

1. Project Data

Summary project data			
GEF project ID		3758	
GEF Agency project ID		4133	
GEF Replenishment Phase		GEF-4	
Lead GEF Agency (include all for joint projects)		UNDP	
Project name		Energy Efficient Design and Construction in Residential Sector	
Country/Countries		Kazakhstan	
Region		Europe and Central Asia	
Focal area		Climate Change	
Operational Program or Strategic Priorities/Objectives		Climate Change Strategic Objective 1: Promote energy-efficient technologies and practices in appliances and buildings	
Executing agencies involved		Agency for Construction and Residential-Communal Affairs of the Republic of Kazakhstan	
NGOs/CBOs involvement		Pro Eco provided training under certain outputs	
Private sector involvement		Involved as co-financers	
CEO Endorsement (FSP) /Approval date (MSP)		September 1, 2010	
Effectiveness date / project start		September 22, 2010	
Expected date of project completion (at start)		December 1, 2015	
Actual date of project completion		December 2015	
Project Financing			
		At Endorsement (US \$M)	At Completion (US \$M)
Project Preparation Grant	GEF funding	0.1	-
	Co-financing	0.1	-
GEF Project Grant		4.57	4.57
Co-financing	IA own	0.03	0.04
	Government	24.85	131.40
	Other multi- /bi-laterals	3.020	132.27
	Private sector	-	-
	NGOs/CSOs	-	-

Total GEF funding	4.67	4.57
Total Co-financing	28.00	263.71
Total project funding (GEF grant(s) + co-financing)	32.66	268.28
Terminal evaluation/review information		
TE completion date	March 31, 2016	
Author of TE	Susan L. Legro and Zhannat Bekbolatova	
TER completion date	February 1, 2017	
TER prepared by	Spandana Battula	
TER peer review by (if GEF IEO review)	Molly Watts	

2. Summary of Project Ratings

Criteria	Final PIR	IA Terminal Evaluation	IA Evaluation Office Review	GEF IEO Review
Project Outcomes	S	S	-	S
Sustainability of Outcomes		L	-	L
M&E Design		MS	-	MS
M&E Implementation		HS	-	HS
Quality of Implementation		HS	-	HS
Quality of Execution		S	-	S
Quality of the Terminal Evaluation Report		-	-	S

3. Project Objectives

3.1 Global Environmental Objectives of the project:

The Global Environmental Objective of the project is to “decrease GHG emissions from new residential buildings by transforming practices and markets in the building sector of Kazakhstan towards more energy-efficient design and construction” (PD pg 0).

3.2 Development Objectives of the project:

The project’s Development Objective is to “increase energy efficiency in new and renovated residential buildings in Kazakhstan, thereby reducing greenhouse gas emissions” (TE pg 14). It aimed to achieve its objective through four outcomes:

Outcome 1: Improved enforcement and implementation of mandatory building energy codes and rating system;

Outcome 2: Expansion of markets for energy-efficient products;

Outcome 3: Education and outreach to promote energy-efficient building design and technology; and

Outcome 4: Development and demonstration of energy-efficient building projects.

3.3 Were there any **changes** in the Global Environmental Objectives, Development Objectives, or other activities during implementation?

There were no changes to the objectives or activities to the project during implementation.

4. GEF IEO assessment of Outcomes and Sustainability

Please refer to the GEF Terminal Evaluation Review Guidelines for detail on the criteria for ratings.

Relevance can receive either a Satisfactory or Unsatisfactory rating. For Effectiveness and Cost efficiency, a six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess. Sustainability ratings are assessed on a four-point scale: Likely=no or negligible risk; Moderately Likely=low risk; Moderately Unlikely=substantial risks; Unlikely=high risk. In assessing a Sustainability rating please note if, and to what degree, sustainability of project outcomes is threatened by financial, sociopolitical, institutional/governance, or environmental factors.

Please justify ratings in the space below each box.

4.1 Relevance	Rating: Satisfactory
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The project was consistent with GEF's Climate Change Strategic Objective 1 to "promote energy-efficient technologies and practices in appliances and buildings" (PD pg 4). It was also relevant to UNDP Country Programme Action Plan's Outcome 2 to "take steps to adapt to climate change and mitigate its impact through energy efficiency measures and climate change adaptation policies" (TE pg 46). In addition, it is aligned with Kazakhstan's thermal-performance code for buildings in 2004 which "regulates energy consumption for space heating in new and renovated buildings" (PD pg 4). Further, the project is relevant to Kazakhstan's participation in the global initiative on Sustainable Energy for All and Future Energy Expo, 2017 (TE pg 46).

4.2 Effectiveness	Rating: Satisfactory
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The TE rated the overall effectiveness of the project as Satisfactory. The project was successful in improving enforcement of building energy codes, conducting outreach efforts to promote energy-efficient building designs and demonstrating design models. However, for the project's second outcome on expanding markets for efficient products, the project was unable to meet its targets on establishing technical standards, as the approval for labeling system was still pending by the government at project end. But the project used adaptive management and pursued different approaches to develop standards especially for window designs (TE pg 36). Overall, the project effectively achieved most of its targets and thus, the TER also gives a Satisfactory rating.

The achievements under the planned outcomes are listed below:

Outcome 1: Improved enforcement and implementation of mandatory building energy codes and rating system

The TE rated this outcome as Highly Satisfactory for successfully achieving all five of its outputs. This outcome aimed to strengthen enforcement of building codes, establish voluntary standards, and put in place a rating and labeling system as well as a GHG monitoring system. To strengthen enforcement, the project shifted design and construction oversight to the central government, and undertook large-scale enforcement checks (TE pg 30). For the output on establishing voluntary standards for energy performance beyond existing code requirements, the project successfully met its target by constructing

and certifying three A-class buildings by the end of 2015 (TE pg 31). The outcome also planned to establish an “energy passport” system involving rating and labeling so as to provide clear information to market stakeholders. This was achieved when the government adopted a new legislation on energy rating system in November 2015 and made it mandatory for all new and newly reconstructed buildings to abide by the energy passport system (TE pg 33). Furthermore, for effective program evaluation, the project also developed procedures for GHG monitoring and accounting in buildings for the City of Astana (TE pg 32).

Outcome 2: Expansion of markets for energy-efficient products

This outcome was given a Moderately Unsatisfactory rating for not achieving two of its outputs. The first output related to establishing technical standards and certification processes. The project designed a labeling system and also supported drafting a special decree on window labeling but they were pending approval by the Ministry of Regional Development. Also, government approval for the updated Law on Energy Saving was not received. The TE noted that “due to institutional forces beyond the project’s control” the decree and legislation were not passed by the government before the project end (TE pg 35). Output 2 meant to increase consumer understanding on efficient materials, and for that the project published a special booklet called How to choose energy-efficient windows? However, as the labeling was not introduced, the awareness amongst consumers on efficient products was not surveyed (TE pg 36).

Outcome 3: Education and outreach to promote energy-efficient building design and technology

The outcome delivered on all the four outputs and was given Highly Satisfactory rating by the TE. The first output, related to training building designers to apply best practices in energy efficient designs, exceeded its target of training 2,034 design professionals and students. The project conducted 34 national and regional workshops and seminars (TE pg 37). The project also held several competitions to motivate aspiring designers to pursue energy-efficient designs and the Green Building Council, which was founded with project support, established the Green Awards (TE pgs 38-39). In addition, to train building owners and developers, the project established energy efficient centers in three regions and published practical manuals on appropriate practices. Due to these trainings, an association was formed of 14 companies to promote high-efficiency panel construction, and a research institute designed nine efficient buildings for developers (TE pgs 39-41).

Outcome 4: Development and demonstration of energy-efficient building design

Under this outcome, the project achieved its targets in all the three outputs and it was rated Satisfactory. To deliver its first output aimed to demonstrate best practices, the project built a new energy efficient residential building in Karagandy and an existing building was reconstructed (TE pg 42). To replicate models for energy savings, the project adapted building designs “on the basis of more efficient structural insulated panels” (TE pg 43), and in addition, the project received letters of interest from developers to use these prototypes in future designs. However, this output fell short in achieving its target of establishing prototype design models for 20 buildings and was able to establish models for only nine buildings (TE pg 43). Lastly, to increase cost ceilings for energy efficient government-funded buildings, the project submitted recommendations to change the existing costs and, in 2014, the

government “amended the Affordable Housing Program to increase allowable construction costs of social housing by 5- 10% (i.e. from \$495/m² to \$550/m²) in all regions of the country except the two largest cities” (TE pg 44).

4.3 Efficiency	Rating: Highly Satisfactory
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The TE rated the efficiency of the project to be Highly Satisfactory and the Mid Term Review gave the same rating. The project began operations immediately after ProDoc signature and the TE does not report of any delays during implementation. In fact, the project started selection of the project manager immediately after GEF approval (MTR pg 54). In terms of costs, the project not only received substantial resources from the government but it also leveraged support from “post-secondary educational institutions and new civil society organizations ranging from energy efficiency centers to professional chambers and associations” (TE pg 47). It efficiently managed its finances by meeting the “procurement needs for the investment projects” and the project’s implementing partners worked closely together to “ensure that the highly complex process of tendering and procurement for the pilot buildings complied with both the existing government regulations for Kazakhstan and UNDP procedures” (TE pg 47). Further, the procedures and equipment used for construction were consistent with good practices on the field (TE pg 47). Considering the time and cost-efficiency, the TER maintains the project’s efficiency rating as Highly Satisfactory.

4.4 Sustainability	Rating: Likely
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The TE gave a Likely rating to the overall sustainability of the project’s continuation of benefits. The TER finds that risks threatening sustainability are low because the government indicated support to provide financial resources through new a state program and expressed intentions to construct energy efficient buildings for the Future Energy Expo 2017. Although the project had cooperation from state agencies during implementation, government approval for Law on Energy Savings and decree on labeling system were still pending at the time of the TE. Lastly, there seem to be no environmental threats to undermine project benefits. Taking into account moderate institutional risks but low financial, sociopolitical and environmental threats, the TER gives a Likely rating to sustainability of the project.

Financial resources: The TE gave a Likely rating to financial sustainability because the government “indicated its intention to build residential buildings under a new state program that are designed for higher-than-average level of energy performance” (TE pg 48). Even during project implementation, the government had committed financing from state programmes such as the Affordable Housing, and Modernization of Housing and Municipal Infrastructure (MTR pg 50). At the time of the TE, developers had confirmed their plans to build energy efficient residential buildings (TE pg 48). Thus, the TER gives a Likely rating to financial sustainability of the project.

Sociopolitical: The project received support from the government as well as non-state actors like civil society and business groups (TE pg 47). It approved legislation on energy rating system and also confirmed “its intention to design and construct buildings for Expo 2017, a high-visibility event, that meet above-average energy performance standards” (TE 49). The project also created awareness and built capacity by training design professionals and building developers, who have shown interest in pursuing energy efficient designs and constructing efficient buildings (TE pg 40-41). Given the sociopolitical support from stakeholders, the TER gives a Likely rating.

Institutional framework and governance: The project was successful in getting government approval of legislation on energy passport for code compliance and design parameters which would be essential for nationwide governance on rating systems for buildings (TE pg 49) However, the approvals for decree on labeling system and Law on Energy Saving were still pending at the time the TE was written (TE pgs 35 & 49). The project had cooperation of activities from state agencies and in addition, the government created dedicated state agencies for residential housing such as the Kazakhstan Center for Modernization and Development of Housing and Municipal Infrastructure (MTR pg 50). These components would help in furthering institutional and governance support for continuation of project benefits.

Environmental: The TE gave a Likely rating to environmental sustainability as “there do not appear to be any environmental risks that may jeopardize project outcomes” (TE pg 49). It also noted that with replication of the project, there will be lower consumption of coal and thereby, lowering environmental risks (TE pg 49).

5. Processes and factors affecting attainment of project outcomes

5.1 Co-financing. To what extent was the reported co-financing essential to the achievement of GEF objectives? If there was a difference in the level of expected co-financing and actual co-financing, then what were the reasons for it? Did the extent of materialization of co-financing affect project’s outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The project’s actual co-financing of US \$263,710,800 was ten times higher than the anticipated co-financing of US \$27,995,340 (TE pg 6). Substantial amount of co-financing came from the government and other sources including private sector (TE pg 24). However, the TE does not provide information on how the funds were disbursed for activities.

5.2 Project extensions and/or delays. If there were delays in project implementation and completion, then what were the reasons for it? Did the delay affect the project’s outcomes and/or sustainability? If so, in what ways and through what causal linkages?

The project did not experience any delays during implementation.

5.3 Country ownership. Assess the extent to which country ownership has affected project outcomes and sustainability? Describe the ways in which it affected outcomes and sustainability, highlighting the causal links:

The country ownership of the project was high as government as well as civil society groups and private sector were actively involved in identification, planning and implementation of the project. These stakeholders also gave substantial co-financing to the project. On the policy front, the government showed support in the form of approving the legislation on energy rating system and modifying regulatory frameworks. It also “expressed its intent to continue professional training through technical universities in energy efficient design and construction” (TE pg 47).

6. Assessment of project’s Monitoring and Evaluation system

Ratings are assessed on a six point scale: Highly Satisfactory=no shortcomings in this M&E component; Satisfactory=minor shortcomings in this M&E component; Moderately Satisfactory=moderate shortcomings in this M&E component; Moderately Unsatisfactory=significant shortcomings in this M&E component; Unsatisfactory=major shortcomings in this M&E component; Highly Unsatisfactory=there were no project M&E systems.

Please justify ratings in the space below each box.

6.1 M&E Design at entry	Rating: Moderately Satisfactory
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The TE gave Moderately Satisfactory rating to the M&E design at entry and the TER finds this rating appropriate. The project document included standard M&E activities such as inception workshop, annual work plans, project implementation reviews, annual project reports, mid-term review, terminal evaluation and project terminal report at the end of the project period. It also provided Strategic Results Framework (SRF) that had range of quantitative and qualitative factors such as statistical and technical data, objectives indices and facts, qualitative assessment (PD pgs 33-34). The project design also included monitoring activities in its outputs, for instance, output 4.1 involved activities related to monitoring energy consumption in buildings, and output 1.6 covered monitoring and accounting of energy use and GHG emissions from buildings (TE pg 25). However, the MTR noted that the indicators “did not meet the specification of SMART indicators in the sense that not all proposed indicators were time-bound and/or measurable” (TE pg 25). For example, there were too many indicators in Output 1.4 which were subsequently amended to a single name indicator for simplification by the MTE. Further, for output 1.2, the MTE added measurable indicators to assess number of buildings complying with the rules (MTE pg 64). The M&E budget was \$168,500 from the GEF grant (TE pg 25).

6.2 M&E Implementation	Rating: Highly Satisfactory
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The TE and MTR rated M&E implementation as Highly Satisfactory. The project timely submitted annual project reports, project implementation reviews, and mid-term review report. As per the MTR and TE, the Steering Committee held regular meetings and summary of implemented activities were reported to the Committee (MTR pg 30, TE pg 26). The financial audits conducted from 2011-2013 gave overall satisfactory ratings for areas related to project progress, procurement, cash management, and general administration (MTR pg 30). In terms of adaptive management, the TE observed that the project team thoroughly responded to all the MTR recommendations and documented in the response log (TE pg 23). For example, the project modified the resources and its results framework upon recommendation of the MTR to make the indicators more measurable and time-bound. The project also calculated new baselines and project estimates as per the MTR recommendation to provide realistic GHG emission reduction targets (TE pg 25). Considering the good M&E practice followed by the project, the TER maintains the rating of Highly Satisfactory for M&E implementation.

7. Assessment of project implementation and execution

Quality of Implementation includes the quality of project design, as well as the quality of supervision and assistance provided by implementing agency(s) to execution agencies throughout project implementation. Quality of Execution covers the effectiveness of the executing agency(s) in performing its roles and responsibilities. In both instances, the focus is upon factors that are largely within the control of the respective implementing and executing agency(s). A six point rating scale is used (Highly Satisfactory to Highly Unsatisfactory), or Unable to Assess.

Please justify ratings in the space below each box.

7.1 Quality of Project Implementation	Rating: Highly Satisfactory
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The TE gave Highly Satisfactory rating to UNDP's project implementation. UNDP provided more than standard support to the project team by reviewing project achievements and project implementation strategy in regular meetings (MTR pg 33). UNDP gave co-financing to the project and also provided financial oversight under the national implementation arrangements (TE pg 23). It also "created a reporting system in Atlas as per the M&E plan in the project document, and it is updated regularly on the basis of the QPRs (TE pg 27). UNDP supervised the project on a daily basis through the country office and also reviewed the monthly reports (TE pg 25). As per the interviews conducted during TE, the implementing project managers were "to-the-point, effective, high-level" (TE pg 27).

7.2 Quality of Project Execution	Rating: Satisfactory
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The TE gave a Satisfactory rating to the project execution done by the Agency for Construction and Residential-Communal Affairs of the Republic of Kazakhstan. The agency was suitable for the project for its “role in construction and building codes and because of its overview of construction initiatives, which was helpful in the selection of sites for the pilot buildings” (TE pg 20). The TE stated that “national base of the EA was seen as a comparative advantage for advancing policies and activities at both the national and subnational levels” (TE pg 27). It participated in the Steering Committee and coordinated well with UNDP. Both UNDP and the executing agency worked intensively to “ensure that the highly complex process of tendering and procurement for the pilot buildings complied with both the existing government regulations for Kazakhstan and UNDP procedures” (TE pg 47). However, the TE noted that there were issues within government institutions and which created some difficulties in coordination (TE pg 27).

8. Assessment of Project Impacts

Note - In instances where information on any impact related topic is not provided in the terminal evaluations, the reviewer should indicate in the relevant sections below that this is indeed the case and identify the information gaps. When providing information on topics related to impact, please cite the page number of the terminal evaluation from where the information is sourced.

8.1 Environmental Change. Describe the changes in environmental stress and environmental status that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

As per the TE, measurements from GEF Climate Change Tracking Tool indicated GHG emission reduction of 2 Million tonnes CO₂ during project period (TE pg 50).

8.2 Socioeconomic change. Describe any changes in human well-being (income, education, health, community relationships, etc.) that occurred by the end of the project. Include both quantitative and qualitative changes documented, sources of information for these changes, and how project activities contributed to or hindered these changes. Also include how contextual factors have contributed to or hindered these changes.

The project activities under Outcome 3 gave rise to awareness about energy efficient products on the part of design professionals and students. The project held several competitions to motivate practices through which design professionals got the opportunity to participate in international competitions (TE pg 37).

8.3 Capacity and governance changes. Describe notable changes in capacities and governance that can lead to large-scale action (both mass and legislative) bringing about positive environmental change. “Capacities” include awareness, knowledge, skills, infrastructure, and environmental monitoring

systems, among others. “Governance” refers to decision-making processes, structures and systems, including access to and use of information, and thus would include laws, administrative bodies, trust-building and conflict resolution processes, information-sharing systems, etc. Indicate how project activities contributed to/ hindered these changes, as well as how contextual factors have influenced these changes.

a) Capacities: The project held 34 regional and national workshops for design professionals and students of architecture on building design as well as established an energy efficient centers in three regions. Also, it introduced a course of study in energy-efficient buildings under the “Construction” concentration for training and education (TE pgs 37-38).

b) Governance: The legislation on energy rating system was approved and was made mandatory for application to new construction of buildings (TE pg 32).

8.4 Unintended impacts. Describe any impacts not targeted by the project, whether positive or negative, affecting either ecological or social aspects. Indicate the factors that contributed to these unintended impacts occurring.

No unintended impacts were reported by the TE.

8.5 Adoption of GEF initiatives at scale. Identify any initiatives (e.g. technologies, approaches, financing instruments, implementing bodies, legal frameworks, information systems) that have been mainstreamed, replicated and/or scaled up by government and other stakeholders by project end. Include the extent to which this broader adoption has taken place, e.g. if plans and resources have been established but no actual adoption has taken place, or if market change and large-scale environmental benefits have begun to occur. Indicate how project activities and other contextual factors contributed to these taking place. If broader adoption has not taken place as expected, indicate which factors (both project-related and contextual) have hindered this from happening.

There was no broad adoption of GEF initiatives at scale.

9. Lessons and recommendations

9.1 Briefly describe the key lessons, good practices, or approaches mentioned in the terminal evaluation report that could have application for other GEF projects.

Lessons learnt are (TE pgs 53-54):

- a) Procurement for a building with two sources of financing was time consuming and so, future project should use GEF grant for design services only or support the development of homeowner financing incentives;
- b) For commissioning an energy efficient building, the project should have budget for arrangements related to equipment, reconstruction and technologies;

- c) Occupants seeking affordable housing are important as beneficiaries and their needs should be considered at the design stage;
- d) The energy savings from the pilot demonstrations is also resulting in budget cuts by the government, hence, “designing and constructing a building with efficient features is not enough to ensure significant economic savings” (TE pg 53);
- e) Projects should consider important barriers outside of the construction sector for energy savings;
- f) When calculating total energy use, attention should be given to cooling, lighting, appliances and other energy needs to assess energy performance; and
- g) Projects should be aware of ownership arrangements on rental housing in government housing sector investments.

Good practices listed in the TE are (TE pg 52-53):

- a) It was good strategy for the project to focus on building codes to leverage large-scale emission reductions and “training and certification activities in this area were described by one contractor as connecting policy with practice” (TE pg 52);
- b) The project’s promotion of comfort with energy savings and GHG reductions benefitted broad audience. Also, its use of organizations such as NGOs built capacity broadly than a centralized approach would have done;
- c) Information sharing with experts from Belarus and other GEF building projects helped to increase resources for the project;
- d) The regional website used by the project “provided networking opportunities for the project with other similar initiatives” and it will also ensure that information is available even after closure of the project (TE pg 53).

9.2 Briefly describe the recommendations given in the terminal evaluation.

The TE gave recommendations for UNDP Kazakhstan, UNDP RBEC, and GEF (TE pgs 54-56):

- a) UNDP needs to “improve awareness at the local government level and confront coal-based, energy-intensive policies” and some of the areas to promote advocacy could be fossil fuel subsidy reforms and incentives to save energy (TE pg 55);
- b) UNDP should ensure there is fixed timetable for building code updates so that the government makes the codes increasingly rigorous;
- c) UNDP should emphasize linkages between ownership structures and energy use, and promote housing sector in its policy advocacy;
- d) UNDP should “coordinate its work on energy and environment with its work on economic and social well-being” (TE pg 55) and also “advocate on behalf of the residents of the pilot building” to improve their existing circumstances (TE pg 56);
- e) UNDP should consider indicators to measure occupants’ satisfaction in future energy efficient buildings;
- f) Projects should discuss operations and maintenance budgets at the design stage;
- g) The website and project publications should be accessible at the regional level; and

- h) GEF should consider providing financial support for post-project monitoring and evaluation because many of the results will occur after project closure.

10. Quality of the Terminal Evaluation Report

A six point rating scale is used for each sub-criteria and overall rating of the terminal evaluation report (Highly Satisfactory to Highly Unsatisfactory)

Criteria	GEF IEO comments	Rating
To what extent does the report contain an assessment of relevant outcomes and impacts of the project and the achievement of the objectives?	The report contains an elaborate assessment of the outcomes and achievements, however, more detail under impact section is needed.	MS
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The report's ratings are well explained with evidence and they are aligned with information from other project documents.	S
To what extent does the report properly assess project sustainability and/or project exit strategy?	The report's assessment of sustainability is complete and the ratings are consistent with evidence presented. The exit strategy is not provided because the project has provided this in the form of new projects in portfolio.	S
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	Lessons learned are comprehensive and supported well with evidence.	S
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The report includes co-financing figures, however, it does not provide costs per activities.	MS
Assess the quality of the report's evaluation of project M&E systems:	The report fittingly assessed M&E design and implementation and gave appropriate ratings.	S
Overall TE Rating		S

11. Note any additional sources of information used in the preparation of the terminal evaluation report (excluding PIRs, TEs, and PADs).

The TER did not use any additional sources of information.