



Completion Report

Project Number: 31577
Loan Number: 2017
March 2010

Uzbekistan: Grain Productivity Improvement Project

Asian Development Bank

CURRENCY EQUIVALENTS

Currency Unit		–	sum (SUM)
		At Appraisal	At Project Completion
		7 October 2003	30 October 2009
SUM1.00	=	\$0.00103	\$0.000665
\$1.00	=	SUM975	SUM1,503.50

ABBREVIATIONS

ADB	–	Asian Development Bank
AGACLRI	–	Andijan and Galla-Aral cereals and legumes research institutes
ASC	–	agricultural service center
CAIR	–	Central Asian Institute for Irrigation Research
COM	–	cabinet of ministers
ha	–	hectare
M&E	–	monitoring and evaluation
MAWR	–	Ministry of Agriculture and Water Resources
PCR	–	project completion report
PFI	–	participating financial institution
PMO	–	project management office
PSC	–	project steering committee
PSO	–	project site office
PWG	–	project working group
RBAC	–	rural business advisory center
RRA	–	Rural Restructuring Agency
t	–	ton
TA	–	technical assistance
WUA	–	water users' association

GLOSSARY

oblast	–	province/region
rayon	–	district
dehkan	–	small household farm up to 0.2 ha

NOTES

- (i) The fiscal year (FY) of the government ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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BASIC DATA

A. Loan Identification

1.	Country	Uzbekistan
2.	Loan number	2017
3.	Project title	Grain Productivity Improvement Project
4.	Borrower	Republic of Uzbekistan
5.	Executing agency	Rural Restructuring Agency
6.	Amount of loan	\$26.0 million
7.	Project completion report number	PCR:UZB 0005

B. Loan Data

1.	Appraisal	
	– Date started	23 June 2003
	– Date completed	14 July 2003
2.	Loan negotiations	
	– Date started	3 October 2003
	– Date completed	5 October 2003
3.	Date of Board approval	14 November 2003
4.	Date of loan agreement	2 November 2004
5.	Date of loan effectiveness	
	– In loan agreement	90 days after the date of loan agreement
	– Actual	9 December 2004
	– Number of extensions	Nil
6.	Closing date	
	– In loan agreement	31 March 2009
	– Actual	31 March 2009
	– Number of extensions	Nil
7.	Terms of loan	
	– Interest rate	London interbank offered rate (LIBOR) +0.6%
	– Commitment charge	0.75% per annum
	– Front-end fee	0.50% of the loan amount
	– Maturity (number of years)	25 years
	– Grace period (number of years)	5 years
8.	Terms of relending (if any)	
	– Interest rate	To be determined, but not less than LIBOR +2%
	– Maturity (number of years)	10 years
	– Grace period (number of years)	4 years
	– Front-end fee	0.50%
	– Commitment charge	0.75% per annum
9.	Disbursements	
a.	Dates	
	Initial Disbursement	Final Disbursement
	9 December 2004	30 September 2009
	Effective Date	Original Closing Date
	9 December 2004	31 March 2009
		Time Interval
		58 months
		Time Interval
		52 months

b. Amount (\$ '000)

Category or Subloan	Original Allocation	Last Revised Allocation	Amount Canceled	Net Amount Available	Amount Disbursed	Undisbursed Balance
1. Survey (monitoring and evaluation)	59	59			42.23	16.77
2. Civil works	405	405			20.78	384.22
3A. Information extension material	105	105			14.44	90.57
3B. Farm/lab materials and office supplies	1,256	885			433.26	451.97
4A. Research and farm equipment	5,224	5,224			3,738.91	1,485.08
4B. Office furniture	131	131			84.80	46.20
5. Vehicles	397	397			363.84	33.16
6A. Training, overseas	332	332			63.66	268.34
6B. Training, domestic	153	153			0.00	153.00
7A. Consulting services, international	581	734			730.00	4.18
7B. Consulting services, national	130	130			39.51	90.50
8. Credit line for private companies	10,100	10,100			6,882.38	3,217.61
9. Project operations and staff	929	1,146			1,092.91	53.69
10. Front-end fee	130	130			130.00	0.00
11. Interest during construction	4,648	4,648			1,408.87	3,239.13
12. Unallocated	1,420	1,420			0.00	1,420.00
Total	26,000	26,000			15,046.58	10,953.42

10. Local costs (financed)	
- Amount (\$ million)	13.4
- Percent of local costs	56.1
- Percent of total cost	84.3

C. Project Data

1. Project cost (\$ million)

Cost	Appraisal Estimate	Actual
Foreign exchange cost	23.4	10.2
Local currency cost	16.6	5.7
Total	40.0	15.9

2. Financing plan (\$ million)

Cost	Appraisal Estimate	Actual
Implementation costs		
Borrower financed	10.6	2.5
ADB financed	21.2	11.9
Beneficiaries financing	3.4	0.0
Subtotal	35.2	14.4
IDC costs	4.4	1.4
Commitment fee	0.3	0.0

Front-end fee	0.1	0.1
Subtotal	4.8	1.5
Total	40.0	15.9

ADB = Asian Development Bank, IDC = interest during construction.

3. Cost breakdown by project component (\$ million)

Component	Appraisal Estimate	Actual
A. Base Cost		
1. Variety development and testing	3.8	2.0
2. Enhanced farm management	13.2	5.5
3. Agricultural enterprise development	12.9	5.2
4. Project management	1.6	1.7
Subtotal (A)	31.5	14.4
B. Contingencies		
1. Physical	2.6	0.0
2. Price	1.2	0.0
Subtotal (B)	3.8	0.0
C. Interest During Construction	4.4	1.4
D. Commitment Fee	0.2	0.0
E. Front-End Fee	0.1	0.1
Total Project Cost	40.0	15.9

4. Project schedule

Item	Appraisal Estimate	Actual
Project approval		14 Nov 2003
Physical activities	Feb 2004–Dec 2008	Feb 2004–Dec 2008
Project loan	Feb 2004–Mar 2008	Feb 2004–Mar 2008
	Inception Estimate	Actual
A. Variety Development and Testing		
1. Variety development	Feb 2005–Dec 2008	Jun 2005–Dec 2008
2. Variety testing	Feb 2005–Dec 2008	Jun 2005–Dec 2008
B. Enhanced Farm Management		
1. Farm extension	May 2005–Dec 2008	Jul 2005–Dec 2008
2. Technology development	May 2005–Dec 2008	Jul 2005–Dec 2008
3. Irrigation facility repair	Aug 2005–Dec 2007	Feb 2006–Jun 2009
C. Agriculture Enterprise Development	Feb 2005–Dec 2008	Feb 2005–Dec 2008
D. Project Management	Jan 2005–Dec 2008	Jan 2005–Mar 2009
E. Consulting Services		Aug 2005–Mar 2009

5. Project performance report ratings

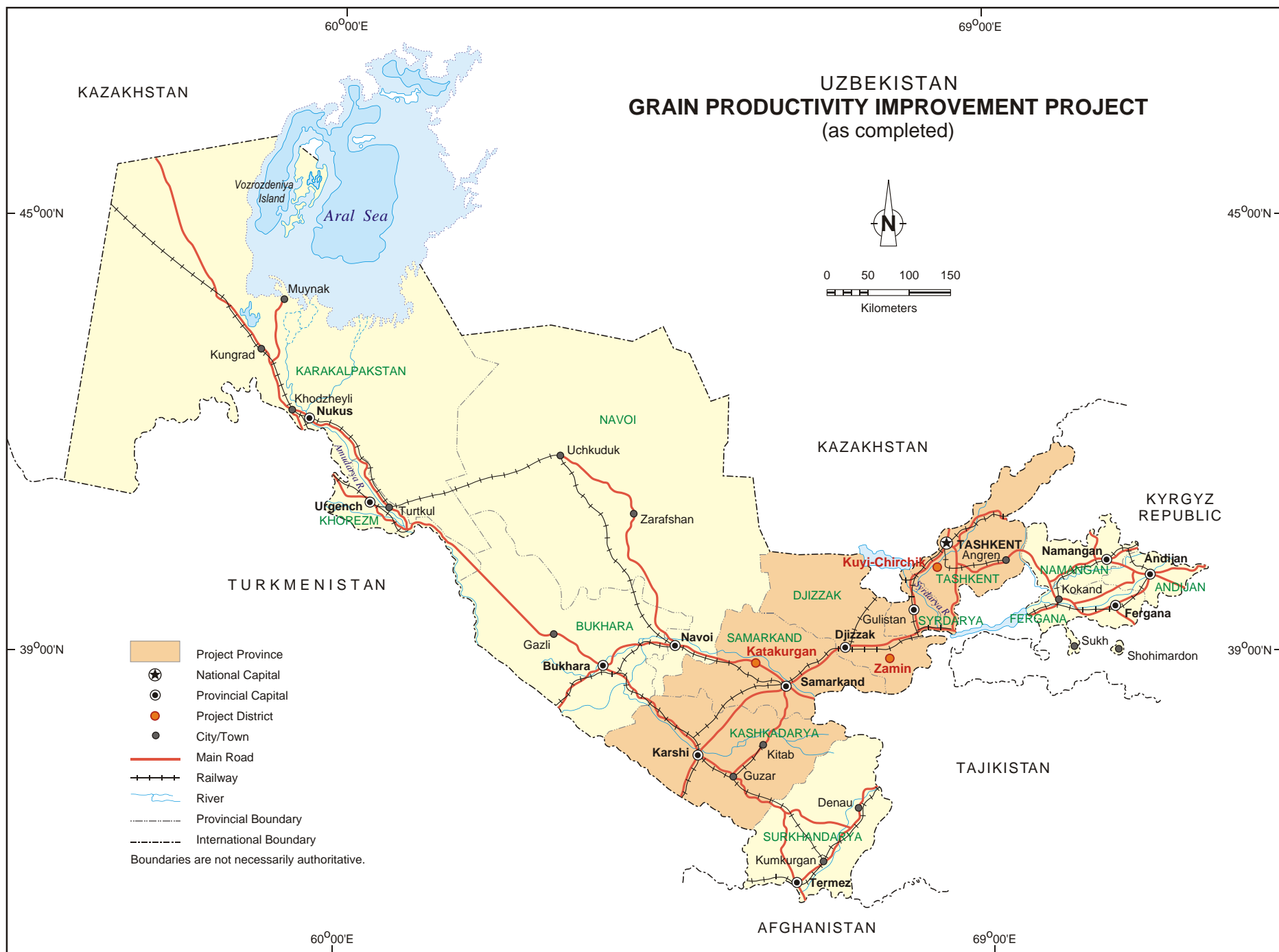
Implementation Period	Ratings
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	Development Objectives	Implementation Progress
From 1 January 2005 to 31 December 2005	Satisfactory	Satisfactory
From 1 January 2006 to 31 December 2006	Satisfactory	Satisfactory
From 1 January 2007 to 31 December 2007	Satisfactory	Satisfactory
From 1 January 2008 to 31 December 2008	Satisfactory	Satisfactory

D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members^a
Inception mission	March 2005	2	18	a
Loan review mission	May 2006	1	10	a
Midterm review mission	Oct 2007	1	3	a
Loan review mission	July 2008	1	4	a
Project completion review mission	Oct–Nov 2009	2	31	a, b

^a Specialization: a = project implementation officer, b = engineer.



I. PROJECT DESCRIPTION

1. The Grain Productivity Improvement Project,¹ approved on 14 November 2003, had the goal of improving farm incomes by promoting economically viable and sustainable systems of wheat production. The project had four components: (i) capacity building in the wheat-breeding institute and crop variety testing agency to accelerate the release of new wheat varieties better suited for Uzbekistan; (ii) capacity building in rural business advisory centers (RBACs) and selected research institutes to promote the adoption of new varieties and improve farming practices, particularly in crop rotation and on-farm soil and water management; (iii) the provision of a credit fund for seed production and capacity building in privately owned agricultural service centers (ASCs), which would provide farmers with diversified services such as farm input retailing, machinery rental, agro-processing services, marketing, and transport; and (iv) supporting the coordination of project activities and impact monitoring. The design of the project was based on project preparatory technical assistance (TA).² The project framework is in Appendix 1.

2. The project covered five wheat-producing *oblasts* (provinces or regions): Tashkent, Syrdarya, Djizak, Samarkand, and Kaskadarya. Irrigation system repair and enterprise development would focus on three districts: Kuyi-Chirchik in Tashkent, Zamin in Djizak, and Katakurgan in Samarkand. The project area is marked on the map. With the view to promoting the participation of the private sector in agribusiness, the project was expected to facilitate policy dialogue on agricultural reforms, including reducing mandatory production quotas that required farmers to sell to the government a fixed portion of their produce at government-fixed prices. It was expected that the reforms implemented in the three project districts would subsequently be implemented country-wide in a phased manner.

3. The total cost of the project was estimated at \$40.00 million, comprising \$23.40 million in foreign exchange and \$16.60 million in local currency. The Asian Development Bank (ADB) was to provide \$26.00 million (65%) through its ordinary capital resources, the government would finance \$10.60 million (26%), and beneficiaries would be required to contribute \$3.40 million (9%), mainly in kind in the form of inputs at field demonstration farms. For agricultural enterprise development, the Ministry of Finance would onlend \$10.1 million through selected participating financing institutions (PFIs) to private companies providing farm services in the three project districts.

4. The project was supposed to start in early 2004 and be completed by the end of 2008. The implementation schedule is in Appendix 2. The Rural Restructuring Agency (RRA), established in 1998 under the Ministry of Agriculture and Water Resources to implement all externally assisted projects in the agriculture and water sectors, was the executing agency. A project steering committee (PSC) headed by the deputy prime minister and comprising senior government officials would guide project implementation and monitor its development impact. A project management office (PMO) established within the RRA would manage day-to-day implementation while project site offices at the three project districts would supervise field activities.

¹ ADB. 2003. *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Technical Assistance Grant to the Republic of Uzbekistan for Grain Productivity Improvement Project*. Manila.

² ADB. 1998. *Technical Assistance to the Republic of Uzbekistan for Grain Productivity Improvement Project*. Manila.

5. The project provided for procuring farm machinery, research and office equipment, vehicles, materials, civil works, and consulting services. The procurement of materials and services under the subloans would be carried out by the private enterprises.

6. The project provided for 31 person-months of international consultant services and 42 person-months of national. The international consultants would help (i) administer the project, (ii) evaluate project impact, (iii) upgrade wheat plant breeding and variety testing, (iv) develop effective extension services, and (v) evaluate the PFIs. The national consultants would help organize water users' associations (WUAs) and support capacity building in extension services, the evaluation of PFIs, and impact evaluation.

7. The project would benefit about 217,000 families associated with wheat growing in the project area. The average yield of irrigated wheat in the project districts was expected to increase from 2.80 to 3.25 tons (t) per hectare (ha), and for rain-fed areas from 0.60 to 1.00 t/ha, in 7 years. In the three project districts, the average farm income would increase by 31%–60%, which would improve communities' living conditions and access to social and health services. Also, price reforms, strengthened RBACs, and private sector participation in agribusiness would spur sustainable growth in agriculture and farm profits. At appraisal, the project economic internal rate of return was estimated at 31%. Sensitivity analysis showed that the project was robust against changes in cost and benefit streams.

8. The project was expected to improve soil and water quality, improve soil structure and fertility, conserve moisture, and have a neutral or positive impact on the desertification and salinization of the Aral Sea. The project was thus classified environment category B, and an initial environmental examination was carried out.

9. Advisory TA for \$400,000 for Furthering Reforms in the Grain Sector³ was associated with the project to (i) support private sector operations in the project districts and (ii) assist the government in reviewing its food security strategy. The TA provided for 12 person-months of international consultants' inputs and 15 person-months of national.

II. EVALUATION OF DESIGN AND IMPLEMENTATION

A. Relevance of Design and Formulation

10. The project goal of increasing farms income by promoting wheat production in an economically viable and sustainable manner was in line with country operational strategy for Uzbekistan of March 2000⁴ and the country strategy and program update for 2003-2005⁵. Both strategies supported the government's efforts to transform the country's centrally planned system into a market economy and thereby promote economic efficiency, generate sustainable employment, and reduce poverty. The project supported the government's March 1998 Program for Strengthening Reforms in Agriculture, which pursued the following three goals: (i) generating robust foreign exchange earnings, mainly through the sale of cotton; (ii) improving food security; and (iii) promoting rural employment and enhancing living standards to ensure social stability.

³ ADB. 2003. *Technical Assistance to the Republic of Uzbekistan for Furthering Reforms in the Grain Sector*. Manila (TA 4217-UZB for \$400,000 approved on 14 November 2003).

⁴ ADB. 2000. *Country Operational Strategy: Uzbekistan, 2000*. Manila.

⁵ ADB. 2002. *Country Strategy and Program Update: Uzbekistan, 2003-2005*. Manila.

11. The project directly supported three of the four strategic priorities of ADB's current strategy for Uzbekistan presented in the country strategy and program 2006–2010,⁶ which focuses on (i) accelerated environmentally sustainable rural development, (ii) enabling private sector development, (iii) facilitating development of regional transport corridors and (iv) building the human capital of the poor. Governance is emphasized as a crosscutting theme.

12. Project design and formulation was appropriate, as its components covered all areas necessary for improving wheat productivity, from varietal development to enhanced farm management and the development of the private sector. The long-term profitability of the sector and incentives for productivity improvement were facilitated by the continuation of policy reforms in the project area, which would subsequently be extended nationwide in a phased manner. Enhancing the capacity and involvement of relevant organizations during implementation was appropriate, as they would continue the same activities after project completion and would thus add to the benefits achieved and strengthen their sustainability (Appendix 3). However, the resources provided under the project were insufficient for effectively coordinating so many government agencies. Project implementation under the RRA was appropriate, as it had developed enough capacity through implementing externally assisted projects in the sector. However, the implementation period of 5 years was short, and some targets, particularly for varietal development, were too ambitious. The quality of project preparatory TA, which formed the basis of project design, was good.

13. A noticeable policy change during implementation was to encourage farmers to consolidate small farms into economically viable units of 100–200 ha. This would improve financial viability, facilitate introducing more cost-effective measures, and encourage investment in yield-enhancing inputs like farm machinery and improved seed.

14. The project faced a number of challenges, including the history of slow pace of policy reforms in the agriculture sector and their less-than-satisfactory implementation, various market distortions, poor coordination among a number of government and other public institutions, and that some long-term tasks like varietal development would realize results only long after project completion. The difficulties were reinforced by the mindset of the people and the government agencies reflecting Soviet-era policies and norms for applying farm inputs and machinery services. The project accepted the challenges and tried to address all short-, medium-, and long-term issues, including policy issues. Therefore, the project design was appropriate. However, the project was ambitious with regard to the implementation period, which was aggravated by an 18% reduction because of initial implementation delays not compensated for by extending the loan closing date.

15. Although the cabinet of ministers (COM) issued the required resolution in compliance with loan covenants for reducing procurement quotas for wheat and wheat seeds, the local administration continues to maintain the old crop allocation practices with unrealistic production quotas, which were the main causes of farmers' low profitability. Other distortions like government control of inputs and financial resources force farmers to sell most of their produce to the government.

B. Project Outputs

16. **Varietal development and testing.** The capacity of the Andijan and Galla-Aral cereals and legumes research institutes (AGACLRI) to produce high-grade seed was strengthened

⁶ ADB. 2006. *Country Strategy and Program: Uzbekistan, 2006–2010*. Manila.

through the provision of field cultivation and harvesting equipment, and by overseas study tours to wheat breeding centers for the specialists. Laboratory equipment could not be procured because during the first round of bidding all bid prices significantly exceeded the available budget and there was no sufficient time for second attempt before the closing of the project.

17. Out of the 40 varieties, the Andijan Cereal and Legumes Research Institute developed six soft wheat varieties, three each in 2008 and 2009, which were considered suitable for irrigated areas. The Galla-Aral Cereal and Legumes Research Institute developed during 2007 and 2008 four soft and hard wheat varieties, two for rain-fed areas and two for irrigated. These varieties were submitted for trial registration to the State Commission on Varietal Testing. The appraisal had a target of six new varieties from both institutes. The first year testing of the three varieties submitted by the Andijan institute in 2008 had satisfactory results on basic economic and biological indicators. The varieties have been found to tolerate drought and have some disease resistance. Similar results have been found in testing varieties submitted by the Galla-Aral institute. In addition to wheat, the institutes submitted for testing six varieties of soybean, three of chickpea, and two of lentil. These crops will be included in the crop rotation to improve soil fertility. As varietal testing is normally completed in 3 years, the final results will be available after 2012.

18. The capacity of the two institutes and their outstations to multiply foundation seed has increased from 400 to 700 t/year. Although this is below the target of 900 t/year, it is sufficient to meet national demand. The project could not, however, attract private seed growers because of insufficient attention and incentives. Imports of high-quality seed from internationally recognized seed-producing countries was anticipated at appraisal but did not materialize for lack of experience in cooperating with these countries and the restrictive cost of seed. The AGACLRI preferred to use elite seeds from the Krasnodar Seed Breeding Institute in the Russian Federation, which was the center of wheat breeding during the Soviet era. Since the Russian Federation is not an ADB member country, these seeds could not be procured with ADB funds. Nevertheless, the required amount of seed was imported using the government's own resources.

19. **Enhanced farm management.** Three RBACs were established, one in each project district. The project allocated funds for renovating buildings provided by the government and procuring office equipment and furniture. In addition, training was provided to the staff. Depending upon the specialty of the staff, RBACs provide advice on farming practices, agricultural inputs, selecting and using farm machinery, preparing business plans, keeping accounts, and securing loans. Although farmers enter into contracts to pay for the services provided, the payment situation is not healthy because of the state order payment system, under which transactions are made through banks with little control by farmers. Because of poor financing, high staff turnover has been observed in the RBACs. The RBAC in Kuyi-Chirchik is strong, the one in Katakurgan is stable, and the one in Zamin is weak.

20. Various farm machinery trials and demonstrations were conducted by the Agricultural Institute for Mechanization and Electrification during 2007 and 2008 on 2,876 ha on 148 farms in the three project districts. The technologies included (i) precision land leveling using a laser technique; (ii) direct seed drilling; and (iii) resource-saving technologies, including deep ripping, zero and minimum tillage, mulching, and new crop rotation schemes. These were used not only for technology development and selection but also as the bases for agriculture extension and farmer training. Although some difficulties were experienced with irrigation and farm management because of the poor condition of infrastructure and poor water management above the farm level, the performance of the demonstration farms was satisfactory and their impact

was visible. On demand, various farm machinery services were provided to 118 farms occupying 1,161 ha. By project completion, farmers holding about 60% of the irrigated wheat and 10% of the rain-fed wheat in the project districts were familiar with the new technologies, which was similar to appraisal targets of 60% and 12%. At the *oblast* level, the project met the targets, and about 20% of farmers of irrigated land were familiar with new technologies. Details on the demonstrations are in Table 1.

Table 1: Details of Field Demonstrations

Activity	Kuyi-Chirchik Rayon		Zamin Rayon		Katakurgan Rayon		Other Rayons		Total	
	Area (ha)	No. of Farms	Area (ha)	No. of Farms	Area (ha)	No. of Farms	Area (ha)	No. of Farms	Area (ha)	No. of Farms
Precision land leveling	56.1	2	86.0	2	78.5	2	488.5	75	709.1	81
Harrowing	142.6	2	19.0	1	78.0	2			239.6	5
Deep ripping	58.6	1	34.0	2	97.5	2	30.0	2	220.1	7
Mulching	100.0	2	109.0	2	45.5	2	10.0	1	264.5	7
Combined disc harrowing	46.1	2	42.0	2	71.5	2			159.6	6
Fertilizer spraying	72.6	2	38.0	1	94.0	2	3.0	1	207.6	6
Seed drilling	121.6	2	144.3	2	117.0	2	156.0	10	538.9	16
Cultivation			156.5	2	21.0	2			177.5	4
Ridge formation	2.0	1	54.0	2	4.5	1			60.5	4
Chisel plowing	105.6	2	33.0	1	20.0	2	140.0	7	298.6	12
Total	705.2	16	715.8	17	627.5	19	827.5	96	2,876.0	148

ha = hectare, No. = number.

Source: ADB estimates.

21. The project had a very positive impact on wheat yields and production, as well as on farmers incomes. Regarding yield, in Katakurgan, the rain-fed wheat yield for 2006–2008 averaged 1.04 t/ha, against the project-end target of 0.86 t/ha. Similarly, the average irrigated wheat yield in the three project districts during 2008 was 4.49 t/ha, against the appraisal target of 3.11 t/ha⁷ and the 2002 yield of 2.24 t/ha. Wheat production in irrigated areas of the five project *oblasts* exceeded the project-end appraisal target by 43%. The severe drought of 2008, however, badly affected wheat yield and production in rain-fed areas, particularly in Zamin rayon (district).

22. The impact of increased yields, relaxed government control through reforms of procurement quotas and higher prices, and reduced production costs brought about by improved technologies had a remarkable impact on farmers' income from wheat production. Compared with appraisal targets, the increase in income at project completion from rain-fed wheat production was 275%, irrigated wheat production 110%, and irrigated wheat seed production 305%.

23. As a result of the technology development component, there was a visible change in the mindset of farmers and field-level government officials. They are no longer mired in the Soviet era machinery, technology, or norms. People have started adopting the findings of the field demonstrations, particularly with respect to minimum tillage, laser land leveling, crop rotation, and the use of multiple-operation farm machinery like a seed drill that digs a furrow, plants seed

⁷ Minor discrepancies were observed in different parts of the report and recommendation of the President on figures related to wheat production. In this report, figures from economic and financial analysis have been used for reference.

and covers it, adds fertilizer, and levels the land, all in one operation. This results in significant fuel and time savings, reduces production costs, and increases farmers income. Consequently, the demand for untraditional farm machinery has grown, and several local companies have started manufacturing and marketing new products. Recognizing demand for machinery other than Soviet types, several foreign manufacturers are arranging mobile exhibitions. People's change of mindset in half a decade is a remarkable achievement.

24. Impressed by the project results in introducing new technologies, German development cooperation through KfW has signed a memorandum of agreement with the government to provide €2.5 million for similar technology development through demonstrations in the country's other 10 *oblasts*. The project is scheduled to start in 2010.

25. The project provided pest-monitoring equipment, three tractors, seven chemical sprayers, two vehicles, and office equipment and furniture to the Plant Protection Institute. This has enabled the institute to introduce new pest-control methods for different crops and recommend adequate timing, rates, and techniques for spraying chemicals to control pests and weeds. The institute also monitored the fields affected by pests, diseases, and weeds. In addition, the institute held 187 seminars for farmers, published 20 scientific articles in specialized magazines, and prepared 12 publications on pest and disease control. It continues to provide regular advisory services to the farmers.

26. The Central Asian Institute for Irrigation Research (CAIIR) carried out topographical and soil surveys in the project districts; developed recommendations on the use of legumes, peas, and alfalfa to restore soil fertility; and demonstrated the application of new water-saving irrigation technologies using portable plastic flumes. This resulted in savings of about 12% of irrigation water and reduced soil erosion and water logging. The CAIIR carried out laboratory analyses of project area soils and developed recommendations on applying fertilizers and on agronomic and irrigation practices. In addition, the CAIIR developed several brochures on new technologies and disseminated information to farmers through seminars and on-farm training.

27. The rehabilitation of irrigation and drainage facilities for 6,000 ha of seed farms was to be fully financed from government funds. In 2006, a plan was prepared to improve facilities on 50 farms covering 20,000 ha, of which wheat and cotton would each account for 9,000 ha. By the end of September 2009, facilities serving 12,952 ha were improved. The work on the remaining 7,030 ha is expected to be completed by the second quarter of 2010.

28. The project facilitated the formation of 30 water users' associations (WUAs), as planned. However, the project provided training and operation-and-maintenance equipment to only four of them in project districts. Although all WUAs made significant progress, by project completion only one was functioning well. The main reason for their weakness is the state order system, which does not allow direct payment of irrigation service fees from farmers to WUAs. Currently, the collection rate of irrigation service fees varies from 10% to 30%. To generate income, WUAs have started renting equipment to farmers and various government agencies, payments for which are also often in arrears. Under these circumstances, it is doubtful that the WUAs will be able to pay for the equipment provided to them under the project on the original terms and conditions. Lack of financial resources has led to high staff turnover, and the WUAs remain technically, administratively, and institutionally weak.

29. **Agriculture enterprise development.** A credit line of \$10.1 million was committed for providing subloans to privately owned ASCs in the project districts through PFIs for procuring farm machinery, agricultural inputs, processing, and provision of services to the farmers, as well

as for seed production. The selected PFIs were Pakhta Bank (\$7.1 million) and Ipoteka Bank (\$3.0 million). Subloans were to be provided for a maximum of 10 years, with a grace period of 3 years, at commercial interest rates, with subborrowers assuming the foreign exchange risk. The project envisaged support to relatively large ASCs with several units of agricultural machinery that would provide services to other farmers as well. Therefore, the credit threshold was set at \$100,000.

30. However, there was not enough time or capability for farmers to decide upon the type of services and machinery and embark upon bigger enterprises. In addition, stringent collateral requirements, restrictions on sourcing (excluding the Russian Federation and Belorussia), lengthy processing (up to 6 months), and lack of skill in preparing business plans discouraged potential applicants. Therefore, except for two loans for flour-milling machinery and spare parts, all loans were for purchasing agricultural machinery. Many purchased one or two units, and the maximum procurement by a single enterprise was five farm machines. The purchase of 49 combine grain harvesters is, however, a good indicator of the provision of service to other farmers, which is estimated to cover about 40% of wheat area in the three project districts. There was no loan sought for wheat seed farming.

31. To attract more ASCs, in February 2006 the threshold was reduced to \$50,000. By project completion, Pakthat Bank had extended 108 subloans totaling \$6.88 million. Details of these loans are in Appendix 4. Ipoteka Bank, which is primarily a mortgage bank, withdrew in August 2006 without providing any subloans, realizing that the agricultural credit was not their field and too difficult for them to handle.

C. Project Costs

32. The actual project cost was \$15.9 million, well below the appraisal estimate of \$40.0 million. ADB financed \$13.4 million, or only 51.5% of the loan amount of \$26.0 million, and 84% of the total project cost, compared with the appraisal estimate of 65%. The lower-than-estimated ADB financing was observed in all categories of expenditure, of which major categories are civil works; farm, laboratory, and office supplies; research farm equipment; overseas and domestic training; and a credit line for private companies, which utilized only 68% of the allocation of \$10.1 million. Very low utilization resulted from the original short implementation period of 5 years, which was further reduced by about 18% by not extending the loan closing date to compensate for the startup delay (para. 35).

D. Disbursements

33. By loan closing, ADB had disbursed \$13.4 million, which was 51.5% of the approved loan amount of \$26.0 million. The reasons for significantly low disbursement and expenditure are in para. 31. The first disbursement was on 9 December 2004 and the last on 30 September 2009. The project opened two imprest accounts, one for the credit line and one for other activities. The ceiling of the credit line imprest account was \$1.0 million, and the other ceiling was \$100,000, which was raised on 29 September 2005 to \$300,000 to improve fund flow and payments.

E. Project Schedule

34. The project was approved on 14 November 2003 and should have been declared effective 90 days after approval. However, because of delayed issuance of the COM resolution on reducing state procurement quotas on 21 October 2004, the loan agreement was signed on

2 November 2004 and the loan was declared effective on 9 December 2004. Thus the project started with an 11-month delay, which delayed the whole implementation schedule.

35. The type of activities included in the project required a longer implementation period than the 5 years envisaged in project design. The development, testing, and registration of new seed varieties normally takes 10–15 years. Similarly, more time was needed for testing various technologies and selecting the ones most suitable for the local conditions; introducing the selected technologies to farmers whose mindset was for Soviet-era techniques; and preparing farmers to seek subloans under the project through PFIs, helping them to process their applications and ultimately procure equipment and materials. As TA had recommended an implementation period of 7 years, the implementation period of 5 years in project design is considered unrealistic, and its further reduction by not extending the loan closing date to compensate for the startup delay of 11 months constrained project outputs and the use of loan funds. As a result, about 48.5% of the loan remained unutilized. A comparison of the original and the actual schedules is in Appendix 2.

F. Implementation Arrangements

36. The PMO, project site offices, PSC, and project working group were established on 21 October 2004 by Government Resolution No. 492. They worked satisfactorily until major changes in RRA and PMO staffing in mid-2008, which adversely affected the project during its last period of implementation. Staff turnover remained high because of a compensation structure poorer than that of competing private and international organizations. There was one minor change in implementation arrangements related to reducing the threshold for subloans under the credit line component from \$100,000 to \$50,000, which was approved by the Uzbekistan Resident Mission country director on 2 February 2006.

G. Conditions and Covenants

37. Of 31 covenants, 28 have been fully complied with. Compliance with the covenant relating to the issuance of a COM resolution regarding the state procurement quota for wheat and wheat seed was late and partial. As the resolution was issued late, project effectivity, which was linked with it, was delayed by 11 months. The project implementation period was consequently reduced by 18%, which resulted in incomplete procurement and constrained projected achievements. The establishment of the PSC also was delayed. Compliance with the covenant relating to interest rates for the subloans was only partial. The rates were fixed by the PFIs based on their internal procedures, which take into account the cost of funds, profitability, and interest rates charged by other banks. However, these rates were fixed for the entire project implementation period. Overall, the covenants were relevant and comprehensive, though the addition of a couple more covenants would have been desirable to address various marketing and financial distortions that indirectly render farmers helpless, such as the government's control of agricultural inputs and the state order payment system. The status of compliance with loan covenants is in Appendix 5.

38. The RRA submitted periodic progress reports and audited financial statements of good quality on time.

H. Related Technical Assistance

39. The advisory TA consultant, ANZDEC in association with UBI Consulting, was recruited in accordance with ADB Guidelines on the Use of Consultants. The consultant started working

in March 2006, following a delay of about 2 years, partly because of 1-year delay in loan effectivity. Considering that the country achieved self-sufficiency in wheat, and arguing the in-house availability of expertise in grain policy, the government requested ADB to abandon the input of the grain policy expert, which was designed to assist the government in reviewing its grain policy and identifying market mechanisms by which grain prices and output could be stabilized and food security achieved in a cost-effective manner. ADB agreed to the government's request, and the TA focused on facilitating private sector entry into seed production and the operation of ASCs in the three project districts.

40. The consultants worked very closely with beneficiaries, the RRA, and Ministry of Agriculture and Water Resources staff. They conducted a number of workshops to improve understanding and build capacity. The actual consultancy input was 8.83 person-months of international consultancy and 19.06 person-months of national, compared with provision for 12 person-months of international and 15 person-months of national. The implementation period was extended from 10 to 12 months. On completion, \$115,295 (28%) of the ADB grant of \$400,000 remained undisbursed. The TA completion report⁸ rated the performance of the consultant, the RRA, and ADB satisfactory. Overall, the TA was rated only partly successful because of the deletion of the policy-related component. The TA completion report concluded that, considering the time and resources available, TA targets were too ambitious, particularly considering the government's slow pace toward reforms. It was recommended that ADB continue its engagement with the government on implementing policy reforms in agriculture.

I. Consultant Recruitment and Procurement

41. Mott MacDonald Environmental Consultants was hired for the project in accordance with ADB Guidelines on the Use of Consultants. The consultants were fielded in late August 2005 and, by March 2009, had provided 29.9 person-months of international consultancy and 49.1 person-months of national, against the envisaged inputs of 30 person-months of international and 40 person-months of national at contract signing. Minor modifications in inputs were mutually agreed and provided in response to changes in requirements. Against the original allocation of \$711,000, the contract was concluded for \$755,955, and the actual cost of consulting services was \$730,452. The consultants assisted the RRA in all envisaged aspects, and their performance is rated satisfactory.

J. Performance of Consultants, Contractors, and Suppliers

42. All procurement under the project was carried out in accordance with ADB Procurement Guidelines. Some goods and services could not be procured due to the shortened implementation period resulting from the start-up delays. Nevertheless, the performance of the consultants, contractors, and suppliers was satisfactory.

K. Performance of the Borrower and the Executing Agency

43. The borrower's delay in issuing the COM resolution on the state procurement quota caused a startup delay of 11 months and ultimately a reduction of 11 months (18%) in the implementation period, which constrained procurement and the achievement of results. The RRA generally performed well, making use of the experience gained in implementing other externally financed projects. Staff turnover due to low salaries and investigations of the RRA by the prosecutor in mid-2008 had, however, a negative effect on the project.

⁸ ADB. 2008. *Technical Assistance Completion Report on Furthering Reforms in the Grain Sector Project*. Manila.

44. The RRA made good use of the capacity building and support provided by the loan and TA consultants in managing and implementing the project. The consultants' capacity building in the various government and other agencies associated with the project will go a long way in uplifting the sector. The performance of the borrower and the RRA is rated satisfactory.

L. Performance of the Asian Development Bank

45. Project administration was, from the start, delegated to the ADB Uzbekistan Resident Mission, which closely administered the project through periodic review missions and a midterm review mission. However, ADB did not extend the loan closing date to compensate for the initial implementation delays, despite the project's performing satisfactorily and the absence of cost over-run issues. An extension by at least 1 year could have significantly improved project performance and the sustainability of its outcomes. The performance of ADB is rated satisfactory.

III. EVALUATION OF PERFORMANCE

A. Relevance

46. As described in paras. 10. and 11., the project was highly relevant at the time of design and at completion, as it was in line with the government agricultural development strategy and ADB's current strategy for Uzbekistan, addressing three of the four strategic priorities. Also, as noted in para. 12, the project design was highly relevant. Thus the project is rated highly relevant.

B. Effectiveness in Achieving Outcome

47. The project achieved or exceeded most of the targets related to varietal development and enhanced agricultural management. However, the provision of subloans to ASCs was only 68% complete. Overall disbursement was only 51.5% of the loan amount, mainly because the implementation period was reduced by initial implementation delays. On the basis of the project outputs and outcome, the project is rated effective.

C. Efficiency in Achieving Outcome and Outputs

48. Project resources were used efficiently, allowing the project to achieve many of its outputs and outcome using only about half of the loan amount. Many of the project activities, particularly varietal development and testing and enhanced farm management, were conducted through the relevant government organization, which is efficient, as these organizations will continue these tasks, making use of capacity built and equipment procured under the project. Encouraging and involving the private sector in agriculture will add efficiency in the sector in the long term. Continued dialogue on policy reforms will bring, in the medium to long term, profitability and efficiency to the sector.

49. The financial and economic reevaluation (Appendix 6) indicates that the project continues to have high financial and economic returns. Farmers' income from rain-fed wheat was 275% higher than the appraisal estimate for 2008, from irrigated wheat 110% higher, and from wheat seed production 305% higher. This is the combined effect of increases in yields, relaxed government control over the wheat sector, and reduced production cost because of the adoption of cost-effective improved technologies. The financial internal rate of return of a typical ASC is estimated at 26.5%, which is comparable to the appraisal estimate of 27.5%. The

economic internal rate of the project is estimated at 37.3%, which is higher than the appraisal estimate of 30.8%. Therefore, the project is rated efficient.

D. Preliminary Assessment of Sustainability

50. Although the implementation of policy reforms in the short term is unsatisfactory, and the state order systems still prevent farmers from paying irrigation service fees and thus hamper the establishment of strong WUAs, the change in the mindset of farmers and field-level officials regarding Soviet-era practices and norms is encouraging (para. 23). Strong demand for locally manufactured farm machinery, the use of more suitable locally adapted technologies, the development of new seed varieties specially suited to local conditions, and farmers' acceptance of these technologies tested and proved in demonstration plots are good indicators of the sustainability of the project initiative. The project is thus rated likely sustainable. However, there is a need to continue dialogue on easing out government control of the sector by relaxing the state procurement quota and its control over agriculture marketing.

E. Impact

51. The project has positive social and environmental impacts. The use of improved seed, minimum tillage, conservation of moisture through various land and farming practices, reduction in the number of farm operations, use of crop rotation to increase soil fertility and structure, and improvement of irrigation and drainage facilities have saved water, energy, other agricultural inputs, and other resources, as well as increased farm outputs and profitability. With enhanced on-farm activities and assistance to ASCs, the project has generated employment opportunities that, together with increased farm incomes, will help reduce poverty.

IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

A. Overall Assessment

52. The project was implemented as designed, by and large, with the exception of some activities like the procurement of farm machinery and equipment and the provision of subloans. The project achieved or exceeded most of its output targets and brought resource savings and stronger public-related government institutions to the agriculture sector, with positive environmental and social impacts. The project is thus rated highly relevant, effective, efficient, and likely sustainable. Overall, the project is rated successful.

B. Lessons Learned

53. Following are the lessons learned from the project.

- (i) In forming loan covenants regarding policy reforms, sector issues should be reviewed in total, as some reforms may be rendered ineffective by various distortions.
- (ii) The implementation period should be realistic, determined after a thorough analysis of activities and their inter-relations and sequence. As the design implementation period of the project was short, some targets, particularly those related to varietal development and testing, were ambitious.

- (iii) While involving a number of government institutions and building their capacity is desirable for sustainability, enough resources should be provided for effective coordination.
- (iv) For agriculture enterprise development to be successful, sufficient lead time and necessary information and data should be provided, preferably through demonstration farms, for farmers to be convinced of what types of machinery and equipment to procure; subloan procedures should be simplified and the processing time shortened.
- (v) PFIs should be selected more thoroughly keeping in view their relevant experience, geographic coverage, staff, and other resources.
- (vi) It is important to provide suitable incentives to attract commercial seed growers, which is key to providing quality seed of new varieties to farmers, in addition to incentives for increasing the capacity of the breeding institutions to multiply high-quality foundation seed.
- (vii) Field trial-cum-demonstration farms are effective in introducing improved technologies to farmers.
- (viii) For WUAs and other community-based organizations to be effective and sustainable, they should have a good source(s) of income and reasonable leverage to collect.
- (ix) Project management staff benefits should match with those of comparable private sector institutions to prevent high turnover that constrains project management.

C. Recommendations

1. Project Related

54. **Future monitoring.** Monitoring is recommended to ensure the following:

- (i) the government continues to reduce procurement quotas, bring procurement prices closer to free market prices, and implement these reforms in the spirit with which they were agreed;
- (ii) policy reforms implemented in the project area are extended to other areas in a phased manner;
- (iii) the ongoing improvement of irrigation and drainage facilities for 20,000 ha of wheat-producing farms;
- (iv) ongoing field trials and registration of 10 wheat varieties developed, and the continuation of the varietal development and testing program initiated under the project; and
- (v) the continuation of technology development and extension through field demonstration plots.

55. **Covenants.** Policy reform covenants should be drafted carefully, keeping in view the various distortions that may not be evident but have the potential of undoing the impact of the covenants.

56. **Further action or follow-up.** The recommended follow-up actions include the following:

- (i) As the AGACLRI lost access to project funds after the loan closing date, and considering that the institutes are still in the process of varietal testing and approval, it is strongly recommended that the government provide enough funds not only to complete the varietal testing and approval but also to develop new varieties of different crops, making use of capacity built and equipment provided under the project.
- (ii) The government should continue to make funds available to complete the improvement of irrigation and drainage facilities for 20,000 ha of wheat-producing farms.
- (iii) Policy dialogue and technology development initiatives should be included in future agriculture and/or irrigation sector projects.

57. **Additional assistance.** The project has greatly helped improve wheat production and save resources. A similar project for cotton, the most important crop in Uzbekistan, is desirable.

58. **Timing of the project performance evaluation report.** Project performance evaluation should be conducted after the improvement of irrigation and drainage facilities for wheat-producing farms being undertaken by government fund is completed.

2. General

59. ADB review missions should review and evaluate various performance indicators, particularly those in the project framework, as means of verification. Similarly, when reviewing the periodic progress reports submitted by the RRA, ADB should look for various performance indicators, especially those for which periodic progress reports have been mentioned in the project framework as means of verification.

60. Midterm review should be considered as reappraisal of the project, and enough resources should be provided for it.

PROJECT FRAMEWORK

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions												
Goal Increase income	<p>Average operating margin for rain-fed farms in project districts rises from SUM19,000 per hectare (ha) to SUM25,000/ha by 2008, for irrigated farms from SUM100,000/ha to SUM160,000/ha.</p> <p>Operating margins for wheat seed production increase from SUM131,000/ha to SUM250,000/ha by 2008; for rain-fed wheat from SUM8,000/ha to SUM20,000/ha; for irrigated wheat SUM80,000/ha to SUM160,000/ha.</p>	<p>Project monitoring and evaluation (M&E) surveys, project completion, and project performance audit reports</p> <p>Provincial (<i>oblast</i>) and district statistics</p> <p>Farm financial and technical reports</p> <p>Impact evaluation, including collection of gender-disaggregated data</p>	<p>The government will gradually lower obligatory state procurement quotas and ease price and quantity controls on farm inputs.</p> <p>Social and macroeconomic environment are stable and supportive of investment in the agriculture and rural sectors.</p>												
Purpose Promote wheat production in the project area in an economical and sustainable manner. <ul style="list-style-type: none">Stabilize and increase wheat yields in the project rain-fed and irrigated areas.Develop robust private companies providing agricultural services in the three project districts.Improve domestic wheat flour quality.	<p>Increase average yield of rain-fed wheat in the districts from 0.6 tons (t)/ha to 1.2 t/ha by 2008. Yields will not fall below 1.0t/ha during 2007–2009.</p> <p>Increase average yield of irrigated wheat in the <i>rayons</i> (districts) as follows (t/ha):</p> <table><tr><td>Rayon</td><td>2002</td><td>2008</td></tr><tr><td>Kuyi-Chirchik</td><td>3.0</td><td>3.4</td></tr><tr><td>Zamin</td><td>2.4</td><td>3.0</td></tr><tr><td>Katakurgan</td><td>3.1</td><td>3.4</td></tr></table> <p>Increase average yield of rain-fed wheat in the five project <i>oblasts</i> from 0.6 t/ha to 1.0 t/ha by 2008.</p> <p>Increase area under rain-fed wheat in the project districts from 24,000 ha in 2002 to 30,000 ha by 2008.</p> <p>In the districts, farmers plant 33% of the sown rain-fed land with crops such as legumes in rotation with wheat.</p> <p>Increase the area of rain-fed wheat in the project <i>oblasts</i> from 295,000 ha to 330,000 ha by 2008, and reduce the cultivation of wheat in well-irrigated areas.</p> <p>Private companies provide 30% of wheat seed sales and machinery rental revenues by</p>	Rayon	2002	2008	Kuyi-Chirchik	3.0	3.4	Zamin	2.4	3.0	Katakurgan	3.1	3.4	<p>Ministry of Economy, and Ministry of Agriculture and Water Resources (MAWR) annual statistics</p> <p>Project review mission</p> <p>Farm technical and financial reports</p> <p>Impact evaluation survey</p> <p>Project performance audit</p>	<p>Domestic markets for fodder and/or non-grain crops are sustained.</p> <p>Targeted total irrigated areas mandated for wheat production are not increased.</p>
Rayon	2002	2008													
Kuyi-Chirchik	3.0	3.4													
Zamin	2.4	3.0													
Katakurgan	3.1	3.4													

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions
	value in the districts. Improve the baking quality of the wheat flour produced in the <i>oblasts</i> .		
Outputs 1. Varietal Development and Testing <ul style="list-style-type: none"> Release locally adapted wheat varieties in five <i>oblasts</i> Improve availability of domestically produced foundation wheat seed 	<p>Six new locally adapted wheat varieties registered and released by 2008</p> <p>Andijan and Galla-Aral cereals and legumes research institutes (AGACLRl) capacity to multiply foundation seed increases from 400 t per annum to 900 t by 2008</p> <p>Seed quality parameters (humidity, germination rate, impurities, etc.) improve in the project <i>oblasts</i> by 2008 to match the quality parameters adopted for each oblast.</p>	<p>Project quarterly and annual progress reports</p> <p>Project review missions and M&E studies</p> <p>Consultation with seed farms and companies</p>	<p>Government policy to restructure seed industry is maintained; Uz Grain Association and Andijan seed farms are prepared to relinquish some control over the seed industry.</p> <p>Enthusiasm of local governments and farms is established and maintained.</p> <p>State Center for Seed Quality Control and Certification effectively implements seed quality control regulations and charges adequate fees to recover seed certification costs.</p>
2. Enhanced Farm Management a. Farm Extension <ul style="list-style-type: none"> Improved farm and business extension services in the districts Upgraded extension services for wheat cultivation in the <i>oblasts</i> 	<p>Farmers in the districts satisfied with extension services provided by rural business advisory centers (RBACs)</p> <p>Improved wheat varieties planted on 40,000 ha (60% of total wheat area) in the project districts by 2008</p> <p>60% of farmers in the project districts are familiar with improved soil and water management technologies introduced under the project by 2008.</p>	<p>Project quarterly and annual progress reports</p> <p>Project review missions, project evaluation</p> <p>MAWR data</p>	<p>RBACs maintain qualified staff.</p> <p>Enthusiasm of local governments and farms is established and maintained.</p> <p>Farmers, particularly private and <i>dekhan</i> farmers, participate actively in extension and demonstration activities.</p>
b. Technology Development <ul style="list-style-type: none"> Enhance MAWR's capacity to introduce and disseminate alternative on-farm 	<p>30% of farmer in the project <i>oblasts</i> are familiar with improved soil and water management techniques introduced under the</p>	<p>Project quarterly and annual progress reports</p> <p>MAWR statistics</p>	<p>Project institutes—Agricultural Institute for Mechanization and Electrification, Central</p>

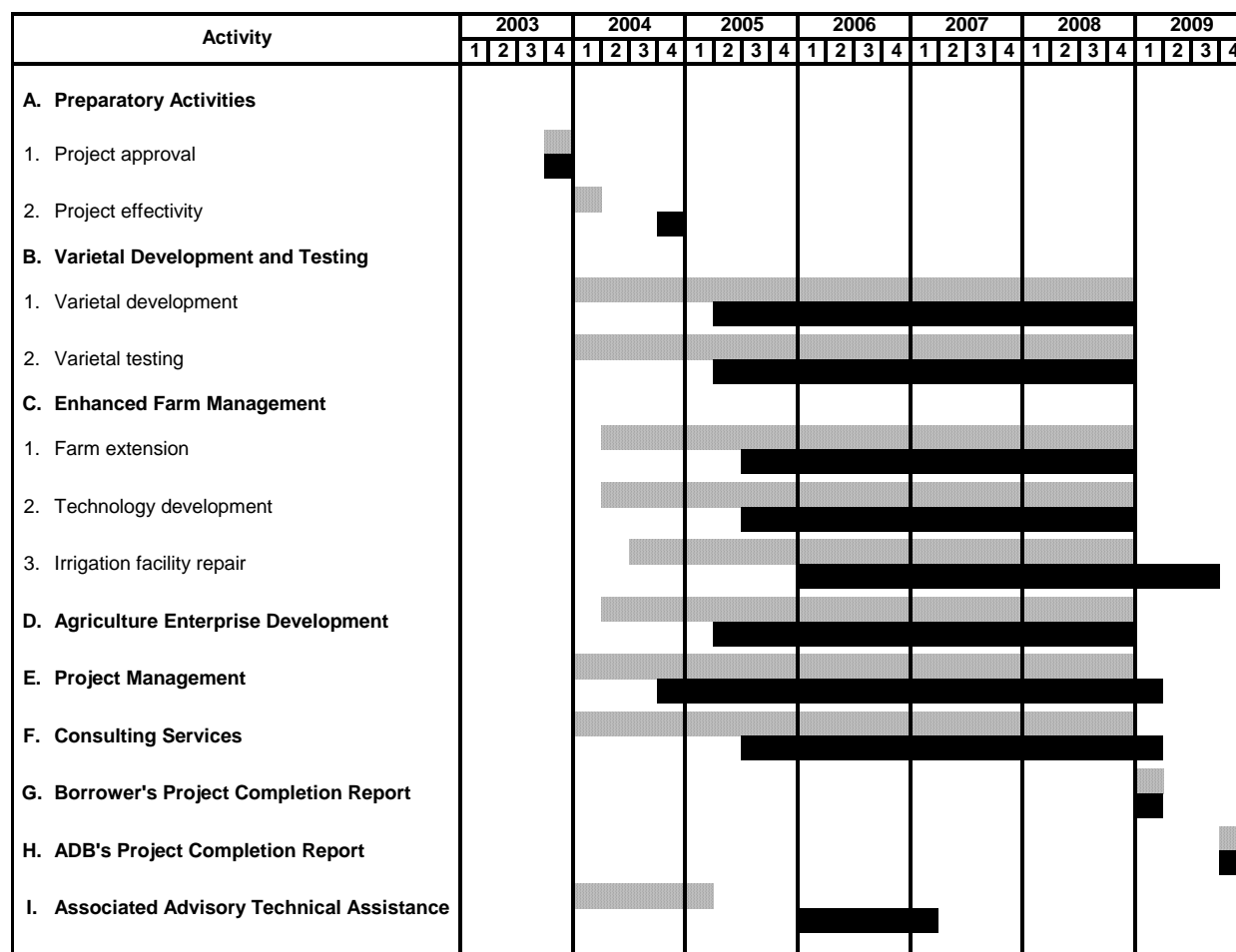
Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions
soil and water management practices suited for crop rotation involving wheat	<p>project by 2008.</p> <p>Improved wheat varieties planted on 150,000 ha in the project <i>oblasts</i> and 225,000 ha nationwide by 2008</p> <p>Accurate monthly assessment of pest infestation risk, particularly from locusts, disseminated in the <i>oblasts</i></p>	Project review missions, project evaluation assessment	Asian Institute for Irrigation Research, and Plant Protection Institute—maintain qualified staff.
<p>c. Irrigation Facility Repair</p> <ul style="list-style-type: none"> Improved drainage and irrigation water supply for seed-growing farms in the districts Upgraded irrigation system operation and maintenance 	<p>Drainage improved on 6,000 ha of seed-producing areas in the districts</p> <p>Irrigation water supply stabilized in the project districts</p> <p>30 independent water users' associations formed in the districts.</p>	<p>Project quarterly and annual progress reports</p> <p>MAWR and district statistics</p> <p>Project review missions, project evaluation assessment</p>	On- and off-farm systems are maintained after rehabilitation.
<p>3. Agricultural Enterprise Development</p> <ul style="list-style-type: none"> Sustained development of private enterprises providing agricultural input supply and processing and marketing services 	<p>Agricultural service centers (ASCs) under the project benefit 14,000 ha per annum.</p> <p>ASCs created under the project remain financially profitable during 2004–2008.</p> <p>Private seed enterprises established in the project <i>oblasts</i> remain financially profitable during 2004–2008.</p> <p>8,500 tons of high-quality elite and certified seeds are produced in the project districts annually by 2008.</p> <p>A plan is developed for further private sector participation in agricultural support services and marketing for the three districts.</p>	<p>Project quarterly and annual progress reports</p> <p>Audited financial reports of companies</p> <p>Reports of commercial banks</p> <p>Project review missions</p>	<p>Equipment rental rates remain affordable to farmers.</p> <p>Local wheat and cotton prices are linked to international prices, allowing farmers and ASCs to hedge against exchange rate fluctuations.</p> <p>State and local government involvement in business operations of ASCs and seed enterprises is minimized.</p> <p>Preferential subsidy or treatment is not continued to machinery and tractor parks in the districts, which will compete with the ASCs created under the project.</p> <p>Access to working capital, materials, and foreign exchange are adequate for ASCs and seed companies.</p>

Design Summary	Performance Indicators/Targets	Monitoring Mechanisms	Assumptions
Activities <ul style="list-style-type: none">• Land and building acquisition• Provision of information material• Civil works• Equipment including vehicle and farm machinery purchase• Training• Consulting services• Project administration• Incremental recurrent budget	<p>Quantities of inputs as estimated in the detailed cost estimates</p> <p>Monitored gender development targets</p>	<p>Project progress report</p> <p>Project performance monitoring system reports</p> <p>Project completion report</p> <p>Postevaluation report</p>	<p>Sufficient local counterpart funds are available and provided in a timely manner.</p>
Inputs \$ million			
A. Varietal Development and Testing		3.76	
1. Plant Breeding		2.68	
2. Varietal Testing		1.08	
B. Enhanced Farm Management		13.17	
1. Farm Extension		1.30	
2. Technology Development		2.22	
3. Irrigation Repairs		9.65	
C. Agricultural Enterprise Development		12.89	
D. Project Management		1.66	

Source: ADB estimates.

IMPLEMENTATION SCHEDULE

IMPLEMENTATION SCHEDULE



Legend: Scheduled  Actual 

ADB = Asian Development Bank.
Source: ADB estimates.

ORGANIZATIONS ASSOCIATED DURING PROJECT IMPLEMENTATION

S. No.	Name of the Agency	Role	Assistance provided/Outputs
1.	Plant Genetic Institute	Develop and/or adapt varieties with desirable characteristics.	Equipment and study tours to upgrade capacity to evaluate cereal resistance to diseases
2.	Andijan and Galla-Aral cereals and legumes research institutes (AGACLRI)	Select appropriate seeds for development of new seed varieties suitable for local conditions.	The capacity of the institutes strengthened through the provision of field cultivation and harvesting equipment and overseas study tours to wheat-breeding centers for the specialists
3.	State Commission on Varietal Testing	Test and certify new seed varieties for multiplication.	Strengthened and expedited the agency's capacity to evaluate promising varieties identified by the AGACLRI and varieties imported by private seed companies
4.	Rural business advisory centers	Established under the Association of Dehkan and Private Farmers, a national farmers' association, to provide advisory services to farmers on payment	Capacity building of the staff, renovation of the office buildings, and provision of office equipment and furniture
5.	Agricultural Institute for Mechanization and Electrification	Undertake field trials at demonstration farms for farm machinery, soil and water management, agronomic practices, and agricultural inputs.	The project provided a variety of farm equipment including tractors, seed drills, cultivators, sprayers, laser land levelers, and vehicles.
6.	Plant Protection Institute	Monitor and forecast disease, pest, and weed infestations, particularly locust infestation, which has harmed wheat crop	The project provided pest-monitoring equipment, three tractors, seven chemical sprayers, two vehicles, and office equipment and furniture.
7.	Central Asian Institute for Irrigation Research	Introduce improved soil- and water-management techniques.	The institute (i) developed recommendations on the use of legumes, peas, and alfalfa to restore soil fertility; (ii) demonstrated the application of new water-saving technologies; (iii) developed recommendations on applying fertilizers and agronomic and irrigation practices; and (iv) developed brochures on new technologies and disseminated information during seminars.
8.	District agriculture and water resources departments	Improve irrigation and drainage facilities for about 6,000 ha of wheat seed-producing farms.	Critically needed equipment to maintain primary canals and drainage collectors in the project districts
9.	Water users' associations	Manage irrigation systems, allocate water among the farmers, and rehabilitate on-farm infrastructure.	Capacity building, renovation of office buildings, provision of office equipment and furniture, and provision of equipment to maintain irrigation and drainage facilities

Source: ADB estimates.

DETAILS OF LOANS PROVIDED TO AGRICULTURAL SERVICE CENTERS

S. №	Application No.	Amount (\$)	Private Company Name	Type of Equipment	Rayon
1	1 dd. 28.03.2006	84,124.65	OOO MTP "Mardi Sultonov-Agrotech"	Combine grain harvester	Katakurgan
2	2 dd. 28.03.2006	84,124.65	Suiligop	Combine grain harvester	Katakurgan
3	3 dd. 28.03.2006	84,124.65	OOO MTP "Olim Ruziev-TFO"	Combine grain harvester	Katakurgan
4	4 dd. 28.03.2006	84,124.65	OOO MTP "Koradaryo Trans-GTT"	Combine grain harvester	Katakurgan
5	5 dd. 28.03.2006	84,124.65	OOO MTP "Motoserver-TMA"	Combine grain harvester	Katakurgan
6	6 dd. 28.03.2006	84,124.65	OOO MTP "Mekhanizator-RBM"	Combine grain harvester	Katakurgan
7	7 dd. 05.04.2006	84,300.55	Umid-A	Combine grain harvester	Zamin
8	8 dd. 05.04.2006	84,300.55	Olish	Combine grain harvester	Zamin
9	9 dd. 05.04.2006	84,300.55	Ziyodullo	Combine grain harvester	Zamin
10	10 dd. 05.04.2006	84,300.55	Beshbuloq	Combine grain harvester	Zamin
11	11 dd. 05.04.2006	84,300.55	Mirbobo	Combine grain harvester	Zamin
12	12 dd. 05.04.2006	84,300.55	Pakhtaorol	Combine grain harvester	Zamin
13	13 dd. 05.04.2006	84,300.55	Jakhon-A	Combine grain harvester	Zamin
14	14 dd. 05.04.2006	84,300.55	Kaynar	Combine grain harvester	Zamin
15	15 dd. 05.04.2006	84,300.55	Sayqal-M	Combine grain harvester	Zamin
16	16 dd. 05.04.2006	84,300.55	Abduganiev Mukhammadi	Combine grain harvester	Zamin
17	17 dd. 12.04.2006	85,138.20	Osmanov Ismanbek	Combine grain harvester	Kuyi-Chirchik
18	18 dd. 12.04.2006	85,138.20	MTP "Ulugbel Agro"	Combine grain harvester	Kuyi-Chirchik
19	19 dd. 12.04.2006	85,138.20	Shukhrat-2	Combine grain harvester	Kuyi-Chirchik
20	20 dd. 12.04.2006	85,138.20	Sanjar	Combine grain harvester	Kuyi-Chirchik
21	21 dd. 12.04.2006	85,138.20	Zabikhillo Hurilla Khoji oqli	Combine grain harvester	Kuyi-Chirchik
22	22 dd. 12.04.2006	85,138.20	Kutpinisa aya	Combine grain harvester	Kuyi-Chirchik
23	23 dd. 12.04.2006	85,138.20	Bijigit	Combine grain harvester	Kuyi-Chirchik
24	24 dd. 12.04.2006	85,138.20	Sarkor	Combine grain harvester	Kuyi-Chirchik
25	25 dd. 12.04.2006	85,138.20	Isroil	Combine grain harvester	Kuyi-Chirchik
26	26 dd. 12.04.2006	85,138.20	Eko-klein	Combine grain harvester	Kuyi-Chirchik
27	27 dd. 12.04.2006	85,138.20	Mushtariy begim	Combine grain harvester	Kuyi-Chirchik
28	28 dd. 12.04.2006	85,138.20	MTP "Fermer Agro Xizmat"	Combine grain harvester	Kuyi-Chirchik
29	29 dd. 06.05.2006	85,907.10	MTP "Gold Agro Plyus"	Combine grain harvester	Kuyi-Chirchik
30	30 dd. 06.05.2006	85,907.10	MTP "Nurtechmadadkor"	Combine grain harvester	Kuyi-Chirchik
31	31 dd. 06.05.2006	85,907.10	MTP "Ulugbel Agro Technologiya"	Combine grain harvester	Kuyi-Chirchik
32	32 dd. 06.05.2006	85,907.10	MTP "Qurbonali ota"	Combine grain harvester	Kuyi-Chirchik
33	33 dd. 06.05.2006	85,907.10	MTP "Guliston oltin eri"	Combine grain harvester	Kuyi-Chirchik
34	34 dd. 06.05.2006	85,907.10	Mirza Makhmud Agro	Combine grain harvester	Kuyi-Chirchik
35	35 dd. 06.05.2006	85,907.10	Usta Subkhon Odilov	Combine grain harvester	Kuyi-Chirchik
36	36 dd. 06.05.2006	85,907.10	MTP "Nurli Chanoq"	Combine grain harvester	Kuyi-Chirchik
37	37 dd. 06.05.2006	85,365.37	Karim Ota	Combine grain harvester	Zamin
38	38 dd. 06.05.2006	85,365.37	Niyat	Combine grain harvester	Zamin
39	39 dd. 16.05.2006	87,969.15	Zaminlik Gallakor	Combine grain harvester	Zamin
40	40 dd. 16.05.2006	87,969.15	Muzaffar	Combine grain harvester	Zamin
41	41 dd. 16.05.2006	87,969.15	Boychibor	Combine grain harvester	Zamin
42	42 dd. 16.05.2006	87,969.15	Buyuk Iskandar	Combine grain harvester	Zamin
43	43 dd. 13.06.2006	88,353.60	Grand Trans AXB	Combine grain harvester	Katakurgan
44	44 dd. 13.06.2006	88,353.60	MTP "Buston Trans-BTT"	Combine grain harvester	Katakurgan
45	45 dd. 13.06.2006	88,353.60	Muzaffar-U	Combine grain harvester	Katakurgan
46	46 dd. 13.06.2006	88,353.60	Koksoy-KEX	Combine grain harvester	Katakurgan
47	47 dd. 13.06.2006	88,353.60	MTP "Zafar Tech MMTP"	Combine grain harvester	Katakurgan
48	48 dd. 13.06.2006	88,353.60	Guli	Combine grain harvester	Katakurgan

S. №	Application No.	Amount (\$)	Private Company Name	Type of Equipment	Rayon
49	49 dd. 13.06.2006	85,365.37	Qurbonov Elmurod Qurbonovich	Combine grain harvester	Katakurgan
50	1 dd. 19.04.2007	20,430.34	Abdulloh Turashukur	Tractor with trailer	Kuyi-Chirchik
51	2 dd. 19.04.2007	20,430.34	Kalimov Ikromjon	Tractor with trailer	Kuyi-Chirchik
52	3 dd. 19.04.2007	5,566.55	ADI	Spayer, seeder, harrow	Kuyi-Chirchik
53	4 dd. 19.04.2007	20,430.34	Askar Husniddin	Tractor with trailer	Kuyi-Chirchik
54	5 dd. 19.04.2007	20,430.34	Azimboy ota	Tractor with trailer	Kuyi-Chirchik
55	6 dd. 19.04.2007	20,430.34	Abdumumin Abdulatif	Tractor with trailer	Kuyi-Chirchik
56	7 dd. 19.04.2007	20,430.34	Tayful	Tractor with trailer	Kuyi-Chirchik
57	8 dd. 19.04.2007	24,034.98	Abboshon Zebobonu	Tractor with trailer	Kuyi-Chirchik
58	9 dd. 19.04.2007	16,825.70	Jahongir Agzam	Tractor	Kuyi-Chirchik
59	10 dd. 19.04.2007	19,770.19	Begzod Sherzod Davronbek	Tractor and spayer	Kuyi-Chirchik
60	11 dd. 19.04.2007	20,430.34	Absatar Abdullaev	Tractor with trailer	Kuyi-Chirchik
61	12 dd. 19.04.2007	22,163.99	Vohobhoji ota	Tractor, trailer, and seeder	Kuyi-Chirchik
62	13 dd. 19.04.2007	33,883.70	Nurali Junaid ogli	Crawler tractor with plow	Kuyi-Chirchik
63	13 dd. 19.04.2007	1,999.30	Nurali Junaid ogli		Kuyi-Chirchik
64	14 dd. 19.04.2007	22,122.05	Kobulbek Holmatov	Tractor, trailer, and seeder	Kuyi-Chirchik
65	15 dd. 27.07.2007	23,419.15	Shaxboz	Farm machinery	
66	16 dd. 27.07.2007	16,644.82	Kholmumin Poyon	Farm machinery	
67	17 dd. 27.07.2007	16,644.82	Shom Becnur	Farm machinery	
68	18 dd. 27.07.2007	16,644.82	Kudrat Bobo	Farm machinery	
69	19 dd. 27.07.2007	19,922.73	Shokhijakhon Turabekzoda	Farm machinery	
70	20 dd. 27.07.2007	16,644.82	Nurmurodov Yazdon Yan	Farm machinery	
71	21 dd. 27.07.2007	16,644.82	Makhkamov Rakhmat	Farm machinery	
72	22 dd. 27.07.2007	16,644.82	Chanoq	Farm machinery	
73	23 dd. 27.07.2007	19,922.73	Elmamat Omon	Farm machinery	
74	24 dd. 27.07.2007	32,364.92	Khojaqishloq	Farm machinery	
75	25 dd. 27.07.2007	19,922.73	Ogiloy Kamol Kelajagi	Farm machinery	
76	26 dd. 27.07.2007	22,872.07	Tursunoy Sodiqova	Tractor, trailer, and chopper	Katakurgan
77	27 dd. 27.07.2007	36,014.50	Karomat khoji ona	Farm machinery	
78	28 dd. 27.07.2007	36,014.50	Umar	Farm machinery	
79	29 dd. 27.07.2007	39,059.99	Akhmad Bobo	Farm machinery	
80	30 dd. 27.07.2007	20,210.72	Toshtemir	Farm machinery	
81	31 dd. 27.07.2007	19,286.00	Ilkhom	Farm machinery	
82	32 dd. 27.07.2007	37,073.82	Muborak	Farm machinery	
83	33 dd. 08.08.2007	5,650.78	Suyligop	Cultivator	Katakurgan
84	34 dd. 23.08.2007	3,265.66	Vakhob Xoji Ota	Cultivator	Kuyi-Chirchik
85	35 dd. 23.08.2007	3,265.66	Tayful	Cultivator	Kuyi-Chirchik
86	36 dd. 23.08.2007	3,265.66	Abdulloh Turashukur	Cultivator	Kuyi-Chirchik
87	37 dd. 23.08.2007	3,265.66	Azimboy Ota	Cultivator	Kuyi-Chirchik
88	38 dd. 23.08.2007	3,265.66	Kalimov Ikromjon	Cultivator	Kuyi-Chirchik
89	39 dd. 23.08.2007	3,265.66	Abboshon Zebobonu	Cultivator	Kuyi-Chirchik
90	40 dd. 23.08.2007	3,265.66	Absattar Abdullaev	Cultivator	Kuyi-Chirchik
91	41 dd. 23.08.2007	3,265.66	Asqar Khusniddin	Cultivator	Kuyi-Chirchik
92	42 dd. 23.08.2007	3,265.66	Jakhongir Agzam	Cultivator	Kuyi-Chirchik
93	43 dd. 01.11.2007	81,000.00	Chorvador	Flour-milling line	Kuyi-Chirchik
94	44 dd. 06.05.2008	18,828.54	Sohilda bahor	Tractor	Katakurgan
95	45 dd. 06.05.2008	18,828.54	Oltin Kuz IBO	Tractor	Katakurgan
96	46 dd. 06.05.2008	18,828.54	Pakhtakor-S	Tractor	Katakurgan
97	46 dd. 06.05.2008	3,692.71	Pakhtakor-S	Implements	Katakurgan
98	47 dd. 02.07.2008	44,208.64	Firdavs	Two tractors with trailers	Katakurgan
99	48 dd. 11.08.2008	9,000.00	Chorvador	Spares for milling line	Kuyi-Chirchik
100	49 dd. 16.12.2008	42,054.63	Tursunova Tuti-F.T.O.	Crawler tractor	Katakurgan
101	50 dd. 16.12.2008	42,054.63	Kadan Agrotech	Crawler tractor	Katakurgan
102	51 dd. 27.03.2009	473,933.67	Kattaming Techta'minot	Tractors	Katakurgan

S. №	Application No.	Amount (\$)	Private Company Name	Type of Equipment	Rayon
103	52 dd. 27.03.2009	394,944.73	Kattakurgan Agtoservice	Tractors	Katakurgan
104	53 dd. 27.03.2009	473,933.67	Kattaming AgroTechservice	Tractors	Katakurgan
105	54 dd. 27.03.2009	78,988.94	Kurbanov Elmurod Kurbanovich	Tractor	Katakurgan
106	55 dd. 27.03.2009	78,988.94	Mamur ona QEX	Tractor	Katakurgan
107	56 dd. 31.03.2009	78,989.26	Olish	Tractor	Zamin
108	57 dd. 31.03.2009	78,989.26	Qum-Qiya	Tractor	Zamin
	Total	6,882,400.95			

Source: ADB estimates.

STATUS OF COMPLIANCE WITH LOAN COVENANTS

Covenant	Reference in Loan Agreement	Status of Compliance
Loan Effectiveness 1. The Cabinet of Ministers (COM) of the Borrower shall have adopted a resolution satisfactory to the Asian Development Bank (ADB), which shall determine that (i) commencing from the cropping season 2004, the Government shall limit its procurement of quantities of wheat in the Project districts, (ii) commencing from the cropping season 2004, the Government shall limit its procurement of quantities of wheat seeds in the project districts, (iii) each agricultural enterprise or farm in the project districts shall be responsible on an individual basis to meet the procurement quotas assigned to such enterprise or farm, and (iv) except the above provisions, the government shall not impose restrictions on agricultural enterprises or farmers in project districts.	Article VI, Section 6.01[a]	(i) Late compliance. COM resolution was adopted on 21 October 2004 and loan declared effective on 9 December 2004, with a delay of 11 months from the loan approval by ADB. (ii) Late compliance. Khokims (governors) of the project provinces issued orders on introducing the reduced procurement quotas for wheat and wheat seeds in the project districts starting from 2005 cropping season. (iii) and (iv) complied with
2. The Project Steering Committee (PSC) shall have been established by resolution of COM.	Article VI, Section 6.01[b]	Late compliance. COM resolution was adopted with a delay of 11 months from loan approval by ADB.
Project Steering Committee and Working Group 3. The Borrower shall ensure that the (i) inter-ministerial PSC established by the resolution of the COM shall be responsible for policy coordination in all matters related to the project, (ii) Project Working Group (PWG) to be established within 30 days after the effective date, provides support on inter-ministerial coordination to facilitate implementation of the project implementation. The PSC will meet at least once a year and PWG once every three months.	Schedule 6, paras. 1 and 2	(i) and (ii) complied with on time
Project Executing Agency, Project Management Office, and Project Site Offices 4. The Project Management Office (PMO) established within the Rural Restructuring Agency (RRA) shall be headed by Deputy Director General who shall be responsible to oversee day-to-day tasks of implementation. The Borrower shall ensure that PMO is staffed with adequate and qualified staff.	Schedule 6, para. 4	Complied with. The adequately staffed PMO was established in January 2005.
5. The Borrower shall ensure that the three Project Site Offices (PSOs) established in the project districts shall be responsible for day-to-day management activities at field level. The Borrower shall ensure that the Site Manager who will head each PSO shall be adequately supported.	Schedule 6, para. 5	Complied with. The adequately staffed PSOs were established in the three project districts in January 2005.
6. The Borrower and ADB shall jointly conduct annual reviews including a review of the organization and staffing arrangements of the PMO and the PSOs. The Borrower shall ensure that all necessary adjustments in these arrangements are made in a timely manner.	Schedule 6, para. 6	Complied with. ADB carried out annual review missions. Midterm review mission was carried out from 16 October to 8 November 2007. The project completion mission was carried out from 28 October to 12 November 2009.
7. In carrying out of the Project, the Borrower shall cause competent and qualified consultants and contractors, acceptable to the Borrower and ADB, to be employed to an extent and upon terms and conditions satisfactory to the Borrower and ADB.	Schedule 5	Complied with

Covenant	Reference in Loan Agreement	Status of Compliance
Particular Covenants 8. The Borrower shall maintain, or cause to be maintained, records and account adequate to identify the goods and services and other items of expenditure financed out of the loan proceeds, to disclose the use thereof in the Project, and to record the project progress.	Article IV, Section 4.06 [a]	Complied with
9. The Borrower shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually; (iii) furnish to ADB such audited accounts and financial statements and the report of the auditors relating thereto; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	Article IV, Section 4.06 [b]	Complied with. (i) Two Imprest accounts were established in January 2005. (ii) and (iii) Audited financial statements were submitted annually. (iv) Additional information was submitted to ADB as needed.
10. The Borrower shall enable ADB to discuss the Borrower's financial statements and its financial affairs from time to time with the Borrower's auditors, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB.	Article IV, Section 4.06 [c]	Complied with
Social Matters and Beneficiary Participation 11. The Borrower shall cause Sub-borrowers (i) to comply with applicable labor laws; (ii) to provide workers with adequate safety and health protection measures to guard against any occupational hazards inherent to the workplace; and (iii) to comply with the provisions of the Borrower's legislation regarding prohibition of child labor.	Schedule 6, para. 24	Complied with
12. The Borrower shall ensure that the principles of ADB's Policy on Gender and Development are complied with and shall require contractors not to differentiate wages between men and women for work of equal value.	Schedule 6, para. 25	Complied with. According to ADB's Policy on Gender and Development and local legislation, there is no differentiation of wages between male and female workers for work of equal value.
13. The Borrower shall cause RRA to ensure active beneficiary participation in project activities. Farmers, private sector representatives and other project beneficiaries, including women, shall be involved in the design, implementation, and monitoring of the Project.	Schedule 6, para. 27	Partly complied with. Beneficiaries were consulted during the project design and took part in its implementation. However, beneficiaries were not actively involved in monitoring project activities for lack of time and specific knowledge.
Monitoring and Evaluation 14. During project implementation, the monitoring and Evaluation (M&E) Unit shall work with the PMO M&E specialist to develop and maintain 6 months after the effective date, an M&E system for measuring project outputs and impacts. The Borrower shall ensure that after project completion project impact shall be monitored in such a manner and by such agency as may be agreed upon by the Borrower and ADB.	Schedule 6, para. 22	Complied with. M&E system was developed and maintained by PMO.
15. The Borrower shall ensure that the M&E Unit which has been established within RRA, is staffed with two full-time persons with expertise in environment, sociology, and economics.	Schedule 6, para. 22	Complied with. In January 2005, the M&E unit was established with full-time environment, sociology, and economics experts.
16. The Borrower shall ensure that the Project is implemented in accordance with relevant environmental laws and regulations of the Borrower and ADB's environmental guidelines.	Schedule 6, para. 23	Complied with. Agro-economic and environmental baseline surveys were conducted in 2006. Environmental monitoring was conducted annually.

Covenant	Reference in Loan Agreement	Status of Compliance
State Procurement Quotas 17. During the period of project implementation, except as ADB may otherwise agree, no change or reversal will be made to the resolutions of COM, adopted in compliance with the conditions of loan effectiveness.	Schedule 6, para. 12	Complied with for the 2005–2008 cropping seasons.
18. In procuring the quotas of wheat and wheat seeds, the Borrower shall ensure that farmers in the project districts receive, in a timely manner, advance payments for wheat production and final payments for wheat grains and wheat seeds within 3 months after crop delivery.	Schedule 6, para. 13	Complied with for the 2005–2008 cropping seasons. Farmers received timely advance payments, and final payments were received within 2 months after crop delivery.
19. The Borrower shall review on an annual basis the state procurement prices for wheat grains and wheat seeds, so as to ensure that any necessary price adjustments fully reflect for each quality grade variations in international border prices, as well as exchange rate changes, and incorporate reasonable changes for processing and marketing of wheat products.	Schedule 6, para. 14	Complied with for the 2005–2008 cropping seasons. Procurement prices for wheat and wheat seed (per ton) were adjusted as follows: 2004, SUM75,000, SUM210,000; 2005, SUM82,000, SUM208,000; 2006, SUM101,000, SUM226,000; 2007, SUM118,000, SUM255,000; 2008, SUM218,000, SUM315,000.
Monitoring of State Procurement Quotas and Private Sector Operations 20. RRA and PMO shall monitor compliance with the requirements set out in paragraphs 12 to 20 (State Procurement Quotas and Private Sector Operations) of Schedule 6 of the Loan Agreement and shall include information thereon in their quarterly reports to PSC and ADB.	Schedule 6, para. 21	Complied with
Private Sector Operations 21. The Borrower shall promote private sector participation in the production and marketing of wheat and wheat seeds and shall cause all Government agencies concerned to facilitate the establishment of agricultural service centers (ASCs) and seed companies.	Schedule 6, para. 15	Complied with. 64 private ASCs have been established.
22. The Borrower shall cause PSC, PWG and RRA to ensure that the ASCs and seed companies in the project districts shall be given access to agro-chemicals, fuel, spare parts, and foreign exchange on terms which shall be not less favorable than those applicable to any company in which the Government or a Government agency holds equity.	Schedule 6, para. 17	Complied with. There is no preferential treatment under the project for ASCs or seed companies with government shareholding.
23. The Borrower shall not take any action to restrict the geographical operation area of the ASCs and seed companies, within or outside the project districts.	Schedule 6, para. 18	Complied with. ASCs provide services within and outside the project districts based on signed contracts with farmers.
24. The Government shall abolish in the project districts by no later than 31 December 2005 all direct and indirect subsidies to machine and tractor parks in which the Government or a Government agency holds equity.	Schedule 6, para. 19	Complied with. Subsidies to machine and tractor parks have been removed.
25. The Government shall not take any action which may interfere with the independence and the internal decision-making processes of the ASCs and seed companies.	Schedule 6, para. 20	Complied with. The government does not interfere in the internal decision-making processes of the ASCs.

Covenant	Reference in Loan Agreement	Status of Compliance
Participating Financial Institutions 26. A banking or financial institution of the Borrower may be selected as Participating Financial Institution (PFI) for the purposes of managing revolving funds, which shall be funded out of repayment on the subloans, to make fresh subloans to new subborrowers within the overall timeframe of the Project.	Schedule 6, para. 7	Complied with. Pakhta Bank and Ipoteka Bank were selected for the disbursement of the credit line facility, and 108 loans were provided.
27. All Subsidiary Loan Agreements shall be submitted to ADB for approval prior to their execution. The Borrower shall cause the RRA to ensure that all Subsidiary Loan Agreements shall have been executed and delivered in a form and substance satisfactory to ADB by not later than 8 months after the effective date.	Schedule 6, para. 8	Complied with. Subsidiary loan agreements have been executed and delivered in a form and substance satisfactory to ADB.
28. The terms of the Credit Guidelines shall apply to subloans	Schedule 6, para. 9	Complied with. At the borrower's request, ADB agreed to reduce the minimum subloan size.
29. The Borrower shall cause PFIs to require each of their subborrowers to meet and maintain the financial obligations and covenants.	Schedule 6, para. 10 [a]	Complied with
30. Any company which is owned by the Government or a Government agency, or in which the Government or a Government agency hold equity, shall not be eligible to be a subborrower.	Schedule 6, para. 10 [b]	Complied with
Interest Rates 31. The Borrower and PFIs shall, from time to time, at the request of any party, exchange views with ADB concerning the interest rates to be charged by PFIs, taking into consideration the PFIs cost of funds, profitability, and interest rates charged by other banks and financial institutions in Uzbekistan.	Schedule 6, para. 11	Partly complied with. The interest rates for the subloans were fixed by the PFIs based on their internal procedures, which take into account the cost of funds, profitability, and interest rates charged by other banks. However, these rates were fixed for the entire project-implementation period.

Source: ADB estimates.

ECONOMIC AND FINANCIAL REEVALUATION

A. Wheat Yields and Production

1. The Grain Productivity Improvement Project had a very positive impact on wheat yields and production, and on the incomes of project area farmers. As shown in Table A6.1, the average 2006–2008 rain-fed wheat yield in Katakurgan District was 1.04 tons (t)/hectare (ha) which is above the appraisal target of 0.86 t/ha to be achieved in 2008. Zamin District was severely affected by the drought of 2008, and hence the rain-fed area yield was low. In irrigated areas, the average yield achieved in 2008 was 4.49 t/ha, which is 44% above the target of 3.11 t/ha.

2. Although the area under irrigated wheat exceeded the appraisal target (Table A6.1), the area under rain-fed wheat in 2008 was reduced because of severe drought that year. Wheat production in the five project *oblasts* (provinces or regions), however, exceeded the appraisal estimate by 43%, mainly because of improvements in yield, particularly in irrigated areas.

Table A6.1: Average Wheat Yield, Area, and Production

Criteria/Farm Type	Base Case 2002	Targets			Actual/Estimated		
		5th Year	10th Year	25th Year	4th Year	10th Year	15th Year
Average Yield in Three Project Districts (tons per hectare)							
Rain-fed wheat	0.60	0.86	1.35	1.56	1.04, 0.37 ^a	1.50	1.50
Irrigated wheat	2.42	3.11	3.22	3.22	4.49	4.65	4.65
Area Under Wheat in Five Project Oblasts (tons per hectare)							
Rain-fed wheat	293,000	317,153	329,966	329,966	190,102	234,643	289,621
Irrigated wheat	559,700	559,700	559,700	559,700	568,400	568,400	568,400
Annual Wheat Production in Five Project Oblasts (tons)							
Rain-fed wheat	234,400	463,043	534,544	534,544	42,260	351,965	434,431
Irrigated wheat	1 356 870	1 740 086	1 800 637	1 803 404	2 480 912	2 644 231	2 645 800

^a 2006–2008 average for Katakurgan and Zamin, respectively. Zamin rain-fed area was severely affected by the 2008 drought.

Source: ADB estimates.

B. Financial Analysis

3. The financial analysis was carried out for farms and agricultural service centers (ASCs) but not for the seed companies, as none were established because the rehabilitation of irrigation and drainage systems where they were supposed to be established were not completed during the implementation period.

1. Financial Analysis at the Farm Level

4. Compounding the effect of the increase in yield, reduction in procurement quota and production costs, and increase in the both market and state procurement prices, annual incomes from wheat production in all areas were much higher than the project-end projections (Table A6.2). The increase in income from rain-fed wheat was 275% higher than the project-end projections, irrigated wheat 110% higher, and irrigated wheat seed 305% higher, which is remarkable.

Table A6.2: Average Incomes from Wheat Production in Project Districts

Criteria/Farm Type	Base Case 2002	Targets			Actual/Estimated		
		5th Year	10th Year	25th Year	4th Year	10th Year	15th Year
Annual Income/Average Operating Margins in Project Districts (SUM per hectare)							
Rain-fed wheat	18,950	20,000	48,830	48,830	74,986	86,234	86,234
Irrigated wheat	100,000	160,000	350,700	350,700	337,438	388,053	388,053
Irrigated wheat seed	150,000	250,000	357,000	357,000	1,012,313	1,164,159	1,164,159

Source: ADB estimates.

2. Financial Analysis of an Agricultural Service Center

5. The financial analysis of ASCs carried out at appraisal considered large machinery centers having more than 20 units of agricultural equipment for a total amount of about \$3.75 million per center. In fact, only small ASCs were established, which purchased from 1 to 5 units of equipment (para. 29). Therefore, analysis was conducted for a small ASC with 1 tractor, basic tractor attachments, and 1 combine grain harvester. The financial internal rate of return for such an ASC is estimated at 26.5%, compared with the appraisal estimate for a much larger center of 27.5% (Table A6.3). Sensitivity analysis shows that the center would be robust and the return under adverse condition of costs and benefits would reduce to 17.1%.

C. Economic Reevaluation

6. Using the methodology of the appraisal report, economic reevaluation was conducted using the updated information and projections. The economic internal rate of return for the project is estimated at 37.3%, higher than the appraisal estimate of 30.8% (Table A6.3), mainly because of the achievement of projected targets at about 40% of project costs. Sensitivity analysis shows that the project continues to be robust against adverse conditions of costs and benefits.

Table A6.3: Financial and Economic Reevaluation

Parameter	Appraisal Estimate	PCR Estimate
Agriculture Service Center		
Financial internal rate of return	27.5%	26.5%
Sensitivity analysis scenario ^a	18.7%	17.1%
Project Economic Internal Rate of Return		
As designed	30.8%	37.3%
Sensitivity analysis scenario ^b	16.4%	20.1%
Net Present Worth (SUM million)		
As designed	155,737	319,840
Sensitivity analysis scenario ^b	49,605	97,236

PCR = project completion report.

^a Assuming a 10% increase in cost stream and a 10% reduction in benefit stream.^b Assuming a 25% increase in cost stream and a 25% reduction in benefit stream.

Source: ADB estimates.