

TECHNICAL ASSISTANCE COMPLETION REPORT

Division: ECAE

TA No., Country, and Name TA3647-KAZ: Technology and Institutional Development for Sustainable Locust Management		Amount Approved: \$700,000 Revised Amount: \$700,000	
Executing Agency: Ministry of Agriculture (Dept. of Plant Protection and Quarantine)	Source of Funding: Japan Special Fund	TA Amount Undisbursed \$110,148.95	TA Amount Utilized \$589,851.05
Date of Report Approval Signing Fielding of Consultants 23 April 01 3 September 01 24 September 01		TA Completion Date Original: 31 Dec 02 Actual: 30 September 03 Closing Date Original: 31 Dec 02 Actual: 30 September 03	
Description (Background and Rationale)			
<p>Kazakhstan has suffered recurrent crop and pasture damages from locusts. The scale of the problem increased dramatically after independence (during 1996–2001), when cessation of state subsidies for wheat production in the northern steppe lands led to the abandonment of up to one third of the former wheat lands. The resulting mosaic of weedy fields, pastures, and bare ground provides ideal breeding grounds for locusts. At the same period, lack of budgetary provision for plant protection led to a reduction in the surveillance and monitoring of the locust situation.</p> <p>At the height of the locust upsurge, damage was caused to 220,000 hectares resulting in losses of \$15 million. The Government was forced to conduct a massive chemical control campaign throughout the country with assistance from Food and Agriculture Organization to modernize both the application methods and the types of chemicals. However, there was no corresponding development of systematic measures to monitor and mitigate the avoidable environmental and public health impacts of the large-scale spraying. There was a clear need to improve the targeting of control operations through more effective collection and analysis of locust information and to take steps to reduce the potential for impacts, both human and environmental, of the control operations. This could be achieved through enhanced public awareness of the dangers of pesticides and how to avoid them, and through updated information on best practice in line with international standards for health, safety, and environmental protection during control operations.</p>			
Objectives and Scope			
<p>The objective of the technical assistance (TA) was to assist the Ministry of Agriculture (MOA) and its related agencies to develop capacity and technologies for locust management by formulating an environmentally and financially sound program for locust monitoring and control.</p> <p>The TA comprised three components; (i) information dissemination on improved technologies, (ii) locust monitoring and forecasting system, and (iii) environmental monitoring of locust control operations. The outcome of the TA was expected to provide guidance to the MOA in maintaining an enhanced capability for predicting and managing locust population upsurges, in adopting more environmentally benign control strategies, and reducing risks to people and the environment through enhanced information dissemination and monitoring of control programs.</p> <p>During implementation, the TA scope was expanded from 5 northern regions to cover all 14 regions, and corresponding increase in equipment and consultancy inputs. On 15 January 2003, the National Center for Phytosanitary Diagnostic and Forecasting (NCPDF) was established as a regular Government institution, which was not envisaged at the TA preparation stage. NCPDF will be financed out of annual budget and is mandated to monitor and manage all pests including locust and hence, the ministry and field offices staff and equipment associated with locust management were transferred to NCPDF. On Government's request, the TA provided further consultancy inputs to train the new staff of NCPDF, which decided to use the locust information management system developed under the TA. The requirements of the expanded scope were met from contingencies and savings in some categories.</p> <p>The TA scope was appropriate, its schedule timely, and executing arrangements befitting. All stakeholders actively participated in TA activities and the executing agency (EA) demonstrated strong ownership which was reflected by request to expand TA scope to cover the entire country, the establishment of the NCPDF, adoption by the NCPDF of the system developed under the TA, and the request for training of the NCPDF staff.</p>			
Evaluation of Inputs			
<p>International and domestic specialists were engaged through international consulting firm IPP Consultants to provide inputs of 12.0 person-months (p-m) and 62.0 p-m respectively. The TA was implemented in accordance with the terms of reference (TOR). ADB staff maintained close contact with the Government and the consultants and provided regular guidance during the three review missions undertaken as scheduled—after inception, mid-term, and draft final reports—which helped improve reports quality. Significant additional inputs of 3.95 p-m for international experts and 8.50 p-m for domestic experts were provided by the consultant within the TA budget, which reflects sound management and</p>			

economy of the inputs. The performance of ADB, the EA, and the consultant may be termed as highly satisfactory.

Evaluation of Outputs

The TA prepared a three-volume final report, adequately addressing the TOR, as given below.

Information dissemination: A vigorous public information campaign was launched through newspapers, radio, and TV. In addition, the Project produced a 20-minute video which focuses on the dangers of pesticides spraying, how they can be minimized, and the advantage of the new ultra-low volume (ULV) spraying technology in delivering less pesticides with greater accuracy. The spraying inspectors sent out to monitor operational locust spraying were trained in correct ULV procedure and were able to provide ad hoc advice and demonstration to any field teams who were found to be inadequately trained. Also, 20,000 copies of a poster providing contact points for information and emergency use were distributed and 5,000 copies of a pocket-sized booklet providing guidelines to good practice in safe spraying were produced for operators. The booklet also makes it clear that ULV equipment is the safest approach for locust spraying. The booklet was produced in conjunction with a major safety inspection program covering spraying operations in two regions. The results of the inspection surveys were published in the Journal of Plant Protection and Quarantine. Using the materials produced under the TA, NCPDF will continue information dissemination.

Seminars/workshops on new technology: A seminar was held in April 02 to inform the relevant staff the objectives and scope of the Project while eliciting information and opinions. As per TOR, the Consultant conducted a seminar in November 01 on the use of locust fungal disease *Metarhizium* as an environment-friendly bio-control agent against locusts. This was followed by providing the MOA with a translation of the Food and Agriculture Organization Expert Consultation on risk assessment of bio-control agents for locust control. NCPDF will facilitate field testing of *Metarhizium* and other myco-pesticides and registration of such bio-control agents.

Locust monitoring system: After a wide process of consultation, involving a major workshop/seminar, personal interviews, desk study, and questionnaires; the Project designed, developed, and delivered a functioning GIS/database system capable of storing, processing, and displaying locust information across the whole of Kazakhstan, separately for each of the three main locust species and for non-migratory grasshopper pests. The system is accompanied by a complete operational manual, in Russian and English. Twenty three staff, representing all regions, received training in the use of the system. NCPDF will use this system for monitoring pests of all crops including the locust.

Environmental monitoring: A detailed report was produced on the results of monitoring the toxicological effects of four of the commonest pesticides used in Kazakhstan on terrestrial and aquatic biodiversity under controlled conditions using best practice. Analyses of pesticide residues in living organisms indicated that chlorinated hydrocarbon pesticides are still present in the environment and being concentrated in the tissues of birds and other animals many years after they ceased to be used. Environmental monitoring of pest control is now the responsibility of NCPDF, which it will undertake using the procedures and guidelines developed under the TA.

All outputs were delivered in time, met the TOR requirements, and were of high quality. Also, the requirements of expanded scope were met within the TA allocation, and the Government is fully satisfied with the outputs.

Overall Assessment and Rating

The Project is rated highly successful considering that (i) the project has achieved to deliver all major outputs as originally envisaged, for an area that far exceeded the original scope; (ii) the Project has achieved to establish NCPDF with sufficient technical capacity, equipment, and the Government's strong assurance to continue funding for sustained operations; (iii) the Project has strong relevance to Kazakhstan's and ADB objectives of promoting economic growth by facilitating protection against the menace of locust, capacity building, and environmental protection, and (iv) there are no unintended negative impacts.

Major Lessons Learned

Very close administration of the TA, close liaison with the EA, and timely and appropriate guidance to the consultant has resulted in highly successful project. Positive response to Government's requests motivated them to the establishment of the NCPDF which will ensure continued use of technologies developed and capacity build under the TA, and thus of sustainable benefits.

Recommendations and Follow-Up Actions

Following recommendations provided in the final report need to be monitored: (i) additional training for and human resource strengthening of the NCPDF (ii) future environmental monitoring, and (ii) field test of myco-insecticides.

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