Initial Project Information Document (PID)

Report No: AB694

Project Name	KAZAKHSTAN - Agricultural Competitiveness Project
Region	Europe and Central Asia Region
Sector	Agricultural extension and research (60%); Agricultural marketing and trade (40%)
Theme	Technology diffusion (P); Rural services and infrastructure (P)
Project	P049721
Borrower(s)	GOVT. OF KAZAKSTAN
Implementing Agency(ies)	MINISTRY OF AGRICULTURE MINISTRY OF AGRICULTURE Address: 49 Abai St., Astana 473000 Contact Person: Deputy Minister Mr. Dulat Aidzhanov Tel: (3172) 323-784 Fax: (3172) 324-541 Email: agrinvest@rambler.ru
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1. Country and Sector Background

Background

Agriculture represents 8% of Kazakhstan's GDP. Agricultural production has been increasing during the past five years, and the Government is now implementing several strategies to help diversify the country's economy from the high dependence on oil, whose price volatility is notorious. Agricultural development is an important pillar of this diversification strategy.

Kazakhstan, a country five times the size of France, covers several different agro-ecological systems. The north is suitable for rainfed agriculture, where most cereals are produced. The center-south is desert and semi-desert, except in the foothills of the mountains in the south and east of the country. In the south agriculture is mostly dependent on irrigation (1.2 million hectares), while the east is traditionally devoted to oil-seed crops (mostly sunflower). Crops represent 58% of output, mainly cereals (30%) vegetables (8%), potatoes (6%), cotton (3%). Livestock products represent 42% of output, with meat (23% comprising poultry) and milk (14%) being the most important commodities.

History. Agriculture was a key sector during the Soviet period. In the 1950s and 1960s almost 35 million hectares were cultivated under the Virgin Land Scheme, while irrigation was developed in the south. After independence, in 1991, agriculture suffered a great set-back: during 1991-1998 agricultural output contracted by 50%. This was due to the transition to adjust from a planned to a market economy: prices of inputs increased to reflect market prices, while collective farms were restructured; in addition, the large Soviet market was lost. Collective farms were heavily undercapitalized: livestock reduced from 25 to 9 million equivalent animal units during 1990-1998; agricultural machinery also reduced significantly (from 220,000 tractors in 1990 to 50,000 in 2000). In addition, social services that were earlier provided by collective farms have

deteriorated. In 1998 a convergence of exogenous factors (e.g., bad weather, the regional financial crisis, low international prices, and substantial currency overvaluation) contributed to bring production to its lowest level in several decades.

Since 1998 a recovery of the agricultural sector has started, bringing agricultural output to 75% of its 1989-91 average. The recovery of crops has been more rapid than livestock, comparing an average annual growth of 33 percent against 3 percent. Still agriculture has a significant potential for development. Crop yields can be significantly increased. Average cereal yield is 1 ton/ha against 2.7 in Canada, with a similar climate, and 1.8 in Australia, with a similar extensive crop system (See para. E.3 for more analysis on the production frontier) . Milk yields currently stand between 1,800-2,000 Kg/cow/year, or one third of the yield in New Zealand. Available pasture, although not of excellent quality, can sustainably maintain a much larger number of livestock than it currently does. In fact Kazakhstan has the highest amount of permanent pasture per animal in the world. However, to unleash this potential the sector has to tackle a number of problems, among which are appropriate access to know-how, technology, markets, or the right scale of credit.

Employment. Agriculture officially employs 2,3 million people, or 22% of the economically active population. However the impact of agriculture on rural livelihood is even more relevant than these numbers would reveal. Two million of households – almost half of the country's total -- complement their revenue with agricultural activities carried out in their household plots. This figure is higher that the 1.8 million of rural households; this means that also peri-urban households complement their revenue with agricultural activities. The following table compares the three types of farm management.

Table 1 - Farm Structure in Kazakhstan (2002)

	Number	Total arable land ('000 Ha)	Average size (Ha/farm)	Output
Agricultural Enterprises	18,322	13,077	713.7	27%
Private Farms	122,042	6,050	49.6	25%
Household Plots	2,172,176	383	0.2	48%
Total	**2,312,540**	**19,510**	**8.4**	**100%**

Almost all agricultural enterprises have been privatized (agricultural research stations being an exception). However they have not always undergone a full restructuring process, since land has been privatized on the basis of conditional land shares, which have been allocated to all former employees of the collective farms. As restructuring proceeds, land under the control of agricultural enterprises fell from 81% of the total in 1997 to 68% in 2002, as conversion to individual farms continues. The latter form of farming now accounts for more than a third of grain production, well over a half of meat production, and more than two thirds of raw cotton production even though they only control a third of land (up from 19% in 1997). Yield (production per ha) in individual farms has nearly doubled over the same period, while that in agricultural enterprises has been stagnant. Livestock production continues to be led by household plots which account for the bulk of meat, milk and wool production, and over half of the egg production. In 2001, household plots produced 23% of crop output and 87% of livestock output. When comparing this output with land size, however, we have to consider that households use almost exclusively public pastures for raising their livestock.

Competitiveness. The Global Competitiveness Report of the World Economic Forum organizes factors affecting competitiveness in three main categories: technology, public institutions, and macroeconomic environment. Kazakhstan is not among the countries analyzed. In the following table we organized the main factors affecting the competitiveness of the agricultural sector in Kazakhstan.

Factors affecting competitiveness of the Agricultural Sector in Kazakhstan

Positive	Negative
Abundant natural resources (agricultural land)	Difficult access to markets (because of distance and other factors)
Qualified labor force	Rigid and uneven climate
Stable macro-economic environment	Unfavorable business environment
Increasing public support	Relatively high cost of labor
Low cost of energy	Limited access to finance
	Limited access to technology
	Risk of currency over-evaluation (Dutch disease)

Access to technology. Kazakh farmers have limited access to modern technology for sustainable production, even though during the Soviet period there was a strong emphasis on research and technological development. The bulk of agricultural research and technological adaptation is carried out by 30 public institutes employing some 1,200 scientists. Although the public research system was reorganized in 2002, many shortcomings still remain:

- The system is under-funded, with an annual public investment of $5 million, or 0.4% of Agricultural GDP, compared to a global average of over 1%;
- There is no system of technology transfer to disseminate the findings of agricultural research and facilitate access to technology to the final users (farmers);
- The pay scale of researchers is not competitive. As a consequence over half of scientists are over 50 years of age, and there are very few new scientists entering the system—less than 10% are under 40 years, the most productive age for innovative research. Almost none of the scientists have foreign post-graduate training outside of the FSU, and few speak English;
- Most scientific equipment is old, although generally well maintained. Access to international scientific knowledge is very limited. Libraries do not have funds to subscribe to international journals;
- Research tends to be traditional, with minimal participation of farmers and the private sector in setting priorities. Most research activities involve a single discipline, and they are carried out on-station;
- There is little attention on impact. Although some research activities undoubtedly lead to impacts on the ground, such as wheat breeding, most of the research has yet to adjust to a market oriented system, where profitability determines technology uptake;
- The research centers have a semi-autonomous status, which allows a fair amount of flexibility in managing funds, but does not allow for hiring and firing of staff or setting competitive salaries.
- Most centers are heavily involved in various types of commercial activities to counteract limited budget allocations. Much of these activities relate to non-research products and services which substitute for, rather than complement, research activities.

The private sector is taking an increasing role in agricultural research, albeit it is still very limited. According to the Scientific Technical Information Institute, the private sector finances 10 % of total investment in agricultural research.

Access to markets. Finding new markets is one of Kazakhstan's agricultural sector key challenges. In average domestic demand is almost fulfilled, except for specific niches such as high quality products, regional supply/demand unbalances (over-supply in rural areas, and under-supply in urban areas), and seasonality of supply. Domestic demand growth as consequence of income growth may not be as elastic as expected (because income growth is still affecting only a relatively small share of total population). Access to export markets is essential to avoid that an increase in production without sufficient market will negatively affect domestic prices. Russia is the major export market for Kazakhstan. However in 2002 exports of wheat to Iran and Azerbaijan surpassed Russia. Iran is currently importing around 6 million MT per year, mostly from Australia, Canada, and Argentina. Kazakhstan contributed to 11% of its imports, or 0.7 million MT, in 2002. Meanwhile Russia is achieving wheat self-sufficiency, and it may soon

become a competitor of Kazakhstan.

During 1998-2002, annual agricultural exports have been in average $540 million. Wheat is the major agricultural export commodity, representing 60% of all agricultural exports; Kazakhstan is the eight largest world exporter of wheat and its share of the world market ranges from 2 to 3 percent. The quality of wheat occupies a special niche market, even though it is a "soft" wheat (*triticum aestivum* L), it has a level of gluten and protein comparable to "hard " wheat. Improvement in the transport network is being undertaken to counteract the high cost of transport. However this should be complemented with a marketing strategy aiming at (i) competing with high quality goods which are imported for the high end of domestic demand; and (ii) increase the added value of agricultural products so to reduce the relative cost of transport.

Business environment. Although the business environment of Kazakhstan is not optimal by international standards, the country is performing positively when compared to other countries in the region. Kazakhstan is considered the most politically stable country in the region, with better enforcement of the rule of law, better Government effectiveness and control of corruption. A recent World Bank study on Governance and Service Delivery in Kazakhstan found out that education services are perceived as one of the least transparent institutions (it was ranked third after police and courts by both households and public officials). Agricultural services instead are perceived as one of the least corrupt institutions.

Government strategy

The Government declared that agriculture and rural development are a key Country priority for the next three years. Several steps have already been taken:

Budget allocation. The approved 2003 Republican Budget increased budget allocations for rural development for each of the following four sectors (a) agriculture ($65 m, almost 65% more than in 2002), (b) rural education ($23 m), (c) rural health ($19 m), and (d) rural water supply ($2 m).

Institutional Focus. Due to recent reorganization within the government structure, the Ministry of Agriculture has been enhanced with the responsibility of natural resources management (water, forestry, and fisheries committees) as well as responsibility for applied agricultural research, thus facilitating the links between agricultural research and agricultural policy. The 30 public institutes described above were organized in 9 centers, and a semi-competitive system of funding research was introduced.

Legal framework. Kazakhstan recently approved a new land code, a micro-finance law, and a law on credit partnership. The land code allows private property of agricultural land, which is of paramount importance for agricultural development. The details of the land code are controversial, and many analysts argue that it provides excessive emphasis to efficiency rather than equity.

The Government also approved a comprehensive agricultural strategy for the years 2003-2005 called Agro-Food Program. The Program contains many positive elements but not specific on instruments and implementation arrangements.

2. Objectives

The project development objective is to increase the competitiveness of the agricultural sector in Kazakhstan. To achieve this objective, the project would (i) increase the quality, quantity, and relevance of public and private investment in applied agricultural research and technology transfer, and (ii) improve the capacity of the public and private sectors to monitor food quality, certify standards, and grade agricultural products.

3. Rationale for Bank's Involvement

The Bank has extensive experience in ECA and Latin American in design and implementation of competitive funding systems for agricultural research and decentralization of extension systems, i.e., Chile, Colombia, Brazil, Bolivia, Ecuador, Croatia, Azerbaijan, Romania, Albania, etc. This experience is particularly valuable in the separation of roles between public and private actors. World Bank involvement can act as a catalyst to increase collaboration between public and private actors by improving the perception of objectivity regarding decisions of both sides.

The Bank is a major financier for strengthening agricultural research and extension systems worldwide and has strong commitment to this important instrument to stimulate economic growth and alleviate rural poverty. The recent experience with the Country Innovation Day in Central Asia has also been helpful to test a similar competitive scheme.

World Bank involvement in Agricultural Standards may help to increase the credibility of the system during WTO negotiations.

6. Justification:

Public financing of research, particularly in the agricultural sector, is a common practice in most of the world. Although private sector investment in Research and Development (R&D) has increased rapidly, even in OECD countries the public sector still accounts for over half of agricultural R&D expenditures. Public funding for agricultural research is justified by the long-term and risky nature of such activities, economies of scale, and non-excludability and non-rivalry (the pervasive nature of 'spillovers' such that inventors usually cannot easily appropriate the benefits of their innovations, except in cases such as hybrid seeds). Moreover, agricultural research that helps conserve natural resources, prevent environmental pollution, and adds to consumer safety and nutrition, generates significant externalities. Public financing of technology transfer is more difficult to justify, given its shorter return periods and lower risks. However the lessons of experience described above show that technology transfer is an essential to make research effective. A combination of public-private financing can offset the above described externalities while at the same time improving the sustainability of the whole system.

Furthermore, public investment for technology development causes minimal distortions, differently from other kinds of support that governments provide to the agricultural sector, such as tariffs and subsidies. (Because of this, the WTO considers this kind of investments under the so-called “green box” of non distorting support measures.)

4. Description

The Project will consist of four components: (a) improvement of agricultural products quality; (b) agricultural applied research and technology validation; (c) agricultural knowledge transfer and market-information system, and (d) institutional development. The implementing agency will be the Ministry of Agriculture.

(a) Improvement of Agricultural Products Quality

This component will contribute to improving the capacity of the public and private sectors to monitor food quality, certify agricultural products and working procedures in accordance with the international grade and standards. The strategy will follow the requirements of World Trade Organization accession in agriculture and food industry, particularly in the WTO requirements on sanitary and phytosanitary measures.

The resources of this component will be used to build capacity in the Ministry of Agriculture and the private sector to enable them to monitor and certify the quality of agricultural products. The proposed unit on standardization will be in charge of harmonizing standards from the Soviet period (called GOST standards) with the existing international standards.

The component will modernize laboratories and support those laboratories which need to get international certification in accordance with ISO 17025 system. The component also will pilot introducing international quality systems as the Good Agricultural Practices (GAP), Good Manufacturing Practices (GMP) and Hazard Analysis and Critical Control Points (HACCP).

(b) Agricultural Applied Research and Technology Validation

The component will establish a institution to finance small demand-driven investment in technology adoption and validation. The institution will establish a competitive process for funding of problem-oriented and market-driven adaptive research that will result in a rapid impact. Applied research and technology validation will be carried out with a demand-driven approach, mostly on farm or with agro-processors, and will emphasize strong involvement of users in all phases, from setting priorities to uptake of results. The institution would encourage private sector firms and producer organizations to submit proposals and/or be active collaborators in the R&D activity. The mechanism is based on a scheme similar to Competitive Grant Schemes experimented in Latin America and in some ECA countries and characterized by: (i) introduction of a demand-driven element to increase the links with final clients (users); (ii) public financing though a multiplicity of competing executors; (iii) separation between the management of the institution and the technical review panel which will review proposals to guarantee a transparent selection.

The Institution will complement, not replace the core funding of the agricultural knowledge system. It will finance priority activities in technology adaptation, validation, and dissemination. This should not be seen as the solution to the overall funding needs of the agricultural knowledge system complex. Because of this, the project will create a framework of incentives for the agricultural research system to reform and it will provide technical assistance to help improve the

efficiency of the existing agricultural research system.

The component will develop the institutional structure for Institution, comprising: (i) a governing board, (ii) a secretariat, and (iii) an independent technical review panel. Subprojects will be financed on a demand-driven basis, and therefore it is not possible to know ex-ante the specific type of subprojects. It will finance two main types of subprojects:

- technology adaptation and validation in the areas of crop and livestock production, post-harvest operations, inputs (such as seeds), natural resource management, processing, storage, and marketing; and
- technology transfer, including demonstration plots, validation of economic or social validity of some technologies, use of media, etc.

(c) Agricultural Knowledge Transfer and Market Information System

This component will provide advisory services on agricultural technologies and knowledge. It would disseminate knowledge and information to small and medium rural producers, and agro-processors. Knowledge would cover technology, business management, agricultural economics, market information, accounting, and legal issues. The component would also carry out targeted training and fellowships abroad.

The market information system will improve (i) the transfer of market information to small and medium agricultural stakeholders, (ii) the capacity of agricultural businesses to access markets and export, and (iii) the efficiency of distributing channels from farms to processors.

(d) Institutional Development

This component will support the Ministry of Agriculture's ability to: (i) manage, monitor, and evaluate project activities; (ii) design and monitor policies which affect agricultural competitiveness; (iii) provide technical assistance to design a plan to reorganize the existing agricultural research system in an effort to improve its effectiveness and its links with users; (iv) provide training to staff on different aspects such as policy analysis, management, and economics, and technical aspects such as agricultural trade and WTO accession, agricultural knowledge and information systems, participation in regional agricultural fairs and conference, (v) formulation and evaluation of budgeted programs and (vi) development of GMO system in Kazakhstan.

5. Financing

Source (Total (US$m))

BORROWER (£10.00)
IBRD (£25.00)
Total Project Cost: £35.00

6. Implementation

The project will be implemented by the Ministry of Agriculture. Implementation arrangements of the Food Quality and Agricultural Standards Component are under definition. In particular, the role of GOST-Standards and of the Ministry of Health is to be clarified.

7. Sustainability

Sustainability will depend on the capacity of the project to prove that the proposed approach will produce evident improvements. Thanks to a significant oil revenue, the Government will probably continue to have available resources to take over funding the proposed approach, on the condition that it will clearly perceive the benefits provided. In addition, the proposed approach should create incentives for the private sector to gradually take over some project actions.

8. Lessons learned from past operations in the country/sector

World Bank experience on competitiveness projects is still limited. However this type of project represents an evolution of agricultural support services projects, which provide significant lessons of experience. Agricultural support services projects in the region have had mixed results in implementation. These projects have tended to be difficult or cumbersome to implement either because of the number of various project activities included, or the scale of project interventions, or both. The approach taken in the conceptualization of this project has been to limit the number of activities to those which are most relevant to affect sector competitiveness.

Initial findings of an ESW on livestock were incorporated into the Agricultural Standards Component. The suggestion to work on a pilot scale on some rayons was developed during this study and discussed during the National Workshop on livestock.

Important lessons developed during the implementation of Competitive Schemes have been incorporated in the CATS component:

- Potential clients and providers have been involved from the initial stage of project design. They are part of a working group which is meeting regularly;
- Given that the scheme has proven to work better for short term research, CATS would focus on applied and adaptive research and technology transfer
- Given that competitive schemes work better in a large market, where competition can produce real benefits, it was decided not to limit excessively the area of intervention of the component (except for an initial pilot/set-up phase)
- A dissemination plan to guarantee transparency during all phases of implementation is of utmost importance
- Setting up the governance of such scheme is demanding. This effort requires a significant investment to be justified.

Bank experience, as documented by OED evaluations, indicates that the following elements are important for success of agricultural research and extension projects:

Both public and private sector services should be considered in extension system design and both traditional mass-media and new communications technologies may be appropriate in extension programs.

Needs-based extension staff training should focus on training extension workers to encourage farmer organization participation in extension in addition to providing technical information.

Monitoring and evaluation systems for extension programs need to assess program impacts resulting from usable technologies adopted by farmers.

Extension systems must be adaptable to respond to rapidly changing economic, trade, and sectoral conditions.

Considering technology generation and transfer as elements of a single system promotes

synergies between scientists, educators, extension agents, farmers, and industry stakeholders.

Rationalizing existing resources and limiting expansion of facilities is important to developing financially sustainable research systems. Policy and regulatory regimes should be favorable to private sector research and technology spill-ins.

Research planning and priority setting are important, but need to be carried out in ways that ensure local ownership and good quality of such exercises.

Attention to excellence in research quality needs to be enhanced through: needs-based training; competitively awarding research grants based on explicit economic, social and technical criteria; external review of research programs; involvement of universities and a range of other research providers; and linkages with international, regional and national research centers of excellence.

Effective institutional linkages with research system clients requires farmer involvement in determining research agendas and consideration of gender effects in research planning and execution.

9. Environment Aspects (including any public consultation)

Issues : The uncertainty of the final investments financed under the project will require an Operational Manual. This will contain an environmental section which will include guidelines for subproject environmental evaluation, a description of institutional arrangements for environmental review and approval, and an assessment of institutional capacity for performing the environmental review and approval.

After World Bank no-objection, the Operational Manual will be disclosed in Kazakhstan in national language and it will be available in the Infoshop. The institutional capacity will be reviewed as well within the section as it will include the description of institutional arrangements and assessment of capacity for environmental review and approval. The project team considers that there are sufficient institutional resource within the Ministry of Agriculture to perform the environmental review and monitoring functions.

10. List of factual technical documents:

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Note: This is information on an evolving project. Certain components may not be necessarily included in the final project.