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**ON A
CREDIT**

**IN THE AMOUNT OF SDR 40.4 MILLION
(US\$60 MILLION EQUIVALENT)**

TO THE GOVERNMENTS OF

**BURKINA FASO, CHAD, MALI, MAURITANIA,
NIGER, SENEGAL, AND THE GAMBIA**

FOR AN

AFRICA EMERGENCY LOCUST PROJECT

December 21, 2011

**Environmental and Natural Resources Management Unit
Sustainable Development Department
Region Integration (AFCRI)
Africa Region**

CURRENCY EQUIVALENTS

1 US\$ = 500 FCFA (At appraisal), 455 FCFA (at ICR)

1 SDR = 0.673 US\$

Weights and Measures: Metric

ABBREVIATIONS AND ACRONYMS

AELP	Africa Emergency Locust Project
AfDB	African Development Bank
AGETIER	Agence d'Exécution des Travaux et Infrastructures Rurales
AGRHYMET	Centre Régional de Formation et d'Application en Agro météorologie et Hydrologie Opérationnelle
AMEXTIPE	Agence Mauritanienne d'Exécution des Travaux d'Intérêt Public pour l'Emploi
ANLA	National Agency for Locust Control (Chad)
ASPRODEB	Senegalese Association for the Promotion of Grass-roots Organizations (Senegal)
CAP	Community Actions Programme (Niger)
CCLP	Country Comprehensive Locust Program
CILSS	Inter-state Committee for the Fight against the Drought in the Sahel
CLCPRO	Commission for Desert Locust Control in the Western Region
CNLCP	National Center for Locust Control
DLCC	Desert Locust Control Committee
DOPAIR	Directorate of Producer Organization and Rural institution Support (Burkina)
DPV	Plant Protection Directorate
ECLO	Emergency Center for Locust Operations
EMPRES	Emergency Prevention System
ESSD	Environmentally and Socially Sustainable Development
EWR	Early Warning and Response
ICR	Implementation Completion Report
IDA	International Development Agency
IFAD	International Fund for Agricultural Development
IPM	Integrated Pest Management
LANSPEX	Laboratory for Public Health and Expertise (Niger)
FAO	Food and Agriculture Organization (United Nations)
M&E	Monitoring and Evaluation
NCU	National Coordination Unit (AELP project)
NGO	Nongovernmental Organization
PDO	Project Development Objectives
PNUA	National Locust Emergency Plan
PPF	Project Preparation Facility
PPRA	Locust Risk Management Plan
PSAOP	Agriculture Services and Producers Organizations Support Project (Senegal)
RMP	Risk Management Plans
QUEST	Quality, Environmental Protection, and Safety of Treatments

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Africa Emergency Locust Project (AELP)

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Data Sheet

A. Basic Information

Country:	Africa	Project Name:	Africa Emergency Locust Project
Project ID:	P092473	L/C/TF Number(s):	IDA-40190 IDA-40200 IDA-40210 IDA-40220 IDA-40230 IDA-40240 IDA-40250
ICR Date:	12/24/2011	ICR Type:	Core ICR
Lending Instrument:	ERL	Borrowers:	Senegal, Gambia, Mauritania, Mali, Burkina Faso, Niger, Chad
Original Total Commitment:	SDR 40.40M	Disbursed Amount:	SDR 40.35M
Revised Amount:	SDR 40.37M		

Environmental Category: B

Implementing Agencies:

Senegal - Ministry of Agriculture
Mali - Ministry of Agriculture
Mauritania - Ministry of Rural Development
Niger - Ministry of Livestock and Animal Industries
The Gambia - Department of State for Agriculture
Chad - Ministry of Agriculture
Burkina Faso - Ministry of Agriculture, Hydraulics, and Halieutic Resources

Cofinanciers and Other External Partners:

B. Key Dates

Process	Date	Process	Original Date	Revised / Actual Date(s)
Concept Review:	09/16/2004	Effectiveness:	05/27/2005	05/27/2005
Appraisal:	11/01/2004	Restructuring(s):		04/29/2009 05/15/2010
Approval:	12/16/2004	Mid-term Review:	12/11/2006	12/11/2006
		Closing:	06/30/2009	05/31/2011

C. Ratings Summary

C.1 Performance Rating by ICR

Outcomes:	Moderately Satisfactory
Risk to Development Outcome:	Low or Negligible

Bank Performance:	Satisfactory		
Borrower Performance:	Moderately Satisfactory		
C.2 Detailed Ratings of Bank and Borrower Performance (by ICR)			
Bank	Ratings	Borrower	Ratings
Quality at Entry:	Satisfactory	Government:	Moderately Satisfactory
Quality of Supervision:	Satisfactory	Implementing Agency/Agencies:	Moderately Satisfactory
Overall Bank Performance:	Satisfactory	Overall Borrower Performance:	Moderately Satisfactory
C.3 Quality at Entry and Implementation Performance Indicators			
Implementation Performance	Indicators	QAG Assessments (if any)	Rating
Potential Problem Project at Any Time (Yes/No):	Yes	Quality at Entry (QEA):	Satisfactory
Problem Project at Any Time (Yes/No):	No	Quality of Supervision (QSA):	None
DO Rating before Closing/Inactive Status:	Moderately Satisfactory		

D. Sector and Theme Codes		
	Original	Actual
Sector Code (as % of total Bank financing)		
Agricultural extension and research	10	10
Central government administration	30	30
Crops	50	50
Other social services	10	10
Theme Code (as % of total Bank financing)		
Natural disaster management	33	33
Other rural development	17	17
Pollution management and environmental health	17	17
Regional integration	16	16
Social safety nets	17	17
E. Bank Staff		
Positions	At ICR	At Approval
Vice President:	Obiageli Katryn Ezekwesili	Callisto E. Madavo
Country Director:	Yusupha B. Crookes	Mark D. Tomlinson
Sector Manager:	Idah Z. Pswarayi-Riddihough	Mary A. Barton-Dock
Project Team Leader:	Denis Jean-Jacques Jordy	Peter Kristensen
ICR Team Leader:	Salimata D. Folléa	
ICR Primary Author:	Salimata D. Folléa	

F. Results Framework Analysis

Project Development Objectives (from Project Technical Annex, World Bank 2004)

To reduce the vulnerability of the concerned countries to present and future infestations by supporting improved strategies for prevention, early warning, reaction and mitigation, both at the national level and at the regional level.

Revised Project Development Objectives (as approved by original approving authority)

(a) PDO Indicator(s)

Indicator	Baseline Value	Original Target Values (from Approval Documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
PDO-Level Indicators				
Indicator 1:	Effectiveness of early warning and response for locust infestations (measured by scorecard)			
Value quantitative or qualitative)	See baseline scorecard for each country in annex 4	See annex 4 for countries' scorecards	Each country should have at least a 33 score	Above threshold level of 33 for scorecard (max. value is 48)
Date achieved	See baseline scorecard date for each country in annex 4	06/30/2010	06/30/2010	05/31/2011
Comments (including % achievement)	Score for each country: Targets exceeded - Burkina Faso: 37; Chad: 43; The Gambia: 40; Niger: 43; Mauritania: 44; Mali: 43; Senegal: 39			
Indicator 2:	Country risk-management plans that clearly outlines roles and responsibilities of key stakeholders are regionally coordinated with FAO and CLCPRO by end of project			
Value Quantitative)	0	7		7
Date achieved	09/01/2004	05/31/2011		05/31/2011
Comments (including % achievement)	Target achieved – All countries have completed their plan with support from CLCPRO			
Indicator 3:	Independent national locust-control units in frontline countries operating with core government funding are established by end of project			
Value Quantitative)	0	4		4
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target achieved – Independent units in Mauritania, Mali, Chad, and Niger with operating costs earmarked in national budgets.			

(b) Intermediate Outcome Indicator(s)

Indicator	Baseline Value	Original Target Values (from Approval Documents)	Formally Revised Target Values	Actual Value Achieved at Completion or Target Years
Component A: Emergency Locust Management				
Indicator 1	Countries with locust control operations established according to agreed upon regional contingency plan			
Value (quantitative)	0	7		7
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments	Target achieved by 100%.			

Indicator 2:	Environmental management: Countries with pesticide management that meets international safety regulations			
Value (quantitative)	0	7		7
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target achieved – Pesticide management capacities strengthened in all countries and pesticides database in place			
Indicator 3:	Pesticide storage facilities rehabilitated or constructed by the project			
Value (quantitative)	0	7		26
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target greatly exceeded – Central pesticide stores built and/or upgraded in all countries, along with other facilities for temporary storage that belong to the regional locust/pest control monitoring bases			
Component B: Emergency Agricultural Investments				
Indicator 1:	Direct project beneficiaries whose livelihood was restored (households)			
Value (quantitative or qualitative)	0	285,000		400,000
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target exceeded by 40%.			
Indicator 2:	Socioeconomic impact mitigation mechanism established for people affected by locust infestation			
Yes/No	No	Yes		Yes
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target achieved – Mechanism established in all countries and mainstreamed in national disaster risk management (DRM) system			
Component C: Early Warning and Response (national capacity for early warning and response improved)				
Indicator 1:	Country risk-management plans prepared			
Value (quantitative)	0	7		7
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target achieved.			
Indicator 2:	Countries with national capacity for application of biopesticides for locust control			
Value (quantitative)	0	7		6
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target largely (86%) achieved – The Gambia’s biopesticide program was cancelled following deficiency of national agricultural research center.			
Indicator 3:	Locust control teams applying best practice methods for locust control			
Percentage	20 percent	100 percent		90 percent
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target largely (90%) achieved.			

Indicator 4:	Average response time from warning to reaction on locust infestation			
Value (quantitative or qualitative)	Several weeks	1 to 5 days		1 to 5 days.
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Locust infestations in 2009 and 2010 in Niger, Mauritania, and Chad show a reduction in response time from several weeks to 1 to 5 days as reported by the countries.			
Indicator 5:	Number of operational locust survey and control teams.			
Value (quantitative)	12	54		62
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target exceeded – Mauritania has exceeded the target (20 vs. 12) and these teams have provided critical control at a very early stage during locust outbreaks in 2009 and 2010.			
Indicator 6:	Regional locust-monitoring bases rehabilitated/constructed			
Value (quantitative)	0	29		29
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target achieved			
Component D: Project Management				
Indicator	Countries using information to adjust priorities of the project to respond to locust infestation emergencies.			
Yes/No	No	Yes		Yes
Date achieved	09/01/2004	06/30/2010		05/31/2011
Comments (including % achievement)	Target achieved			

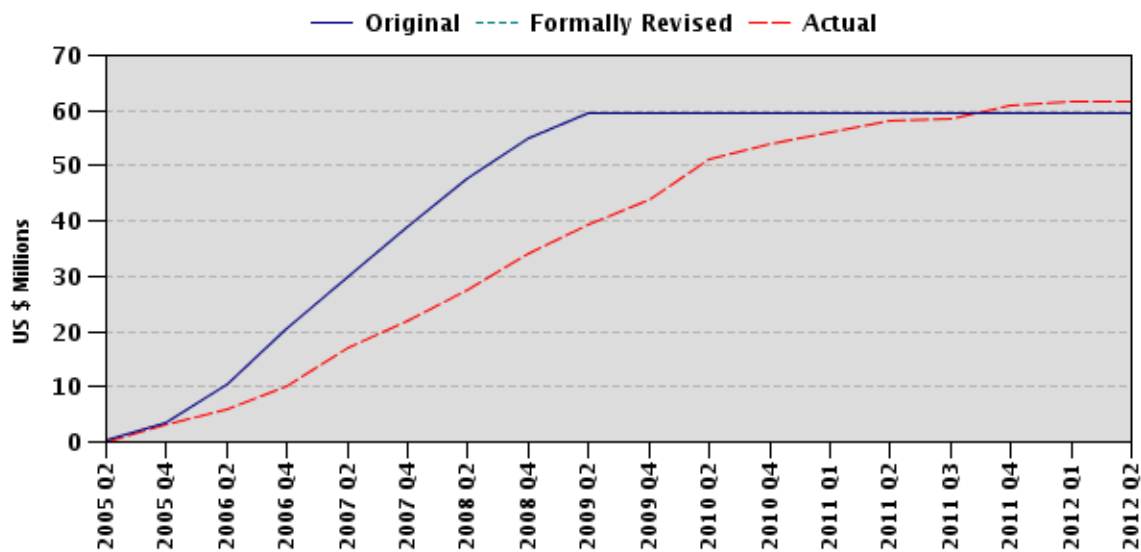
G. Ratings of Project Performance in ISRs

No.	Date ISR Archived	DO	IP	Actual Disbursements (US\$ millions)
1	03/26/2005	Moderately Satisfactory	Moderately Satisfactory	0.00
2	12/16/2005	Moderately Satisfactory	Moderately Satisfactory	5.49
3	06/30/2006	Moderately Satisfactory	Moderately Satisfactory	10.23
4	12/21/2006	Moderately Satisfactory	Moderately Satisfactory	17.06
5	04/21/2007	Satisfactory	Satisfactory	20.76
6	06/27/2007	Satisfactory	Satisfactory	22.09
7	12/13/2007	Moderately Satisfactory	Moderately Satisfactory	27.09
8	05/30/2008	Satisfactory	Moderately Satisfactory	32.58
9	11/27/2008	Satisfactory	Moderately Satisfactory	38.11
10	05/27/2009	Satisfactory	Satisfactory	43.29
11	12/02/2009	Moderately Satisfactory	Satisfactory	50.95
12	06/25/2010	Moderately Satisfactory	Moderately Satisfactory	53.86
13	03/22/2011	Satisfactory	Satisfactory	58.45

H. Restructuring (if any)

Restructuring Date(s)	Board Approved PDO Change	ISR Ratings at Restructuring		Amount Disbursed at Restructuring in US\$ millions	Reason for Restructuring & Key Changes Made
		DO	IP		
04/29/2009		S	MS	42.62	Reallocation of proceeds + Closing date extension (until June 2010)
05/15/2010		MS	S	52.91	Closing date extension (until May 2011)

I. Disbursement Profile



1. PROJECT CONTEXT, DEVELOPMENT OBJECTIVES, AND DESIGN

1.1. Context at Appraisal

1. In 2004, West Africa faced its worst desert locust (*Schistocerca gregaria*) infestation in 15 years. The infestation spread and threatened agricultural productivity from the Atlantic Coast to Eastern Chad. The following countries were directly affected, resulting in major destruction of agricultural production: (i) Chad, Mali, Mauritania, and Niger, the frontline countries where locust breeding areas are located; and (ii) Senegal, Burkina Faso, and The Gambia, which, while free of breeding areas, are known as *invasion countries* because locust swarms flew rapidly across them and caused significant crop damage. Governments lacked the means to fight the pests, and available funding to treat infested areas was inadequate.

2. In consultation and in close collaboration with governments of affected countries, the Food and Agriculture Organization (FAO), and donors, the Africa Emergency Locust Project (AELP) was mounted. AELP reflected the Bank's areas of comparative advantage in providing financing at the country level to complement funds committed by other donors for regional initiatives.¹ It built upon existing Bank operations and achieved positive synergies with ongoing IDA-funded agricultural and rural development projects that provided credits for rural advisory services on pesticide use in agriculture and supported environmentally friendly agricultural practices by farmers and agro-industry. Bank assistance supported the governments' overall programs under the Bank's emergency procedures (OP/BP 8.50).

1.2. Original Project Development Objectives and Key Indicators

3. The project development objectives (PDOs), as stated in the Technical Annex (World Bank, 2004), were to reduce the vulnerability of the concerned countries to present and future locust infestations by supporting improved strategies for prevention, early warning, reaction, and mitigation at the national and regional levels.

4. The PDOs were to be achieved by: (i) helping countries to control or manage locust infestations; (ii) mitigating the effects of locust infestations on people and the environment; and (iii) helping to ensure a more timely reaction to future infestations.

¹ AELP financing was intended to complement investments by the European Commission, the African Development Bank, USAID, and the French aid agency (Agence Française de Développement) within the context of the Emergency Prevention System for Trans-boundary Animal and Plant Pests and Diseases (EMPRES) of the United Nations Food and Agriculture Organization (FAO).

1.3. Revised PDO (as Approved by Original Approving Authority) and Key Indicators, Reasons, and Justification

5. There were no revisions in the PDO and key indicators. However, in order to improve synergies with the Emergency Prevention System for Trans-boundary Animal and Plant Pests and Diseases (EMPRES) implemented by FAO at the regional level, additional regional impact indicators were added to the results framework at the AELP mid-term review in December 2006. The added indicators are underlined in Annex 1.

1.4. Main Beneficiaries

6. The project was designed to directly benefit an estimated 4–5 million people living in the vulnerable farming communities across the Sahel region affected by the locust outbreak. The indirect beneficiaries were national institutions, whose capacities to address all aspects of locust crisis prevention and management were to be strengthened.

1.5. Original Components

7. The project included a number of emergency activities, post-emergency recovery activities, and activities to improve future preparedness. These were organized into four components:

8. Component A: Emergency locust management: This included investments for the emergency actions required to ensure timely, cost-effective, and environmentally and socially sustainable locust tracking, eradication, and control operations (including improved pesticide management and monitoring of the impact of pesticides used to control locusts).

9. Component B: Emergency agriculture investments: This included investments for the emergency actions required to restore livelihoods and agricultural productivity in rural areas badly affected by the 2004 locust invasion.

10. Component C: Early warning and response: This included medium- and long-term activities required to strengthen the national capacity for early warning and response to outbreaks (including preparation of a locust-management financing mechanism and research programs on biological control of desert locusts).

11. Component D: Project management: The activities of this component were aimed at effective project management, so AELP could be designed, adjusted, monitored, and evaluated to reflect changing conditions.

12. In addition to activities implemented at the national and local levels, the project included interventions at the regional level that required regional collaboration, such as coordination of locust control, research into alternatives to chemical control measures, and monitoring and evaluation, especially in collaboration with FAO.

1.6. Revised Components

13. At mid-term review in December 2006, given that there had been no major outbreaks, Components A and C were subdivided as follows, for more focus on prevention and risk management:

- A1. Emergency locust control
- A2. Pesticide management
- C1. Surveillance and early warning
- C2. Sustainability of locust control, emergency funds, and risk management
- C3. Promotion of biopesticides

1.7. Other Significant Changes

14. Changes were also made to (a) the project's schedule and (b) the funding allocation across categories of expenditure.

(a) Project schedule. The closing date of the project was extended twice. The first extension (from June 30, 2009, to June 30, 2010) was approved in May 2009 for all seven countries (Mauritania, Senegal, Mali, Burkina Faso, Niger, Chad, and The Gambia). The second extension, approved in June 2010, covered a period of 11 months (from July 1, 2010, to May 31, 2011), with the exception of The Gambia (credit closed on June 30, 2010) and Niger (credit closed on December 31, 2010). The Gambia was not part of the second extension, as this country had completed project implementation by the end of the first extension. Niger needed only 6 more months after the first extension to complete project activities. The extensions were necessary to accommodate (i) the late date of project effectiveness (project was approved on December 16, 2004, and became effective on May 25, 2005); (ii) political turmoil in Chad, which slowed the implementation of project activities there; (iii) national institutional changes and political turmoil in Mauritania, which led to suspension of disbursements from August 2008 to January 2009; (iv) the slow pace of institutional reforms to establish independent national locust control centers; (v) slow procurement processes and delays in the execution of civil works; and (vi) delays in the elaboration of environmental management plans for pesticide storage facilities.

(b) Funding allocation. During implementation, reallocation of funds between categories of expenditure occurred three times (2007, 2009, and 2010). The reallocations were mainly done to shift funding from the procurement of large quantities of pesticides for locust control to managing the existing stocks by upgrading storage facilities and building new ones where needed to safeguard pesticides. Funds were also shifted for equipment procurement to build countries' capacities for prevention, for the early warning and response system (EWRS), and for reaction mechanisms.

1.8. Implementation Arrangements

15. The project aimed at strengthening the capacity of national institutions already involved in locust-related operations through a variety of programs highlighting efficient monitoring and surveillance systems. In each country, a leading national agency was identified to oversee the implementation of the overall project (Annex 2). At the regional level, partnership was established with the following regional donor-supported bodies to ensure coherence of locust-management activities at the regional level:

- The Commission for Controlling the Desert Locust in North Africa and in the Western Africa Region (CLCPRO, *Commission de Lutte contre le Criquet Pèlerin dans la Région Occidentale*), in charge of coordinating locust operations in 10 members countries and particularly in the frontline countries (an example of South–South cooperation)
- The Desert Locust Component of the Emergency Prevention System for Trans-boundary Animal and Plant Pests and Diseases (EMPRES), implemented by the FAO through the CLCPRO and financed by the African Development Bank, the French government, USAID, FAO, CLCPRO, and IFAD
- The FAO-led Emergency Center for Locust Operations (ECLO), the focal point for assistance to locust-affected countries and the Desert Locust Information System (DLIS) in charge of locust surveillance and early warning (worldwide).

2. KEY FACTORS AFFECTING IMPLEMENTATION AND OUTCOMES

2.1. Project Preparation, Design, and Quality at Entry

16. **Background analysis.** The project’s background analysis was generally adequate. The background analysis highlighted a number of distinct and interrelated factors that had directly led to the 2004 locust emergency, namely: (i) insufficient capacity and preparedness of national technical departments to deal with crises (lack of equipment, skilled human resources, and funding), absence of concrete contingency plans at the national and regional levels, and weak capacity for sound pesticide management; (ii) failure of the affected countries to maintain a minimum level of capacity during remission phases; (iii) an inadequate communication system, leading to delayed and inadequate responses to the infestation; and (iv) lack of an appropriate system for monitoring environmental hazards.

17. **Lessons reflected in project design.** The project benefitted from the experience of ECLO and EMPRES for its design. It also partnered with CLCPRO in the design process. This partnership was essential to the success of the project, as it permitted participatory planning, exploited synergies between institutions, avoided duplication of efforts, and provided the Bank teams with excellent technical and logistical support for Bank-funded activities.

18. **Assessment of project design.** The project design was based on sound institutional mapping and adequate understanding of the comparative advantages of national and

regional institutions that were already committed to emergency prevention, in general, and locust control, in particular. The design stressed: (i) the relevance of a project operating in an emergency situation that aimed to use best practices and lessons learned from similar programs; (ii) the importance of building the capacity of national institutions to meet necessary requirements for efficient implementation of planned activities; and (iii) the key role of regional frameworks in supporting the efforts of individual countries for locust-control operations. The design also included activities dealing with emergency situations, including restoration of livelihoods of affected populations, and measures to improve readiness for potential future locust attacks. It followed the governments' overall programs and was aligned with the Bank's emergency procedures (OP/BP 8.50) and the strategy of the New Partnership for Africa's Development (NEPAD) on the prevention and management of natural crises.

19. ***Lending instrument.*** The design of the project as an Emergency Recovery Credit (ERC) was appropriate given the emergency situation at the time. A horizontal Adaptable Program Loan (APL) would not have been appropriate because of the unpredictability of the nature of infestation, which would have made the development of triggers difficult.

20. ***Assessment of risks and their mitigation.*** Most risks were adequately identified and rated; mitigation measures were also adequate. Uncertainty about total pesticide quantities needed for the locust outbreak, and concerns about accumulation of obsolete stocks as a result of large procurements and donations, increased the risk rating to "substantial." The risk was effectively mitigated through the establishment of strict procurement guidelines based on pesticide quantities needed, storage capacity, and spraying capacity on the ground. Funds initially budgeted for pesticide acquisition were reallocated to upgrade storage capacity and improve pesticide management.

21. ***Adequacy of government commitment, stakeholder involvement, and/or participatory processes.*** At project design, there was concerted effort among participating governments and project stakeholders to quickly eradicate the locust invasion and restore livelihoods. The effort included representatives from ministries of agriculture, donor partners (such as FAO), and producer organizations. Governments showed high commitment by creating and funding the operation and maintenance of national locust control entities. They maintained their support throughout project implementation, with the shortcoming of delayed or partial counterpart funding to support activities under their responsibility. But by project end, all countries met or exceeded their financial commitments, with the following exceptions: (i) The Gambia disbursed only about 50%, which affected overall implementation of the AELP in The Gambia by causing delays in infrastructure works and friction with contractors who were to be paid by the project and the Government of The Gambia on a *pari passu* basis. The works were completed by project end and the contractors were paid directly by the Government after project closure as reported by the country. (ii) Chad disbursed only 20%, resulting in the non execution of (a) construction of water towers at locust-monitoring bases, (b) the sector-review study on plant protection and pesticide management, and (c) full coverage of operating costs of its national locust-control center.

2.2. Implementation

Mid-term review

22. A mid-term review of AELP was conducted in December 2006. At that time, implementation had slowed owing to sluggish procurement processes. Disbursement rates for all countries were low, ranging from 17 percent in Mauritania to 35 percent in Senegal. The low disbursement rate was in part justified by the fortunate fact that no new major locust invasions affected the countries after the 2004 outbreak through 2006; hence funds allocated for emergency locust management activities were not being disbursed and could be reallocated to safeguarding the existing pesticides stocks. As shown earlier, the mid-term review also led to subdividing components A and C for greater focus on prevention and risk management.

23. The mid-term review was also an opportunity to strengthen the level of coordination between FAO, CLCPRO, and the World Bank, particularly concerning the following elements: (i) sustainable long-term financing mechanism; (ii) the socioeconomic compensation mechanism; (iii) biopesticides; (iv) the regional risk-management plan; and (v) pesticide management. Actions to move forward in these areas were clearly identified and included in the country dialogues.

24. In addition, the mid-term review provided an opportunity to improve the regional integration of the AELP countries' projects as it allowed for inter-country exchange in each of the components of the project. In particular, important cross-fertilization occurred in relation to future risk management (Components A and C) and compensation of affected populations (Component B).

Project restructuring

25. The AELP underwent level II restructurings in 2009 and in 2010. The restructurings pertained to (i) a first extension of the closing date from June 30, 2009 to June 30, 2010; (ii) a second extension from June 30, 2010 to May 31, 2011, except in The Gambia, where the project closed on June 30, 2010, and Niger, where it closed on December 31, 2010; and (iii) a reallocation of credit proceeds between categories of expenditure. The restructurings did not change the PDO, the components, or the indicators.

Performance

26. The following factors hindered timely project implementation: (i) political instability and civil unrest in Chad, Mali, Mauritania, and Niger, which prevented key field activities and hampered regular supervision by the Bank;² (ii) slow procurement processes and subsequent slow disbursements; and (iii) delayed or partial counterpart funding.

² In Mali, the project was directly affected by insecurity (project staff had been retained by kidnappers for over a month and vehicles were stolen in two different circumstances). It should be pointed out that the Bank established some 'palliative' solutions, through audio/video conferences and, in the case of Mauritania, 'reverse' missions to Senegal.

2.3. Monitoring and Evaluation (M&E) Design, Implementation, and Utilization. **Rating: *Moderately Satisfactory***

27. ***M&E design.*** Country-specific M&E systems were established during project preparation. In order to collect, compile, and harmonize national information and to take regional activities into account, sharing a regional M&E system led by EMPRES was also considered. Because the development of this system had been postponed to the second phase of EMPRES, currently under preparation, the participating countries and the project team complemented the existing country-specific systems with measurable impact indicators common to all countries.

28. ***M&E implementation.*** The implementation of the AELP M&E system was generally satisfactory, with adequate collection and analysis of relevant data for all components except component B, for which baseline data were lacking. This was due to the fact that the project was prepared in a three-month period at a time of serious drought and locust invasion. Given the emergency nature of the project it was not possible to collect reliable baseline data on the respective roles of drought and locusts in crop losses. Moreover, because this type of targeted help was new in the participating countries, it was difficult to obtain accurate information on affected groups at the beginning of project. To strengthen the M&E system, the project designed and implemented an efficient system of scorecards, which were particularly useful for measuring the progress of complex systems and institutions (i.e., the early warning and response system for disaster management, Annex 4). In Burkina Faso, Chad, and Mali, where the capacity of national institutions involved in project implementation was sometimes weak, locally based Bank M&E specialists provided technical support, thereby enabling these two countries to come up to speed with M&E data collection.

29. ***M&E utilization.*** Appropriate data were evaluated and extensively used to assess project achievements and constraints and to inform decision-making and resource allocation. Although quantitative assessment in terms of restoration of productive assets and revenues generated by micro-projects under component B could not be performed for lack of baseline data, qualitative information obtained through beneficiary satisfaction surveys was used to inform the M&E.

2.4. Safeguards and Fiduciary Compliance

Safeguards

30. For purposes of environmental assessment, the project was rated “category B” with emphasis on preparing pesticide management plans to address the potential risks associated with procurement of large quantities of pesticides. The safeguard issues were well integrated into the project objectives by supporting improved strategies for prevention, early warning, response, and mitigation at the national and regional levels. The mitigation of safeguards risks focused on issues related to the utilization and management of locust insecticides and associated environmental and human health risks, as well as on the adoption of alternative locust-control approaches (mainly through biopesticides).

31. The project triggered three environmental policies, OP 4.01 on environmental assessment, OP 4.04 on natural habitats, and OP 4.09 on pest management. The country projects prepared pest and pesticide management plans (in compliance with BP 4.01 annex C and OP 4.09), and environmental management plans (in compliance with OP 4.01 and 4.04). The methodology for safeguard review of AELP project documentation, interviews with key stakeholders (including national locust-control units and village brigades), and field visits to pesticide stores, health centers, and communal radio stations were effective. Particular emphasis was placed on compliance with and implementation of safeguard measures put forth in national pesticide management plans and environmental management plans.

32. An assessment of project compliance with environmental safeguards was carried out from May to November 2007 by an international consultant. The assessment highlighted a number of substantial achievements—chief among them improved institutional and technical capacities of national locust-control units, high technical and environmental standards in locust management, training of national control teams in the use of biopesticides, and awareness among local communities and the general public about risks associated with poor pesticide management. Some weaknesses were also identified. These included variations among safeguards measures in terms of quality resulting in different benchmarks, emphasis on the management of locust invasions rather than on maintaining relevant capacities during recession times, and neglect of basic safeguard measures for the storage of insecticides.

33. The main recommendations formulated by the consultant's report included: (i) harmonization of safeguard measures among AELP countries so that actions are based on common environmental and human health standards and requirements; (ii) enhancement of information exchange within and between the locust-control units of AELP countries and their partners; (iii) more adequate design of pesticide storage, handling, and management facilities; (iv) management of stocks in an effective, efficient, and transparent way, preferably using the FAO Pesticide Stock Management System (PSMS), or an equivalent system; (v) improvement of the capacity of health centers in the treatment of pesticide poisoning incidents; (vi) joint surveys, (bio-) control operations, and environmental/human health monitoring campaigns.

34. Country-specific action plans for improved safeguards compliance were implemented satisfactorily, and pesticide storage facilities were built in compliance with key health and environmental principles³ in all of the participating countries. In Burkina Faso, the construction of pesticide stores was hampered by difficulties in obtaining land titles but completed during the last year of the project. In Senegal, the civil works contract had to be interrupted in September 2010 because of accumulated delays; a new procurement process was carried out to complete planned infrastructure. After project closure, the pesticide stores will be managed in accordance with the environmental management plans prepared before construction. Particular attention will be given to maintenance of access roads, water supply, security, training of storekeepers, and buffer

³ For instance, construction of access roads to stores, installation of grids to improve ventilation in stores, creation of security exits, and respect for safety distances between human habitat and stores through the creation of buffer zones, among other measures.

zones to prevent construction inside a 500-meter perimeter surrounding the stores. In Mauritania, a special report on environmental safeguard activities was produced in 2010 and a detailed road map included systematic environmental screening of activities.

35. The monitoring of environmental impacts was regularly carried out: (i) by the Bank field missions, which verified adherence to sound environmental management practices; and (ii) by the national QUEST (Quality, Environmental Protection, and Safety of Treatments) teams, which ensured environmental and health monitoring and quality control of all locust operations. Mali pioneered a program for management of contaminated sites co-financed with the FAO. In collaboration with the World Bank's Africa Stockpiles Program and the University of Wageningen in the Netherlands, six sites were decontaminated based on the land-farming method. Maps of sensitive areas were produced and digitalized, and empty pesticide containers were collected, treated, and recycled.

36. By project closing, compliance with safeguard policies was rated *satisfactory* in all countries except Senegal (*moderately satisfactory*) where construction of a buffer zone around the pesticide storage had not been completed by project end. The project team worked closely with the government during the last supervision mission in May 2011 and agreed on the measures required to ensure that the project will remain compliant with Bank safeguards policies even after project closure. This is being closely followed up by the project's task team leader, based in Senegal, to ensure satisfactory implementation of the action plan related to the buffer zone. The overall safeguards rating is therefore maintained as satisfactory.

Financial management

37. Financial management is rated *moderately satisfactory*. Five audits were conducted on time and financial reports prepared and transmitted in a timely manner. Fiduciary management modalities and procedures varied by country. In Niger, it was the ongoing Bank-financed Community Action Program (PAC, first phase), which ensured fiduciary and financial management. In Mali and Mauritania, fiduciary responsibilities were initially managed by Bank-financed projects—respectively, the Support to Agricultural Services Project (PSAOP) and the Integrated Irrigated Agricultural Project (PDIAM). These were later transferred to the national coordination units (NCUs) created under the project (also referred to herein as national locust-control centers). The remaining countries had their own financial management specialists.

38. In Burkina Faso, ineligible expenditures in 2009 and 2010, mainly concerning pre-financing of the counterpart funding, were subsequently reimbursed. However, the main reason for the MS rating was the unsatisfactory financial management for The Gambia, where the financial management review, conducted in July 2010, identified ineligible expenditures in the amount of US\$48,540 and raised suspicions of fraud regarding training expenditures, which also increased the project's financial management risk to *substantial*. This was reported to the Bank Integrity Unit (INT), which requested that the Government of The Gambia conduct further investigations and take appropriate measures regarding the suspicion of fraud. As a result, the ineligible expenditures were

refunded, the government conducted investigations, and remedial measures were put in place. A letter dated October 20, 2011 from The Gambian government declared that the issues had been resolved. This was reported back by the task team to the INT for final closure of the case.

Disbursement

39. The project had disbursed the total loan proceeds by closure. Funds were disbursed more slowly than planned over the first two years mainly due to slow procurement processes and to partially unused funds of Component A, as discussed earlier. However, disbursements increased substantially after restructuring, thanks to the reallocation of funds and faster procurement. Funds were reallocated mainly from the pesticides category (given that the stocks were sufficient and no more pesticides were needed) to works for safeguarding pesticide stocks. In general, the gap between disbursement estimates at appraisal and actual disbursements at project end is due to the fact that the project was prepared very rapidly as an emergency operation and no historical data were available to build upon, as this was the first project of its kind in the Africa region. The project was therefore designed in a flexible manner to enable adjustment of the funding as information became available. See annex 3 on project costs by country, categories of expenditures, components and source of funds.

Procurement

40. Procurement faced challenges at early stages of project implementation, generally because Bank procurement policies had not been specifically adapted to the characteristics of an emergency project. This was resolved when OP 8.00 came into effect in March 2007. The main procurement issue related to laborious national procurement procedures within national directorates of public procurement (*directions générales des marchés publics*), resulting in long delays before contracting. Furthermore the general procurement capacity of the NCUs was weak, owing to deficiencies in procurement planning and monitoring, procurement cycle management, and procurement record keeping. To address the capacity issue, Bank staff provided capacity-building support to NCUs. The slow process of reviewing procurement documents by the national authorities was brought to the governments' attention and pointed out during Country Portfolio Performance Review meetings which resulted in an improvement of national procurement processing timelines. At project closure, procurement was rated *satisfactory* for all countries.

2.5. Post completion Operation/Next Phase

41. There are no plans for a second phase of the AELP. The sustainability of its initiatives is expected to be ensured by the national locust-control entities that have been put in place or strengthened, with support from existing regional institutions (FAO/CLCPRO). The PSMS and national databases will continue to be supported by national resources. Overall, the monitoring and control of locust outbreaks remain high on the governments' agendas given their potentially high destructive consequences. This helps ensure a more resilient future scenario in case of new outbreaks. Under the technical expertise of FAO/CLCPRO, the forthcoming second phase of EMPRES in West

Africa will consolidate and build on the results achieved by AELP, provide more support to preventive activities carried out by national teams, and strengthen regional coordination and monitoring activities.

42. The regional dimension of the project facilitated the sharing of lessons learned among the seven participating countries. Experiences can be replicated to optimally address future outbreaks in a much more efficient and timely manner. The respective national locust-control units have the necessary equipment, logistics, practical knowledge, and action plans to deal with future locust outbreaks.

3. ASSESSMENT OF OUTCOMES

3.1. Relevance of Objectives, Design, and Implementation. Rating: *Satisfactory*

43. **Relevance is rated high.** The project objective was and remains highly relevant to past and current global priorities, and to Bank country assistance strategies in all seven participating nations. In essence, the project has contributed to regional food security and protection of agricultural production against migratory pests and natural disasters. These are priorities in the countries' past and current assistance strategies. Furthermore, the early warning and response system put in place can also be seen as a precursor of the ongoing work on disaster risk management in line with the 2010 World Bank Climate Change Strategy for Sub Saharan Africa, "Making Development Climate Resilient."

44. The main risks related to the project, such as environmental risks from poor management of pesticides and their empty containers, as well as health-related issues related to exposure to pesticides, were identified at the time of project preparation and properly mitigated with environmental and social management measures that were satisfactorily implemented. This further substantiates the high relevance of the project, given its positive externalities in terms of environmental protection as a regional public good.

45. The project design and implementation approach were also highly relevant at the time of preparation in 2004, as the project specifically focused on the Bank's areas of comparative advantage in providing financing at the country level for activities that complemented funds committed by other donors for regional initiatives. This relevance is demonstrated by the AELP's ability to mobilize a regional Project Preparation Facility (PPF) to control locust propagation and to support control campaigns throughout the remainder of 2004 before main swarms began to migrate to areas with heavier rainfall. This strategy was essential to eradicate the pests in a timely manner while the Board approval process was underway. Other evidence of high relevance is demonstrated by the fact that, during AELP, the three locust invasions that occurred between 2009 and 2011 in Chad, Mauritania, and Niger were controlled based on the timely prevention, early warning, and reaction strategies put in place by the project. Without the project, these outbreaks could have been major disasters on a par with the 2004 invasion, which resulted in substantial agricultural and pasture losses in the region.

46. The quality-at-entry (QEA) review of June 15, 2005, rated the project's strategic relevance and approach highly satisfactory, pointing out the appropriateness of its approach and complexity, and the integration of lessons and of country and sector knowledge in the project's design. The following quote from the QEA further demonstrates the high relevance of the project: "The panel rates the overall quality of this operation, which was designed to join a group of international donors in helping to fight an emerging locust invasion in West Africa, as Satisfactory. The panel believes the configuration and design of the project are appropriate. This seven-country emergency operation for countries at different levels of institutional capacity and readiness was marked by the speed of the Bank's reaction (three months only between identification and Board) and close coordination with FAO and other donors. Senior Bank, regional, and country management helped assure that processing was expeditious. The three main components covered emergency locust management (spraying, purchase of chemicals and biological materials); emergency agriculture investments to help recovery of populations affected by the current infestation; and improvement of national capacities for early warning of locust attacks. The nature of the evolving emergency, and considerable uncertainty as to which countries could be more affected, presented some design challenges. At the same time, there was clearly a regional externality which had to be addressed. These aspects were appropriately handled."

3.2. Achievement of Project Development Objectives. Rating: *Substantial*

47. The PDO was to reduce the vulnerability of the participating countries to present and future locust infestations by supporting improved strategies for prevention, early warning, reaction, and mitigation, at both the national and regional levels.

48. PDO attainment is measured by the following three indicators: (i) effectiveness of the early warning and response system (as measured using the scorecard in Annex 4); (ii) country risk-management plans clearly outlining roles and responsibilities of key stakeholders and regionally coordinated with FAO and CLCPRO; and (iii) independent national locust-control units in frontline countries operating with core government funding.

49. *PDO-level Indicator 1: An effective early warning and response system for locust infestations is established.* Achievement of this indicator is measured by a scorecard (Annex 4) consisting of the following six sub indicators, each rated by a performance score between 0 (unsatisfactory) and 3 (highly satisfactory).

- Improved locust control (reaction): (a) control operations implemented according to an agreed upon regional contingency plan; (b) coordinated implementation and monitoring of locust detection and control plans; and (c) operating costs covered by Governments;
- Improved organization and reinforced locust-control capacity (operational readiness): (a) a nationally budgeted program to coordinate locust control; (b) a training plan targeting population, technicians, and higher level professionals, and (c) an equipment management plan including regularly implemented inventory, operating, and maintenance systems;

- Improved pesticide management: (a) stocks inventory and PSMS updated regularly, including training and use of alternatives to pesticides; (b) percentage of volume of pesticides safeguarded in line with FAO norms; (c) percentage of empty pesticide containers collected; and (d) percentage of empty containers decontaminated and destroyed;
- Improved health and environmental monitoring: (a) health monitoring plan fully implemented by local health institution; and (b) environmental monitoring plan fully implemented by local environment institutions;
- Enhanced control and early warning systems: (a) elaboration and implementation of risk-management plan sustainably funded (more than five years) and reassessed annually with CLCPRO; (b) areas prospected for locust control; and (c) submission of progress reports to the DLIS Bulletin and to ECLO;
- Promotion of alternative locust-control measures through planned and implemented promotion of biopesticides.

50. All countries exceeded the minimum score of 33 out of 48 required for effective early warning. The national scores were as follows: Burkina, 37; Chad, 43; The Gambia, 40; Niger, 43; Mauritania, 44; Mali, 43; and Senegal, 39. PDO-level Indicator 1 was therefore satisfactorily achieved.

51. The effectiveness of the early warning system was also demonstrated by the ability of three frontline countries (Niger, Mauritania, and Chad) to: (i) detect at early stages three resurgences between 2009 and 2011 in their respective countries; (ii) react in a timely manner to control the pests; (iii) prevent propagation in the region; and (iv) avoid a major outbreak that could have wiped out the crops and pastures as in 2004.

52. *PDO-level Indicator 2: Country risk-management plans clearly outlining roles and responsibilities of key stakeholders are regionally coordinated with FAO and CLCPRO.* Under the coordination of the FAO/CLCRPO, a regional workshop was organized in Alger in 2006 and another in Bamako in 2008. IDA funds were leveraged to enable the participation of all seven countries in the workshops. As a result, each country developed a country risk-management plan including roles and responsibilities of key stakeholders in locust control. This indicator was therefore attained in a satisfactory manner.

53. *PDO-level Indicator 3: Independent national locust-control units in frontline countries are operating with core government funding by the end of the project.* Independent locust-control units were created in Mauritania, Mali, Chad, and Niger, fully staffed by the respective governments, and their recurrent costs earmarked in the national budgets. The effective operation of the independent units was demonstrated by the ability of the Mauritania, Niger, and Chad centers to control three resurgences as explained above.

54. Through the attainment of the above three outcome indicators, the project successfully established a prevention-mitigation system characterized by: (a) strengthened capacity for surveillance and early warning during remission and upsurges in order to reduce the risk of outbreak; (b) strengthened capacity to control locusts in case of outbreaks and invasions in order to mitigate the impact of invasions by reducing locust swarms and breeding; and (c) enhanced environmental and health management in order to mitigate environmental and health risks related to locust-control operations.

55. The project fostered regional integration in the fight against locust as shown by the high score of 3 (highly satisfactory) of each participating country in the following indicator of the scorecard (indicator 1a): locust control operations implemented according to agreed upon regional contingency plan. This regional integrated approach in locust control significantly contributed to the PDO achievement as evidenced by the quick eradication of the three locust upsurges during project life conducted in line with the regional contingency plan.

3.3. Achievement of Project Components

Component A: Emergency Locust Management. Rating: Satisfactory

56. Performance of this component is measured through the following three indicators: (i) national locust-control operations are established according to an agreed upon regional contingency plan; (ii) national pesticide management practices meet international safety regulations; and (iii) pesticide storage facilities are rehabilitated or constructed.

57. *Indicator 1: National locust-control operations are established according to an agreed upon regional contingency plan.* As indicated above, all seven countries participated in a CLPRO regional workshop in Algiers in 2006 and in another regional workshop in Bamako in 2008. A regional contingency plan was agreed upon for the implementation of future locust-control operations. The plan included: (i) the adequate number of locust-control teams to be deployed for effective and timely control of the pests in times of invasion; (ii) the elaboration of a locust detection and control plan; and (iii) coverage of the operating costs of control by national governments. As per the scorecard, this indicator has been attained satisfactorily by all participating countries. This is evidenced by the rating of 3 (highly satisfactory) for six countries, and 2 (satisfactory) for Niger.

58. The component also financed substantial training activities to support effective control operations, including:

- Strengthening the capacities of key national institutions in crisis planning, prevention, and management, and training QUEST teams on health and environmental monitoring (including for potentially serious environmental side effects of the use of pesticides and verification to ensure that locust-control staff had been properly informed of the dangers linked to the use of pesticides);

- Provision of scholarships to 28 civil servants for graduate and postgraduate studies mainly abroad in locust control and management⁴ given the lack of national academic institutions in this area;
- Training on locust bio-ecology and control measures, and on risk prevention, including early warning and response systems and health and environmental protection through sensitization of producers and rural communities on correct use of biopesticides and secure management of pesticides and empty containers;
- Other specific training depending on local situations (for example, in The Gambia, locust teams agents, pilots, engineers, soldier trainers, and military officers were trained in the operation and maintenance of sprayers mounted on aircraft and other vehicles); and 5 civil servants trained in bachelor level degree in agriculture;
- General public awareness about locust risks and challenges in project countries through comprehensive communication strategies and the use of media (such as 52 radio programs and 2 televised spots in Niger), in order to better involve various institutional actors in activities to prevent and combat migratory locusts;
- In Niger, acquisition of a locust-control airplane at the government's request to further strengthen the regional locust control capacity. Acquired in July 2009, the plane has not yet been used. Government funds to pay for pilot training, insurance, and spare parts were delayed. At project end, Niger confirmed that the plane's recurrent costs have now been budgeted, and it will be ready and available for the whole region to control locust outbreaks.

59. *Indicator 2: National pesticide management practices meet international safety regulations.* This indicator is measured by the following sub indicators in the scorecard: (i) inventory of pesticide stocks and regular updates to the PSMS, including training and use of alternatives to pesticides; (ii) percentage of volume of pesticides safeguarded in line with FAO norms; (iii) percentage of empty pesticide containers collected; (iv) percentage of empty containers decontaminated and destroyed; and (v) percentage of empty containers decontaminated and recycled. The values of the scorecard for all participating countries for these sub indicators vary between 2 (satisfactory) and 3 (highly satisfactory). Only Niger received a 1 (moderately satisfactory) owing to the low percentage (26 to 50%) of empty containers decontaminated and destroyed.

60. The process of collecting, storing, treating, transporting, and recycling the empty metallic and plastic containers proved to be complex and demanded extensive efforts in certain countries. In Chad, where the number of containers was relatively limited (419), 60 percent were collected, rinsed, and safely stocked instead of being destroyed owing to

⁴ This included two students in Chad, four in Mali, three in Niger, nine in Senegal, four in Burkina Faso, and six in Mauritania. Many of these students went to the Hassan II Institute for Agronomic and Veterinary Sciences in Morocco, where a strong partnership was created with the national locust-control center of Agadir, and to the AGRHYMET center in Niamey, Niger.

the absence of adequate facilities. In Niger, about 600 metallic containers were treated and stocked in a storehouse near Niamey. However, it was reported that some of the additional empty containers were used by blacksmiths to make small furnaces or water troughs for animals or even by households to store drinking water. Hence, the low scorecard rating of 1.

61. On the other hand, in Mali, about 15 tons of metallic containers and 10 tons of plastic containers were sent for final treatment to a specialized private factory in Senegal. In Mauritania, it was estimated that about 98% of the containers were successfully collected and recycled.

62. For sub indicators (i) stock inventory and (ii) safeguarding, the use by the participating countries of the FAO-developed PSMS software, and other pesticide stock management tools and guidelines under the Bank-financed Africa Pesticides Stockpile Program, improved tracking of stocks and reduced risks related to the accumulation of obsolete stocks. Thanks to assistance from FAO/EMPRES, USAID, and other donors, risks of obsolete stockpiles were significantly reduced through a program allowing countries with large stocks to transfer pesticides to countries in need.⁵

63. Management of the pesticide stocks acquired for the 2004 locust invasion turned out to be very complex owing to weak coordination of pesticide supplies from donors and purchases of new pesticides by the countries. The result was large quantities of obsolete stocks. Stocks of obsolete pesticides totaled about 161,000 liters in Mauritania (35% of the total stock in the country), 217,000 liters in Senegal, 21,000 liters in The Gambia, and 122,500 liters in Mali. With support from AELP and EMPRES, a satisfactory system of operational monitoring was put in place in the seven participating countries. Strategies and procedures for safe management of locust-control pesticides were established and implemented. The system fostered quality control of locust (and other pest) treatment in compliance with standard pesticide application practices, through annual surveys of sensitive areas. In Burkina Faso, for example, about 150,000 hectares were systematically surveyed every year.

64. Environmental impacts were evaluated and essential medical monitoring provided for staff in all countries. In Mali, for example, 350 national technicians were tested each year for cholinesterasis,⁶ and in Mauritania all staff involved in treatment campaigns underwent regular physical checkups.

65. *Indicator 3: Pesticide storage facilities are rehabilitated or constructed by the project.* In all project countries, pesticide warehouses have been completed in full compliance with international standards. Pesticide warehouses include adequate equipment, such as fire extinguishers, warning signs and sign boards, and tiling, as well as buffer zones between warehouses and human habitats. In addition, regional storage was built or rehabilitated in each country (Annex 5). These facilities enabled the

⁵ In 2007, Mauritania donated about 70,000 liters of pesticide to Yemen; and in 2010, Mali gave large stocks to Mozambique, Malawi, and Tanzania, as well as to Georgia.

⁶ Blood test used to monitor the level of exposure to pesticides used in locust-control operations.

countries to safeguard obsolete pesticides destined for disposal once financing becomes available to the country. Disposal was beyond the scope of this project.

66. The component also supported the formulation, disclosure, and implementation of an environmental and social management plan for the construction and management of pesticide storehouses. In Senegal, a plan for pesticide and empty container management (*plan de gestion des pesticides et des emballages vides*) was also formulated, and the other countries developed similar tools. With support from CLCPRO/EMPRES, all the countries created a national list of environmental requirements (*cahier national de charges environnementales*) to minimize human and environmental risks related to the use of pesticides.

Component B: Emergency Agriculture Investments. Rating: Moderately Satisfactory

67. This component aimed at making emergency investments to restore the livelihoods of people affected by the 2004 invasions. The following indicators measure the achievement of this component: (1) direct project beneficiaries whose livelihoods were restored (households); and (2) a socioeconomic impact mitigation mechanism for people affected by locust infestation.

68. *Indicator 1: Direct project beneficiaries whose livelihoods were restored (households).* The project supported approximately 400,000 households (approximately 4,000,000 people) affected by the 2004 invasion by providing agricultural inputs and equipment, microgrants, revenue-generating microprojects, and community infrastructure subprojects. Annex 7 provides details by country based on an evaluation of the component conducted in May 2008 by an international consultant. The evaluation also highlights the findings of national evaluations conducted by the countries.

69. Based on the 2008 evaluation, qualitative data and satisfaction surveys of beneficiaries indicate that the inputs allowed beneficiaries to resume production and to reach or sometimes exceed pre-invasion levels. Where farming tools and animal traction equipment were distributed (or purchased with microgrants), the local evaluation reports observed a large increase in cultivated area, suggesting extensive development of rain-fed production.

70. Based on qualitative data, the project enabled the beneficiaries to restore their livelihoods. The absence of baseline information discussed in the M&E section prevented a quantitative evaluation of restored livelihoods.

71. *Indicator 2: A socioeconomic impact mitigation mechanism is established for people affected by locust infestation.* A mechanism has been established in all participating countries, including risk-management and prevention plans developed by the projects that also incorporate the impact mitigation mechanism. Details by country are provided in Annex 7.

72. On balance, given the lack of baseline information for indicator 1, which led to a moderately satisfactory rating for that indicator, and successful achievement of indicator 2, the overall rating of Component B is moderately satisfactory.

Component C: Early warning and response. Rating: Satisfactory

73. Results of this component are measured by six indicators: (1) preparation of country risk-management plans; (2) national capacity for application of biopesticides for locust control; (3) use of best practices by locust-control teams; (4) average response time between warning of locust infestation and reaction; (5) number of operational locust survey and control teams; and (6) regional locust-monitoring bases rehabilitated or constructed.

74. *Indicator 1: Preparation of country risk-management plans.* A key element to the successful implementation of the AELP was the formulation of contingency and risk-management plans. Following a joint EMPRES/AELP workshop in Bamako in 2008, each frontline country received guidance on the formulation of a locust risk management framework (*cadre de gestion du risque acridien*) that included two separate components: (i) a locust risk prevention plan (*plan de prévention du risque acridien*); and (ii) a national locust emergency plan (*plan national d'urgence antiacridienne*) in invasion countries. CLCPRO had previously provided a framework for these documents at its Algiers regional planning meeting in Algiers in 2006 (EMPRES 2006). The framework described the roles and responsibilities of each stakeholder involved in locust management, according to the level of risks. In all seven countries, these management and planning instruments were validated by technical workshops.

75. *Indicator 2: National capacity for application of biopesticides for locust control.* The AELP Technical Annex (World Bank, 2004) favored the adoption of biological means of controlling locusts and grasshoppers, and strongly encouraged participating countries to use the Green Muscle® mycopesticide, a naturally occurring fungus (*Metarhizium anisopliae*), that is deadly to both locusts and grasshoppers but does not damage other insects, plants, animals, or people. The biopesticide, according to international safety regulations, provides a safe, natural alternative to chemical insecticides in the fight against crop-destroying locusts and grasshoppers. However, the adoption of Green Muscle proved to be more difficult than expected. Problems seem to be related to its high cost, specific storage conditions, slow action, and difficulty of use under natural conditions (the fungus prefers temperatures of 28–30°C and stops growing above 35°). Prudence was also necessary, because of reports concerning the sensitivity of camels to mycotoxins.

76. In Senegal, the project supported the creation of a “cold store.” Green Muscle has been used since 2007, treating 71% of affected areas in 2010 (against 9% in 2008 and 43% in 2009), with mortality rates of about 95% after a 14-day treatment (aerial treatment since 2009). In Niger, Green Muscle was used to treat about 36% of infested areas.

77. Mauritania adopted a very cautious approach, and carried out preliminary detailed analyses (using the facilities of its laboratory in Akjoujt) on conditions favoring or hampering operational use of Green Muscle. This approach, although scientifically justified, prevented Mauritania from fully achieving initial plans to use the biopesticide in 20% of the affected areas.

78. In The Gambia, the biopesticides program was cancelled because of deficiencies at the national agricultural research center.

79. Six of the seven countries have the capacity to apply biopesticide for locust control. However, because of specific storage conditions, slow action, and difficulty of use under natural conditions, FAO recommended improving the durability, efficiency, and physical stability of Green Muscle before using it on a large scale.

80. *Indicator 3: Use of best practices by locust-control teams.* Achievement of this indicator is evidenced by the successful eradication of three resurgences during the project. To ensure that best practices methods are reinforced, the project financed research on biological control of locusts and integrated pest management through several joint research programs at regional and national levels.

- In Niger, activities were jointly implemented with the Directorate of Plant Protection and the Laboratory for Public Health and Expertise (LANSPEX) to train senior laboratory technicians and carry out analyses of pesticides, as well as analyses of samples of soil, water, and plants from areas infected in 2004. The project also established in 2008 an agreement with the Centre Regional de Formation et d'Application en Agrométéorologie et Hydrologie Opérationnelle (AGRHYMET) for research on biopesticides.
- In Mauritania, the national locust-control center carried out a comprehensive research program in areas such as the genesis and evolution of a gregarious locust population and production of vegetative maps of locust swarming areas. Furthermore, an information and knowledge sharing program was established with the *Institut Supérieur d'Enseignement Technologique* and the national university. At the international level, collaboration was also established with AGRHYMET, the University of Cordoba (Spain) and the International Center for Agricultural Research and Development (CIRAD, Montpellier, France).⁷
- In Senegal, in June 2010, a formal partnership agreement was established by the Plant Protection Directorate (DPV) with the Fondation CERES–Locustox (Regional Center for Research in Ecotoxicology and Environmental Safety), in the areas of impact assessment and environmental monitoring of treatments against pests, toxico-vigilance, analysis of pesticide residues, pesticide formulation, and compliance. Most of the countries produced detailed maps of sensitive areas. In Senegal, these maps were digitized by the Ecologic Monitoring Center.
- In Mali an agreement was established with the Institute of Rural Economy (IER) in order to improve knowledge about locusts. Maps of sensitive areas were digitized by the Malian Geographic Institute (IGM).
- In Burkina Faso, a national locust observatory was put in place as an essential instrument to monitor the situation using GIS spatial data.
- In Chad, an agreement was signed with the Chadian Institute for Agronomic Research and Development (ITRAD) concerning research on biopesticides.

⁷ Unfortunately, lack of funds prevented more in-depth research on the lethal effects of pesticides on *Chilocorus bipustulus*, a ladybug enemy of the palm tree killer *Parlatoria blanchardi* (a white cochineal).

81. As part of the effort to build national capacities for best-practice methods in locust control, graduate and postgraduate scholarships were awarded to 28 people in six countries, as indicated earlier. The scholarships were explicitly or implicitly conditional, in the sense that after graduation the students were committed to spend a certain number of years in professional activities related to national locust control (10 years, in the case of Mali) or to reimburse part of the costs incurred (conditions specifically highlighted in Mauritania).

82. *Indicator 4: Average response time from warning to reaction on locust infestation.* In every participating country, in conformity with the PDO, a functional early warning and response system was put in place before the end of the project, including the requisite human resource capacity, infrastructure and the equipment for rapid response to pest or locust infestations.

83. The average response time from warning to reaction was evidenced in three countries when the three earlier mentioned swarms occurred: one day in Niger, and two to five days in Mauritania and Chad.

84. In an effort to further reduce the response time, in The Gambia, the early warning and response system surveyed 1,800 hectares on a monthly basis and provided timely reports of key information to regional locust and pest monitoring teams. About 5,800 farmer brigade trainers were trained on identification and reporting of outbreaks, while 226 women vegetable producers in 113 villages were taught to report locus infestation. Furthermore, simulations exercises showed an average response time of one day.

85. In Mali, a bottom-up feedback system, with the involvement of communities and local authorities, is based on “village ranger units” made up of local volunteers who are put in areas at risk where eco-botanic characteristics appeared to offer favorable conditions for outbreaks. The presence of the village rangers will ensure early transmission of information and shorter response times. At the time of this ICR, Mali confirmed a response time of one day in the event of an outbreak, based on its early warning system and prevention measures in place.

86. In Mauritania, the early warning and response system comprised annual operations of between six and 15 monitoring units over a period of six to nine months. By making the best use of its excellent relationships with nomadic pastoral communities, the project set up an informal bottom-up information system on key locust-control parameters (such as unusual presence of insects, color of locusts, behavioral changes, etc.), to trigger early warning measures, thereby enabling further reduction of the response time in case of future outbreaks.

87. *Indicator 5: Number of operational locust survey and control teams.* In each country a satisfactory number of survey and control teams were established in line with the recommendations at the 2006 EMPRES regional planning meeting in Algiers (Annex 5).

88. *Indicator 6: Regional locust-monitoring bases rehabilitated/constructed.* These results have been achieved, as recorded in Annex 5: three in Burkina Faso and Chad; six in The Gambia; two in Niger; four in Mauritania; four in Mali; and eight in Senegal.

Component D: Project management. Rating: Satisfactory

89. Achievement under this component is measured by one indicator: Countries using information to adjust priorities of the project to respond to locust infestation emergencies. In all of the countries, the NCUs played a valuable role in formulating a communication strategy and facilitating knowledge sharing among the seven countries through regional workshops and combined supervision missions. This enabled good coordination and preparedness, and adjustment of priorities to respond to locust infestation emergencies. This is evidenced during the three outbreaks that occurred in the midst of AELP, by the quick reaction of the national locust-control centers, acting as NCUs of the project.

90. In all seven countries, the NCUs also played a key role in supervising and coordinating relationships with ministerial departments and other national and international stakeholders to build regional readiness to manage potential infestation emergencies.

Activities with Regional Scope

91. In addition to activities at the national level implemented by the NCUs, two areas of project interventions warranted regional integration: (i) coordination of national locust-control activities and (ii) research into alternatives to chemical control measures. Coordination of countries' activities in these two areas took place through a series of annual meetings organized by CLCPRO as indicated above.

92. The leveraging of IDA funds to support participation of the seven countries in these events has enabled regional capacity building and sharing of experiences among the countries, thus ensuring a regionally coherent approach to the fight against desert locusts, while safeguarding pesticide stockpiles so that they are readily available for future invasions in the West Africa region and beyond (particularly for South-South collaboration). This was the case in 2007, when Mauritania donated about 70,000 liters of pesticides to Yemen, and in 2010, when Mali gave large stocks to Mozambique, Malawi, and Tanzania, as well to Georgia. Furthermore, successful environmental safeguard procedures fostered through IDA funding ensured protection of the environment as a public good.

3.4. Efficiency. Rating: Substantial

93. *Economic analysis.* The AELP is part of the EMPRES's joint and longer-term effort. Therefore, project impacts and results represent only a fraction of the potential and longer-term benefits. The joint effort is expected to generate substantial benefits in terms of averted locust infestation for all the locust-prone countries of Sahel and the Maghreb.

94. An *ex ante* economic analysis was not performed during the AELP preparation due to the emergency nature of the project. The benefits accruing from the project are

significant but could not fully be assessed—again because of the emergency nature of the AELP. Those benefits include the averted health burden (malnutrition and its effect on diarrhea and acute respiratory infection), environmental degradation (loss of biodiversity), loss of economic opportunity (from reduced agricultural yields and livestock mortality), and social distress (pauperization, stress, and migration). An *ex post* AELP economic analysis followed a very conservative stance, using as an averted loss only 0.1% of the agricultural value added and pasture yield (mainly focusing on agricultural economic opportunities as a proxy), whereas the three resurgences of a locust outbreak that were detected and effectively mitigated during the AELP implementation could have wiped out at least 10% of the agricultural value added in each of the seven countries.

95. The *ex post* AELP economic analysis, which covers the project life (2005–11), was performed for the overall project, by country, and for infrastructure and equipment disbursements (Annex 6). The analysis was performed at three levels: (i) the entire project; (ii) the project components (considering IDA-only as well as IDA and country disbursements); and (iii) IDA infrastructure and equipment. Because more precise health, environmental, economic, and social data were not readily available for a full *ex post* economic analysis, the IDA and country investment costs, including the four project components, were adjusted by a standard conversion factor (shadow prices), and the benefits (factor costs) were derived by proxy as noted above (i.e., a conservative 0.1% of the agricultural GDP based on an FAO suggested method and 0.1% of pasture land—dry matter yield under a very conservative rainfall of 250 mm/year on average over the period—in the seven countries).

96. The economic analysis estimated the *ex post* benefits accruing to society. The overall AELP's four-component analysis yields a net present value (NPV) of US\$49.0 million over seven years and a benefit/cost ratio of 2.5 associated with a positive economic internal rate of return (IRR) greater than 200 percent. Considered individually, 6 countries revealed positive net economic benefits. The exception was The Gambia, which had the second-slowest agricultural GDP growth over the period (+9 percent against 10.3 percent for the seven countries as a group) mainly because of lower budgeted funds for the project and the sector. When considering IDA disbursements alone, the four-component analysis shows the same overall project outcomes (Table 3.1).

97. The overall project infrastructure and equipment analysis NPV, discounted at 12 percent, is also positive at US\$29.2 million over seven years. The benefit/cost ratio is 3.3, while the IRR is considerably positive and higher than 200 percent. Moreover, when taken individually, all countries show positive economic benefits except Mauritania. This was caused by the comparatively low actual growth of its agricultural GDP over the period (5 percent against 10.3 percent for the seven countries as a group), due mainly to high variability of rainfall, especially in 2006 and 2007.

Table 3.1. Economic Analysis Summary

Key Economic Indicator	Burkina Faso	Chad	Gambia, The	Mali	Mauritania	Niger	Senegal	AELP
<i>Four Components</i>								
NPV	8.0	12.7	(0.1)	15.3	6.7	0.2	3.3	49.0
IRR (%)	>200	>200	<0	>200	>200	>200	>200	>200
PV Benefit/Cost Ratio	2.8	3.7	0.9	3.7	2.1	0.98	1.6	2.5
Project Viability	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Project Viability: Sensitivity Analysis	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
<i>Infrastructure and Equipment</i>								
NPV	9.3	1.8	0.6	11.0	(0.6)	0.9	6.2	29.2
IRR (%)	>200	>200	>200	>200	<0	79	>200	>200
PV Benefit/Cost Ratio	8.1	1.9	2.9	8.7	0.7	1.3	4.6	3.3
Project Viability	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes
Project Viability: Sensitivity Analysis	Yes	Yes	Yes	Yes	No	No	Yes	Yes

Source: Annex 6.

98. A sensitivity analysis conducted to test the robustness of project benefits (0.08% for both the agricultural value added and affected pasture land instead of 0.1%), reveals that the project is still viable on both counts: the four-component analysis (NPV of US\$40.3 million with an IRR greater than 200% and a benefit/cost ratio of 2.3); and the infrastructure and equipment analysis (NPV of US\$20.7 million with an IRR >200% and a benefit/cost ratio of 2.6). The Gambia and Mauritania, already with negative NPV, fail in the sensitivity analysis to pass the benefit/cost criteria (The Gambia for the four-component analysis, and Mauritania for the infrastructure and equipment analysis). Niger also fails to pass the infrastructure and equipment analysis, mainly because an airplane was purchased but not used during the AELP. For the infrastructure and equipment analysis, the plane is considered as a negative benefit during the project lifetime, although it is expected to be used in the future. For the full economic analysis, see Annex 6.

3.5. Justification of Overall Outcome. *Rating: Moderately Satisfactory*

99. Evaluation of the achievement of outcomes under the AELP should take into account the following elements: (i) The project was prepared as an emergency response to an unprecedented locust invasion and little was known at the time about the magnitude of the infestations or the extent of the livelihoods destroyed;(ii) The project was prepared within a three-month period at a time when Bank experience with locust control was limited, which required “complex donor coordination done with great skill,” as quoted by the QEA of June 2005 report.

100. The overall project outcome is rated moderately satisfactory on the basis of: (i) high relevance, (ii) substantial efficacy, and (iii) substantial efficiency in most countries, with shortcomings in The Gambia, which has a negative IRR for all components owing to poor agricultural growth over the period due to lower budgeted funds for the project and the sector; Mauritania, which has a negative IRR for the project components and for infrastructure/equipment, owing to factors lying outside the scope and control of the project; and Niger, which has a negative IRR for infrastructure/equipment because a purchased aircraft was not used during the project life.

3.5. Overarching Themes, Other Outcomes, and Impacts

Poverty Impacts, Gender Aspects, and Social Development

101. In its design and implementation, the project directly aimed to benefit vulnerable populations living in areas affected by locust infestations. Project activities were highly consistent with the current development priorities of participating countries in terms of poverty reduction strategies. Vulnerable households in all countries were directly targeted by compensation measures in the form of distribution of agricultural inputs and equipment, revenue-generating microprojects, microgrants, and community infrastructure subprojects. Women and youth were the main focus of the compensation measures, except in Burkina Faso and Niger, where women constituted the large majority of beneficiaries compared with youth. The decontamination of polluted sites helped protect populations against both health and environmental risks.

Institutional Change and Strengthening

102. Despite its emergency aspects, the project had a substantial, long-term impact on institutional development at the national level through the creation and operation of national locust-control centers, the formulation of comprehensive national locust emergency plans (PNUAs), and the staffing of national institutions with skilled people.

103. The process of identifying, planning, implementing, and monitoring the various activities of the project helped revitalize technical line departments, strengthening their relationships with other sectors, and facilitating the inclusion and participation of rural producer associations.

104. Governments' capacities have been specifically strengthened as follows. (i) A results-based M&E system was rolled out in all institutions involved with project implementation; (ii) Fiduciary management included better procurement, financial management, and environmental and social safeguards through specific technical support from Bank staff; (iii) An early warning and response system has been established to counter future locust invasions; (iv) Technical knowledge in locust control and management has been increased through academic and on-the-job training for key staff involved in locust monitoring and control activities, pesticide management, and environmental and health safeguards.

Unintended Outcomes and Impacts

105. The project helped to efficiently link national researchers to international networks and allowed proactive forms of knowledge management and sharing, even beyond locust-related issues.

4. ASSESSMENT OF RISK TO DEVELOPMENT OUTCOME

4.1. External risks. Rating: *Significant*

106. *Political instability and unrest and civil insecurity.* The present situation in the Northern Regions of Mali and Niger, as well as some western parts of Mauritania towards the Malian border is still unclear. This situation could have an impact on the sustainability of many future activities and affect the long-term flow of benefits.

4.2. Internal risks. Rating: *Moderate*

107. *Readiness of government to deal with future infestation.* National governments have to deal with multiple social, economic, and financial problems linked to global and volatile economies. They could therefore emphasize other current development issues at the expense of preparedness and response to unpredictable future locust crisis. Because of long remission periods between upsurges, governments of member countries could fail to maintain even the minimum capacity necessary to continue sound prevention practices. However, the close involvement of national governments in project implementation has increased their awareness to the risk posed by locusts and should ensure the continued priority of the agenda.

108. *Balancing the availability of pesticides with disposal of expired stocks.* National agencies will need to better manage and coordinate potential incoming new pesticides for future outbreaks and ensure the safety of current stocks and their future disposal when they become obsolete. Otherwise health, natural resources, biodiversity, and the economy could suffer severe detrimental effects.

5. ASSESSMENT OF BANK AND BORROWER PERFORMANCE

5.1. Bank performance. Rating: *Satisfactory*

Quality at Entry (QAE): Rating: Satisfactory

109. The operation was QEA reviewed and assessed by QAG on June 15, 2005. The overall rating of the quality was “Satisfactory” based on the fact that the configuration and design of the project were appropriate. Other strong aspects substantiating this rating as underlined by the review are: “(i) use of existing institutions, mechanisms, ongoing projects to benefit from synergies for an effective and quick start; (ii) complex donor coordination handled with great skills; (iii) flexible design to permit reallocation of funds to priority investments on the basis of discovered facts as well as the audit of the locust elimination covering Bank, FAO and other donor efforts; and (iv) strong handling of M&E for an emergency operation, with a clear path to defining specific benchmarks, complementing with surveys on longer-term impacts.” The review however suggested that 100% financing could have been made and that allocation of funds to the countries could also have been more flexible, with a “common minimum for each country plus a fund from which differential needs as they emerged could have been treated differentially”.

Supervision: Rating: Satisfactory

110. The Bank actively and successfully acted in order to integrate the project into the existing regional institutional architecture (the EMPRES system, since 1994, had given priority to transboundary pest and disease problems; and the CLCPRO was already promoting, through the EMPRES program, regional and national action, research, and training). During implementation, working relationships with CLCPRO/EMPRES were excellent and many supervision missions were conducted jointly. Very quickly, the Bank was considered a partner strongly supporting existing prevention strategies and providing much needed funding. The overall result, highlighted also by the mid-term evaluation of the EMPRES program in Western Africa Region, held in 2009, was excellent collaboration and complementarity, with the aim of avoiding duplication of initiatives and seeking to cofinance some facilities (such as pesticide storehouses, whose costs had been underestimated by EMPRES).

111. Effective implementation of activities was also supported by biannual supervision missions specifically stressing environmental issues and challenges. Supervisions were supported by an adequate number of specialists including pesticides, environmental and social safeguards specialists who provided the technical skills mix needed to address sectoral concerns. Furthermore, operations, procurement, financial management and monitoring and evaluation specialists were also part of the supervision team. There was low turnover of task team leaders as the TTL was changed only once due to a reorganization in the Bank in 2008. Furthermore, in each country a locally based TTL ensured close monitoring of project activities. Adequate measures were taken to speed up the implementation process (in Senegal, for instance, during the last 6 months of the project, a joint task force made up of representatives of the Bank, the DPV, and the National Coordination Unit, held weekly meetings in order to solve procurement issues, monitor pending activities, and hasten their implementation before the end of the project). Audio/video conferences were organized when political and social unrest did not allow regular supervision missions. Budget constraints were such that the involvement of a social safeguard specialist from Washington was once a year instead of two. To overcome this constraint, the team recruited a local safeguards consultant and in the end, the budget constraint did not limit effectiveness of implementation support. Please see annex 8 for the team list and related financial resources.

112. Senior Bank, regional and country management helped assure that processing of the project was expeditious to adhere to its emergency nature. Throughout implementation, Bank regional and country management staff remained supportive of the project by helping to address national slow procurement issues and bring up the issue of counterpart funding at the Ministry of Finance levels, thereby facilitating release of the funds. They also provided supervision budgets based on the regional norm, which is tight, but as indicated above, with locally recruited consultants, the team managed to ensure effective implementation support.

113. The two cases of fiduciary irregularities discussed in the ICR were quickly identified by the Bank team who proactively brought them to the attention of the respective governments and to INT. The matters were followed up closely by the Bank team to ensure proper handling by the governments through investigations ordered by

INT. These resulted in refunding the Bank of the ineligible expenses. The cases have now been resolved and closed.

5.2. Borrowers' performance. Rating: *Moderately Satisfactory*

114. The governments of the seven participating countries generally supported the project, facilitating administrative decisions, creating adequate institutions to implement and monitor activities, supporting the involvement of a network of national public and private stakeholders, and earmarking funds for locust control. All the national ICRs rightly praise the performance of their respective governments and their commitment to project activities. In Senegal, for instance, at the very outset of the preparatory phase, the government had disbursed about US\$8 million from its budget to start locust-control operations and committed participation of the army to coordinate operations. Furthermore, countries have put in place National Locust Emergency Plans and Locust Risk Prevention Plans.

115. Also the governments of Burkina Faso and The Gambia decisively handled the two cases of fiduciary irregularities mentioned earlier, which led to their timely resolution and closure.

116. A weak area in Borrower's performance relates to late earmarking (2011 national budget) of recurrent costs of an SCI Turbothrust aircraft for locust control, bought in Niger in July 2009. Due to this, purchase of spare parts, insurance, and refresher training for pilots)⁸ could not be completed during the project life.

117. In The Gambia, future institutional sustainability has been jeopardized by the decision, following the restructuring of the Ministry of Agriculture, to streamline plant protection into a service rather than a separate Department. The result was that the service would no longer be able to ensure the coordination of the regional locust-control teams—established and strengthened by the project—and of the early warning and response system put in place (which would require a single chain of command for a well coordinated rapid response to locust or other migratory pest invasions). It is uncertain how future coordination of locust control will be ensured in this country.

118. Furthermore, counterpart funding release was delayed in all participating countries, although fully or exceedingly disbursed by project closure, except for The Gambia, where only about 50 percent of the committed funds were disbursed.

⁸ An article published by a local newspaper in December 2010, at the time of the public conference of the anti-corruption commission, highlighted prolonged delays and possible waste of funding (purchases costing US\$1.7 exclusive of tax, in addition to recurrent costs estimated at US\$100,000 for 150 hours of operations). A budget of US\$230,000 was allocated in the 2011 annual budget of the national locust-control center for the purchase of spare parts, insurance, and refresher training of pilots. The Government committed to resolve all the logistical problems and to organize an inaugural flight before the end of the grace period, which ended on April 30, 2011. However, the aircraft has been stored at the aerial base of the crop protection department in Niamey and, at the time of the present ICR, the aircraft had not yet flown for its inauguration.

5.3. Implementing Agency or Agencies Performance. Rating: *Moderately Satisfactory*

119. In the seven AELP countries, the general performance of all the institutional actors involved in the implementation for the different activities was moderately satisfactory. This includes national agencies, specialized laboratories, private service providers, national NGOs, and producer associations, as well as national agencies in charge of public works (such as the Malian AGETIER and the Mauritanian AMEXTIPE)⁹. The MS rating is due to the fact that the collaboration with AMEXTIPE in Mauritania did not always result in timely and efficient completion of works. The problem was linked to the fact that AMEXTIPE was supervising both implementation of the works through local entrepreneurs and their quality control through local bureaus. This was identified and avoided for subsequent works. In Chad, the level of commitment of managers and staff of the implementing agency was low and this, coupled with the social and political unrest in the country, impacted timely implementation of the project.

Justification of Rating for Overall Borrower Performance. Rating: Moderately Satisfactory

120. The overall performance of the participating countries is considered moderately satisfactory given: (i) the systemic counterpart funding delays and shortfalls in all participating countries throughout project implementation; (ii) the unavailability of funds to operate the aircraft purchased in Niger for locust control until project closure on May 31, 2011 (although its recurrent costs have now been budgeted in the 2011 national budget); and (iii) the institutional change in The Gambia discussed above, which might jeopardize the project's long-term impact in that country.

6. LESSONS LEARNED

121. A number of lessons can be drawn from the AELP experience:

Monitoring and evaluation. It is important to collect baseline data for effective measurement of interventions of the community-driven development (CDD) type. Such data are needed to substantiate qualitative data collected through surveys of beneficiaries' satisfaction. If it is not possible to collect baseline information during preparation, extensive efforts should be made to do so during implementation. In the event this proved impossible because of the absence of national statistics, project restructurings should be used as opportunities to review the objective of CDD-type components, possibly reducing their scope and selecting quantitatively measurable indicators for which baseline data are available.

Design and implementation of CDD-type component. The Bank's know-how with respect to CDD and social protection programs needs to be fully exploited in the design, implementation, and monitoring of community microprojects that seek to restore local livelihoods. This leveraging could have helped mitigate shortcomings related to the inadequate expertise of locust-control agents about key community development requirements and the absence of clear guidelines on compensation measures for victims.

⁹ Agence Mauritanienne d'Exécution des Travaux d'Intérêt Public pour l'Emploi

Implementation support and supervision funds. Regional projects with important environmental and safeguards aspects such as the AELP should be allocated sufficient implementation support funds to allow participation in each mission of experienced environmental and safeguards specialists from the Bank. Given the potential reputational risks associated with projects involving the use of chemicals that can have negative environmental, health, and social impacts, and the ensuing negative externalities at the regional level and costs associated with compensations, it is essential that due diligence of safeguards instruments be closely monitored with adequate budget through Bank staff instead of local consultants.

Counterpart funding. To avoid implementation challenges caused by unavailability or delayed counterpart funding, it might be appropriate to look into financing projects by 100% if in line with the country financial parameters.

Sustainability

- Although no plans presently exist for a second phase of the AELP, it is important not to lose the momentum built by the project. Appropriate measures should be taken in order to systematically mainstream pest control, in general, and locust control, in particular, into future Bank-supported agricultural development and natural resource management projects, as well as into crises preparedness and response components of social protection policies. The Bank, for instance, through the Global Facility of Disaster Reduction and Recovery (GFDRR) should establish close strategic partnership with the forthcoming second phase of the EMPRES Western Africa Region project implemented by CLCPRO, which will provide more sustainability for preventive activities carried out by national teams, and strengthen regional coordination and monitoring activities.
- In all frontline countries (Mauritania, Mali, Niger, and Chad), the project supported the creation of a national locust-control center whose services and maintenance are earmarked in the countries' national budget. Governments will need to disburse funds in a timely manner to fully guarantee sustainability of project achievements.

7. COMMENTS ON ISSUES RAISED BY BORROWER/IMPLEMENTING AGENCIES / PARTNERS

122. Participating countries have analyzed the draft ICR and accepted its key elements, including main conclusions, ratings and recommendations. They have also proposed some corrections and clarifications, which have been integrated into this final version of the document. Annex 9 synthesizes elements of national ICRs.

123. Among key partners, CLCPRO proposed some clarifications and editorial changes that have been integrated into this final version.

ANNEXES

Annex 1. Outcome and Result Indicators

Underlined indicators were added at mid-term review in December 2006.

PDO	Outcome Indicators	Use of Outcome Information
<p>To reduce the vulnerability of the concerned countries to present and future infestations by supporting improved strategies for prevention, early warning, reaction and mitigation, both at the national level and at the regional level</p>	<p>A. Early warning and response effectiveness of seven countries improved by end of project.</p> <p>B. <u>Country risk management plans that clearly outline roles and responsibilities of key stakeholders are regionally coordinated with FAO and CLCPRO by end of project</u></p> <p>C. <u>Independent national locust-control units in frontline countries operating with core government funding are established by end of project</u></p>	<p>A. The effectiveness is measured using a scorecard that rates the incremental improvement in effectiveness. The government and World Bank will use the results to assess progress during project supervision.</p> <p>B. <u>Used by countries and regional entities to support regional integration</u></p> <p>C. <u>This information will be used to assess the sustainability of long-term locust control in frontline countries</u></p>
Intermediate Results One per Component	Results Indicators for Each Component	Use of Results Monitoring
<p>Component A: Emergency locust-control measures are improved (cost-effective, timely), and undertaken in environmental and social sustainable manner</p>	<p>Component A</p> <ol style="list-style-type: none"> 1. <u>Locust control: Control operations implemented according to agreed upon regional contingency Plan</u> 2. <u>Environmental management: Pesticide management meets international safety regulations</u> 3. Pesticide management capacities strengthened in all countries and pesticides database in place 	<p>Component A</p> <ol style="list-style-type: none"> 1. <u>National committees will use this independently evaluated information to evaluate effectiveness of national program to address infestation</u> 2. <u>National committees will use this information to prevent environmental and social risks associated with pesticide use</u>
<p>Component B: Livelihood of people affected by locust infestation addressed</p>	<p>Component B</p> <ol style="list-style-type: none"> 1. Percentage of beneficiaries receiving aid from project that restore their livelihood 2. <u>Socioeconomic impact mitigation mechanism established by end of project</u> 	<p>Component B</p> <ol style="list-style-type: none"> 1. <u>National committees will use this independently evaluated information to decide whether additional relief is required to affected populations</u> 2. <u>Countries will use this to swiftly provide compensation to people affected by locust</u>

<p>Component C: National capacity for early warning and response improved</p>	<p>Component C</p> <ol style="list-style-type: none"> 1. <u>Country risk management plans prepared</u> 2. <u>Capacity for application of biopesticides for locust control established</u> 3. <u>Percentage of locust-control teams that apply best practice method for locust control</u> 4. Average response time from warning to reaction on locust infestation 5. Number of operational locust survey and control teams 6. Regional locust-monitoring bases rehabilitated/constructed 	<p>Component C</p> <ol style="list-style-type: none"> 1. National committees will use this information to inform if additional capacity is required to undertake improved early warning system 2. National committees will use this information to confirm readiness for locust control in sensitive areas.
<p>Component D: Project is managed (designed, adjusted, monitored and evaluated) effectively</p>	<p>Component D Evidence of use of information to adjust priorities of the project to respond to the emergency</p>	<p>Component D Evidence of use of information to adjust project</p>

Annex 2. National Implementing Agencies and Other Stakeholders

Country	Implementing Agency
Burkina Faso	Ministry of Agriculture, Hydraulics, and Halieutic Resources
Chad	Ministry of Agriculture and Irrigation
Gambia, The	Department of State for Agriculture
Mali	Ministry of Agriculture
Mauritania	Ministry of Rural Development
Niger	Ministry of Livestock and Animal Industries
Senegal	Ministry of Agriculture and Hydraulics

Annex 3. Project Costs

Project cost by financier and country (US\$'000), appraisal estimates

Country	IDA	Government	Total
Burkina Faso	8,401	1,440	9,841
Chad	9,083	1,696	10,780
Gambia, The	1,872	171	2,043
Mali	10,065	2,281	12,346
Mauritania	10,633	2,518	13,151
Niger	9,936	2,888	12,823
Senegal	10,010	2,378	12,388
TOTAL	60,000	13,372	73,372

Burkina Faso

Category	Estimate at appraisal	Actual disbursed
Works	0.320	0.949
Vehicles/Equipment/Other goods (including pesticides)	3.388	1.855
Consulting/Audits	0.879	0.638
Training	0.421	0.741
Microgrants	1.234	2,201
Operating Costs	1.483	2,101
Refund/PPF	1,600	0.403

Chad

Category	Estimate at appraisal	Actual disbursed
Works	0.302	2.665
Vehicles/Equipment/Other goods (including Pesticides)	3,128	1.836
Consulting/Audits	0.284	0.000
Training	0.891	1.014
Microgrants	0.491	0.455
Operating Costs	1,093	0.979
Refund/PPF	2,510	1.992
	2,000	0.567

Mali

Category	Estimate at appraisal	Actual disbursed
Works	0.165	0.770
Vehicles/Equipment/Other goods Including Pesticides	4.765	1.196
Consulting/Audits	0.872	0.040
Training	1.731	0.956
Microgrants	0.569	0.660
Operating Costs	0.793	1.944
Refund/PPF	2,581	1.224
	1,746	0.957

Mauritania

Category	Estimate at appraisal	Actual disbursed
Works	0.588	1.747
Vehicles/Equipment/Other goods (including Pesticides)	5.658	1.606
Consulting/Audits	0.496	0.000
Training	0.433	0.439
Microgrants	0.454	0.710
Operating Costs	0.560	0.761
Refund/PPF	3.456	1.765
	2.000	0.000266

Niger

Category	Estimate at appraisal	Actual disbursed
Works	0	1.082
Vehicles/Equipment/Other goods	5.554	3.581
Pesticides	0.950	0.000
Consulting/Audits	0.645	0.459
Training	0.462	0.373
Microgrants	0.665	0.162
Operating Costs	0.665	0.659
Refund/PPF	1.515	0.390

Senegal

Category	Estimate at appraisal	Actual disbursed
Works	0.380	1.212
Vehicles/Equipment/Other goods (including Pesticides)	5.444	1.155
Consulting/Audits	2.642	0.000
Training	1.129	0.648
Microgrants	0.479	0.572
Operating Costs	0.646	0.735
Refund/PPF	1.708	0.917
	0.200	0.962

Gambia, The

Category	Estimate at appraisal	Actual disbursed
Works	0.097	0.185
Vehicles/Equipment/Other goods (including Pesticides)	0.223	0.221
Consulting/Audits	0.076	0.000
Training	0.248	0.104
Microgrants	0.091	0.291
Operating Costs	0.122	0.000
Refund/PPF	0.357	0.464
	0.062	0.000246

Project costs by components and Government financing in US\$ million equivalent (Exchange rate at appraisal was US\$1 = 500 CFAF and at closing US\$1= 455 CFAF)

Burkina Faso

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Management	4.15	1.85	44.58
B. Emergency Agriculture Investments	2.14	2.28	106.54
C. Early Warning System	0.57	1.79	314.04
D. Project Management	0.87	1.74	200
E. PPF	1.60	0.79	49.38
Total Baseline Cost	9.33	8.45	90.57
Physical Contingencies	0.27		
Price Contingencies	0.24		
Total Project Costs	9.84	8.45	85.87

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	89.84	8.45	85.9
Burkina Faso	Government Funds	0.24	0.49	200.5

Chad

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Campaign	4.40	4.23	96
B. Emergency Agriculture Investments	2.85	1.84	65
C. Early Warning System	0.37	2.33	63
D. Project Management	0.78	2.05	263
E. PPF	2.00		
Total Baseline Cost	10.41	10.45	100
Physical Contingencies	0.13		
Price Contingencies	0.23		
Total Project Costs	10.77	10.45	

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	10.77	10.45	97.02
Chad	Government Funds	1.76	0.36	20.45

Mali

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Campaign	5.20	0.74	14
B. Emergency Agriculture Investments	2.77	3.21	116
C. Early Warning System	1.06	4.64	438
D. Project Management	1.02	3.66	35.9
E. PPF	1.93	0.35	18
Total Baseline Cost	11.99	12.65	106
Physical Contingencies	0.02		
Price Contingencies	0.33		
Total Project Costs	12.34	12.65	

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	12.34	12.65	102.5
Mali	Government Funds	2.28	2.55	111.84

Mauritania

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Campaign	5.24	6	115
B. Emergency Agriculture Investments	2.49	2.51	101
C. Early Warning System	2.04	2,2	108
D. Project Management	0.89	1.8	202
E. PPF	2.00		
Total Baseline Cost	12.66	12.51	99
Physical Contingencies	0.10		
Price Contingencies	0.39		
Total Project Costs	13.15	12.51	

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	13.15	12.51	95.1
Mauritania	Government Funds	2.5	1.5	60

Niger

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Campaign	1.63	1.17	72
B. Emergency Agriculture Investments	4.88	2.91	60
C. Early Warning System	2.47	4.45	180
D. Project Management	1.02	1.77	173
E. PPF	2.00	0.56	28
Total Baseline Cost	12.00	10.85	90
Physical Contingencies	0.61		
Price Contingencies	0.21		
Total Project Costs	12.82	10.85	

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	12.82	10.85	84.6%
Niger	Government Funds	0.266	1.255	472%

Senegal

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Campaign	4.85	3.13	64.53
B. Emergency Agriculture Investments	1.93	1.52	78.75
C. Early Warning System	1.73	4.23	244.50
D. Project Management	1.07	2.63	245.79
E. PPF	2.00	1.76	88.00
Total Baseline Cost	11.58	13.27	114.59
Physical Contingencies	0.51		
Price Contingencies	0.29		
Total Project Costs	12.38	13.27	114.59

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	12.38	13.27	107
Senegal	Government Funds	0.53	0.77	145

The Gambia

Components	Appraisal Estimate	Actual /Latest Estimate	%
A. Emergency Locust Campaign	0.26	0.40	154%
B. Emergency Agriculture Investment	0.14	0.23	164%
C. Early Warning System	0.41	0.46	112%
D. Project Management	0.27	0.89	330%
E. PPF	0.86	0.0003	
Total Baseline Cost	1.94	1.99	103%
Physical Contingencies	0.01		
Price Contingencies	0.09		
Total Project Costs	2.04	1.99	

Source of Funds	Type of Financing	Appraisal Estimate	Actual/ Latest Est.	%
IDA	Credit	2.04	1.99	97.5%
The Gambia	Government Funds	0.750	0.392	52.3%

Annex 4. Score cards by country (baseline) and at ICR

Africa Emergency Locust Project: Score card (1/2)			Front line Countries								Invasion countries							
			Chad		Mali		Mauritania		Niger		Gambia		Burkina		Senegal			
			2005	2011	2005	2011	2004	2011	2005	2011	2005	2011	2004	2011	2005	2011		
			Scores															
1 Desert locust control improved																		
a Control operations implemented according to agreed upon regional contingency Plan																		
		Insufficient number of control teams (low capacity to control the infestation)	0															
		Insufficient number of control teams (Do not respond to the minimum requirements defined at the Algier regional Planning, EMPRESS 2006)	1								1		1		1			
		Acceptable number of control teams (Correspond to the minimum requirements defined at the Algier Regional planning, EMPRESS 2006)	2	2					2									
		Satisfactory number of control teams (Maximum capacity as required by the Algier Regional Planning, EMPRESS 2006)	3	3	3	3		3	3		3		3		3			
b Locusts Prospection and Control Plan																		
		No Plan exists	0															
		A national plan has been elaborated in collaboration with all participating countries (regional integration)	1	1			1						1					
		A national Plan is implemented in collaboration with the other participating countries	2		2		2			2		2			2			
		A national plan is implemented, evaluated and adjusted monthly in coordination with the other countries	3	3	3		3	3	3	3	3	3	3	3	3	3		
c Operating costs covered by National Governments																		
		0 to 25%	0															
		26 to 50%	1	1			1									1		
		51 to 75%	2		2		2	2	2	2	2	2	2			2		
		76 to 100%	3	3	3		3							3		3		
2 Improved organization and reinforced locusts control capacity																		
a National budgeted program to coordinate locusts control (institutional aspect)																		
		No program/no coordination	0															
		A program exists on paper but not implemented	1	1					1			1	1		1			
		A program is implemented, sufficiently financed and coordinated at the regional level	2		2	2	2			2		2		2				
		A Program is implemented, financed for the longterm (more than 10 years), evaluated annually with the regional coordination	3	3					3							3		
b Training Plan																		
		No plan, no regular training planned	0	0														
		A training plan exists, but not adhered to, a few trainings are done when the opportunity presents itself	1		1		1		1				1					
		A training plan exists and is implemented based on a thorough analysis and coordinated regionally	2							2					2			
		A training plan (for the populations, technicians, higher level professionals) exists, fully financed, implemented annually	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
c Management of equipment																		
		An equipment management plan exists (inventory, operation and maintenance)	0						0									
		An equipment management plan exists (inventory, operation and maintenance) but is not implemented	1				1				1		1					
		An equipment management plan exists (inventory, operation and maintenance) but not implemented regularly	2	2	2				2						2			
		An equipment management plan exists (inventory, operation and maintenance) and implemented regularly	3	3	3	3	3				3		3	3	3	3		
3 Improved Pesticides Management																		
a Stocks inventory																		
		No Inventory	0								0							
		Inventory done in line with FAO procedures	1	1	1							1	1					
		Inventory done and the FAO Pesticides Stock Management System (PSMS) updated regularly	2	2					2						2			
		Inventory done and PSMS updated regularly, including training and use of alternatives to pesticides	3			3	3	3	3	3				3	3	3		
b Percentage of volume of pesticides safeguarded in line with FAO norms																		
		0 to 25%	0	0			0				0							
		26 to 50%	1						1				1					
		51 to 75%	2		2										2			
		76 to 100%	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
c Percentage of empty pesticides containers collected																		
		0 to 25%	0						0									
		26 to 50%	1	1			1				1							
		51 to 75%	2		2								2		2	3		
		76 to 100%	3			3	3	3	3	3	3	3	3					
d1 Percentage of empty containers decontaminated and destroyed																		
		0 to 25%	0	0					0									
		26 to 50%	1		1					1	1		1		1			
		51 to 75%	2		2									2		3		
		76 to 100%	3			3	3					3						
d2 Percentage of empty containers decontaminated and recycled																		
		0 to 25%	0									0						
		26 to 50%	1															
		51 to 75%	2													2		
		76 to 100%	3													3		

Africa Emergency Locust Project: Score card (2/2)			Front line Countries								Invasion countries						
			Chad		Mali		Mauritania		Niger		Gambia		Burkina		Senegal		
			Scores	2005	2011	2005	2011	2004	2011	2005	2011	2005	2011	2004	2011	2005	2011
4 Health and Environmental Monitoring																	
a Health monitoring plan																	
	No plan exists	0	0											0			
	A plan exists but implementation modalities are not defined	1			1				1		1				1	1	
	A plan exists, executed systematically during locusts treatment, results are transmitted at the central level for analysis and action	2						2									2
	A plan exists, fully implemented and systematically integrated with National Health institutions's health monitoring plan	3		3		3		3		3		3					
b Environmental Monitoring Plan																	
	No plan	0	0											0			
	A plan exists but its modalities of execution are not defined	1									1				1	1	
	A plan exists, executed systematically during locusts treatment, results are transmitted at the central level for analysis and action	2			2		2		2								2
	A plan exists, fully implemented and systematically integrated with National Environmental Monitoring Plan	3		3		3		3		3		3					
5 Strengthening of early warning system																	
a Risks Management Plan																	
	No plan, no regional coordination	0	0		0												
	A plan exists on paper, but not implemented	1		1		1		1		1		1	1			1	1
	A plan exists and implemented or through simulation. Fully financed and coordinated regionally	2				2		2						2	2		
	A plan exists and implemented and includes sustainable financing (more than 5 years), is reassessed annually with the regional coordination	3								3							
b % of surface area prospected versus areas planned to be prospected																	
	0 to 25%	0															
	26 to 50%	1	1			1								1			
	51 to 75%	2			2		2		2	2	2						2
	76 to 100%	3		3				3				3					
c1 Submission of reports to Desert Locust Information System (DLIS) Bulletins, and Emergency Center for Locust Operations (ECLO)																	
	No report submitted	0	0											0			
	Reports submitted to DLIS with delay	1														1	
	Reports submitted to DLIS in a timely manner (integrating technical aspects)	2										2	2				
	Excellent quality reports submitted to DLIS in a timely manner	3		3	3	3	3	3	3	3							
c2 Simulation Exercise (invasion countries)																	
	No simulation conducted	0															0
	One simulation conducted	1										1					
	More than one simulations conducted	2															
	More than one simulations conducted and evaluated as satisfactory	3												3			
6 Promotion of alternative locusts control measures																	
Bio-Pesticides																	
	No plan for bio-pesticides use	0	0							0		2					
	A plan exists, but implementation modalities are not defined	1				1					1		1				
	A plan exists, but not implemented regularly	2			2	2								2	2		
	A plan exists and implemented regularly	3		3				3		3							3
Scores			48	10	43	28	43	19	44	21	43	20	40	16	37	24	39
Individual Scores	Unsatisfactory	0															
	Moderately Satisfactory	1															
	Satisfactory	2															
	Highly Satisfactory	3															
Total Scores	Highly Unsatisfactory	0 to 8															
	Unsatisfactory	9 to 16															
	Moderately Unsatisfactory	17 to 24															
	Moderately Satisfactory	25 to 32															
	Satisfactory	33 to 40															
	Highly Satisfactory	41 to 48															

Annex 5. Main Outputs of Project by Component

Key Results	Burkina Faso	Chad	Gambia, The	Niger	Mauritania	Mali	Senegal
Efficiency of early warning and response system (value of scorecard)	37 Satisfactory	39 Satisfactory	40 Satisfactory	38 Satisfactory	41 Satisfactory	43 Highly Satisfactory	38 Satisfactory
Institutional reforms		ANLU created and operational		CNCLP created and operational	Institutional strengthening of the CNLCP	CNLCP operational	
Risk management plan	PNUA validated	PPRE and PNUA validated	PNUA validated	PPRA and PNUA validated	PPRE and PNUA validated	PPRE and PNUA validated	PNUA validated and simulation planned before end 2011.
Warning teams trained and operational	6 detection and treatment teams are operational	4 detection teams; 3 treatment teams, 1 maintenance, 1 QUEST team and 1 coordination team	6 for survey 6 treatment 3 QUEST teams 1 coordination unit	5 detection teams, 2 quick intervention teams and 1 coordination team	20 detection and treatment teams, 1 QUEST team, 1 maintenance team and 1 coordination team	6 detection team, 3 treatment teams, 1 QUEST team, 1 transport/maintenance team and 1 coordination team	8 detection teams and 8 treatment teams
Regional locust-monitoring bases rehabilitated/constructed.	3 phytosanitary bases rehabilitated (Dori, Djibo, Gorom-Gorom)	3 secondary bases built (Kalait, Fada and Salal)	6 Regional bases constructed and equipped	2 secondary bases rehabilitated (Agadez, Iferouane) with EMPRES funding	4 secondary bases rehabilitated: Aioun Zouerate, Bir Moghrain, Atar and Magtae Lahjar (Kreïmi)	1 intervention base in GAO and 3 support bases (Kidal, AguelHoc and Yelimane)	Rehabilitation and equipment of 8 bases for monitoring and alarm (Richard Toll, Dahra, Nganda, Kolda, Notto, Sokone, Missirah, and Ogo)
Buildings for DPV/UNLA	9 buildings for DPV, including fence, built. Decontamination center rehabilitated. Training and documentation room built.	Buildings for ANLA in Abéché and fence built. Storage for equipment in N'Djamena rehabilitated.	2 buildings constructed and equipped	CNLCP in Niamey built.	CNLCP building built (with EMPRES financing)	CNLCP buildings rehabilitated in Bamako.	1 building for UCP and 1 building for radio for DPV rehabilitated and equipped
Central pesticide storage facilities	0	2 Abéché and N'djamena	1 central pesticide store constructed and equipped	2 rehabilitated (central in Sorey/Niamey) and Agadez base rehabilitated.	1 in Ryad	1 in Gao	1 in Sangalkam

Key Results	Burkina Faso	Chad	Gambia, The	Niger	Mauritania	Mali	Senegal
Regional pesticide storage facilities	5 regional pesticide storage facilities built (Djibo, Dori, Gorom-Gorom, Sebba, Arbinda)	3 facilities built (Fada Kalait and Salal)	6 regional stores built and rehabilitated and equipped	1 facility built in Tahoua, 6 facilities rehabilitated to meet norms (Diffa, Maradi, Zinder, Agadez, Tilabery, Tahoua); building of facilities in Diffa, Maradi, and Zinder on hold	3 facilities built (Zouerate, Bir Moghrain, Atar)	3 facilities built (Kidal, Aguel Hoc and Yélimané); Sanankoroba facility rehabilitated and storage facility built	4 secondary facilities built (Richard Toll, Notto, Dahra and Missirah); 2 secondary facilities rehabilitated (Kolda and Sokone).
Other measures for pesticides management	Database (PSMS) established	Database (PSMS) established	Data base established	PSMS established	Database (PSMS) established	Database (PSMS) established	Database (PSMS) established
Number of staff trained in locust control and management (MS level or above)	2 engineers; 1 acridologist. 1 plant protection specialist	2 acridologists trained	6 staff trained to BSc level	3 MS level and 1 PhD level	1 PhD 3 MS 2 Engineers	4 MS level	2 acridologists trained in Morocco and 7 engineers trained in Niger and Mali
Biopesticides	Biopesticides (methalurzium) tested (except for locusts): 95% mortality rate	Treatment teams of ANLA trained to use biopesticide	NARI staff trained on biopesticide use	Capacity for use of biopesticides. 36.40% of infested surfaces treated with biological pesticide in 2006. 2 Training sessions on the use of Green Muscle®	1 green team mobilized during each campaign.	Teams of CNLCP and OPV trained the use of Green Muscle®	40% of infested surfaces treated with biological pesticide Green Muscle® in 2009
Compensation of households that suffered from 2004 invasion (number of households)	25,076	7,526	179,000	103,124	89,000	5,000	21,946

Key Results	Burkina Faso	Chad	Gambia, The	Niger	Mauritania	Mali	Senegal
Capacity strengthening	Several training sessions provided to about 20 plant protection staff on safe management of pesticides, fighting locusts, detection and intervention techniques, management of empty containers and obsolete products.	Creation of ANLA (<i>Agence nationale de la lutte antiacridienne</i>) with infrastructure and necessary equipment. Intervention capacities improved and strengthening of staff capacities for detection, locust control, management and use of pesticides, and use of biopesticides.	1,000 soldiers, 200 extension workers trained on locust control with 5,000 farmer brigades on identification and reporting of locust infestations	Training of 170 plant protection staff. Training of 1,300 staff for locust control. Procurement of 31 all-terrain vehicles, 4 trucks and 10 tons of pesticides. Procurement of 9 radios. Purchase of 4 airline strips for agricultural plane. Monitoring system established. Communication Plan for locust control center established. Risk management plan established. Pesticides storage facilities in Sorey (Niamey) and Agadez rehabilitated. Health follow-up of 38 staff working closely with pesticides. Training of 2 staff on residues analysis. Purchase of a mobile laboratory.	Staff of the project transferred to CNLCP (1 researcher, 1 SIG specialist, 1 communication specialist, data entry staff and 2 radio operators)	Since the start of the project, capacities have improved.	
Other key results	Treatment center for empty packages is operational. Establishment of a national observatory on locusts and other pests (locust database linked to a satellite communication system – VSAT)	Environmental Impact studies done on contaminated sites and elaboration of an action plan for their decontamination.	Training of pilot and engineer on the locust aircrafts and purchase and training on air craft spray equipment. Massive sensitization of general public on pesticide hazards and risks to minimize incidents	Purchase of a plane for locust control (Turbothrush)	Local expertise in site decontamination developed. All sites have been decontaminated and all obsolete pesticides safeguarded.	Three highly polluted sites were decontaminated. Emergency locust-control mechanism is operational. Human health protected during pesticides use. Environmental safety guidelines in place.	

Key Results	Burkina Faso	Chad	Gambia, The	Niger	Mauritania	Mali	Senegal
			Rapid response capacity reduced from 30 days to 24 hours	Rapid intervention capacity in place, demonstrated by the countries' ability to fight against upsurges in 2006 and 2009.	Early warning and response system developed and enabled rapid intervention in 3 upsurges.		
						Akjoujt research center and Aoun logistics center renovated.	

Note: Key results were obtained in close collaboration with the FAO/CLCPRO EMPRES programme (African Development Bank, France, and USAID).
PSMS = FAO Pesticide Stocks Management System.

Annex 6. Economic and Financial Analysis of Project

Background

1. The economic analysis or the national profitability analysis aims to identify and measure the net economic benefits of the project from the society point of view. Moreover, the national profitability analysis is determined with the help of adjusted prices (i.e., shadow prices) that are deemed to be an approximation of true economic prices (reflecting the social opportunity cost). Similarly, in the case of national profitability analysis, the social discount rate is applied, i.e., the rate at which the Sahelian countries (Burkina Faso, Chad, The Gambia, Mali, Mauritania, Niger, and Senegal) can borrow money taking into consideration the country risk.
2. The Africa Emergency Locust Project (AELP) is part of the EMPRES's joint and longer term effort. Therefore, the AELP impacts and results are only a fraction of the potential and longer term benefits of the joint effort that would hopefully generate substantial benefits in the future for all the locust-prone countries of the Sahel and the Maghreb.
3. An ex ante economic analysis was not performed during the AELP preparation due to the emergency nature of the project, i.e., time constraints. The ex post economic analysis only covers the AELP during the lifetime of the project, i.e., the 2005–11 periods. Three indicators will be considered to determine the viability of the project:
 - The net present value (NPV) which is the difference between the discounted total benefits and cost;
 - The internal rate of return (IRR), which is the discount rate that zeroes out the NPV or, the interest rate that makes the net present value of all cash flows equal to zero; and
 - The benefit-cost ratio, which is the ratio of the present value (PV) of benefits over the PV of costs over the lifetime of the project.

Economic Analysis Process

4. The ex post economic analysis was performed for the overall project, by country and for the infrastructure and equipment disbursements. Hence, the analysis was performed at 3 levels: project level; *four components* level considering IDA alone as well as IDA and country public disbursements; and IDA *infrastructure and equipment* level:
 - The project level considers the aggregation of the *four components* as well as the aggregation of *infrastructure and equipment* disbursements (see below).
 - The combined *four components* of the AELP include: (i) helping countries to control/manage locust infestations; (ii) mitigating the effects of locust infestations on people and the environment; and (iii) helping to ensure a more timely reaction to future infestations. Whereas component B is by far the most important in terms of budget allocation and mitigation (sustaining targeted people livelihood after the devastating effects of the 2004 locust infestation that sometimes led to the increase of the harvested land area prior to the infestation).

it is important to note that both components A and C of leveraging the component B benefits. For instance, under components A and C, the strengthening of the national centers for locust control (CNLCPs) proved effective: (i) locust outbreaks between 2009 and 2011 were rapidly neutralized in Mauritania, Niger and Chad, in compliance with environmental standards and social practices; and (ii) early warning and prevention capacities developed for locust invasions were efficiently used against grasshoppers, in particular in Senegal where 80% of infested areas were treated, and Burkina Faso, for training purpose. Hence, the *four components* are considered simultaneously in the economic analysis.

- The *infrastructure and equipment* investment disbursement are considered in the analysis. For instance, a plane was bought for Niger that was not utilized during the 2005–11 periods. Since the economic analysis focuses on the project *per se*, an alternative analysis was performed that considers the plane as a negative benefit as it was not utilized during the AELP implementation although it could eventually be used in the future.

5. A number of socioeconomic and environmental benefits could accrue with the implementation of the project but could not be valued due to time constraints and readily available data. Estimates of the benefits based only on averted direct crop losses clearly underestimate the true cost of the disasters. A “without project” scenario could notably have the following health, environmental, economic and social negative direct and indirect effects:

- Morbidity and mortality: malnutrition incidence increase, especially among infants and children under 5 years old that could have probably increased the children under-5 year mortality rate. Malnutrition is a condition that increases the risk of contracting other opportunistic diseases such as diarrhea and acute respiratory infection.
- Soil degradation: threatened habitat, loss of biodiversity and increased desertification.
- Opportunity loss: cash crop cycle disruption and livestock decline will have a direct loss of productive assets/capacity that will have negative effects on future production with direct effects on general consumer prices for food and animal fodder.
- Human and social capital: increase in pauperization, rise of psycho-physical stress, erosion of the coping mechanism and likelihood of migration and possibly settlement in peri-urban areas.

6. Incidentally, poor pesticide management under component B could have had detrimental health, environmental, economic and social effects if safeguards were not put in place, namely:

- direct or “second hand” exposure of pesticide handlers and local residents to unsecured/obsolete pesticides;
- direct and indirect effects on natural resources including water, biodiversity and soil (food and water contamination);
- direct economic effects on yields (honeybees, fish, etc.); and

- direct social pain, suffering and coping (disease), and migration due to livelihood disruption.

7. Yet, pesticide distribution was judiciously managed in all countries especially in terms of storage and spending was kept to a bare minimum and was reduced from an originally budgeted US\$5.3 million to an actually disbursed US\$0.60 million. Hence, any social externalities are assumed to be minor during project implementation and are not considered in the economic analysis.

8. Precise economic analysis is made difficult by the complexity and heterogeneity of the AELP health, environmental, economic and social expected outcomes. For instance, potential income generation, the well being improvement and the state of the commons accruing to the targeted population estimated at 4 million people and their habitat across 7 countries during the project implementation were not quantitatively monitored.

9. Therefore, proxies were used to perform the ex post economic analysis as it only covers the reduction of the agricultural value added due to a possible “without project” disruption attributed to locust infestation. A without project could have increased the risk of locust infestation as time series show cycle resurgence of locust infestation that can sometimes be triggered by droughts.

10. The FAO’s Global Assessment of Soil Degradation (GLASOD) survey data was not used in the economic analysis as it dates back to the 1990, which is self-defeating for the 2005–11 periods. The retained method to derive the social benefits for the economic analysis is derived from FAO (Moussaoui, 2010) and considers a fraction of the agricultural GDP as well as the dry material in pasture land (for livestock feed) that will be affected by locust prevalence. A very conservative 0.1% of the agricultural value added and the 0.1% reduction of the dry material on 1% of pasture land for each country under the lowest rainfall scenario (250 mm/year to avoid precipitation variability) for each country in terms of averted losses was retained. The FAO also suggests two other scenarios that were not retained: a 1% and 10% relative figure of the agricultural GDP in terms of losses due to locust infestation: indeed, a major production collapse could occur as demonstrated by the previous locust outbreaks with ample health, environmental, economic and social ramifications.

Table A7.1. AELP Economic Analysis Dataset at the Project and Country Levels for Agriculture Value Added, US\$ Million

Country	Total 2005–11 Disbursement			Current Agricultural GDP						
	IDA (Actual)	Gov. (Estimate)	Total	2005	2006	2007	2008	2009	2010 (Estimate)	2011 (Estimate)
Burkina Faso	8.9	1.5	10.4	1,852	1,921	2,252	2,678	2,710	2,907	3,125
Chad	9.5	1.3	10.8	651	711	878	1,139	932	1,034	1,087
Gambia, The	2.0	0.2	2.2	148	154	187	234	201	226	250
Mali	10.6	2.4	13.0	1,941	2,165	2,611	3,187	3,287	3,573	3,870
Mauritania	11.1	2.6	13.7	435	350	332	444	380	472	543
Niger	10.5	3.0	13.5	833	952	1,023	1,290	1,298	1,401	1,478
Senegal	10.5	2.5	13.0	1,452	1,386	1,517	2,043	2,123	2,240	2,408
Total	63.1	13.5	76.6	7,310	7,638	8,800	11,016	10,931	11,854	12,762

Note: The government disbursement estimates are hypothetical and are based on the 2004 project document.

Source: World Bank (2004); World Bank (2010); and IMF Article IV (2011) for all countries.

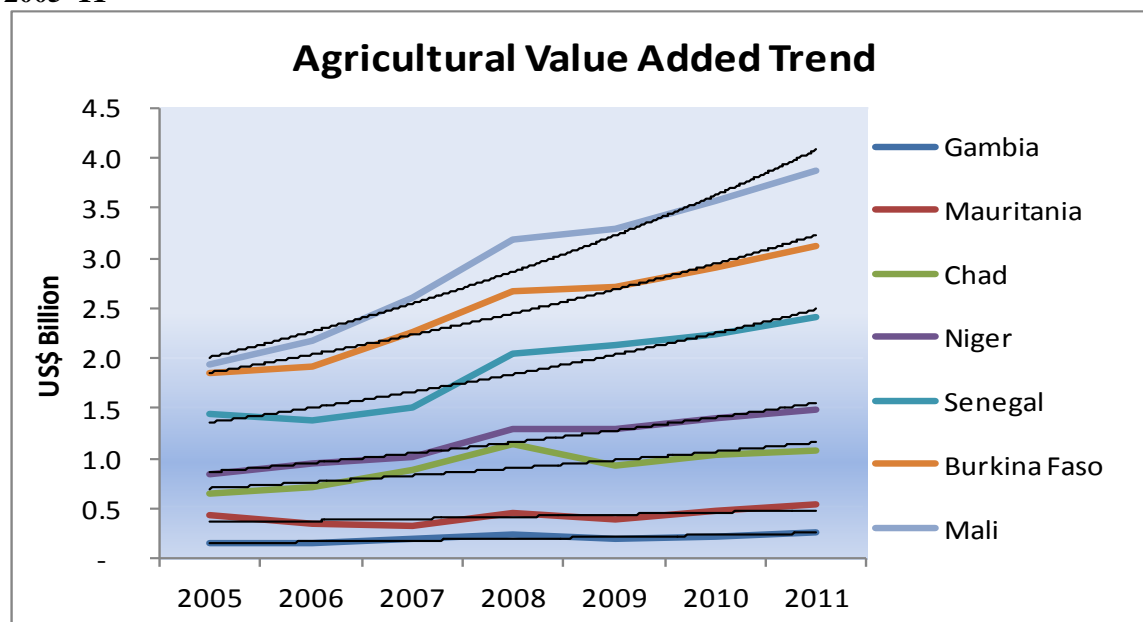
Table A7.2. AELP Economic Analysis Dataset at the Project and Country Levels for Pasture Land, US\$ Million

Country	Area	Pasture	Pasture area	Hypothetical Area Averted from locust infestation: 0.1%	Yield of Dry Matter under rainfall of 250 mm/year	2005–11 Avg. Barley International Cost	Benefits
	Km ²	%	ha million	ha million	t/ha	US\$/t	US\$ million
Burkina Faso	274,200	22	6.0	0.1	0.25	159.7	2.4
Chad	1,285,000	36	46.3	0.5	0.25	159.7	18.5
Gambia, The	11,300	10	0.1	0.0	0.25	159.7	0.0
Mali	1,242,000	25	31.1	0.3	0.25	159.7	12.4
Mauritania	1,027,000	38	39.0	0.4	0.25	159.7	15.6
Niger	1,268,000	7	8.9	0.1	0.25	159.7	3.5
Senegal	196,700	16	3.1	0.0	0.25	159.7	1.3
Total	5,304,200		135	1.3			53.7

Source: FAO website: www.fao.org; and Index mundi website: www.indexmundi.com.

11. The initial dataset is illustrated in Tables A7.1 and A7.2. Total IDA actual disbursements amount to US\$63.1 million over the 2005–11 periods. The government actual disbursement estimates were derived from the original project document and amount to US\$13.5 million. As for the agricultural GDP, all trends are positive over the 2005–11 periods as illustrated in Table A7.1 and Figure A7.1. Nevertheless, Chad registers a significant decline in 2009 due to poor rains and pestilence, and Mauritania and Senegal show slight variability over the 2005–09 periods. Moreover, all these figures need to be considered with caution as they are not adjusted for price, market and institutional distortions. Table A7.3 provides the disbursements on infrastructure and equipment for each country.

Figure A7.1. Agricultural Value Added Trend in the AELP Countries, Current US\$ Billion, 2005–11



Source: Table A7.1.

Table A7.3 Economic Analysis Dataset at the Infrastructure and Equipment Level, US\$ Million

Country	Investment Breakdown			Cost		
	Locust surveillance and control facilities built	Pesticide storages built/rehabilitated	Vehicles and locust-control and treatment equipment	Disbursement	of which one airplane for urgent control	
	(#)			(US\$ million)		
Burkina Faso	3	4		Yes	2.8	
Chad	3	5		Yes	4.6	
Gambia (The)		7		Yes	0.6	
Mali	4	4		Yes	3.1	
Mauritania	4	4		Yes	5.3	
Niger		1		Yes	7.3	1.5
Senegal	8	7		Yes	3.7	
Total	22	32		Yes	27.5	1.5

Source: AELP files (2011).

12. A number of key assumptions have been considered for the economic analysis:

- The economic analysis is carried out over a period of 7 years from 2005 to 2011.
- A real discount rate of 12% per annum is used.
- The overall standard conversion factor for adjusting market prices to shadow prices is set at 0.71 based on professional judgment in the Sahel region. The shadow wage is 1 as most labor needed for the whole project, microprojects and other activities are assumed to be locally hired.
- The agricultural GDP was adjusted by 0.8 to provide the agricultural value added at factor cost.

- Droughts and precipitation related variability are already factored in the actual agricultural GDP.
- Dry material averted through locust prevention is equivalent to the border (international) price of the equivalent amount of barley to feed the livestock.
- Both the agriculture value added averted reduction and the averted pasture degradation are only used for the *4 components* analysis whereas only the agriculture value added averted reduction is used for the *infrastructure and equipment* component.
- Priority investments, which do not include undisbursed funds, are disbursed equally over the 7 years of the implementation of the project as exact figures are not available per year.
- Disbursed government funds were estimated to represent 80% of the original budgeted funds (Table A7.1).
- The right-of-way including the price of land and any structures upon it is zero as it is owned by the government.
- Real operations and maintenance (OMEX) cost is used in the analysis.
- The actual gross domestic product (GDP) per year was adopted for the calculation from the 2005–11 periods (World Bank WDI, 2010, data for 2005–09; and IMF Article IV, 2011 for the 2010–11 projection estimates).
- All benefits are assumed to begin to accrue in 2005.

Economic Analysis Results

Determination of NPV, IRR, and Benefit/Cost Ratio

13. The overall project *four components*' economic NPV discounted at 12% is positive with US\$49 million over 7 years. The benefit/cost ratio reaches 2.5 while the economic IRR is considerably positive and greater than 200%. (Table A7.4). Despite the conservative stance and the few benefits considered in the economic analysis, the project is economically viable and was worth implementing. Yet, when looking at each country's economic analysis, 6 countries show economic viability whereas only The Gambia fails to pass the benefit/cost analysis criteria due to both endogenous and exogenous factors. Despite the irregularity of government disbursement funds and the complicated procurement procedures, both Mauritania and Chad have faced climatic variability during the implementation of the project, which however did not affect the economic viability of project. As for The Gambia, the counterpart fund (only 5% of IDA funds and the lowest among the 7 AELP countries) disbursement was an issue all over the project lifetime, which could have affected the economic results although most outcomes were reached according to the monitorable indicators.

14. The same calculations were performed only with IDA funds and the results are almost similar than the ones illustrated in Table A7.3 with a NPV of US\$54.6 million, a PV benefit/cost ratio of 3 and an IRR greater than 200% with the same 6 countries showing economic viability.

15. The overall project *infrastructure and equipment* economic net present value (NPV) discounted at 12% is also positive with US\$29.2 million over 7 years. The benefit/cost ratio reaches 3.3 while the economic IRR is considerably positive and higher than 200%.

(Table A7.4). By country, all *infrastructure and equipment* investment spent show a positive return except for Mauritania due to both exogenous (rainfall variability during the 2006–09 periods) and endogenous factors affecting its agricultural production (Table A7.4).

Table A7.4. Economic Analysis with 12% Discount Rate

Key Economic Indicator	Burkina Faso	Chad	Gambia, The	Mali	Mauritania	Niger	Senegal	AELP
Four Components								
NPV	8.0	12.7	(0.1)	15.3	6.7	0.2	3.3	49.0
IRR (%)	>200	>200	<0	>200	>200	>200	>200	>200
PV Benefit/Cost Ratio	2.8	3.7	0.9	3.7	2.1	0.98	1.6	2.5
Project Viability	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Infrastructure and Equipment								
NPV	9.3	1.8	0.6	11.0	(0.6)	0.9	6.2	29.2
IRR (%)	>200	>200	>200	>200	<0	79	>200	>200
PV Benefit/Cost Ratio	8.1	1.9	2.9	8.7	0.7	1.3	4.6	3.3
Project Viability	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes

Note: A plane was bought for Niger and was not used. For the infrastructure and equipment analysis, the plane is considered as a negative benefit during the project lifetime although it could eventually be used in the future.

Sensitivity Analysis

16. The sensitivity analysis is conducted to test the viability of the benefits representing 0.08% of the agricultural value added and 0.08% of the pasture instead of 0.1% or each.

Table A7.5. Economic Sensitivity with a 0.08% of Agricultural Value Added Benefit

Key Economic Indicator	Burkina Faso	Chad	Gambia, The	Mali	Mauritania	Niger	Senegal	AELP
Four components								
NPV	5.8	11.6	(0.3)	12.7	6.2	2.0	2.2	40.3
IRR (%)	>200	>200	<0	>200	>200	198	>200	>200
PV Benefit/Cost Ratio	2.3	3.4	0.7	3.2	2.0	1.4	1.5	2.3
Project Viability	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Infrastructure and Equipment								
NPV	7.2	1.0	0.4	8.5	(0.1)	(0.1)	0.6	20.7
IRR (%)	>200	>200	>200	>200	<0	9	61	>200
PV Benefit/Cost Ratio	6.4	1.5	2.3	6.9	0.6	0.9	1.2	2.6
Project Viability	Yes	Yes	Yes	Yes	No	No	Yes	Yes

17. The overall project *four components* is still viable with an NPV of US\$40.3 million with an economic IRR greater than 200% and a benefit/cost ratio of 2.3 (Table A7.5).

18. The overall project *infrastructure and equipment* component economic NPV discounted at 12% is also positive with US\$20.7 million over 7 years. The benefit/cost ratio reaches 2.6 while the economic IRR is considerably positive and higher than 200% (Table A7.3). By country, all infrastructure and equipment spent also show a positive return except for Mauritania and Niger (Table A7.5).

Annex 7. Details on Component B

Evaluation of indicator 1 of component B—Direct project beneficiaries that restored their livelihood (households)—is drawn from the 2008 evaluation conducted by an international consultant. Based on his report, which also highlights the findings of evaluations by national consultants in each country, it is estimated that about 400,000 households, approximately 4,000,000 people, benefitted from project direct support. The table below provides data on the beneficiaries reached as well as the types of investments provided to help restore their livelihoods.

	Chad	Niger	Mali	Burkina Faso	Senegal	Mauritania	Gambia, The
Beneficiaries							
Households hit by infestations	9,373	200,000	10,000	24,582	46,000	100,000	230 (villages) of 179,000 population
Household supported (agricultural inputs)	7,523	232,000	5,000	No distribution	21 946	89,000	230 (villages)
% achievement (supported/targeted)	80.2	116	50	-	47.7	89	100
Revenue Generating Micro-Projects						No RGM	No RGM
Targeted requests	68	100	5,000	1 466	201		
Micro projects achieved	55	15	5,000	971	301		
% achievement (achieved/targeted)	88.8	15	100	66.2	150		
Total number of beneficiaries (households) reached	7,300	1,734	5,000	25,076	300		
Communities Infrastructure Subprojects (CIS)				No CIS	No CIS	No CIS	No CIS
Targeted	124	93	30				
Achieved	0	150	25				
% achievement (achieved/targeted)	0	161	83.3				

Source: Audette (2008).

1. For the monitoring of impacts of agricultural distributed inputs, only Chad and Niger have collected some information on the agricultural production capacity of affected groups.
2. *Niger.* In 2007, a national consultant was commissioned by the project to conduct a survey assessing the situation prevailing before the 2004 locust attacks based on agriculture statistics and beneficiaries' interviews. The consultant collected data on cultivated surface areas and agricultural yields. The survey showed (i) yield increases associated with more productive varieties of seeds provided by the project, compared to the ones initially used by the farmers before the invasions; (ii) restoration of agricultural production capacity and (iii) more cultivated areas than before the attack. However, the

weakness of this study relates to the fact that the collected data do not allow extrapolating these important yields and production gains to all project interventions in surveyed areas.

3. The first inputs were distributed nine months after the locust attacks and the majority of subprojects started only in 2006, two years after the attacks. This was far too long for people who had lost everything and who received no other support.

4. *Chad.* A baseline survey was conducted. Based on some data from the survey, the national consultant concluded a considerable increase in surface areas cultivated (greater than 50 percent compared to 2005) following distribution of inputs and animal traction equipment distributed by the project. However, the report quality was evaluated as poor by the country and therefore not validated at the national level.

5. *The Gambia.* The Gambia conducted an agricultural loss assessment that provides information on surface areas, yields and production before and after attacks by grasshoppers and other pests, but not related to locust attacks.

6. *Mali.* A survey on households and communes affected by the locust attacks was done in 2007. That survey proposed indicators that could be used to assess component B impacts. The national consultant that evaluated component B impact does not make any concrete reference to these indicators, but his report concludes that, thanks to micro grants, there was an important increase of yields and revenues among the affected population.

7. *Burkina Faso and Mauritania.* No baseline surveys were performed. But the national evaluation consultants noted in their reports important yield gains and an increase of cultivated surface areas compared to the situation before the attack, thanks to the purchase of animal traction equipment and the use of the inputs distributed by the project.

8. In general, the inputs and equipment distributed to restore productive capacities were greatly appreciated by recipients and were generally used for their intended purposes when distributed at the right time. According to few qualitative data and satisfaction surveys of beneficiaries, the inputs allowed them to restart production and to reach or sometimes exceed their levels before the invasion. Where farming tools and animal traction equipment were distributed (or purchased with microgrants), consultants observed an important increase of cultivated surface areas suggesting an extensive development of rain fed production. Even though input distribution impacts are considered very positive, it should be noted that these measures were implemented more than two years after the invasion.

9. Income generating microprojects (IGMs) were implemented very late in 2006 and 2007, with the exception of a few microprojects in Senegal (production of green beans) that started in late 2005. However, the IGMs were not closely monitored to assess their impacts and pertinence in term of rapid generation of revenues for the affected population, and their efficiency (income generated versus projects investment costs).

10. The delay was mainly due to the fact that this targeted support was new, and it was difficult to distinguish locust-only damage from drought-related damage, which was not covered by the project. Also contributing to the delay were: (i) the absence of clear

guidelines on compensation for victims; and (ii) inadequate expertise on the part of locust-control agents about key community development requirements.

11. Furthermore, the project's main focus was to ensure control and management of locusts through prevention and preparedness, and by taking steps to reduce impact after a disaster has occurred. The latter objective included measures to mitigate the health and environmental impact of locust-control operations—through disposal of empty pesticide drums, improvement of pesticide warehouse and storage conditions for remaining pesticides, and monitoring of environmental and health impact. The overarching goal of protecting the population made it necessary to undertake these activities as a priority and in a timely manner, which contributed to delaying the provision of agricultural inputs and development of microprojects.

12. *Indicator 2: Socioeconomic impact mitigation mechanism established for people impacted by locust infestation has been achieved.* Below are the results by country:

13. *Burkina Faso.* A national mechanism for prevention and management of food crisis is functional. Mechanisms have been set up for emergency intervention and socio-economic impacts mitigation in case of infestation.

14. *Chad.* The locust socioeconomic impact mechanism has been developed and is now part of the overall national crisis management mechanism.

15. *The Gambia.* An emergency funding mechanism for future invasions has been completed.

16. *Mauritania.* The National Plan for Natural Disaster Management has a socioeconomic compensation component. The national locust-control center contributed to its development. This system of management of socioeconomic compensation against damages of locust infestations was introduced and passed via a communication to the Council of Ministers in January 2010. It is now housed at the national platform for disaster risk management within the Ministry of Environment.

17. *Mali.* A study was conducted to establish a sustainable mechanism for compensation and emergency. This study has been validated and the mechanism will be part of the country's calamity fund (*fond de calamité*).

18. *Niger.* A study was conducted and recommendations made. The food crisis compensation mechanism already managed at the level of the Prime Minister's cabinet will also support locust invasion victims in the future.

19. *Senegal.* A national system for prevention and management of food crisis has been developed into which a specific locust-related compensation mechanism is integrated.

Annex 8. Bank Lending and Implementation Support/Supervision Processes

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Staff Time and Cost (from SAP)

Stage of Project Cycle	Staff Time and Cost	
	No. of Staff Weeks	US\$ Thousands (including travel and consultant costs)
Lending		
FY2005 BB	82.63	434,068
LEN TOTAL:	82.63	434,068
Supervision/ICR		
FY2005 BB	68.25	176,182
FY2006 BB	134.54	316,108
FY2007 BB	111.64	285,710
FY2008 BB	150.69	414,258
FY2009 BB	89.66	216,316
FY2010 BB	66.87	177,546
FY2011 BB	44.76	161,913
FY2012 BB	9.96	55,590
SPN TOTAL	676.37	1,803,624
GRAND TOTAL	759	2,237,692

Annex 9. Summary of Borrower's ICR

Introduction

In order to prepare their own national ICRs, the seven participating countries were provided with clear guidelines concerning both the general structure of the document and its key analytical elements. This annex focuses on three key aspects highlighted by the national ICRs:

- a) Presentation of major achievements as well as main constraints and issues faced during the implementation of the AELP;
- b) Assessment of the pertinence of the project, its main implementation modalities, physical achievements, lessons learned and, whenever possible, impact of project activities on national development policy; and
- c) Key recommendations to ensure the sustainability of the achievements of the AELP.

Burkina Faso

General institutional arrangements

- The Ministry of Agriculture, Water and Halieutic Resources was in charge of the implementation of the project;
- A Steering committee was put in place to coordinate and monitor the implementation of all the activities of the project;
- A Project Coordination Unit was created, made up of: one coordinator, one procurement specialist, an administrative/financial expert, an M&E specialist, a secretary, and two drivers.

Presentation of major achievements as well as main constraints and issues faced during the implementation of the AELP

Overall, the design of the project was satisfactory. The project efficiently integrated concerns related to the sustainability of the achievements and the continuity of the role of public services. Key results are the following (presented by component):

Component A - Emergency locust tracking and pesticide management: Activities significantly improved response capacities and skills of actors involved in locust control and safe and environmentally sensitive management of pesticides through: (i) training of four specialists abroad as well as of 150 agricultural agents and 26,000 producers; (ii) annual survey of 150,000 ha; (iii) acquisition of material and equipment; and (iv) creation and operationalization of a database for the management of pesticides, and rehabilitation of a decontamination center (for the treatment of empty containers).

Component B - Emergency agriculture investments: Activities of this component contributed to providing short-term food security to a number of households and to reconstitute productive assets of about 76% of populations affected by locust invasion,

through 911 microprojects (for a total cost of about US\$1.8 million). A total of about 490,000 persons benefitted from the activities of the project, and, according to the results of an independent survey, about 86% of them manifested their full satisfaction. Although formal activities ended in 2008, some self-financing activities (such as livestock fattening schemes and gardening activities) are still benefitting some households.

Component C - Early warning and response: Activities focused on strengthening the early warning, intervention and supervision capacities of the DPV. Other activities focused on: rehabilitation of three pest control facilities and storehouses, building of DPV training facilities (with adequate equipment), connection to water and electricity of three regional antennas, and provision of six pest control facilities with radio transmitters/receivers. In addition, DPV facilities were rehabilitated after the 2009 floods (total cost estimated at about US\$400,000). Finally, the project put in place the National Locust Observatory, a key early warning instrument for spatial database and transmission of data via VSAT.

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and impact of project activities on national development policy

- The Bank provided efficient support to the implementation of the various activities of the project. Particularly important was the 2006 mid-term review held in Nouakchott, which refocused objectives and areas of intervention and allowed better targeting mechanisms in the specific context of each country. Furthermore, the Bank ensured advisory services to monitor the activities, through regular consultations between experts. Workshops were organized to focus on specific issues, such as M&E and harmonization of the results framework, with indicators and targets specific to each country;
- The change of the Director of the DPV (the structure in charge of implementing components A and C) was a main constraint affecting the efficiency of the implementation of various activities;
- At the end of the project, a special committee recommended the transfer to the Ministry of Agriculture of all project equipment. The national budget will assume recurrent costs, and the maintenance of vehicles (a total of about US\$26,000).
- The agreement between IDA and the Government of Burkina concerned SDR 5.7 million, equivalent to US\$8.4 million. For the period 2005–08, the total contribution of the Government was estimated at US\$1.44 (of which US\$1.2 million as tax exemption), and a counterpart funding of FCFA 122 million (or about US\$240,000). On September 20th, 2011, the cumulated value of the investments was about US\$8.9 million, equivalent to an implementation rate of 86.9%.

Key elements to ensure the sustainability of the achievements of the AELP in Burkina

1. Integrate maintenance costs of teams in charge of locust control into the annual programs of the DPV;

2. Ensure permanent operations of the satellite-based monitoring and control system (ONCP);
3. Ensure functioning and maintenance of infrastructure and equipment;
4. Strengthen provincial committees in charge of selecting microprojects (by involving new stakeholders);
5. Institutionalize an 'Emergency response fund'; and

Chad

The agreement between IDA and the Government of Chad concerned about SDR6.1, equivalent to US\$ 9.5 million.

Presentation of major achievements as well as main constraints and issues faced during the implementation of the AELP

Overall, the design of the project is satisfactory.

Component A - Emergency locust tracking and pesticide management:

- Environmental protection activities concerned the following: Collection and analysis of existing legal texts on pesticide management; preparation of guidelines concerning the management of pesticides and empty containers and related information/ training/ communication products; environmental evaluation of contaminated areas; establishment of an environmental and social management plan (building of pesticides storehouses); inventory of pesticides; operationalization of QUEST teams.
- Facilities for emergency control operations: building two main storehouses and three additional storehouses (equipped with equipment compliant with norms); and reforestation of buffer zones (around main storehouses).

Component B - Emergency agriculture investment: Preparatory activities included: Socioeconomic studies of sensitive areas; identification of most affected villages and producers (9,373 producers, in 40 villages in 13 subdistricts), and assessment of emergency mechanisms to assist the targeted communities. Investments aimed at mitigating negative impact of locust invasions on local populations: agricultural and veterinary inputs were distributed to more than 7,500 producers and 16,000 animals were vaccinated; 93 microprojects benefitted local populations through microgrants; eight wells and three boreholes were built or rehabilitated; and 10 ha were used for irrigation and four micro water-catchment works were built.

Component C - Early warning and response:

- Creation of the 'National Agency for Locust Control' (ANLA), with establishment of legal support documentation, recruitment of staff, creation of facilities and acquisition of adequate equipment. However, government funding has not been fully disbursed to this date (September 2011);
- Local training of agents on locust control: bio-ecology, detection techniques, and information processing and management; specialized training of two civil servants

(acridology); training of four agents on use of software (Map Info and Ramses V3 and Elocust 2);

- Research on sensitive areas (mapping), agreement with the national research institute (ITRAD), experimental use of biopesticides and training of teams on the use of biopesticides;
- Participation in regional initiatives aimed at coordinating project activities (including participation in a regional workshop on use of biopesticides); and
- Various activities supporting locust-control operations (including establishment of an annual monitoring plan and production of regular newsletters on locust-control operations).

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and impact of project activities on national development policy

The achievements of the AELP in Chad have been satisfactory. Good results of activities of components A and C are a result of timely use of locust-control field teams and capacity building measures. Good results of activities of Component B are a result of adequate provision of agricultural inputs and funding of microprojects.

Major constraints faced by the project

- Low level of commitment of managers and staff of implementing agencies;
- Laborious national procurement procedures, together with Bank own procedures, resulted in long implementation delays.
- Bank's requirements not fully adequate with financial capacity of local service providers;
- Insufficient capacities of national consultants;
- Insecurity because of armed conflicts (at least until the beginning of 2008).

Lessons learned

- Need to adapt laborious national procurement procedures, together with Bank own procedure, to the characteristics of emergency projects;
- Emergence of a positive dynamic at the level of local communities and community-driven development.

Key recommendations to ensure the sustainability of the achievements of the AELP in Chad

1. Make the ANLA fully operational (with adequate financial means).
2. Ensure the sustainability of the achievements (infrastructures, logistics, equipment, studies, and management plan).

The Gambia

Presentation of major achievements as well as main constraints and issues faced during the implementation of the AELP

Overall the project Development Objective has been attained. Overall, the project has the capacity to react and control future locust invasions.

Component A - Emergency locust management: The project undertook a nationwide inventory taking exercise to recover obsolete pesticides and safeguard the acceptable ones (a total of 21 tons of pesticides was recovered and safeguarded). In a bid to create public awareness on the dangers of pesticides, the project conducted various activities (sensitization of some 5000 farmers, over 20,000 other people benefitted from radio programs). Activities targeted the mainstream extension service, soldiers and farmer brigades (training of 210 trainers for established teams; six Control and three Regional QUEST teams were trained on control and safeguards). Other segments of society were sensitized/trained on pesticide management (national assembly members, police officers, NGO personnel, teachers, students, etc.).

Component B - Emergency agriculture investment: To restore agriculture productivity in priority rural areas damaged by locusts, activities included provision of seeds and fertilizers to affected communities so that they can restore their livelihood. In this regards, the following tasks were accomplished: 179,000 farmers from 230 villages were compensated with seeds/fertilizers; Rice production of 12,000 farmers was improved by the distributing of 15 tons of rice seeds to 230 villages; 230 affected communities received mangos, cashew, orange seedlings, cassava cuttings; 97,000 small ruminants and poultry of 230 villages were vaccinated against PPR/NCD, 1500 watering cans distributed to vegetable producing villages; and 15 tons and 500 tons of rice seeds were distributed (in 2008 and 2010 respectively).

Component C - National capacity for early warning and response: The expected output for this component was the improvement of national capacity for monitoring and reporting of future outbreaks. Participatory monitoring was the cornerstone for this component. Hence various stakeholders and relevant service providers were trained on the monitoring, identification and timely reporting of outbreaks. A major prerequisite to this effect is the strengthening of the capacity of these partners. Consequently: 5,840 farmer brigade trainers on identification and reporting of outbreaks; 226 women vegetable producers in 113 villages trained on vegetable production and identification and reporting of locust infestation; five technicians were trained to the bachelor level in agriculture; one pilot and one technician trained on operation and maintenance of two locust-control aircraft; constructed a hangar for two control aircrafts; exposed 30 locust teams on tour to Mauritania and Senegal to enhance their knowledge in locust control and management.

Component D - Project management: The project was managed (that is, designed, adjusted, monitored and evaluated) effectively to meet the, possibly, shifting requirements and priorities of the effort of assisting with management of locust

infestation and its impact on people and the environment in concerned countries. A project coordinating unit (CPU) was set up to look into the implementation process (members of the PCU were trained in various professional disciplines, for improved overall project management).

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and, whenever possible, impact of project activities on national development policy

Lessons learned

- The counterpart fund was a big issue throughout implementation of the project which impacted on overall implementation in terms of delay and friction with contractors. The availability and adequacy was greatly questionable. Government was supposed to disburse 21 Million GMD in four years but disbursed only 50% of the total over a five years period.
- The financing plan was also a big issue that the percentage by category allocated to Government by IDA example for civil works (30%) was high and Government was unable to meet such conditions.
- The third issue was the project funds could not be used to control other pest when the country was experiencing other pest infestations.

Key recommendations to ensure the sustainability of the achievements of the AELP in The Gambia

- Counterpart fund should be waived where feasible or be kind to facilitate the smooth, effective and efficient implementation of the project;
- Where counterpart fund must be involved, it should be conducive for the effective and efficient implementation of the project and the percentage of counterpart financing should be at most 10% or below;
- Pest control projects could be appraised to be a bit flexible in intervening in all pest problems.

Mali

Presentation of major achievements as well as main constraints and issues faced during the implementation of the AELP in Mali

Component A - Emergency locust management:

- Emergency. In spite of no major outbreaks since 2004, national capacities for locust control have been significantly improved through acquisition of material means. Technical capacities and skill of locust-control agents have been improved through adequate training sessions (doctorate studies in acridology abroad for four agents).
- Emergency operations. Planning capacities have been improved with the formulation of an annual locust-control plan (there was no plan before the project). Today, the Locust Risk Management Framework includes two separate

components: (i) a Locust Risk Prevention Plan (PPRA), and (ii) a National Locust Emergency Plan (PNUA).

- Pesticide management. With adequate support by the AELP, a satisfactory system of health and environmental monitoring has been put in place, with the creation of a multidisciplinary team, which fosters quality control of locust treatment in compliance with standard pesticide application. A guide for key environmental tasks has been formulated (it included 87 different requirements to minimize human and environmental risks related to the use of pesticides). About 15 tons of metallic containers and 10 tons of plastic containers were sent for final treatment to a specialized private factory in Senegal. A strategic stock of pesticides (about 72,000 liters) has been created and managed according to FAO norms.

Component B - Emergency agriculture investments:

- About 5,000 households received about US\$2 million as microgrants, in order to purchase agricultural inputs and equipment. Their revenues substantially improved (from US\$2 million in 2005 to about US\$7 million in 2008);
- About 25 microprojects contributed to the improvement of local livelihoods, through the creation of infrastructures and facilities, such as feeder roads, wells, markets, community cereal stores) (total cost about US\$ 0.8 million).

Component C - Early warning and response:

- In Mali, as in the other frontline countries, a national locust-control center was established in 2006 (reporting to the Minister of Agriculture). A plan of action was elaborated and implemented, in compliance with the National Locust Emergency Plan. Six monitoring teams ensure full coverage of locust traditional habitat;
- A bottom-up feedback system has been put in place around rural communities in areas at risk;
- The project supported the creation of the headquarters of the national locust-control center (CNCLP) in Bamako, as well as an operational unit in Gao and three branches at the local level;
- With the AELP support, the CNCLP engaged in the promotion of biopesticides (including the construction of a store and the conduct of tests).

Component D - Project management: Overall expenditures for this component were about US\$3.9 million (with a budget implementation rate of 98.9%).

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and impact of project activities on national development policy

The impact of the project is considered positive, for many reasons:

- Support to the creation of an efficient national locust-control center;
- Strengthened local intervention capacities;
- Effective managed emergency situations (through adequate equipment);

- A functioning system of environmental and health monitoring (with good results in preventing contamination and intoxication of the environment and population);
- Restoration of the productive capacity of households affected by the 2004 invasion;
- Productive infrastructures (microdams, stores, ponds) to affected communities.

Lessons learned

- Future projects should stress the need to adequate training on M&E (lack of capacities hindered adequate activities of the AELP coordination unit at the beginning of the project). Through consultations, a number of measurable, clear and pertinent indicators should be defined;
- Support to affected population, through the involvement of NGOs, has to be properly defined. As NGOs do not cover the entire national territory, adequate and sustainable monitoring of activities would be better done through the involvement of line departments.

Key recommendations to ensure the sustainability of the achievements of the AELP in Mali

- Sustain the funding of locust-control operations (maintenance of vehicles and equipment, training of staff, etc.);
- Share information among the countries affected by locust invasions should be pursued and strengthened (through joint operations, tour visits and exchange of experiments);
- Delegate responsibilities for micro projects to local governments;
- Continue decontaminations of polluted locations.

Mauritania

General institutional arrangements

- The Ministry of Rural Development (MRD) was in charge of the implementation of the project.
- A Steering committee was put in place by the Secretary of the MRD to supervise the implementation of all the activities of the project.
- A Project Coordination Unit was created, made up of: one coordinator, one procurement specialist, an M&E specialist, and an expert in charge of Component B.

Presentation of major achievements as well as main constraints and issues faced during the implementation of the AELP

The general design of the project is good. It allowed a satisfactory implementation of the project, particularly Components A and C, which are part of the mandate of the CNLCP. More difficult was the implementation of activities of Component B, because of their

characteristics exogenous to the mandate of the CNLCP. Overall the main expected results have been achieved.

Component A - Emergency locust tracking and pesticide management: Activities significantly filled the gaps in terms of means of emergency control that had been found during the invasion. Acquisition of considerable equipment and material as well as building the capacities of the national locust-control center (CNLCP) in terms of pesticide management allowed the achievement of key results of this component. CNLCP was enabled to control different outbreaks during the project implementation period, in compliance with environmental and social practices and norms.

Component B - Emergency agriculture investments: Through the activities of this component, the project provided assistance to populations affected by the crisis, in order to restore their productive capacities. About 340,000 people benefitted from a variety of measures: *Agricultural equipment* for gardening work, rehabilitation of rural infrastructures, and support to pastoral producers. A system of socioeconomic compensation was defined, and included into national mechanisms for disaster management.

Component C - Early warning and response: A key element to the successful implementation of the activities was: (i) the definition and operation of an efficient early warning and response system, (ii) the strengthening of the CNLCP which is now endowed with significant administrative and financial autonomy, and (iii) the promotion of Green Muscle® (in collaboration with FAO and IFAD). Research activities were carried out on a variety of topics.

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and impact of project activities on national development policy

- Overall fiduciary management was satisfactory (in terms of audits, DRF, RSF) and procurement. Major constraints were related to unsatisfactory mobilization of government funds. Positive results were achieved in the areas of communication and information;
- Services provided by the Bank ensured efficient implementation of the project. Close and regular monitoring of activities contributed, among others, to the achievement of the project main objectives;
- Through numerous decisions, the government favored the implementation of the project (creation of an autonomous administrative agency in charge of locust control, nomination of the director of the center as the AELP coordinator);
- A substantial part of recurrent costs were ensured by the State (national budget);
- CNLCP human resources largely contributed to successful implementation of the activities;
- Most of human resources and skills developed by the AELP were transferred to the CNLCP at the end of the project (although additional funds will be required to sustain intervention mechanisms, research and trainings well as maintenance of equipment).

Key recommendations to ensure the sustainability of the achievements of the AELP in Mauritania

- Sustain advocacy to mobilize required financial resources from the Government;
- Support human resources and skills developed and their progressive replacement to take over;
- Ensure proper operation and maintenance of infrastructures and equipment;
- Strengthen regional and international frameworks for partnerships and consultations;
- Find a solution for the disposal obsolete products (within the context of the PASP).

Niger

General institutional arrangements

- The Ministry of Agricultural Development (MDA) was in charge of the implementation of the project (however, today, this ministry has been replaced by two separate ministries, Agriculture and Livestock);
- A Steering committee was put in place to coordinate and monitor the implementation of all the activities of the project;
- The project has been managed by a National Coordination Unit made up of: one coordinator, one procurement specialist, an administrative/financial expert, an M&E specialist, a secretary, and supporting staff.

The total cost of the AELP/Niger was about US\$12,820 of which US\$9.94 million IDA and US\$2.88 million from the Government of Niger.

Presentation of the major achievements as well as main constraints and issues faced during the implementation of the AELP

The general management of the project is satisfactory. The «scorecard» is 43 out of 48 Key achievements are the following:

Component A - Emergency locust tracking and pesticide management: Activities related to training, sensitization, health monitoring and pesticide management achieved important results, such as: operationalization of the emergency locust tracking system (resumption of detection in Tamesna areas, part of the breeding area; improved pesticide procurement, transport and storage practices (access to and use of equipment); compliance of stores to standard practices; collection and treatment of empty containers.

Component B - Emergency agriculture investments: A range of activities were carried out: improved access of households to improved seeds (2005–07); improved agricultural yields (34% for millet and 47% for sorghum, in 2005–07); increased agricultural production (rain fed and irrigated); increased revenues of vulnerable producers (through a range of microprojects with significant net margins, for livestock fattening schemes and breeding and production of groundnut oil (by women's groups).

Component C - Early warning and response: Major results were the following: Building the capacities and skills of 97 agents (prevention, early warning and use of biopesticides) including four students in acridology (one at doctorate level); improved information management; functionality of the national center for locust control; acquisition of an agricultural aircraft for large scale treatments; strengthened intervention system; improved locust control (through regular monitoring mission); control of all the outbreaks between 2009–11 (5,000 ha); and improved information sharing among the affected countries.

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and impact of project activities on national development policy

The performance of the Bank was satisfactory through: organization of 10 supervision missions, fast and regular treatment of reimbursement claims, rapid treatment of no objection procedures, close monitoring of project activities through numerous videoconferences, organization of training for project staff (namely on M&E procedures), and a disbursement rate of about 99.77% (i.e. about US\$ 10.2 million).

The government efficiently supported the implementation of the project, through: resumption of consultations with the donor community after the locust invasion, rapid recruitment of a coordinator and creation of a project steering committee, support to the participation of administrative authorities in the implementation of the project, financial support to the national locust-control center (CNLCP), and role of officials of the MDA in implementing different agreements, as well as disbursement of counterpart funding (a total of about US\$1.14 (including tax exemption). However, recurrent costs (maintenance of buildings, equipment, agricultural aircraft, etc.) amount of about US\$400,000/year over the first five years after the end of the project should be supported by the government.

Key recommendations to ensure the sustainability of the achievements of the AELP in Niger:

- Empower agencies, which will ensure future monitoring of activities;
- Adequate budget support by the Government to CNLCP and its operations.

Senegal

Presentation of the major achievements as well as main constraints and issues faced during the implementation of the AELP

Overall, the project was successful as it contributed to reduce the vulnerability of the country to future locust invasions. This included: improved prevention, early warning and control strategies for locust invasion, formulation of a National Locust Emergency Plan, strengthening of a locust-control framework, support to population affected by locust

invasion, and reduction of negative health and environmental impacts. More specifically, main achievements are the following:

Component A - Emergency locust tracking and pesticide management: Implementation of the key provisions of the National Locust Emergency Plan; acquisition of material and equipment; promotion of biopesticides (use of Green Muscle against grasshoppers and adequate equipment); pesticide management and rehabilitation of stores in compliance with international health and environmental norms.

Component B - Emergency agriculture investments: Support to about 86% of targeted population (to restore productive capacities and livelihoods of more than 12,000 households through 305 micro projects); integration of lessons learned by the project into national food security mechanisms; inventory of key plant protection issues and formulation of recommendations.

Component C - Early warning and response: Building the capacities of stakeholders (training of an agronomist in acridology, 8 technicians in plant protection, as well of 200 agents and 6,600 producers). Creation of a central store (to stock up to 9,000 tons of products), six secondary stores, seven locust units at the local level, and a central unit in Richard Toll. Acquisition of 24 vehicles (4x4), and 10 motorbikes.

Assessment of the pertinence of the project, main implementation modalities, physical achievements, lessons learned and impact of project activities on national development policy

The project implementation was satisfactory (with a scorecard of 39 out of 48) and a disbursement rate of 99.9%.

Key recommendations to ensure the sustainability of the achievements of the AELP in Senegal:

- Implement the investment plan recommended by the plant protection review;
- Continue the effort of the Government to support all running costs (estimated at about US\$22,000 for the secondary locust unit at the local level and about US\$110,000 for the headquarters in Richard Toll);
- Transfer all the equipment and material of the project to the DPV;
- Continue the implementation of the recommendations of the national list of environmental referents;
- Ensure compliance of store management with the ESMF;
- Strengthen the intervention capacities of the QUEST teams; and
- Improve the management and quality control of pesticides of the 2004 campaign (about 217,000 liters)

Annex 10. Comments of Cofinanciers and Other Partners/Stakeholders

FAO/CLCPRO reviewed the draft ICR and agreed with its contents. They provided minor editorial changes taken into account in this version.

Annex 11. List of Supporting Documents

AELP-Related Documentation

- AELP. 2008. *Rapport de l'Atelier régional sur le projet de Lutte d'Urgence contre le Criquet Pèlerin (PALUCP)*. Bamako. April.
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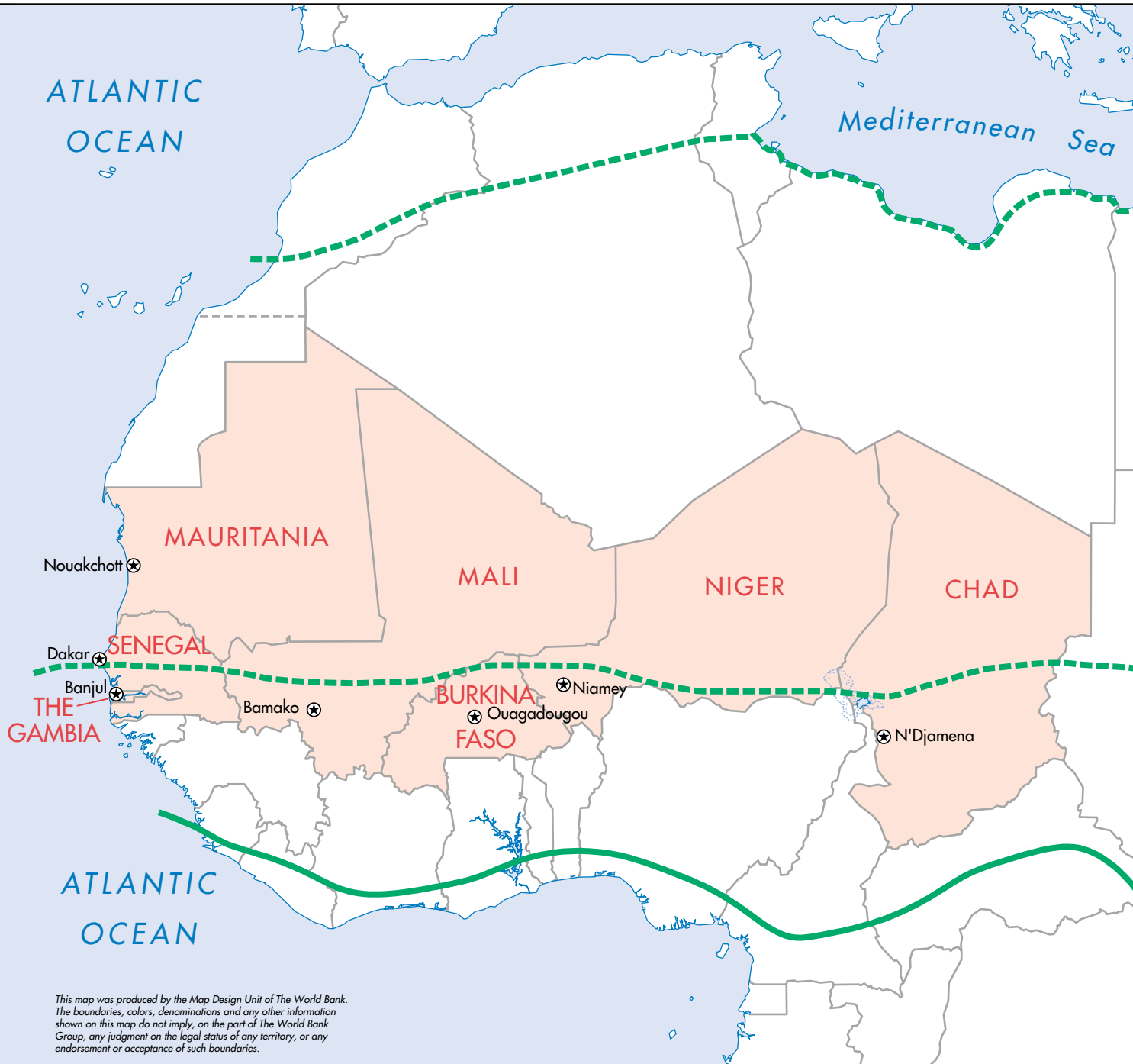
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AFRICA EMERGENCY LOCUST PROJECT

- COUNTRIES PARTICIPATING IN THE PROJECT
- HISTORICAL LIMIT OF INVASION AREA
- RECESSION AREA
- NATIONAL CAPITALS
- INTERNATIONAL BOUNDARIES



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