ASSESSMENT OF AGRICULTURE AND RURAL DEVELOPMENT

A. Introduction

1. This report documents the findings of an assessment of the Asian Development Bank (ADB) support to Tajikistan’s agricultural and rural development (ARD) sector. It was carried out by ADB’s Independent Evaluation Department (IED), as part of its Tajikistan country program assistance evaluation (CAPE) for August 1998–October 2013. During this period, ADB approved and financed five ARD projects with a total approved value of $93.20 million and six technical assistance (TA) projects totaling $4.07 million. The sector assessment’s primary data collection phase (1–23 July 2013) included field inspections of project sites and facilities in 11 districts in the regions of Khatlon, Sughd, and Republican Subordination.

B. Sector Context

2. Seventy-three percent of Tajikistan’s people live in rural areas and one-half of the population is dependent on agriculture. Not surprisingly, the sector accounts for a significant share of its gross domestic product, which was 27% in 2012.1 Moreover, the export of cotton—the country’s main export crop—accounts for approximately 15% of the country’s exports and 27% of its revenues from taxes.2

3. Despite its importance, the ARD sector faces several critical challenges. To better understand the sector in general and these challenges in particular, it is useful to briefly review its history. Figure 1 presents a timeline of key historical developments in the sector, which can be traced back to the latter half of the nineteenth century when Russia shifted its attention to Central Asia for new sources of cotton. This inevitably resulted in a period of Soviet rule and the birth the Tajik Soviet Socialist Republic in 1929. Much of the new republic’s fertile yet scarce arable land, traditionally used to grow food crops, was earmarked for cotton production under a centrally planned economy. By the 1950s, efforts were undertaken to significantly bolster agricultural production in general and cotton production in particular. This led to large-scale investment in irrigation infrastructure, agricultural extension, improved seed production, and fertilizer and pesticide use. This investment paid off, with agricultural output more than doubling from 1960 to 1988.3

4. When Tajikistan became independent in 1991, however, the substantial support that the former Soviet Union had provided to its agriculture sector came to an abrupt end. Soon afterwards, the new Government of Tajikistan began a long, drawn-out process of privatizing state-owned and collective farms. Many of the initial beneficiaries of farm restructuring had connections with the political elite. However, eventually those who had labored on the state and collective farms also acquired land use and transfer rights through a series of presidential decrees, but with ultimate land ownership still resting with the state. With the presence of large number of farmers with limited resources and collateral, a new business opportunity arose for those that did: cotton financiers or “futurists” began providing farmers with credit and inputs in exchange for purchasing rights for whatever cotton was produced. The price the futurists paid for cotton was preset and often inadequate to cover production costs, leave alone being sufficient for profit generation. This—exacerbated by the

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fact that many farmers had to take on a proportionate share of the debt of the disbanded Soviet farms—led to what became known as the farmer debt crisis.\(^4\)

5. Declining state investment and the mounting cotton debt, coupled with the negative impacts of Tajikistan’s civil war (1992–1997), had dire consequences for the agriculture sector, particularly the cotton subsector. Figure 2 illustrates the changes that took place in the production of the main crops grown in Tajikistan from 1985 to 2011. As is evident, cotton production went into a state of decline after the late 1980s and never fully recovered. In fact, the share of cotton in total exports declined from 25.7% in 1993 to as low as 7.7% in 2008. It then made appreciable gains to 15.7% in 2011.\(^5\) Conversely, the production of grain (primarily wheat) increased significantly from the mid-1990s, followed by potatoes and vegetables, while the production of fruit, grapes, and rice more or less stagnated.

6. The primary reason why cotton production has declined in Tajikistan is simply because most farmers plant less of it in their fields in favor of other more lucrative crops. This was ultimately a consequence of the Government’s adoption of land and market-based reforms, the implementation of which accelerated significantly after the mid to late 1990s when Tajikistan began receiving increased support from a number of development partners, including ADB. While cotton production targets are still in place and sometimes enforced by local government, the concept of “freedom farming” is now a reality for many, if not most, farmers.\(^6\) However, transitioning away from cotton was not easy. Lack of alternative sources of financing has been one considerable barrier. Moreover, given their high levels of

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\(^6\) The CAPE sector team, for instance, asked a number of farmers how their agricultural production and income has changed over the last 10 years. In all cases, improvements were stated with respect to both, and the introduction of “freedom farming” was cited as the principal cause.
indebtedness, it was inevitably difficult for farmers to sever their ties with the futurists and, by extension, move away from growing cotton (footnote 4). Hence, the Government’s adoption of the Farm Debt Resolution Strategy in 2005 and, more importantly, a presidential decree in 2009 that wiped out $550 million worth of cotton debt enabled many farmers to better take advantage of “freedom farming.” 7

7. While noteworthy improvements have taken place in Tajikistan’s ARD sector, it still faces a number of challenges. The country has 14.3 million hectares (ha) of land, but only 34.7% is suitable for agricultural use and only 7% (960,000 ha) is conducive for crop cultivation, i.e., is arable. Moreover, due to Tajikistan’s relatively arid climate and the dependence on water of intensive crops such as cotton, agricultural productivity is heavily dependent on irrigation. Approximately 84% of all arable land is serviced by the country’s network of irrigation systems developed before independence by the former Soviet Union. 8 Several projects supported by development partners, such as ADB and the World Bank, have sought to rehabilitate this infrastructure. However, its vast scale and inherent inefficiencies makes this an extremely large and expensive task. As a result, the irrigation needs of many farmers in various regions of the country are not being met (footnote 4).

8. In addition to having inherited an inefficient and dilapidated irrigation network, the agriculture sector is also seriously under-mechanized and under-skilled, and agricultural extension services are currently a small fraction of what they were in the pre-independence era. Moreover, over 50 years of environmentally malign agricultural practices under the former Soviet Union resulted in significant land

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7 ADB-supported TA was directed at both addressing farmer debt and promoting market reforms, such as the elimination of government-imposed cotton production targets. The research it supported revealed that the National Bank of Tajikistan was guaranteeing international loans to the Agroinvest Bank, which on-lent money to the cotton financiers. The exposure of this arrangement prompted an audit by the International Monetary Fund (IMF), which revealed that $856 million worth of loans to Agroinvest Bank had been guaranteed. This put further pressure on the government to address the farm debt crisis. While ADB advocated that much of the burden of debt should be taken on by the cotton financiers themselves, given that they had been the ones profiting most from the system, the government issued a decree in 2009 that wiped out much of the Agroinvest Bank’s debt and, in turn, that of the cotton financiers and the farmers indebted to them. Technical Assistance to Tajikistan for Farm Debt Resolution Program, attached to ADB. 2002. Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to Tajikistan for Agriculture Rehabilitation Project. Manila (TA 4958); ADB. 2005. Technical Assistance to Tajikistan for Farm Analysis and Awareness-Raising for Debt Resolution. Manila (TA 4664); A. Malikova. 2009. Tajikistan cancels farmers’ multi-million dollar debts. Central Asia Online. http://centralasiaonline.com/en_GB/articles/caili/features/2009/11/23/feature-05
degradation in the form of soil erosion, deforestation, and irrigation-induced soil salinity. Finally, while the policies of the former Soviet Union likely suppressed the emergence of a large landowning class, deficiencies in the initial post-independence land reform process resulted in a significant proportion of Tajikistan's choice agricultural lands being distributed to powerful absentee landlords. Given the above challenges, it comes as little surprise that the sector and, more importantly, the people upon which it depends are exceptionally vulnerable to shocks, including those imposed by weather. A severe winter in 2007–2008, for instance, resulted in the significant loss of both human and animal life (footnote 4).

C. ADB's Sector Strategies and Portfolio

9. ADB’s approach to ARD in its three sector strategies and associated updates during August 1998–October 2013 CAPE period are summarized in Table 1. As shown, the ARD sector was featured in the first two country strategies but not in the third. This was the result of ADB’s decision to focus on fewer sectors in Tajikistan, in line with its concentration on core areas of operations under Strategy 2020 adopted in 2008. These included energy, transport, and private and public sector reform. Given that Tajikistan was transitioning to a market economy, a significant focus of the first two country strategies was on facilitating land reform, farm restructuring, and rural private sector development. Both strategies also emphasized direct support to rehabilitate irrigation infrastructure and enhance access to potable water. The second strategy further featured the mobilization and strengthening of water user associations (WUAs) and farmer organizations, efforts to resolve the cotton farmer debt crisis, and the improvement of sustainable land management.

Table 1: Country Strategies and Core Focus Areas in Agriculture and Rural Development Sector

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<td>Support sector reforms: (i) facilitate land reform and farm restructuring; (ii) encourage competition in agricultural marketing; and (iii) develop framework and systems for providing rural financial services. Support community-based post-conflict agricultural rehabilitation and reconstruction, establish potable rural water supply, and mitigate drought</td>
<td>Promote private sector development and institution building in the rural development sector through (i) the continued support to water user associations and farmers' organizations, (ii) improving agricultural support services, (iii) addressing farm cotton-related debt, and (iv) encouraging the development of private sector activity and inclusive growth. Improve irrigation infrastructure and promote sustainable operation and maintenance. Improve national sustainable land management capacity.</td>
<td>Agricultural and rural development not a priority: focus is energy, transport, and private and public sector reform. “Asian Development Bank will move out of agriculture and social services. These sectors are important, but other agencies, particularly the World Bank, will work on them.”</td>
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10. These sector strategies were operationalized through five projects, with a total approved value of $93.2 million, and six technical assistance (TA) projects, with a total approved value of $4.07 million.9 Four of the five projects focused on (i) rehabilitating irrigation infrastructure constructed in the pre-independence period; (ii) constructing potable rural water supply systems; (iii) building community institutional capacity, primarily through mobilizing and strengthening WUAs; and (iv) promoting improved framing practices through the establishment of demonstration plots and farmer training. The first project—the Tajikistan Rural Poverty Reduction Project (TRPRP), implemented by two

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9 This does not include the five project preparation TA projects undertaken during the period, as well as one TA project that approved but never pursued, i.e., Capacity Development for Planning and Management in Local Government, attached to ADB. 2007. Report and Recommendation of the President to the Board of Directors: Proposed Loan, Asian Development Fund Grant, and Technical Assistance Grant to Tajikistan for the Rural Development Project. Manila (TA 4917).
nongovernmental organizations (NGOs), the Aga Khan Foundation and CARE Tajikistan—intended to pilot test a number of approaches for alleviating rural poverty. And the two largest projects implemented over the period—the Agricultural Rehabilitation Project (ARP) and the Irrigation Rehabilitation Project (IRP)—pursued many of these same interventions, including the establishment of WUAs. However, these two projects did not have a micro-finance component as did TRPRP.

11. The Sustainable Cotton Subsector Project (SCSP) did have a micro-finance component but also set up a seed cleaning facility in the Khatlon region and established national cotton grading standards, a joint venture cotton grading company (Tajikistan-Wakefield Inspection Services [WIS]), and quarantine facilities (including a central laboratory, two regional laboratories, and three airport and six boarder inspection posts). The last project—the Rural Development Project (RDP)—was still being implemented during the CAPE study period and was the most ambitious of the projects in terms of scope. It includes: (i) the undertaking of 22 community-level micro infrastructure projects (potable water supply, irrigation, road and bridge construction, and small-scale hydro-electricity); (ii) improving land registration and business registration services and uptake; (iii) developing a national policy and strategy for pasture land and livestock management; (iv) establishing pasture and forest user groups to improve land management and rehabilitate degraded land; and (v) providing loans, agricultural inputs, and business advisory and extensions services to farmers.

12. The first TA undertaken during the period was a comprehensive assessment of Tajikistan’s agricultural sector, which was intended to guide ADB’s initial investment decisions. This was then followed in 2001 by a TA to strengthen the capacity of the Ministry of Nature in environmental assessment planning. A similar TA was also undertaken in 2004, but this specifically involved establishing the Environmental Policy and Planning Center under the State Committee for Environmental Protection and Forestry. There were two additional TA projects that specifically focused on addressing cotton debt. The first (2003) primarily involved developing farm debt resolution strategies and an associated monitoring system, while the second (2006) sought to ensure effective implementation of the government’s newly adopted Farm Debt Resolution Strategy. ADB also supported a TA in 2005—Support for Monitoring Policy Reforms and Improving Farm and Water Management—which was focused not only on monitoring the progress of Tajikistan’s agricultural reform agenda but also promoting competition among providers of farm inputs, technical advice, credit, and marketing services.

D. Evaluation of ADB Support

13. The purpose of this section is to present the results of the sector assessment against these criteria: strategic positioning, relevance, effectiveness, efficiency, sustainability, and development impacts.

14. **Strategic positioning.** Overall, ADB’s strategic positioning is rated *satisfactory*. The sector strategies associated with ERIOS (1998–2003) and CSP (2004–2008), summarized in Table 1, were appropriate. Given that the country was transitioning to a free market system at the time of ADB’s initial engagement, ERIOS’ focus on sector reform and private sector development, including the provision of financial services, was highly pertinent to the country’s needs and consistent with Tajikistan’s first poverty reduction strategy program (2002–2006). In addition, given that agricultural productivity is highly dependent on irrigation in Tajikistan, rehabilitating the irrigation infrastructure constructed during the pre-independence period was perhaps the most pragmatic approach that could have been undertaken at the time to revitalize the sector. Moreover, it made sense to combine this intervention with the construction of portable water supply systems.

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11 However, as discussed in the sustainability section, given the vast scale of the irrigation infrastructure constructed during the Soviet era, any attempting to re-establish it in its full capacity would not only be extremely costly but also beyond the Government’s capacity to maintain.
15. The focus of the 2004–2008 CSP was similar and therefore also appropriate. Its additional emphasis on ensuring sustainable operation and maintenance (O&M) through WUAs, addressing cotton farming debt, and enhancing sustainable land management capacity were particularly relevant. Several other development partners, such as the World Bank, provided substantive support to Tajikistan’s agriculture and rural development during the evaluation period, and the CAPE ARD sector team found that there had been a high degree of collaboration and complementarity between ADB and these actors.

16. Another question relevant to this criterion is whether it was appropriate (i.e., strategic) for ADB to withdraw its support from the ARD sector in its country partnership strategy for 2010–2014. Although not easily answered, the question was posed to the various Tajikistan-based stakeholders the CAPE sector team interviewed. Inevitably, the ministries directly involved in the sector stated that ADB should continue providing support, given agriculture’s importance to Tajikistan’s people and economy. The more interesting responses came from development partners and those outside the sector. These stakeholders expressed greater sympathy for ADB’s decision to focus on fewer sectors. However, given that the majority of Tajikistan’s poor reside in rural areas and agricultural remains a critical component of the economy as a whole, they stated that ADB should ensure that its work in areas such as energy and transport actually bring about tangible benefits for the rural poor, such as directly supporting the provision of energy for winter heating and pump irrigation. Moreover, while it is true that there are several development partners working in the agriculture and rural development sector in Tajikistan, the sector is far from being overcrowded, and there are still significant resources that are needed to develop it. ADB’s claim that other development partners (e.g., the World Bank) could simply take over its work in the sector is, therefore, overly simplistic. Finally, ADB’s focus on climate change adaptation inevitably necessitates that it remain engaged in the sector, for example, via enhancing water resources management or encouraging farmers to adopt more climate resilient agricultural practices.

17. Relevance. ADB’s support for the ARD sector is rated relevant, on the borderline. The evaluation on this criterion included consideration of whether the particular mix of projects and TA ADB supported during the CAPE period was conducive to implementing this period’s country strategies. TRPRP, ARP, and IRP all sought to rehabilitate irrigation infrastructure, construct potable water supply facilities, establish WUAs, and train farmers, which were consistent with many of the strategies outlined in ERIOS and CSP. Moreover, there were a number of TA projects that were focused on supporting reform and addressing cotton debt, as well as improving Tajikistan’s environmental management capacity. As such, much of the project and TA portfolio was relevant to the sector strategies.

18. However, there are two noteworthy issues. First, none of the projects or TA sought to systematically improve agriculture support services, despite this being a core element of the 2004–2008 CSP. Direct farmer training took place on a small scale through four of the five projects, but nothing was pursued that would have effectively addressed Tajikistan’s agricultural extension vacuum. RDP has, however, attempted to pilot an innovative private sector model though the establishment of extension advisory centers, an intervention implemented by the French NGO ACTED. However, doubts were raised by a key informant about whether farmers would be willing to pay fees for the advisory services, particularly at rates that would be able to sustain the centers’ operations. There is also a problem of scale: During the CAPE’s implementation, four centers were found to be operational, each of which supports 25 farmer groups made up of approximately 20 farmers with six consultancy staff. This means that this intervention is only reaching about 1,000 households, representing a very small proportion of the population (0.6%) the project is targeting. There are therefore serious questions pertaining to the model’s scalability.

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19. The second issue relates to project design deficiencies, particularly with respect to SCSP and RDP. A major output of SCSP was to establish a seed cleaning facility, mainly to delint cotton seed. The intended outcome, as provided in the major change in scope and implementation arrangement, was to ensure widespread access to quality seed. However, it is questionable who the facility will actually benefit. In particular, the CAPE sector team was informed by three independent sources that not only do the vast majority of farmers in Tajikistan not have the required equipment to plant delinted cotton seed but also their farming practices (e.g., land tilling) are inherently incompatible. Moreover, improved seed production is virtually non-existent in Tajikistan, so several of the agricultural experts interviewed questioned the reasoning behind establishing the facility before such production takes place. RDP’s design, on the other hand, was also problematic, primarily because it attempted to achieve too many ambitious results. While several of the interventions will likely bring about meaningful benefits for those they reach, this will only be achieved in small geographic pockets.

20. **Effectiveness.** ADB’s support to the sector is rated *effective*, but just above the borderline. Overall, most of the projects and TA projects were successful in achieving their intended outputs. TRPRP actually exceeded many of its planned output targets, while ARP met most of them. As mentioned in its PCR, IRP did not do well with respect to farmer training, given that only 773 out of the planned 2,500 farmers were trained. Moreover, the main way the project intended to achieve its impact was by ensuring adequate irrigation water supply covering 47,500 ha of land for the benefit of 262,000 beneficiaries. The PCR reports that 55,368 ha were reached by the rehabilitated facilities—“23,343 ha direct, 32,025 ha indirect.” It further states that “…large areas of Ash, Pyanj, and Farhkor irrigation systems only receive indirect benefit from increased water distribution linked to work on part of the head works or distribution canal rehabilitation” (footnote 16). In other words, many of the secondary and tertiary canals were not rehabilitated as planned and more than half of the 55,368 ha became better irrigated simply due to increased water flow resulting from the rehabilitation of the headworks and primary canals. While this is beneficial, it can only be considered as a partial achievement—the intended rehabilitation of many of the secondary and tertiary canals in the project’s catchment area never took place.

21. After a major change in project scope in 2009, most of the outputs of the SCSP were largely achieved. However, only one of the two planned seed cleaning facilities was constructed, given that a similar facility planned for Sughd Province was already setup by the private sector. SCSP’s biggest shortcoming, however, is with respect to its bonded warehouse component: Despite these warehouses being initially rented, refurbished, and equipped, they were never used. Assessing RDP’s output performance, on the other hand, is complicated by the fact that it intends to achieve a number of diverse outputs, many of which are inherently difficult to measure. That being said, it has and will achieve a large number of outputs. The issue is more about whether these outputs—together—will result in large scale impact. Finally, a review of the TA completion reports revealed that their intended deliverables were achieved, for the most part, and in some cases exceeded.

22. Given that none of the projects or TA that make up the evaluated program were subjected to impact evaluations, it is difficult to know the precise extent to which they achieved their intended outcomes, the second dimension of the effectiveness criterion. For example, for ARP, the incidence of poverty dropped from 88% to 37%–45% in the four districts targeted by the project. However, given that Tajikistan was in a state of recovery following its civil war, a significant drop in the poverty rate would have almost certainly taken place, even in the absence of the project. That being said, it is highly probable that the irrigation rehabilitation interventions of four of the five projects (accounting for nearly 50% of the entire portfolio’s budget) would have brought about significant livelihood benefits for the targeted farmers, i.e., via directly increasing yields and/or enabling multiple cropping or crop diversification.

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23. These projects also ensured that many households accessed safe drinking water, thereby, also contributing to a reduction in waterborne diseases and reducing the labor burden for women and girls. And improved drainage may have resulted in a significant reduction in mosquito breeding habitat, thereby, reducing the incidence of malaria. Nevertheless, as is reflected in IRP’s PCR in particular, it is likely that the positive effects of the irrigation rehabilitation interventions could have been greater if the associated farmer capacity development components of both ARP and IRP had been more substantive in terms of scale. The projects only trained 1,733 farmers, despite the fact that there were approximately 150,000 households in their combined catchment areas.

24. RDP has the potential to benefit the relatively small number of people directly reached by its interventions, but this is highly unlikely to positively affect overall farm productivity across the targeted districts. Despite the sustainability concerns noted in paras. 32–34, an NGO contracted by the project, ACTED, has worked hard to make RDP’s agriculture and rural business support component work, but the potential impact is also being compromised by delays in the provision of loans to the participating groups. Moreover, it is difficult to see how SCSP has or will increase the incomes of the vast majority of farmers—the project’s primary intended outcome. The project has, however, either reached or partly reached several of its other outcome targets: 63% of the targeted 1,000 cotton producers have been issued with loans, and Tajikistan-WIS has reached the target of certifying 30,000 tons of cotton.\footnote{That said, it is unlikely that the seed cleaning facility will clean and then sell seed to the targeted number of farmers, given that most farmers do not have access to the required seed planting machines or follow the necessary land preparation practices. While the components of the CAPE period projects vary in terms of their potential effectiveness, the entire program is nevertheless rated only borderline effective.}

25. The six TA projects that were reviewed are also rated effective. While the intended nature and scope of many of these TA projects evolved with changes in Tajikistan’s political landscape, they do appear to have been effective in relation to both capacity development and policy reform. Two TA projects deserve special mention: Farm Debt Resolution and Policy Reforms and Farm Analysis and Awareness Raising for Debt Resolution. The former TA is credited with bringing the farm debt crisis to attention of both Government and the donor community and resulted in the former’s adoption of the Farm Debt Resolution Strategy in 2005. While the second TA intended to support the government implement this strategy, it helped to address the debt crisis in a very different way: it revealed the National Bank of Tajikistan’s role in guaranteeing international bank loans to the cotton sector, which led the International Monetary Fund’s audit and, ultimately, to the presidential decree that wiped out much of the farm debt (footnote 8).

26. Efficiency. The efficiency of ADB’s support in the sector is rated less than efficient. Ex-post economic internal rates of return (EIRRs) were computed for the two largest projects—ARP and IRP. The EIRR for the former was calculated to be 19% with a discount rate of 12%, compared with 23% at appraisal. This calculation was based on a 30 year cash flow projection, with $1.87 million being spent on O&M per annum for the period from 2011 to 2032.\footnote{Given that the irrigation facilities associated with this project were rehabilitated, rather than newly constructed, this is unrealistic. Indeed, the CAPE sector team visited the Kyzilsu-Yakhsu irrigation scheme in Vose District and witnessed significant repair work already being undertaken on its pump irrigation station. Due to the age of much of the equipment of this station, it is doubtful whether it will continue to function to 2032, particularly in the absence of replacing pumps, generators, and other pieces of equipment.} Given that the irrigation facilities associated with this project were rehabilitated, rather than newly constructed, this is unrealistic. Indeed, the CAPE sector team visited the Kyzilsu-Yakhsu irrigation scheme in Vose District and witnessed significant repair work already being undertaken on its pump irrigation station. Due to the age of much of the equipment of this station, it is doubtful whether it will continue to function to 2032, particularly in the absence of replacing pumps, generators, and other pieces of equipment.

27. A representative from the Ministry of Energy and Water Resources informed the CAPE ARD sector team that only $10 million was currently being spent each year on irrigation-related O&M, compared with an annual budget of $100 million during the Soviet era. If it is assumed that the pre-independence figure is more realistic in terms of what is required, $11.50 million would be needed per
annum for the facilities’ O&M, rather than the $1.87 million figure used in the PCR’s calculation of the project’s EIRR. This is based on the fact that the project rehabilitated irrigation infrastructure serves 11.5% of Tajikistan’s irrigated land. The ARP was clearly not as efficient as its PCR contends (footnote 15).

28. The ex-post EIRR for IRP was computed to be 11.8%. However, despite this being below ADB’s 12% efficiency cutoff, the project’s PCR rated the project efficient, given that it generated unquantifiable benefits from the improved potable drinking water supply systems not included in the derived EIRR. Although this could be considered reasonable, however, there are three reasons to question the PCR’s efficiency rating. First, similar to ARP, the 25-year period used for the economic life of the irrigation facilities—with an O&M budget amounting to 1.56% of the initial capital invested (compared to 6.5% for ARP)—is clearly unrealistic. Not only were the facilities only rehabilitated (rather than newly constructed) but also the CAPE mission’s field visits revealed shortcomings with some of the civil works that had been undertaken. A second reason to question the PCR’s efficiency rating is that this particular project spent more than twice as much money as ARP to irrigate 1 hectare of land ($786.27 per ha versus $331.80 per ha). The cost per reported beneficiary of the portable water supply component reveals further inefficiencies—$73.01 per person for IRP versus $31.4 for ARP.

29. Ex-post EIRRs were not computed for the other three projects in the portfolio. However, the NGO-led TRPRP was significantly more efficient than the two larger projects that started after it, namely, ARP and IRP. This project achieved significantly more with fewer resources. For instance, it trained considerably more farmers than the other two—4,300 farmers, compared with 960 under ARP and 773 under IRP. While the TRPRP rehabilitated significantly less irrigation infrastructure, it did so at a lower unit cost—$71.40 per ha, compared with $331.80 per ha for ARP and $786.27 per ha for IRP. It also mobilized and supported the capacity development of many more community institutions, including 360 women’s groups. The cost per direct beneficiary was also considerably less—$50.00, compared with $85.14 (ARP) and $222.67 (IRP).

30. The remaining two projects in the portfolio, SCSP and RDP are not as efficient as they could have been. The EIRR for the former project was calculated at 28.7% at appraisal. This calculation was based on the assumption that, “Removing market distortions, and improving the efficiency of processing seed cotton and marketing fiber cotton,” would increase farmgate returns by 49%. However, it is difficult to see how any of the actual interventions carried out under the project will result in increased returns for the vast majority of farmers residing in the four targeted districts. First, the seed delinting facility is incompatible with the equipment and farming systems of most farmers and will, consequently, not enable them to make use of the improved seed. Second, the quarantine component of the project, while important, will have no direct impact on farmgate prices for cotton. This is also the case for the Tajikistan-WIS joint venture, given that it primarily benefits exporters, cotton ginners, and perhaps a small number of large scale farmers. The only component of the project that could have any potential to bolster farmgate prices for cotton is its micro-finance component but loans have thus far only been provided to 629 farms, and these are spread throughout the entire country, rather than being concentrated within the project’s four target districts. RDP, furthermore, has experienced considerable implementation delays. At the end of 2012, only 8.8% of the project’s loan had been disbursed, 58% of its grant, and 34% of the Global Environmental Facility (GEF) grant component. Moreover, the funding to support the project’s microfinance component had not been released at the time of the CAPE’s data collection phase, which seriously threatens its Agriculture and Rural Business Support component.

18 For instance, the roof of pumping station ANS-2D in Asht District, Soghd region was reconstructed, and, after only a few months, it was completely destroyed by wind. Moreover, some parts of the water supply systems that were constructed were also found destroyed in Davlatobad and Navobod villages of Farkhor District.
19 The funds spent on the emergency rehabilitation works were excluded from the calculations.
20 ADB. 2006. Report and Recommendation of the President to the Board of Directors: Proposed Loan and Asian Development Fund Grant to Tajikistan for the Sustainable Cotton Subsector Project. Manila (Grant 0061 and Loan 2271).
31. While implementation of several of the six TA projects undertaken during the CAPE period was slightly delayed, they are rated efficient as a group overall. The two TA projects that focused on resolving the farm debt issue were particularly successful from an efficiency perspective. They triggered the issue's resolution, which benefited poor farmers tremendously. Significant gains were therefore achieved at relatively low cost.

32. **Sustainability.** The sustainability of ADB’s support to the sector over the CAPE period is rated less likely. The irrigation and drainage facilities rehabilitated during the CAPE period represented the greatest financial share of the reviewed project and TA portfolio. While commendable efforts were made to put in place WUAs at the local level, the amount of money they collect in the form of user fees was reported to the CAPE sector team as being inadequate to finance O&M in tertiary canals, leave alone the secondary and primary canals, intake points, and pump stations. The government currently only spends one-tenth of the amount that was spent on irrigation and drainage related O&M during the pre-independence period. The PCRs of ARP and IRP also rate the sustainability of these projects as less likely.

33. There are other sustainability issues with respect to the portfolio as well. ARP, for instance, established three Farm Machinery Units (FMUs), and each received $1 million in loans from the Ministry of Finance to purchase farm machinery and rent it out to farmers. The FMUs were intended to be profitable within five years, but, due to a number of factors (e.g., procurement of inappropriate farm equipment), they are defaulting on their loan repayments. The demonstration farms under both ARP and IRP were further found to no longer exist. The sustainability of RDP’s Agriculture and Rural Business Support component is also questionable. As mentioned above, the model assumes that farmers will eventually start paying fees for the services to cover the operational expenses of the 4 advisory centers, something which is unrealistic. Finally, while only time will tell whether SCSP’s seed cleaning component will be sustainable, for reasons discussed above, there will likely be little demand among most farmers for the type of seed it will generate. While a similar facility was recently established in Sughd Province by the private sector, it is has significantly less capacity and services large-scale farms that employ modern farming equipment and techniques. A follow-up study by ADB’s Tajikistan Resident Mission is recommended on the SCSP facility in the future to assess its viability and document its core client base.

34. There are, however, several components of both SCSP and RDP which are likely to be sustainable. The quarantine facilities established by the former project are under the State Service on Phytosanitary and Plant Quarantine, Ministry of Agriculture, and its Head was adamant about the importance of these facilities and his commitment to sustaining them. The joint venture with Tajikistan-WIS—was visited by the CAPE sector team and was found to be well run and managed, with a healthy customer base. Moreover, the $3 million loan to the Agroinvest Bank will likely be paid back to the Ministry of Finance on schedule. For RDP, user fees were further found to be in place for the rural water supply micro-project that was visited, and it appears that those benefiting from agricultural inputs will be in a position to multiply the seed and reinvest any earned profits into the future. Efforts should be made, however, to ensure that RDP is integrated into the Ministry of Agriculture’s regular work program to ensure continued follow-up and support to the benefiting communities once its project implementation unit ceases to exist.

35. **Development impacts.** The development impacts of the ARD sector program are rated satisfactory. This is based on the extent to which ADB’s support to Tajikistan’s ARD sector contributed to the nation’s overall development in general and ADB’s country strategies in particular. There are

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21 For example, in 2012, the Department of Water Management of J. Rasulov District collected only TJ$1,208,275 from WUAs and with direct contracts with farmers for delivered water, yet its expenses for this same year were TJ$2,461,051. Consequently, this department is burdened by TJ$7,592,616 worth of debt. Moreover, the debt of farms and other organizations to the department for delivered water and other rendered services is TJ$2,349,636.
three areas where ADB’s support made significant contributions to Tajikistan’s overall development. The first area pertains to the community level support provided by four of the five projects implemented in the sector over the CAPE period. While there are notable sustainability issues, the work of TPRP, ARP, and IRP alone rehabilitated irrigation facilities that service 128,942 hectares (17.5%) of Tajikistan’s irrigated land. This likely contributed to the increases cotton and wheat production recorded in the PCRs and provided new crop diversification opportunities, both of which likely increased farmer income and improved food security. The support, thereby, contributed to the post-war recovery effort, a key aim highlighted in ERIOS (1998–2003). These projects also provided potable water to over 200,000 people, thereby, likely reducing the prevalence of waterborne disease. Improved irrigation drainage would have further reduced mosquito breeding habitat, thereby, decreasing the incidence of malaria.

36. The second area where ADB’s contribution to national development was significant is in relation to capacity and institutional development, a strategy stressed in CSP, 2004–2008. Four of the 5 projects, for instance, mobilized and developed the capacity of community level institutions recognized at the national level such as WUAs and Water Support Committees (WSCs). While such institutions cannot, by themselves, ensure sustainability, they play a significant role and promote local ownership. Capacity at the national level was further strengthened through (i) the establishment of the WUA Support Unit (WUASU) under MMWR and the Environmental Policy and Planning Center under the State Committee for Environmental Protection and Forestry; and (ii) training staff from the Ministry of Nature in environmental assessment and planning. SCSP’s development of Tajikistan’s quarantine capacity and the creation of Tajikistan-WIS, as well as RDP’s establishment of a university course on biodiversity, were additional contributions to developing national capacity.

37. ADB’s policy reform work through various TA projects—as part of a larger effort to support the country’s transition to a market economy and the development of the private sector, as emphasized in both ERIOS (1998–2003) and CSP (2004–2008)—is the third area where a significant contribution to promoting national development was made. This was particularly in relation to farm debt. While ADB let the World Bank take the lead on addressing this issue in 2008, the research it supported not only exposed the problem and brought it to the attention of both the government and the donor community but also highlighted National Bank of Tajikistan’s role, inevitably prompting an IMF audit. Given that the ultimate source of much of the debt was traced to the National Bank of Tajikistan, i.e., state reserves, it was possible for the Government to issue the presidential decree that abolished much of it. This case is a good example of how change often happens non-linearly.

38. ADB made a number of significant contributions to Tajikistan’s national development during the CAPE period through its support to the agriculture and rural development sector. However, there were several interventions it supported that will likely make little difference to the country’s overall development. The first of these is in relation to micro-finance. While TRPRP (despite its small size) did a noteworthy job of providing small loans or in-kind credit to 10,789 farmers, the overall the portfolio of projects failed to significantly enhance access among farmers in general to such much needed financing. SCSP has thus far made 629 loans, but these are to farmers scattered all over the country and RDP’s microfinance component has been significantly delayed. Moreover, as mentioned above, the piecemeal community-level support provided by RDP in the way of micro-infrastructure projects, seed provision, and farmer training is unlikely to result in any significant impacts at the district level, leave alone the national level. Finally, for reasons also stated above, the seed cleaning facility established in the Khatlon Region will likely do little to enhance access to improved seed for the majority of farmers in this region and beyond.

39. ADB’s support to Tajikistan’s agricultural and rural development sector also likely contributed significantly to two of the three cross-cutting CPS objectives for the CAPE period—promoting inclusive growth and supporting the country’s transition to a market economy. In particular, it is reasonable to assume that many of the beneficiaries of the irrigation facilities that were rehabilitated, the potable
water supply systems that were constructed, and the farmer training that took place were Tajikistan’s rural poor. And these interventions likely resulted in significant increases in agricultural income, food security, and disease reduction. ADB’s support to rural market reform in general and cotton debt in particular not only contributed to addressing the second CPS cross-cutting objective (market reform) but also, by extension, promoted inclusive growth by enabling farmers to diversify their crops and broadening avenues for both the purchase of agricultural inputs and the sale of agricultural produce.

40. **Overall assessment.** Overall, ADB’s support to Tajikistan’s agriculture and rural development sector is rated *successful*, on the borderline, based on the criteria discussed in paras. 14–39 and summarized in Table 2.

<table>
<thead>
<tr>
<th>Rating Criteria</th>
<th>Criteria Weight</th>
<th>Assessment</th>
<th>Score</th>
<th>Weighted Average Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic positioning</td>
<td>0.1</td>
<td>Satisfactory</td>
<td>2.0</td>
<td>0.2</td>
</tr>
<tr>
<td>relevance</td>
<td>0.1</td>
<td>Relevant</td>
<td>2.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Effectiveness</td>
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<td>Effective</td>
<td>2.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Efficiency</td>
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<td>Less than efficient</td>
<td>1.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Sustainability</td>
<td>0.2</td>
<td>Less likely</td>
<td>1.0</td>
<td>0.2</td>
</tr>
<tr>
<td>Development impacts</td>
<td>0.2</td>
<td>Satisfactory</td>
<td>2.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Overall Assessment</td>
<td>Borderline successful</td>
<td></td>
<td>1.6</td>
<td></td>
</tr>
</tbody>
</table>

The various components of the projects were rated separately, as was each technical assistance projects. The final rating scores were derived by weighting each component and technical assistance project, based on its relative financial value and then adding the weighted scores together.


**F. ADB’s Performance in the Sector**

41. ADB’s performance is rated *successful, on the borderline*, and appears to have been better in the first half of the CAPE period than in the second. ARP and the IRP were generally well designed and focused. One of the interventions that did not work well in ARP—the establishment of farm machinery units—was not featured in IRP, indicating that project learning had taken place. The PCRs for both projects revealed that sufficient review missions took place during the implementation and that both projects met the government’s requests to support additional flood protection and/or rehabilitation works. However, the ARP achieved considerably more than IRP, particularly in terms of cost-efficiency (paras. 26–28). ADB should be commended for undertaking ambitious policy reform and capacity development TA projects during the first half of the CAPE period. Its role in rallying the government and the development partner community to address the farm debt issue is very noteworthy. However, ADB’s decision to abruptly disengage from this issue in 2008 is surprising, particularly given the effort and resources it had already invested.

42. The two projects implemented from 2007 onwards—SCSP and RDP—are arguably more complex and ambitious in scope. However, they both possess overt design shortfalls as well. In particular, the problems noted above with SCSP’s seed cleaning facility should have been identified much earlier, and this proposed intervention likely should have not been allowed to go ahead. It is surprising that these problems were not highlighted in the technical feasibility study that was carried out on the two facilities that were initially proposed, given that local agricultural experts were overtly aware of them. The bonded warehouses supported by this project are currently dysfunctional, representing a significant waste of project resources. As also noted above, there are clear design shortfalls with respect to RDP as well. The indicators in its design and monitoring framework are not only too many and overly ambitious but also many of them do not have suitably quantifiable output targets, so implementation performance can be appropriately assessed. The project’s unfocused and overly ambitious design should not have passed through ADB’s quality control mechanisms. Furthermore, the project is to close in September 2014, but only 43% of its budget had been dispersed...
from September 2007 to July 2013, revealing considerable implementation delays and management problems.

G. Conclusion: Key Findings, Lessons, and Suggestions

1. Key Findings

43. Overall, ADB’s support to the agriculture and rural development sector during the CAPE period made a significant contribution to national development. Tajikistan is an agrarian country and will continue to be so for the foreseeable future. Because of this, ADB’s role in enhancing agricultural production through the rehabilitation of a substantial portion of the nation’s irrigation infrastructure, ensuring access to safe water access for thousands of rural families, and helping to resolve the crippling farm debt problem were significant contributions to addressing rural poverty and promoting development more broadly.

44. That being said, there are a number of points to reflect on. First, there were clear differences in the performance of the portfolio’s projects. The NGO-led TRPRP outperformed both ARP and IRP in several ways. ARP was also found to be considerably more cost-efficient than IRP, despite both being rated as efficient in their respective PCRs. The farming capacity development components of both ARP and IRP were furthermore found to be deficient in terms of scale, thereby, failing to fully maximize the full benefits associated with improved irrigation access. The scope of both SCSP and RDP were more complex, and significantly more effort and expertise should have been invested in their design, as well as on ensuring their sound implementation. Given the shortfalls of these two projects in particular, the overall portfolio of projects and TA operations reviewed in the sector assessment is rated borderline successful.

2. Lessons

45. There are a number of lessons that follow from the CAPE sector assessment. First, regular monitoring, re-appraisal, and re-design are often critical for project success and need to be built meaningfully into ADB’s project management processes. While project planning, appraisal, and design are critically important, there is a need to periodically re-visit the design and execution of project interventions throughout the implementation process. This certainly happened with several of the projects and TA operations. However, deficiencies with respect to such review processes were noted for SCSP and RDP, in particular. A second relevant lesson is that farm capacity development and the establishment of quality extension services needs to be given greater attention in order to maximize the impact of irrigation works. This was a component of both ARP and IRP but was poorly designed and executed in both cases. These projects would have likely been significantly more effective if they had been stronger in this respect.

46. TRPRP, implemented by two NGOs, was considerably smaller than either the ARP or the IRP, yet it significantly outperformed these two projects in farmer capacity development and community mobilization and institution building. In addition, the NGO ACTED was assessed as performing an excellent job in its role in the RDP, despite the inherent sustainability shortfalls of the component in which it was involved. Hence, the third lesson emerging from the CAPE ARD sector assessment is that NGOs have particular comparative advantages and should be involved in projects to fulfill specialized roles, when this is appropriate. The fourth lesson emerges from the failure of the feasibility study for the SCSP’s seed cleaning facility to discover or report the fact that most farmers do not have or use the equipment and planting methods that would make the facility appropriate or viable. Feasibility assessments for ADB project preparation should be holistic and include consultation with local experts and community representatives. Finally, ADB’s positive contribution to resolving the farm debt crisis reveals a fifth lesson: Working in the area of policy reform can bring about large benefits for poor people, but such reforms are inherently political and will often come about nonlinearly.
3. Suggestions

47. While IED recommends that ADB takes action on the lessons in paras. 45–46, the CAPE’s ARD sector assessment has also produced several strategic, forward-looking suggestions. First, ADB should pursue innovative projects in its core and non-core sectors that will directly address rural poverty. The majority of Tajikistan’s poor reside in rural areas. Despite the efforts of other development partners, the need continues to exist for ADB to address the particular development challenges they face. It should make a conscious effort to promote rural development and poverty alleviation in Tajikistan not only by supporting projects in the ARD sector but also by supporting other sectors. For instance, many of the road networks that service rural communities are in poor shape, and engaging in projects to construct or rehabilitate such roads would help better link these communities to markets and services. Rural electrification is another critical area of need, as is the continued development of Tajikistan’s rural financial sector. The latter should include promoting innovative ways for poor farmers to access much-needed financing at reasonable rates of interest, e.g., through rural financial cooperatives. Partnering with other agencies that can take the lead on components that fall outside of ADB’s core operational areas will, however, often be necessary to maximize impact, e.g., through developing value chains and enhancing access to agricultural extension services.

48. While ensuring that farmers throughout Tajikistan have access to reliable irrigation services is a pressing need, this will not be best achieved through continued efforts to rehabilitate the Soviet era infrastructure, given the inherent sustainability issues reviewed above. These leads to the second suggestion: ADB should identify and pilot innovative ways of meeting Tajikistan’s irrigation demand that are more efficient, sustainable, environmentally benign, and in line with recent changes in national cropping patterns.

49. The policy reform work ADB carried out over the CAPE period leveraged important changes for poor rural farmers. This is an example of how strategically focusing ADB’s non-lending resources can bring about positive changes at relatively low cost. However, there is still much reform work that needs to take place in the sector. As such, IED third and finale suggestion is for ADB to continue to support policy reform efforts in the ARD sector through non-lending resources, specifically as they relate to addressing rural poverty and supporting private sector development.