# Terminal Evaluation Review form, GEF Independent Evaluation Office, APR 2017

# 1. Project Data

	<u></u>	immary project data			
GEF project ID		4224			
GEF Agency project ID		557205			
GEF Replenishment Phase		GEF-3			
Lead GEF Agency (include all for joint projects)		World Bank / IFC			
Project name		Turkey Geofund			
Country/Countries		Turkey			
Region		ECA			
Focal area		Climate Change			
Operational Program Priorities/Objectives	or Strategic	GEF Strategic Program 3 (Rene	GEF Strategic Program 3 (Renewable Energy)		
Executing agencies in	volved	None			
NGOs/CBOs involven	nent	None			
Private sector involve	ement	As main beneficiaries (develop	ers, insurers, financial institutions)		
CEO Endorsement (FS	SP) /Approval date (MSP)	May 2010			
Effectiveness date / p	project start	May 2010			
Expected date of pro	ject completion (at start)	2014			
Actual date of projec	t completion	June 2016			
		Project Financing			
		At Endorsement (US \$M)	At Completion (US \$M)		
<b>Project Preparation</b>	GEF funding	0.0	0.0		
Grant	Co-financing	0.0	0.19		
GEF Project Grant		10.0	1.77		
	IA own	1.15	0.00		
	IA UWII	1.15	0.36		
	Government	UA	0.0		
Co-financing					
Co-financing	Government	UA	0.0		
Co-financing	Government Other multi- /bi-laterals	UA UA	0.0 0.3		
Co-financing Total GEF funding	Government Other multi- /bi-laterals Private sector	UA UA UA	0.0 0.3 0.01		
Total GEF funding Total Co-financing	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA UA UA UA UA	0.0 0.3 0.01 0.0		
Total GEF funding	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA         UA         UA         UA         10.0         10.65         20.65	0.0         0.3         0.01         0.0         1.96         0.66         2.62		
Total GEF funding Total Co-financing Total project funding	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA UA UA UA 10.0 10.65	0.0         0.3         0.01         0.0         1.96         0.66         2.62		
Total GEF funding Total Co-financing Total project funding	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA         UA         UA         UA         10.0         10.65         20.65         valuation/review informatio         November 2017	0.0         0.3         0.01         0.0         1.96         0.66         2.62         1		
Total GEF funding Total Co-financing Total project funding (GEF grant(s) + co-fin	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA         UA         UA         UA         UA         10.0         10.65         20.65         valuation/review informatio	0.0         0.3         0.01         0.0         1.96         0.66         2.62         1		
Total GEF funding Total Co-financing Total project funding (GEF grant(s) + co-fin TE completion date	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA UA UA UA 10.0 10.65 20.65 <b>/aluation/review informatio</b> November 2017 Denzel Hankinson, Deborah Or	0.0         0.3         0.01         0.0         1.96         0.66         2.62         1		
Total GEF funding Total Co-financing Total project funding (GEF grant(s) + co-fin TE completion date Author of TE	Government Other multi- /bi-laterals Private sector NGOs/CSOs	UA         UA         UA         UA         UA         10.0         10.65         20.65         /aluation/review information         November 2017         Denzel Hankinson, Deborah Ori         (DHInfrastructure)	0.0         0.3         0.01         0.0         1.96         0.66         2.62         1		

## 2. Summary of Project Ratings

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

## **3. Project Objectives**

3.1 Global Environmental Objectives of the project:

The Project Appraisal Document states that the project's global environment objective is to "reduce greenhouse gas (GHG) emissions on a continuous basis by overcoming barriers to the development of geothermal energy" (pg. 8).

3.2 Development Objectives of the project:

This subproject is part of the Geofund umbrella project, which is a "multi-country facility of US\$25 million with the objective of systematically promoting the use of geothermal energy in the Europe and Central Asia (ECA) region" (PAD, pg. 4).

The Turkey Geofund subproject aimed to "address barriers to geothermal markets in Turkey through technical assistance and Geological Risk Mitigation instruments (such as Geological Risk Insurance)" with the objective that the "increase of geothermal energy use by developing and implementing a number of financially viable projects in Turkey will help to accelerate the use of geothermal energy, build private-sector confidence in investing in this resource, and demonstrate to the regulatory bodies at national and local government levels approaches to address geothermal resource risks cost effectively" (PAD, pg. 9).

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

The project's design and strategy were altered three times since project's inception in 2007. As noted above, the documentation submitted to the GEF CEO for approval in May 2010 outlined two components: 1) technical assistance, and 2) geological risk mitigation. By the second fiscal quarter in 2011, the Project's components were restructured into two phases/components to focus on "creating and piloting geothermal well productivity insurance (GWPI) (component 1), and refining and replicating GWPI in additional projects (component 2)" (TE, pg. 16). After an internal IFC re-evaluation in May 2012, the project added a third component to "Develop and implement geothermal best practices" (TE, pg. 1; Figure 2.1). With each change, there were accompanied changes to the results framework (TE, pg. 66). The final three components, therefore, were:

- Component 1: Creating and piloting a risk mitigation instrument (or geological risk insurance, GRI),
- Component 2: Diffusing GRI to the wider geothermal community, and
- Component 3: Developing and implementing geothermal exploration best practices.

The restructuring, particularly the addition of the best practices component, intended to increase capacity and know-how of project developers and financial institutions (TE, pg. 18). The development of a geological risk insurance and successful piloting and replication of insured geothermal projects were expected to have the following impacts:

- "USD 420 million of direct investment and USD 600 million of indirect investment facilitated in geothermal energy;
- 451.08 thousand tons per year of greenhouse gas production avoided by directly from IFC facilitated projects, and by 644.4 thousand tons per year from projects that were indirectly facilitated through the Project; and
- An increase of 840 thousand MWh per year of energy produced from renewable energy by from IFC facilitated projects, and by 1.2 million MWh per year from projects that were indirectly facilitated through the Project" (TE, pg. 18).

### 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

The TE rates relevance as moderately satisfactory, and this TER rates relevance as **satisfactory** since the project was well-aligned with World Bank, IFC, GEF, and Turkey's strategic priorities.

The project was well-aligned with GEF's Strategic Program 3 on Renewable Energy, which aims at promoting market approaches for renewable energy in grid-based systems (PAD, pg. 8), and with the GEF-3 Operational Program 6, which aimed to promote the uptake of RE by removing barriers and reducing implementation costs (TE, pg. v).

The project was also consistent with IFC and World Bank's high-level strategic commitments to climate change, specifically IFC's Climate Change Strategy (2008) which includes mobilizing donor financing to commercialize clean energy investments, and the World Bank's Renewable Energy and Energy Efficiency Action Plan (2004) target of a 20 percent annual increase in renewable energy and energy efficiency commitments from 2005 to 2009 (TE, pg. 28).

In Turkey, the project was most directly aligned with the World Bank's Country Partnership Strategy (CPS) for 2008-2011, during which World Bank planned to support projects that improved the security, reliability, and efficiency of Turkey's energy supply by emphasizing renewable energy development, and 2012-15 when the World Bank similarly emphasized an improved supply of reliable and efficient energy (TE, pg. 29). The World Bank's Country Partnership Strategies during project implementation were developed around the Government of Turkey's (GoT) ambitious targets to increase renewable energy in its Ninth Development Plan for 2007-2013 (TE, pg. 14). Important institutional, legal, and regulatory

reforms were also taking place in Turkey, as the government passed the Renewable Energy Law in 2005, and the Law on Geothermal Sources and Mineral Waters in 2007 (TE, pg. 30).

4.2 Effectiveness	Rating: Unsatisfactory

The TE rates effectiveness as moderately unsatisfactory, and this TER rates it as **unsatisfactory** given the major shortcomings in project outcomes and impacts.

The only indicator that can be linked to the original components is the number of entities implementing risk mitigation instruments, under component 1, which was not achieved (TE, pg. 44). The following assessment is based on the final modified components.

#### Component 1: Creating and piloting a risk mitigation instrument (or geological risk insurance, GRI)

The project met or surpassed all target outputs under component 1 (TE, pg. 36). For example, IFC conducted workshops to raise geothermal developer awareness of geothermal risk insurance, and informational workshops to inform developers and the wider geothermal community about geothermal risks, evaluating drilling success, and the benefits of geothermal risk insurance (TE, pg. 40). However, the project only met one of two outcome targets under component 1 because an insurance product was launched in 2015, but the project failed to implement any pilot projects using geothermal risk insurance (TE, pg. 35). The TE notes that "from 2010 to 2016, the Project team made three attempts to pilot a geothermal project that uses GRI (TE, pg. 20). However, even after extending the project timeline, the project was still "unable to secure debt using the insurance product as collateral" (TE, pg. 20), largely due to the fact that the project failed to engage financial institutions until late in the project, in 2014 (TE, pg. 28).

#### Component 2: Diffusing GRI to the wider geothermal community

The project only met 1 (number of entities receiving advisory services) out of 5 target outputs under component 2, since it did not achieve the piloting of geothermal projects using geological risk insurance (GRI) from component 1 (TE, pg. 36). Furthermore, the project did not achieve any targeted outcomes under component 2 (5 projects indirectly facilitated by IFC using the GRI that was piloted) since it was contingent on one project piloting GRI from component 1 (TE, pg. 35).

#### Component 3: Developing and implementing geothermal exploration best practices.

The project met 6 out of its 8 target outputs under component 3 (TE, pg. 36), but only 1 out of 3 target outcomes (TE, pg. 44). The Project successfully produced geothermal exploration best practices for developers, including first and second editions of "Geothermal Exploration Best Practices" reports which were endorsed by more geothermal industry associations, technical experts, and other industry players (TE, pg. 21). Furthermore, IFC "facilitated the development of the largest global database on geothermal well productivity, provided advisory services and training for developers/insurers in the form of workshops (various workshops were conducted at two conferences during this period), review of project proposals and models for compliance with best practice principles and standards (conducting technical and integrity due diligence), and support in collection and presentation of project data to financial institutions and insurers" (TE 21). Regarding technical due diligence reports, the project produced reports for 4 projects (Hateks, Kayi, Transmark and Zorlu) which were accepted by the clients (TE, pg. 35).

However, IFC was unable to provide planned capacity building to financial institutions because "(i) there was no effective demand for IFC's advisory services despite initial interest, and (ii) among the few financial institutions that attended the best practices launch conference, most thought the material on financing was insufficient" (TE, pg. 52).

Overall, the project met 10 out of 16 output targets and only 2 out of 6 outcome targets (TE, pg. 35-36). Regarding impacts, the project did not achieve any of the planned direct or indirect impacts because they were contingent of the piloting of geothermal risk insurance (GRI). The TE notes that this is likely due to the fact that: "1) demand for GRI [among financial institutions, developers, and insurers] was fundamentally limited, 2) it was difficult for IFC to align multiple external stakeholder decisions and timetables, 3) an increasingly favorable legal and regulatory environment for geothermal generation reduced the scope for GRI, and 4) the long project cycle of geothermal projects relative to the Project's time frame limited its odds of success" (TE, pg. 66).

4.3 Efficiency	Rating: Moderately unsatisfactory
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The TE rates efficiency as moderately unsatisfactory, and this TER maintains that rating.

There were substantial delays during project preparation which delayed the project start from early 2009 to mid-2010 (TE, pg. 20), and project completion was also extended from mid-2014 to mid-2016 (TE, pg. 19). One factor that contributed to delays during implementation was "political uncertainty prior to the general elections in November 2015" which "slowed down local banks' decision-making on whether to provide financing" for a project using geothermal risk insurance (TE, pg. 32).

The Project used the full budget for technical assistance and the best practices component (which was added after CEO endorsement), however the budget for concessional finance was not used and was returned to the GEF since the geological risk insurance pilot project was not implemented (TE, pg. 53). The TE also notes that the project timeline was too short for the planned impacts to be realized, since it is "widely accepted that geothermal plant development take approximately six to eight years from resource exploration to completion of plant construction" (TE, pg. 56).

4.4 Sustainability Rating: Moderately unlikely	
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The TE rates sustainability as unlikely, and this TER rates it as **moderately unlikely** since no planned impacts were achieved and are unlikely to be achieved after project completion, but capacity building and sharing of best practices are more likely to be sustained.

#### Environmental

This TER rates environmental sustainability as **moderately likely**, due to the potential risk posed by unregulated geothermal activities. As noted in the TE, "clearer regulations on geothermal resource management and permitting need to be established to ensure that resources are not overexploited, to reduce potential commercial conflicts between neighboring wells, and ensure that proposed plant capacity will not put a strain on the resource and can be operated sustainably for the plants lifetime" (TE, pg. 74).

#### Sociopolitical

Sociopolitical sustainability is rated as moderately unlikely.

Overall, there is strong government support for renewables in Turkey, as noted in the section on relevance, and government commitment is expected to continue in this sector. Project activities were linked to long-term national programs on geothermal energy, which ensured project sustainability alongside the Government's commitment, policies and regulations for the development of geothermal energy resources (PAD, pg. 19). There is, however, a risk that spillover effects from geopolitical instability in the region and two general elections from 2015-2016 could threaten the stability of Turkey's macroeconomic environment (TE, pg. 32).

The original Project design did not foresee engagement with financial institutions until 2012, plans which largely did not come to fruition because banks were not willing to pay for IFC's advisory services and workshops on financing early stage geothermal development. (TE, vi)

Stakeholder ownership and awareness greatly enhance the sustainability of the project's technical assistance and best practices outcomes, since most participating stakeholders were both satisfied and more aware following the project's workshops and found the best practice guides to be useful. The long-term sustainability of these benefits will be contingent on having a system in place to record and incorporate feedback for future updates, however this is not considered a high risk to sustainability since advancements in this field typically happen every 5-10 years (TE, pg. 72-3).

However, there remains a significant lack of ownership among financial institutions and insurers, whose buy-in is essential for the further development of geothermal risk mitigation instruments. For example, one developed explained that "insurance is not needed in the Turkish market, what is needed is financing" (TE, pg. 72). Another noted that "banks and investors think it's 'nice' that we have gone through the process and managed to get an insurance policy but there is no real, tangible, positive effect" (TE, pg. 72).

#### **Financial resources**

Financial resources sustainability is rated **unlikely** due to the lack of interest from financial institutions which poses a significant risk, despite ongoing support from bi/multilateral institutions.

The European Bank for Reconstruction and Development (EBRD) and the World Bank have both initiated recent projects that address the same key barriers to geothermal development in Turkey (TE, pg. 31). These projects have the potential of improving the long-term financial sustainability of geothermal exploration in Turkey if the issue of buy-in from financial institutions is addressed. Throughout this project, banks were overall not willing to pay for IFC's advisory services and workshops on financing early stage geothermal development (TE, pg. 50), and most of the insurers approached by IFC were hesitant about the geological risk insurance product "because they felt that exploration risk was uninsurable, Turkey's market potential was too small, and the data required for risk assessment insufficient" (TE, pg. 49).

#### Institutional framework and governance

The institutional and governance sustainability is rated **moderately unlikely**, as it is "unclear whether there will be incentives for renewable energy once the current regime expires, and there are even rumors circulating that the Feed-in-Tariffs (FiTs) may change...unless the [government] extends the validity of FiTs or introduces new incentives for renewable energy, investors might be unwilling to invest in geothermal energy in the medium-term" (TE, pg. 73). Overall, uncertainty regarding the political

regime and government policies promoting renewable energy pose a threat to the sustainability of geothermal activities in Turkey.

## 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?

Co-financing covered 100% of project preparation (\$191,524). However, there was only \$662,347 in materialized co-financing, compared to the \$10.65 million committed at CEO endorsement. The TE does not clearly discuss the project's leveraged co-financing, but the lower co-financing is likely due to the fact that the project failed to pilot a project using geothermal risk insurance (GRI), which was a required precursor to additional projects that would leverage additional co-financing.

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 TE notes substantial delays during project preparation which delayed the project start from early 2009 to mid-2010 (TE, pg. 20), however the TE and PIRs do not specify any reasons. Project completion was also extended from mid-2014 to mid-2016 (TE, pg. 19). One factor that contributed to delays during implementation was "political uncertainty prior to the general elections in November 2015" which "slowed down local banks' decision-making on whether to provide financing" for a project using geothermal risk insurance (TE, pg. 32).

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:

Country ownership at the government level is strong and likely to continue. The PAD noted strong government support for renewables (pg. 5), and the project was strongly linked to existing government commitments and policies and regulations for the development of geothermal energy resources (PAD, pg. 19). The TE further notes that the project "continues to be relevant and in line with the Government of Turkey's energy policy" (TE, pg. 31).

However, the lack of ownership by financial institutions presents a risk to the sustainability of geothermal risk mitigation in Turkey. There was some interest from developers, as evidenced by the advisory fees secured from developers during the project's lifetime. However, banks were overall not willing to pay for IFC's advisory services and workshops on financing early stage geothermal development (TE, pg. 50), and most of the insurers approached by IFC were hesitant about the geological risk insurance product "because they felt that exploration risk was uninsurable, Turkey's market potential was too small, and the data required for risk assessment insufficient" (TE, pg. 49).

## 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: Satisfactory
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The TE rates M&E design as **satisfactory**, and this TER maintains that rating.

The PAD provided a detailed results management framework with indicators and targets for both impacts and outcomes which would be monitored semiannually, and the M&E plan was practical, sufficient, well-budgeted. The plan combined three complementary processes: "(i) internal process of capturing short-term operational results; (ii) data collection on market characteristics from official sources and self-reporting from sponsors' as a part of financing facility monitoring; and (iii) external midpoint and final evaluation" (PAD, pg. 18).

The TE rates M&E implementation as moderately satisfactory, however this TER rates it as **satisfactory** since the plan was well-implemented and changes in the key performance indicators during project implementation were an appropriate response to changing priorities.

As the project's strategy and structure evolved, the project's logframe and results framework were similarly altered with "substantial changes over time such as indicators being replaced or reshuffled to match changes to the Project's components" (TE, pg. 58). Throughout the changes, IFC continued to update the results measurement framework biannually. Overall, the M&E plans was well-implemented, as "results were consistently reported biannually, the internal budget from 2010 accounts for M&E costs in the staff cost line item, mid-term and terminal evaluations were conducted, and there are no records of budgetary problems relating to M&E" (TE, pg. 65).

However, the TE notes that some of the project's achievements were "re-recorded well past the original time of implementation" during the project's restructuring, such as with the output indicator "number of entities receiving advisory services" under component 1, however the TE does not give further details (TE, pg. 66).

## 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: Moderately satisfactory
7.1 Quality of Project Implementation	Rating: Moderately satisfactory

The TE does not provide a rating for quality of project implementation or execution, and this TER rates both as **moderately satisfactory**. The IFC directly executed this project, taking on the role of both implementing and executing agency.

Overall, the project was well-designed by IFC with activities at both the firm and sector-level to address the key barriers to geothermal development in Turkey, and took appropriate measures to mitigate risks. However, the TE notes that the sequencing of activities would have benefited from earlier engagement with financial institutions since financing is a key barrier to early stage geothermal development, and due to their delayed engagement in 2012 the banks were "not willing to pay for IFC's advisory services and workshops on financing early stage geothermal development" (TE, pg. 34). Furthermore, the project's market assessment in 2008 failed to "sufficiently identify gaps in the investment climate for geothermal exploration" which could have guided the structuring of project activities (TE, pg. 34).

The IFC appropriately updated the results framework as components were changed and added, and successfully oversaw the implementation of the M&E plan. IFC's team also involved and communicated well with donors and other stakeholders, except for its limited interactions with government and financial institutions (TE, pg. 63). IFC only engaged financial institutions two years before project completion (six years after the project's inception), and the project could have benefited from more government involvement to "facilitate sharing of data on geothermal fields" (TE, pg. 64).

The TE also notes that the project's design was not well-aligned with the project timeline and available human resources given the technical and high specialized scope of the project (TE, pg. 53). Overall, the efficiency of project execution could have been improved by increasing the number of high-level staff necessary to develop and pilot an insurance product (TE, pg. 57).

7.2 Quality of Project Execution	Rating: Moderately satisfactory
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See above.

## 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.

The Project did not achieve any of the direct or indirect impacts planned since they were contingent on the piloting of geological risk insurance.

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.

The Project did not achieve any of the direct or indirect impacts planned since they were contingent on the piloting of geological risk insurance.

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

Despite the failure to pilot a project using geological risk insurance, the project successfully raised awareness among developers, contractors, financial institutions, insurance companies, and others through workshops and the dissemination of best practices publications. The TE notes that most workshop participants were satisfied with the sessions, and that key learnings included "an increased understanding of IFC's proposed insurance scheme, drilling success rates and data, and IFC funding conditions for geothermal projects" (TE, pg. 42). Furthermore, many workshop participants showed interested in IFC follow up on potential business development opportunities.

The exploration best practices report was also converted into a textbook and widely accepted by different stakeholders in the global geothermal community (TE, pg. 52), and data from the global well database has been used to inform studies such as a the Bloomberg white paper (TE, pg. 48), demonstrating that the project's knowledge products have increased the knowledge base of the geothermal community in Turkey and globally.

Overall, the project increased developers' technical know-how and capacity to develop geothermal projects, raised their awareness and willingness to use geological risk insurance, and promoted exploration best practices to ensure they are widely accepted and adopted.

#### b) Governance

There were no noted governance impacts.

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.

Although the project was not successful at piloting a project using geological risk insurance, the experience did inform new donor projects in Turkey regarding "alternative financing arrangements to support the geothermal sector in Turkey", such as the European Bank for Reconstruction and Development's (EBRD) PLUTO initiative and the World Bank's Geothermal Development Program (TE, pg. 36-37). The project also helped the private sector bring a new product to market in Turkey, as Munich RE (an insurer) noted, "IFC's presence in the market and support for the development of geothermal exploration risk insurance were a key determinant for Munich RE to target Turkey's geothermal sector and adapt our insurance product to the local market" (TE, pg. 52).

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 is no specific evidence of adoption at scale. However, since project completion, "development partners have developed programs to mitigate exploration risk, but few have structured them solely around commercial insurance" and rather combine a range of finance instruments (TE, pg. 71).

## 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.

- A sequential project structure would have been more appropriate, beginning with a knowledge management project (to test the hypothesis and gauge market demand) then a client facing pilot project. This structure applies to any project where new products are being developed and/or tested, particularly if there are known high risks at the project onset.
- IFC should have collaborated with banks from the Project's inception and involved these banks in structuring the insurance product. IFC expected financial institutions to offer debt financing for the de-risked drilling phase. However, financial institutions were not convinced of the collateral value of the insurance.

9.2 Briefly describe the recommendations given in the terminal evaluation.

• Early efforts should include an assessment of market dynamics, demand for the product, and pipeline quality.

- A regional or global focus is more appropriate for projects involving the development of innovative financial tools, particularly when there is a limited project pipeline due to long lead times.
- Pre-implementation should involve an assessment of skills needed to successfully complete the Project and the necessary staff to fill those skills should be involved as early as possible and when attempting to design new financial products, the relevant industry experts should be involved in pre-implementation, to set the scope and limitations of the new design.

## **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 TE provides a detailed assessment of all output, outcome, and impact indicators. However, it is difficult to assess effectiveness against the original components/objectives.	MU
To what extent is the report internally consistent, the evidence presented complete and convincing, and ratings well substantiated?	The evidence provided is convincing and ratings are well substantiated.	S
To what extent does the report properly assess project sustainability and/or project exit strategy?	The TE provides a comprehensive assessment of risks and project sustainability.	S
To what extent are the lessons learned supported by the evidence presented and are they comprehensive?	Most of the lessons learned are well substantiated, however some do not provide sufficient explanation of their context (for example, 5.1.4: "Project teams should be given flexibility to determine the best method for solving an identified problem").	MS
Does the report include the actual project costs (total and per activity) and actual co-financing used?	The report gives a brief overview of budget use in the narrative, however there is insufficient information regarding actual project costs and the sources of co- financing.	MU
Assess the quality of the report's evaluation of project M&E systems:	The report gives a comprehensive assessment for the project's M&E systems.	HS
Overall TE Rating		MS

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

No additional sources of information were used.