These primary ICT systems were connected digitally on multiple software platforms in the cloud. Global and local customized applications were used to leverage ICT for farmers using rural irrigation. Overall, incorporating women in the implementation strategy worked well.¹² The flexibility of time and location for online interaction via mobile phones has empowered women, who can now participate more fully in the planning and decision making of family and farming enterprise development.

Under output 2, the TA: (i) facilitated farmer and extension worker capacity building in digital literacy using hierarchical farmer-to-farmer training and by providing mobile credit incentives through the JAGO TANI software system;¹³ (ii) produced electronic dashboards, accessible to the TA team, the IDEAS team, and the TA field officers, for monitoring and evaluation purposes; (iii) piloted Internet of Things technology in Pasaman Barat and Sukabumi districts for farmers to access online actionable data, including Internet of Things sensors and precision farming 4.0; (iv) piloted the use of drones for farm mapping and crop conditions in Lombok Timur and Garut districts; (v) targeted women's participation through mobile applications and multimedia, which was done both through face-to-face interviews and product diversification strategies that included post-production products such as food processing and other family products suitable for smallholder irrigation families; and (vi) facilitated stakeholders' actionable information interaction on social media, including WhatsApp, Facebook, and Instagram, directly using mobile applications in re-engineered online supply networks.

⁹ The rationale for the integration was that IDEAS would be able to provide public information directly to the farmers via their applications. The public information providers included (i) Agro-climate and Hydrology Research Institute, Ministry of Agriculture, for crop calendar and fertilizer recommendation; (ii) Center for the Study and Development of Agricultural Technology (BBP2TP), Ministry of Agriculture, for good agricultural practices; (iii) Meteorological, Climatological, and Geophysical Agency for weather information; and (iv) Bank Indonesia, the Central Bank, for information on prices.

¹⁰ As of 30 September 2021, 37,144 farmers in 18 subdistricts of ADB's Integrated Participatory Development and Management of Irrigation Program had participated in DES via their mobile phones. Of these, about 7,400 farmers (20%) were active users (meaning they accessed IDEAS at least once a month).

¹¹ A closed loop is an upstream-to-downstream agribusiness partnership model developed around farmer cooperatives in a digital-based ecosystem. It formalizes partnerships between public and private parties, covering the entire ecosystem: the farmers, input suppliers, off-takers, logistics, finance, and advisory services. Private sector participants come from different parts of the value chains, e.g., companies that provide inputs and off-takers. The closed loop in Garut and Sukabumi districts, for instance, engages about 20 value chain stakeholders.

¹² Some women in the irrigation areas are farmers, while others are extension workers. Specific roles for women have been identified in the production cycle, including in post-cultivation crop husbandry, food processing, and online product promotion.

¹³ The JAGO TANI system introduces a new kind of farmer-managed mobile application system that focuses on farmer registration, onboarding, ranking, and finally connections to agricultural value chain stakeholders. The JAGO TANI facilitator and farmer incentives system tracks the progress of farmer mobile application acquisition and automatically calculates the commissions due ("Lessons and Recommendations" section).

Outcome: Management of agricultural extension information services in three districts in rural Indonesia improved (achieved). By the end of the project, the management of agricultural extension information services in the four districts in rural Indonesia had improved. All the intended outcome indicators were achieved. As of 30 September 2021, 79% of extension workers (46% of whom were female) in the TA districts had increased access to and knowledge of cutting-edge farm management practices, ICT, and mobile services.¹⁴ From the Ministry of Agriculture, 134 out of 169 agricultural extension workers in the project areas had been connected to farmer-centered DES. Moreover, 62%–70% of farmers (40% of whom were female) in the TA districts reported they were satisfied with the ICT and mobile extension services.

The impact assessment found that the use of ICT had had a statistically significant positive impact on productivity and income.¹⁵ Farmers could now negotiate better prices and plant crops in line with market demand. Additionally, the use of ICT had led to a change in behavior, specifically when it came to the way the crops were sold. Use of the technology had built closer relationships between farmers, government extension workers, and water user groups. The TA approach can be replicated based on both output 1 (the strategic model of a DES of rural value chain partners) and output 2 (context-specific and actionable information for both agricultural production and new market opportunities). The TA made a successful start in leveraging ICT for irrigation agriculture information. Public–private collaborations online, based on the needs of smallholder farmers, can be replicated in other parts of Indonesia, using readily available mobile phones. Since the successful implementation of the TA, as of July 2022, the Ministry of Agriculture had started replicating the strategic model of the TA in 41 regencies targeting an estimated 30,000 farmers under the Integrated Participatory Development and Management of Irrigation Program.¹⁶

Technical Assistance Assessment Ratings

Criterion	Assessment	Rating
Relevance	The TA was aligned with Indonesia's ICT development needs in rural areas and priorities in ADB's strategic plans and programs, particularly the Integrated Participatory Development and Management of Irrigation Program. The TA design was relevant in terms of the relationship between the design of the strategic ICT model and the information transactions within the digital ecosystems trialed by targeted smallholders. ICT helped to bridge the communication gaps for farmers, enabling them to access information and therefore improve productivity. The TA provided a good case study for the implementation of the Integrated Participatory Development and Management of Irrigation Program.	Relevant
Effectiveness	Despite the COVID-19 pandemic, the TA achieved all the intended outputs, the outcome, and the impact identified in the design and monitoring framework.	Effective
Efficiency	Targets were achieved within budget with 99.4% of the total budget utilized, despite the 12-month extension. Funds were used as expected and there were no issues with financial reporting and procurement. The TA project resulted in measurable socioeconomic benefits. The benefits of farming online were introduced to rural families via IDEAS.	Efficient
Overall Assessment	The TA had no design flaws and was fully aligned with the government's and ADB's priorities. The need for the TA was well articulated and the choice of TA type was appropriate. Its outputs and outcome were achieved as planned and the overall performance exceeded expectations, with no cost or time overruns.	Successful
Sustainability	There is clear evidence of sustainability mechanisms being in place; resources are being allocated (human and financial), and maintenance is being carried out with central and local government support. There is a high degree of support from the government and stakeholders, including incentives and arrangements in place to ensure that the project continues after ADB's involvement. The likelihood of project benefits continuing beyond the project's lifecycle is substantial.	Most likely Sustainable

¹⁴ 134 out of 169 agricultural extension workers in the project areas had been connected to farmer-centered DES.

¹⁵ Both the yield produced and the income (resulting from the sales of the crops) by farmers who use IDEAS are higher than those of farmers who do not use the IDEAS (i.e., the control group). The impact assessment was conducted in May 2020 (during baseline data collection) and June 2021 (during endline data collection) and covered farmers planting rice, corn, and chili.

¹⁶ At the final stage of TA implementation, at the request of the executing agency, the TA supported a preliminary assessment for the replication in Indramayu District, West Java Province, and Pati District, Central Java Province.

Lessons Learned and Recommendations

Design and/or planning	DES are best created organically by the farmers, communities and other value chain stakeholders, with IDEAS playing a key role through social media, particularly using online groups and virtual meetings. It is important to plan DES development in order to coordinate the different components. The digital ecosystems provide smallholder farmers with better solutions for their rural enterprise development.
Implementation and/or delivery	ICT models and monitoring evaluation tools were piloted, including closed loops, farmer online networks known as JAGO TANI, and electronic dashboards. The closed loop approach is based around farmer cooperatives, and results in sharing production and market information. JAGO TANI is a community-based training mechanism which offers a personal training method and is carried out by farmers who train each other. JAGO TANI played an important role in achieving the outreach targets of the TA. As the project progressed, the electronic dashboards (which were used by the IDEAS team, field personnel, and the ADB TA team and were acquired by the TA) proved to be an effective way to monitor and evaluate the progress of the TA.
Knowledge building	Traditional information asymmetry in rural areas has been combated using modern and user-friendly ICT systems. The webinars proved to be a flexible response to the COVID-19 crisis. Since 2021, all IDEAS offer webinar services; the farmers are invited to join via their smartphones. The webinars vary from 20 minutes on specific subjects with six farmers, to 75 minutes with 75 farmers. It is important to identify groups of technically proficient young people who already have an agricultural business in the project site so they can become aggregators and at the same time a hub in the consulting service model using cellular phones.
Stakeholder participation	All the stakeholders involved should experience the benefits from participation in new digital ecosystems. During the TA's initial phase, agricultural value chain stakeholders and constraints of mainstream crops in four locations were identified and mapped. Traditional supply chain connections can then be re-engineered with new, dynamic, bottom-up digital ecosystems.
Partnership	Partnerships between the public and private sectors, including government extension and information services and providers, the IDEAS team, and value chain stakeholders, contributed greatly to the achievement of the TA outputs and outcomes, and, most importantly, its sustainability. The government can provide valuable extension information in the most efficient and inexpensive way, and, at the same time, the private sector can chip in resources. Agreements are in place under the TA for application program interfaces that will allow national organizations to transfer valuable actionable data to farmers via IDEAS. Support could be provided to the IDEAS team to enable sustainable business models to be identified.
Replication and/or scaling up	The TA approach can be replicated based on its two outputs. The digital ecosystem will be the core of the replication strategy, moving farmers' transactions from offline to online. There are four strategic foci: information exchange, sustainable business promotion, re-engineering traditional supply chains to direct online connections, and social interaction. There also four pragmatic steps that will maximize the chance of success for future replication: carrying out needs assessment to map value chain stakeholders and constraints for the mainstream crops, engaging IDEAS teams, recruiting the farmer champions, and engaging private sector value-chain stakeholders.

Follow-up Actions

The TA has provided an extensive blueprint for leveraging ICT in agriculture throughout Indonesia. The TA's experience and lessons learnt can inform the designs of similar ADB program-based loans, including the proposed Horticulture Development in Dryland Areas Project, technical assistance, and grants, and can help to strengthen central and regional governments' development strategies across Indonesia.

Prepared by:
Priasto Aji

Designation and Division:
Senior Economics Officer, IRM

DESIGN AND MONITORING FRAMEWORK

Impact Rural incomes, food security, and livelihoods improved (2015–2019 National Medium-Term Development Plan and 2005–2025 Long-Term National Development Plan) ^a		
Results Chain	Performance Indicators with Targets and Baselines	Achievements
Outcome Management of agricultural extension information services in three districts in rural Indonesia improved.	By 2021: a. 70% of extension workers (40% of whom are female) in the TA districts have increased access to and knowledge of cutting-edge farm management practices, ICT, and mobile services (2016 baseline: 0) b. 70% of farmers (40% of whom are female) in the TA districts report satisfaction with ICT and mobile extension services (2016 baseline: 0)	Achieved. 79% of extension workers (46% of whom were female) in the TA districts had increased access to and knowledge of cutting-edge farm management practices, ICT, and mobile services. Substantially Achieved. 62%–70% of farmers (40% of whom were female) in the TA districts reported satisfaction with ICT and mobile extension services.
Output 1. Model and strategy for using ICT for agricultural information exchange developed. 2. Context-specific, low-cost, timely, and actionable extension information provided.	By September 2021: 1. An ICT and mobile application model covering technology, institutional, financial, economic, and gender aspects developed and endorsed by the Government of Indonesia and functioning (2016 baseline: 0) 2a. Context-specific and updated extension information disseminated at least weekly to farmers, extension workers, and other stakeholders (2016 baseline: 0) 2b. 70% of farmers (40% of whom are female) in TA areas reached through ICT and mobile extension services (2016 baseline: 0) 2c. A functioning value chain stakeholders' mobile platform established. (2016 baseline: 0)	Achieved. An ICT farmer-centered DES model was developed and endorsed by the government and was functioning in four districts. The DES involves three IDEAS and four government institutions; Agro-climate and Hydrology Research Institute, Ministry of Agriculture; BBP2TP, Ministry of Agriculture; Meteorological, Climatological, and Geophysical Agency; and Bank Indonesia. 2a. Achieved. Context-specific and updated extension information was disseminated in real time. This included crop calendars; weather predictions; advisory services disseminated through articles, videos, social media, WhatsApp groups, and webinars; farmer's forums; information on soil fertility; market prices; support for access to financial services; social networking; market access through digital business cards and the marketplace; irrigation reports and complaint handling; water level information; pest and disease identification; and recommendations on active content. Achieved. 73% of farmers (48% of whom were female) in TA areas were reached through ICT and mobile extension services. Achieved. Indigenous cloud-based open and closed digital ecosystems were established in both physical and cloud ICT environments. Closed loop models for horticulture crops in two project locations (Garut and Sukabumi) were established. New online connections and transactions were coordinated in DES created by

		farmers for farmers in the four project locations. These primary ICT systems were connected digitally on multiple software platforms in the cloud. Global and local customized applications were used to leveraging ICT for rural irrigation farmers.
<p>Actual Key Activities with Milestones</p> <p>1. Model and strategy for using ICT for agricultural information exchange developed</p> <p>1.1 The project was launched and the first set of program parameters was developed (September 2018). An ICT forum was held which provided an insight into the types of solutions available to smallholder farmers (September 2018).</p> <p>1.2 Needs analysis missions fielded (November to December 2018).</p> <p>1.3 Decision taken to proceed using commercially available applications rather than the project building its own applications (February 2019).</p> <p>1.4 IDEAS partners invited to join a workshop (April 2019).</p> <p>1.5 Field visits organized in May 2019 in Garut, Sukabumi and Lombok Timur and in June in Pasaman Barat (May and June 2019).</p> <p>1.6 JICA collaborated in ICT adoption planning (December 2019).</p> <p>1.7 Baseline impact assessment carried out (May 2020).</p> <p>1.8 First version of the business cases for each of the IDEAS prepared (May 2020).</p> <p>1.9 Endline impact assessment done (May 2021).</p> <p>1.10 IDEAS business cases and financial models prepared (August 2021).</p> <p>2. Context-specific, low-cost, timely, and actionable extension information provided</p> <p>2.1 Eight field officers recruited and trained, two in each of the four project locations (July 2019).</p> <p>2.2 TA field officers mobilized by IDEAS (October 2019).</p> <p>2.3 IOT sensors installed (October 2019).</p> <p>2.4 Pilot testing of IDEAS mobile applications started (October 2019–January 2020).</p> <p>2.5 IDEAS user acquisition campaigns started (November 2019).</p> <p>2.6 Contact made with existing local intermediaries and community groups (January 2020).</p> <p>2.7 COVID-19 online groups formed (March 2020).</p> <p>2.8 Online applications analyzing online transactions and conceptualizing digital ecosystem structures facilitated (March 2020).</p> <p>2.9 National agricultural information provided to registered users (March 2020).</p> <p>2.10 JAGO TANI multi-level marketing with commissions and incentive schemes launched (April 2020).</p> <p>2.11 Social media campaigns begun (April 2020).</p> <p>2.12 Crop advisory services via IOT sensors and online forums started (July 2020).</p> <p>2.13 Closed loop system in Garut and Sukabumi formalized via memorandum of understanding (October 2020).</p> <p>2.14 Online promotion for TA smallholders' business products, needs and opportunities launched (November 2020).</p> <p>2.15 Active user, actionable information and digital ecosystems development review carried out (January 2021).</p> <p>2.16 IDEAS mobile application services revised based on user requirements (March 2021).</p> <p>2.17 All electronic monitoring dashboards operational (April 2021).</p>		
<p>Actual Inputs</p> <p>JFPR: \$1,987,791.7 of \$2,000,000^b</p> <p>The government provided counterpart support in the form of space, salaries of counterparts, and other in-kind contributions.</p>		
<p>Assumptions for Partner Financing</p> <p>Not applicable</p>		

BBP2TP = Center for the Study and Development of Agricultural Technology, DES = digital ecosystems, ICT = information and communication technology, IDEAS = irrigation digital ecosystem applications, IOT = Internet of Things, JFPR = Japan Fund for Prosperous and Resilient Asia and the Pacific, JICA = Japan International Cooperation Agency, TA = technical assistance.

^a Government of Indonesia. 2015. *Rencana Pembangunan Jangka Menengah Nasional* (National Medium-Term Development Plan), 2015–2019. Jakarta; and Government of Indonesia. 2005. *Rencana Pembangunan Jangka Panjang Nasional Tahun* (Long-Term National Development Plan), 2005–2025. Jakarta.

^b Administered by the Asian Development Bank.

Source: Asian Development Bank.

TECHNICAL ASSISTANCE COST

Table A2.1: Technical Assistance Cost by Activity
(\$'000)

Item	Amount ^a		
	Original ^b	Revised	Actual
1. Consultants	1,634.2	1,634.2	1,845.3
2. Training, seminars, and/or conferences	170.6	170.6	142.5
3. Miscellaneous TA administration	13.3	13.3	0.0
4. Contingency	181.9	181.9	0.0
Total	2,000.0	2,000.0	1,987.8

^a Includes ADB-financed funds and/or ADB fully administered cofinanced funds.

^b Original estimated cost in the TA report.

Source: Asian Development Bank estimates.

Table A2.2: Technical Assistance Cost by Fund
(\$'000)

	JFPR ^a	Total Cost
1. Original ^b	2,000.0	2,000.0
2. Actual	1,987.8	1,987.8
3. Unused	12.2	12.2

JFPR = Japan Fund for Prosperous and Resilient Asia and the Pacific.

^a Administered by the Asian Development Bank.

^b Original estimated cost in the TA report.

Source: Asian Development Bank estimates.

WORKSHOP ACTIVITIES

TA Project Launch, 10 September 2018



Director of Water Management and Irrigation, BAPPENAS at the launch of the TA project

ICT Forum, 24 September 2018



ADB project officer introducing the forum

Needs Assessment Results Workshop, 11 February 2019



ADB project officer delivering remarks at the workshop

Leveraging ICT for Agriculture Workshop, 10 December 2019



Director of Water Management and Irrigation, BAPPENAS delivering an address at the workshop