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**Review of the Fiscal Year 2016  
Defense Environmental International  
Cooperation Program**

Susan L. Clark-Sestak, Project Leader

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## Executive Summary

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The Defense Environmental International Cooperation (DEIC) program is a tool available for the Office of the Secretary of Defense (OSD) and the geographic Combatant Commands (CCMDs) to support security cooperation engagement activities with other nations. DEIC projects focus on defense-related environmental or operational energy themes, with special priority placed on projects that promote the sustainment of mission capability and interoperability or the creation and enhancement of strategic partnerships and partner capabilities. The author reviewed the execution of the fiscal year 2016 (FY16) DEIC program within each of the CCMD areas of responsibility (AORs) and assessed the overall program's performance for that year.

This document has three purposes:

- First, it serves as a record of what was accomplished during FY16 under the DEIC program and identifies the broader impacts that some of those activities have had in supporting DOD objectives. **Note:** Some project titles appear similar to those conducted in previous years. In such cases, one event builds upon another thereby contributing to a deeper or more widespread knowledge of the topic within that country or region.
- Second, it raises awareness about the program's activities among the CCMD leads for DEIC (and other interested personnel), thereby enhancing the cross-pollination of ideas and products developed under the DEIC program's auspices.
- Third, it offers a set of qualitative and quantitative metrics for evaluating the program. The first table characterizes some of the qualitative impacts each of these projects has had.

**Impacts of DEIC Engagement Activities as Executed by the Geographic CCMDs\***

	Support the (US) Warfighter	Contribute to Interoperability and/or Mission Sustainment	Build/Enhance Partner Capacity and Capability	Create/Strengthen Relationships with Other Countries	Promote Interagency Cooperation	Contribute to Others' Regional Leadership Capacity or to Regional Stability	Save U.S. Resources
<b>Projects by CCMD</b>							
<b>AFRICOM</b>							
Oil Spill Preparedness and Response (Morocco)			√	√	√	√	
Horn of Africa: Water Capacity Building Workshop (Ethiopia)		√	√	√	√		
Niger River Basin Flood Mgmt (Nigeria)			√	√			
DEFCON Support, Wildlife Trafficking, and Outreach for Mission Sustainability (S. Africa)		√	√	√	√	√	
Energy as an Engagement Activity (Burkina Faso)			√	√	√	√	
Disaster and Oil Spill Response (Seychelles)			√	√	√		
<b>CENTCOM</b>							
Developing Environmental Standard Operating Procedures (SOPs) for Afghan National Security Force (Afghanistan)	√	√	√		√	√	
<b>EUCOM</b>							
Arctic Security Forces Roundtable (ASFR) 2016 (Norway)				√		√	
Environmental Considerations in Cold Regions in Support of ASFR (various)	√	√		√			
Defense Network (DEFNET)		√		√	√	√	
Natura 2000 and Range Management Outreach (Italy)	√	√		√	√		√
Sustainable Range Management Regional Engagements (Baltics)	√	√	√	√		√	√
Environmental Protection and Sustainable Range Management (Israel)			√	√			
Environmental Considerations in Military Operations Regional Workshop (Montenegro)			√	√		√	
Implications of Climate Change on Military Activities (Bulgaria)			√	√	√		
Sustainable Range Management Bilaterals (Balkans and SE Europe)	√	√	√	√			√
<b>NORTHCOM</b>							
Arctic Capability Advocacy: 3rd Biennial International Arctic Collaborative Workshop	√	√		√	√		

PACOM							
FY16 Regional Environmental Security Forum (RESF) (Fiji)		√	√	√	√	√	
Ecological Restoration of Degraded Mining Areas (Mongolia)			√	√	√		
Maldives National Defense Force Environmental Capacity Building (Maldives)	√	√	√	√			
SE Asia Maritime Environmental Security workshop (Malaysia)			√	√	√	√	
SOUTHCOM							
Toward Net-Zero Waste, Environmental Awareness, and Waste to Energy (Honduras)			√	√	√		
Toward Net-Zero Waste (Guatemala)			√	√	√		
U.S.-Chile Defense Consultative Commission (DCC): Mission Sustainability (Chile)		√		√		√	
Rapid Integrated Strategic Assessment (RISA) for Water Security (Brazil)			√	√	√		
Renewable Energy and Water Sustainability (Colombia)		√	√	√	√		
Climate Change Plan Development (Colombia)			√	√		√	
U.S.-Chile DCC Environmental and Energy Subcommittee: Follow-Up Activity (Chile)		√	√	√			
Encroachment/Incompatible Land Use Impacts on Training Areas (Colombia)		√	√	√			
Meteorological and Oceanographic Capability and Needs Assessment (Colombia)			√	√			
Energy and Water Assessment (Trinidad & Tobago)			√	√	√		
Disaster Waste Mgmt Contingency Plan (Trinidad & Tobago)		√	√	√	√		
Environment and Energy Education Training Working Group			√	√			

\* In addition to the 33 projects listed in this table, the remaining 3 projects DEIC funded in FY16 (U.S. Army Engineer Research and Development Center support to AFRICOM, contractor support to SOUTHCOM, and funding to IDA) all involved engagements with other nations but these three projects did not involve separate engagements. Instead, they supported one or more of the other 33 projects.

The second table offers several quantitative ways of measuring all 36 projects funded by DEIC in FY16.

**Quantifiable Metrics for the DEIC Program and FY16 Results**

Type of Metric	FY16 Results
<b>Related to quantity of foreign engagements</b>	
• Percentage of DEIC projects involving interaction with other nations	100% (36 of 36)
• Ratio of the number of engagements with other nations to DEIC funding	36: \$1.581M, or \$43.9K average cost
• Number of foreign nationals engaged	1,100+
• Number of foreign nations engaged	79
<b>Related to leveraging funding from other sources</b>	
• Percentage of all DEIC projects that leveraged other funding	41.7% (15 of 36)
• Percentage of total spending on DEIC projects that was from other funding sources	37.4% (\$945K of \$2.526M)
• Number of CCMDs that leveraged other funding	3 (of 6)

For FY16, the DEIC program had a final budget of \$1,581,000. A three-member Advisory Group reviewed proposals totaling \$3,071,000 and then recommended to the Assistant Secretary of Defense for Energy, Installations and Environment (ASD(EI&E)) how these funds should be allocated. Of note, despite the small amount of funding and the challenges of executing an international program with funding available only in increments as a result of the U.S. government’s Continuing Resolution (CR), DEIC’s reach was extensive. More than 1,100 representatives from 79 nations participated in DEIC-funded activities during the year, and the program leveraged \$945,000 in other sources of funding to execute these projects.

Also notable in FY16 were several management improvements to the DEIC program, which IDA had recommended in a previous assessment. Notably, the review and approval process was moved up in order to better align with the fiscal year start. The Advisory Group met in early August, the recommendations were provided to ASD(EI&E) in a timely fashion, and the latter issued the memorandum approving the FY16 program on 1 October 2016, the first day of the new fiscal year.

Marked improvements were also evident in terms of funding under the CR. OSD worked diligently to obtain inputs from the CCMDs about near-term funding requirements and succeeded in obtaining a sizable amount of funding under the CR. This funding was then applied equitably across the CCMDs, taking close account of the stated requirements of each. In short, in the case of both recommendations, program management of DEIC was much more effective than in previous years.

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# 1. Overview of the Defense Environmental International Cooperation (DEIC) Program and Fiscal Year 2016 (FY16) Execution

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In previous assessments of the DEIC program, research staff at the Institute for Defense Analyses (IDA) described the purposes of DEIC and the types of activities that it has funded.<sup>1</sup> This document focuses on the execution of the FY2016 program, identifies several larger benefits derived from DEIC activities, and offers additional ways to measure the impact of this program.

## A. Overview of the FY16 DEIC Program

The DEIC program, which resides within the Environment, Safety and Occupational Health (ESOH) Office of the Assistant Secretary of Defense for Energy, Installations and Environment (ASD(EI&E)), was originally funded in FY16 at \$1,705,000. The approved budget was initially \$1,364,000 and was subsequently adjusted to \$1,581,000.<sup>2</sup> The decline in the approved budget compared to the original budget is replicated each year, primarily as a result of the “tax” imposed on Office of the Secretary of Defense (OSD) programs across the board.

Of the approved budget, as of November 2016, a total of just over \$21,000 was planned to be returned to EI&E by the Combatant Commands (CCMDs), although this figure is still subject to minor modification. The amounts of and reasons for the returns are listed in Table 1. The DEIC Program Managers (PMs) at the CCMDs needed to retain these funds until all expenses incurred through the end of the fiscal year had been paid out and therefore they could not be reprogrammed for other DEIC purposes.

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<sup>1</sup> See Susan L. Clark-Sestak and Ashley Neese Bybee, *Review of the Fiscal Year 2013 (FY13) Defense Environmental International Cooperation Program*, IDA Document D-5129 (Alexandria, VA: IDA, February 2014).

<sup>2</sup> The final approved DEIC budget of \$1,488,000 was supplemented with \$69,000 in climate change funding and \$24,000 in other ESOH funding, made available in August 2016, thereby bringing the DEIC program to \$1,581,000.

**Table 1. DEIC Program Funding Returned by CCMD and Reasons for Return**

<b>CCMD</b>	<b>Amount Returned</b>	<b>Reason</b>
Africa Command (AFRICOM)	\$273.43	Difference between project estimates and actual costs.
European Command (EUCOM)	\$16,019.04	Cost savings as well as difference between project estimates and actual costs.
Pacific Command (PACOM)	\$1,963.00	Changes in the scope of one project and the difference between project estimates and actual costs.
Southern Command (SOUTHCOM)	\$3,053.74	Changes in the scope and location of some projects and difference between project estimates and actual costs.

Over the last several years, the federal government’s Continuing Resolution (CR) has had a negative impact on the consistency with which DEIC program funds can be made available. Consistency is an important consideration particularly when scheduling events with other nations. In FY16, this challenge was overcome to a significant extent by the ability of the OSD DEIC PM to secure a considerable portion of DEIC’s budget early in the process and then to distribute CR funding equitably across the CCMDs.

## **B. The DEIC Submission and Approval Process**

ASD(EI&E) released the FY16 Call for Proposals and Meeting Participation memorandum in June 2015 (see Appendix A), which provided guidance on the DEIC program’s priorities. The project proposals submitted for the DEIC Advisory Group’s consideration totaled \$3,071,000, of which the Advisory Group found all but seven of the 56 proposals to be valid requirements appropriate for DEIC funding.<sup>3</sup> The FY16 DEIC approved program was announced by ASD(EI&E) in a 1 October 2015 memorandum (see Appendix B, which contains both the memorandum and the approved spreadsheet).<sup>4</sup> The size of the requested amount for valid activities is evidence that the CCMDs continue to have requirements and interests in DEIC activities well in excess of the available budget.

The Advisory Group divided the projects into three categories: those projects that should have the highest priority (their funding is listed in the “Approved” column); those projects that should be considered next for funding, subject to the availability of funds (listed in the “Approved pending funds” column); and those that were also deemed valid but with lower priority (listed in the “Also valid” column). Of the projects initially proposed by the CCMDs, those that had no funding listed in any of the three columns were

<sup>3</sup> The seven proposals not found to be valid for DEIC funding totaled \$520,000, or 16.9 percent of the total of all submitted proposals.

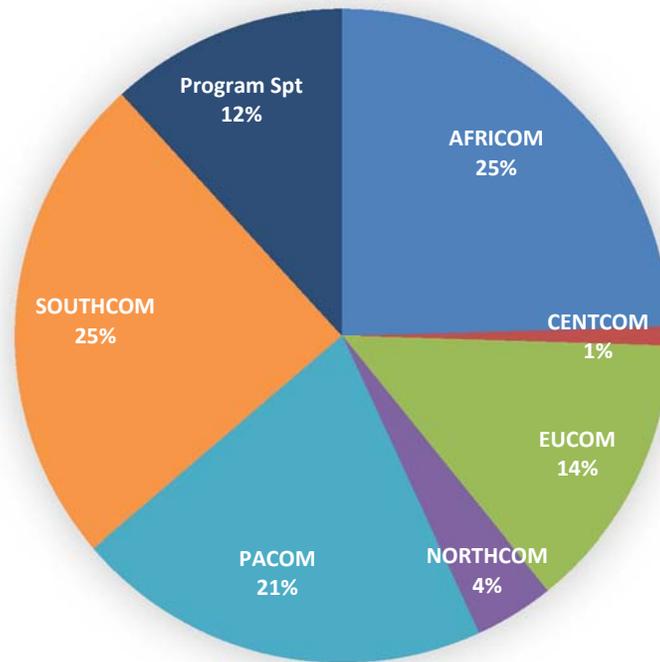
<sup>4</sup> Note that the spreadsheet included in the approved program memorandum omitted the cost of one of SOUTHCOM’s proposals for \$42,000. The SOUTHCOM total should therefore be \$915,000 and the total requested \$3,071,000, not \$3,029,000 as shown.

deemed not appropriate for DEIC funding by the Advisory Group. In addition to the guidance provided in the call for proposals memorandum (see Appendix A), a number of factors were considered during the Advisory Group meeting when determining a project's funding category, but these factors are not specifically prioritized since their applicability and prominence can vary by topic, country, and region. These criteria are routinely addressed during the Advisory Group's discussions with each of the CCMDs and include (but are not limited to) the following:

- The project's ability to support the warfighter or contribute to interoperability and/or mission sustainment.
- The extent to which the engagement opens opportunities for a new or expanded relationship with a country (or, on the contrary, whether so many activities are already ongoing in the country that this effort would have little perceptible impact).
- The project's ability to build or enhance the partner nation's capacity and capabilities in the proposed topic area.
- The involvement of host-nation defense personnel in the project. (While the involvement of additional agencies is welcomed—indeed, desirable—the participation of defense personnel (either uniformed or civilian) is a necessity.)
- The exposure of participants to the concept of interagency cooperation (whole-of-government approaches), thereby enhancing their understanding of each other's roles and responsibilities.
- The potential for the project to contribute to the host-nation's ability to serve a regional leadership role or to otherwise promote regional stability.
- The level of “interest” that the CCMD (or OSD) has in engaging with the given country, which draws on the CCMD's Theater Security Cooperation (TSC) plans and other relevant Department of Defense (DOD) and national-level documents.
- Where the project ranks in the CCMD's own prioritization of its proposals. (Each CCMD must rank order all proposals it has submitted.)
- The perceived ability of the CCMD and host-nation to execute the project as proposed.
- The balance of projects and funding across the CCMDs, taking many of the previous factors into consideration.

The Advisory Group’s recommended funding for projects in the “Approved” column in attachment 1 of the approval memorandum (Appendix B) totaled approximately 80 percent of the original budget, a decision driven (as in previous years) by anticipated budget cuts and the challenges imposed by operating under the CR. If one of these projects could not be executed for any reason, the Advisory Group had a range of projects in the “Approved pending funds” column from which to choose (totaling 30 percent of the original budget); thereby providing the flexibility to decide which projects were most likely to be executable within the remainder of the fiscal year. This approach recognizes the challenges of operating an engagement program with many different nations in times of considerable budget uncertainty. Indeed, a number of projects had to be rescheduled or relocated, often because of host-nation considerations.

Figure 1 illustrates the allocation of funding by area of responsibility (AOR) as ultimately executed. The CCMD summaries provided in Chapters 2–7 of this document offer more detail on the execution of the individual projects. The after action reports (AARs), agendas, participant lists, and many of the presentations for each project have been captured and loaded onto the DEIC working group page of the All Partners Access Network (APAN) website.<sup>5</sup>



**Figure 1. DEIC Program FY16 Spending, by AOR**

<sup>5</sup> The DEIC portion of the website is password-protected and accessible to members of the DEIC community.

The projects in the following chapters are listed in the order in which they appear on the final FY16 spreadsheet (see Appendix C). In a number of cases, the spreadsheets contained in Appendix B and C differ. As noted above, Appendix B reflects the approved DEIC program at the start of the fiscal year.

Appendix C, on the other hand, captures the program as it was actually executed, with any changed locations and funding amounts duly noted. (It does not, however, capture the funds being returned to OSD as described in Table 1 because, as of February 2017, the process for returning the funds had not been completed.) This spreadsheet lists all of the proposed projects (with those that were executed highlighted), the DEIC funds requested for each project, the funding for approved projects, projects approved subject to funds, and the funding levels as actually executed (“Actual” column). In many cases, the funding sent to the CCMDs for these projects was supplemented by other funding sources, the spreadsheet also lists the amount of any such additional funding. Indeed, across all the CCMDs, another \$945,000 in funding was used to help execute the approved DEIC projects. Of the 36 DEIC projects representing executed activities in FY16, 15 of them (or 41.7 percent) used other sources of funding to supplement DEIC funds. This funding came from a wide variety of sources:

- Traditional Commander’s Activity (TCA)
- Title 10—Armed Forces, *U.S. Code*
- Asia Pacific Regional Initiative (APRI) program
- U.S. Army Europe (USAREUR)
- United Nations Environmental Programme (UNEP)
- U.S. Army Engineer Research and Development Center (ERDC)
- South Africa’s Council for Scientific and Industrial Research (CSIR)

In addition, any number of U.S. government and non-U.S. institutions provided the labor of their subject matter experts (SMEs) at no cost to the DEIC projects, a contribution that is not captured in the \$945,000. The ability and willingness to secure additional funding sources and to provide manpower are additional indications of the value that the CCMDs and other organizations attach to DEIC activities.

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## **2. U.S. Africa Command (AFRICOM) Execution of DEIC Projects**

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ASD(EI&E) approved \$312,000 in projects for the AFRICOM AOR and another \$304,000 in projects eligible for reconsideration. As additional funds became available, actual funding for this AOR reached \$388,800 for the execution of projects in six countries. Less than \$300 is planned to be returned out of these FY16 funds. AFRICOM leveraged these DEIC funds with another \$279,000 from a variety of other U.S. and international funding sources for five of the projects. The executed projects in the AFRICOM AOR and some of their key themes or findings are described in the sections that follow.

### **A. Morocco—Oil Spill Preparedness and Response**

*Approved: \$55K; actual: \$55K*

Originally scheduled to be held in Gabon, this event, co-sponsored by UNEP, was executed in Morocco in July 2016. Twenty-five representatives from Morocco, Cote d'Ivoire, Guinea, Guinea Bissau, Mauritania, Nigeria, and Senegal explored sub-regional coordination under the Abidjan Convention and sub-regional Canary Large Marine Ecosystem agreement and contingency plan. The workshop established a baseline on oil spill response strategies, planning, management, and tools. Another objective was to promote interagency (as well as international) cooperation on these topics. The Royal Moroccan Navy is the lead off-shore response agency in the Moroccan National Contingency Plan. Oil spill response is an increasingly important element of maritime domain management and security, given off-shore oil production and high vessel traffic in this region.

### **B. Ethiopia—Horn of Africa: Water Capacity Building Workshop**

*Approved: \$63K; actual: \$41K*

An extensive planning meeting was held in May 2016 involving representatives from Ethiopia and international organizations in preparation for the event, which was scheduled to be held in August 2016. Because of the violent anti-government demonstrations that erupted just before the scheduled event, the workshop itself was cancelled while U.S. personnel were en route to Addis Ababa, resulting in costs that could not be recovered following the cancellation.

### **C. Nigeria—Niger River Basin Flood Management**

*Approved: \$42K; actual: \$42K*

This project has been planned for execution by U.S. Army Africa. The event itself was delayed because of security concerns.<sup>6</sup> However, a planning meeting was held in November 2016 in Port Harcourt involving Nigerian government and oil industry representatives in preparation for the event to be held in FY17.

### **D. South Africa Defense Committee (DEFCOM) Support, Wildlife Trafficking, and Outreach for Mission Sustainability**

*Approved: \$46K; actual: \$87K*

The United States had three separate engagements with South Africa in FY2016. First, in October 2015, the U.S.-South Africa DEFCOM decided to revive environmental cooperation as a sub-group under DEFCOM's Policy and Strategy Working Group.

Second, in May 2016, AFRICOM and the Centre for Scientific and Industrial Research (CSIR) co-hosted a regional workshop attended by more than 40 individuals on wildlife trafficking. Focusing on an integrated and multidisciplinary approach to combating wildlife trafficking, the workshop included an exploration of technologies to improve public, private, and academic capacities to protect the rhinoceros. An important objective was also to facilitate the South African National Defense Forces (SANDF) development, implementation, and enforcement of environmental law under international standards.

The third event was a bilateral workshop with SANDF and civilian representatives held in Pretoria, South Africa, 19–23 September 2016. More than 50 participants explored ways to improve the understanding of military and civilian roles in environmental issues. The third event was the outgrowth of a guidebook,<sup>7</sup> prepared several years ago under DEIC's auspices, on the importance of collaboration to ensure mission sustainability. In addition to describing in greater detail the processes outlined in the guidebook, this workshop included a tabletop exercise whose purpose was to demonstrate opportunities for finding win-win solutions to common problems. The exercise was such a success that a new version is being developed to be used in a U.S. interagency initiative in January 2017.

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<sup>6</sup> For example, the U.S. Department of State issued a travel warning for U.S. citizens to avoid parts of Nigeria "because the security situation in northeast Nigeria remains fluid and unpredictable." "Nigeria Travel Warning," <https://travel.state.gov/content/passports/en/alertswarnings/nigeria-travel-warning>, 3 August 2016.

<sup>7</sup> Environmental Security Working Group, *Guidebook on Outreach for Mission Sustainability*, July 2010.

## **E. Burkina Faso—Operational Energy as an Engagement Activity**

*Approved: \$30K; actual: \$75K*

The Deputy Chief of Mission from the U.S. Embassy in Ouagadougou, Burkina Faso opened a three-day workshop on 16 August 2016, which was on environmental challenges in West Africa. Three representatives from Niger and one from Ghana joined more than eighty participants from Burkina Faso to explore ways to improve the understanding between the military and civilian communities on water and energy in a changing climate. Presentations examined the challenges and opportunities of water resource management; successful applications of renewable energy technologies; and land use. Workshop participants proposed specific recommended actions in these and a score of other topics. (Additional funding came from the approved workshop in Kenya, which was postponed because of security concerns.)

## **F. Seychelles—West Indian Ocean: Environmental Disaster and Oil Spill Response**

*Approved: \$0K; actual: \$42K*

In response to a request from Seychelles, AFRICOM conducted a planning visit in September 2016 with military, civilian, and academic representatives to address their interest in hosting either a bilateral or multinational engagement on environmental disaster and oil spill response. Subject to the availability of funds, the workshop itself would be conducted some time in 2017.

## **G. Subject Matter Expertise Support from the U.S. Army Engineer Research and Development Center (ERDC)**

*Approved: \$0K; actual: \$46K*

Although CENTCOM was not able to execute two of its approved projects, it returned the unused funds to OSD in time for them to be reallocated to the U.S. Army's ERDC, whose work continues to support several of AFRICOM's DEIC engagement activities.

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### **3. U.S. Central Command (CENTCOM) Execution of DEIC Projects**

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ASD(EI&E) approved \$15,000 for one project in the CENTCOM AOR and \$40,000 in additional funding for another project, subject to the availability of additional funds. While additional money was made available to CENTCOM during the year, reaching a total of \$67,000, CENTCOM was ultimately not able to execute the additional activities and returned those funds to OSD in time for them to be reprogrammed for other DEIC activities (see Chapter 1).

#### **A. Afghanistan—Developing Afghan National Security Force Environmental Standard Operating Procedures (SOPs)**

*Approved: \$15K; actual: \$15K*

As noted in IDA's earlier report on DEIC's FY15 activities, this project was executed in October 2015 but incurred most of its costs in FY15.<sup>8</sup> Costs in FY16 covered only U.S. travel to the event. The workshop had more than 100 representatives from the Afghan National Defense and Security Forces (ANDSF) and Department of Interior and other organizations focused on assisting the ANDSF in building environmental policy frameworks (including SOPs, reviewing past environmental performance, and identifying opportunities for improvement, and developing effective communication techniques).

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<sup>8</sup> Susan L. Clark-Sestak, *Review of the FY15 Defense Environmental International Cooperation (DEIC) Program*, IDA Document D-5704 (Alexandria, VA: IDA, March 2016), 11.

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## **4. U.S. European Command (EUCOM) Execution of DEIC Projects**

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ASD(EI&E) approved \$218,000 in projects for the EUCOM AOR and another \$91,000 in projects eligible for reconsideration. Actual funding for this AOR remained at the approved amount for the execution of nine projects or planning meetings, with the anticipated return of approximately \$16,000 in unused funds as of November 2016. EUCOM also secured \$182,000 in other sources of funding for these projects. The executed projects in the EUCOM AOR and some of their key themes or findings are described in the following sections.

### **A. Norway—Arctic Security Forces Roundtable (ASFR) 2016**

*Approved: \$65K; actual: \$65K*

Now in its fifth year, ASFR is a flag-/general officer-level event designed to promote regional understanding, dialogue, and cooperation among the Arctic nations.

In May 2016, 33 representatives from the arctic nations of Canada, Denmark, Finland, Iceland, Norway, and Sweden as well as 4 observer nations (France, Germany, the Netherlands, and the United Kingdom) joined U.S. representatives in Kirkenes, Norway. The event included a presentation on the trilateral work among Finland, Sweden and the United States being pursued on environmental considerations in cold regions, as described in the next section.

### **B. Environmental Considerations in Cold Regions in Support of ASFR**

*Approved: \$17K; actual: \$17K*

Under the auspices of trilateral collaboration among Finland, Sweden, and the United States, two working group meetings were held in the Washington, DC, area in March 2016 and in Stockholm, Sweden, in May 2016. Joining these meetings were representatives from Canada and Denmark as well. By the conclusion of the May meeting, a final draft of the *Environmental Toolbox Annex for Military Activities in Cold Regions* had been completed. This annex explains how environmental considerations differ when operating in cold regions and how to try to address those differences. The annex will be widely available through posting on several websites for use by any interested personnel.

The DEIC funding also covered the travel costs for one U.S. SME to participate in a meeting hosted in Denmark of the Environmental Protection for Heavy Weapons Ranges, a multilateral initiative led by Finland. The project has as its aim the creation of a reference document on this topic by late 2017.

### **C. Defense Environmental Network (DEFNET)**

*Approved: \$7K; actual: \$7K*

As in previous years, DEIC funding was used to support the travel costs associated with the participation of two SMEs at the annual Defense Network (DEFNET) meeting. The October 2015 meeting was held in Denmark with defense environmental representatives from the European Union (EU) nations. DEFNET is an important mechanism for exchanges of information among defense environmental leaders on emerging EU-related environmental matters with implications for military forces located in Europe.

### **D. Italy—Natura 2000 and Range Management Workshop**

*Approved: \$34K; actual: \$34K*

As a follow-on to the very successful June 2015 DEIC event on EU Natura 2000 and training range management, which contributed to the resumption of blank-fire training by U.S. and Italian forces, DEIC funded a one-day workshop in Udine, Italy, in September 2016. The purpose of the workshop was to meet with local and regional government representatives, as well as the Italian military, in order to (1) strengthen the relationships begun the previous year with the aim of fostering transparency and (2) help maintain access for U.S. forces to training areas in northern Italy. Funding for this topic also allowed U.S. participation at a Natura 2000 biodiversity workshop in France in June 2016.

### **E. Baltics—Sustainable Range Management Regional Engagements**

*Approved: \$30K; actual: \$39K*

Because of the cost savings in the execution of other approved projects, EUCOM was able to execute engagements in 2016 with each of the three Baltic nations: Lithuania in April, Latvia in July, and Estonia in September. These meetings and range site visits with counterparts from these countries identified and resolved EU Natura 2000 restrictions on range construction projects. Under EU regulations, construction activities in special protected areas require notification to national ministries of environment (MOEs). The environmental components of the ministries of defense (MODs) were able to submit the required

notifications in time to allow projects funded by the European Reassurance Initiative (ERI) to proceed.

## **F. Israel—Environmental Protection and for Sustainable Range Management**

*Approved: \$18K; actual: \$18K*

DEIC facilitated two engagements with representatives from the Israeli Defense Forces (IDF) and the Israeli MOD. In October 2015, four Israeli SMEs visited the Joint Multinational Training Command in Grafenwoehr, Germany. The visit focused on U.S. sustainable range management practices and collaboration between German and U.S. environmental officials. The United States also hosted an eight-person Israeli delegation in the National Capital Region, which included U.S. and Israeli briefings on green buildings, energy efficiency, and sustainable practices. The Israeli delegation then toured facilities at the Aberdeen Proving Ground and Fort Detrick in Maryland. The focus of the site visits was on remediation technologies and energy efficiency at installations, including renewable energy.

## **G. Montenegro—Environmental Considerations in Military Operations Regional Workshop**

*Approved: \$22K; actual: \$8K*

A final planning meeting was held in September 2016 for the proposed multilateral workshop. Because of scheduling conflicts and the mutual desire to ensure strong regional participation in this workshop in Montenegro, it was necessary to postpone the workshop itself until April 2017.

## **H. Bulgaria—Implications of Climate Change on Military Activities**

*Approved: \$0K; actual: \$5K*

A 3-day workshop, held in July 2016, brought U.S. and United Nations SMEs together with 36 representatives primarily from Bulgaria and Serbia but also from Albania, Bosnia and Herzegovina, Croatia, Georgia, Germany, Hungary, Macedonia, Montenegro, Poland, Romania, Turkey, and Ukraine. The 2016 event represented a follow-on event to a 2015 workshop on the same topic. This year's workshop focused on understanding the threat of climate change and disasters to environmental security using a multidisciplinary approach to improving regional security cooperation.

## **I. Balkans and SE Europe—Sustainable Range Management Bilaterals**

*Approved: \$25K; actual: \$25K*

Two bilateral events were held in the Balkans and southeastern Europe in April 2016, one in Montenegro and one in Croatia. The Montenegro event had 22 representatives from the Montenegrin Army, Air Force, Navy, and MOD focused on environmental considerations in range operations, hazardous material and waste management, and integration of pollution prevention approaches. In Croatia, U.S. SMEs met with eight representatives from the Croatian military and MOD at the Slunj Combat Training Center. This workshop was designed to share best practices on ways to support and enhance operations and continued use of this center. Among the specific topics were range requirements, addressing noise complaints, simulation, scheduling, and the use of geographic information systems (GIS).

A third bilateral engagement was held in September with Serbian Defense Force representatives; its focus was on the technical aspects of range layout, construction, and operations.

## **5. U.S. Northern Command (NORTHCOM) Execution of DEIC Projects**

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NORTHCOM submitted and executed one proposal, which was approved for funding by ASD(EI&E) for \$55,000.

### **A. Arctic Capability Advocacy: Third Biennial International Arctic Collaborative Workshop**

*Approved: \$55K; actual: \$55K*

The Third Biennial International Arctic Collaborative Workshop was held at the University of Alaska, Fairbanks, with 78 people from four countries (Canada, Denmark, Norway, and the United States) and 34 organizations attending the workshop. Since its inception, this forum has helped to foster an international community of interest approach, drawing on representation from government, industry, and academia. During the 2016 workshop, participants focused on ways to share strategies, plans, and capabilities to meet a variety of security challenges associated with combined operations as climate change opens the Arctic to more maritime shipping, tourism, and resource extraction. The workshop included two scenario-driven discussions:

- volcanic activity requiring defense support of civil authorities and
- a foreign military escorting a research vessel, which was conducting unauthorized activity in the Economic Exclusion Zones of Arctic nations.

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## **6. U.S. Pacific Command (PACOM) Execution of DEIC Projects**

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ASD(EI&E) approved \$326,000 in projects for the PACOM AOR and another \$192,000 in projects eligible pending availability of funding. Actual funding for this AOR was at the approved level of \$326,000 for four projects. Of the \$326,000, PACOM reported following the end of the fiscal year that it planned to return approximately \$2,000 to OSD, resulting in a final execution amount of \$324,000. PACOM also secured \$484,000 in other sources of funding for the execution of two of the approved projects. The executed projects in the PACOM AOR and some of their key themes or findings are described in the sections that follow.

### **A. Fiji—Regional Environmental Security Forum (RESF) 2016 and Follow-on Activities**

*Approved: \$200K; actual: 218K*

The 2016 Oceania RESF was co-hosted by the Republic of Fiji Military Forces to increase environmental security awareness in Pacific and Indian Ocean countries. As in previous years, this forum received high-level support from the PACOM leadership. One hundred five participants from eighteen countries as well as several international organizations joined a U.S. interagency team to address environmental security issues. In addition to the U.S. and Fiji, forum participants hailed from Australia, Cook Islands, Kiribati, Maldives, Marshall Islands, Nauru, New Zealand, Papua New Guinea, Philippines, Samoa, Solomon Islands, Timor Leste, Tonga, Tuvalu, and Vanuatu. The 2016 themes were (1) sustainable ocean resources, (2) protecting the coastal zone, and (3) resiliency to extreme and frequent weather events. The forum also sought to identify projects for future regional collaboration.

### **B. Mongolia—Ecological Restoration (Replanting) of Degraded Mining Areas**

*Approved: \$96K; actual: \$48K*

Because of scheduling constraints, it was not possible to execute fully all the planned phases of the replanting project. On 6–7 June 2016, a workshop convened 38 policymakers and technical experts from Mongolia, China, and India, as well as the United States, to

discuss the challenges and opportunities for improving the restoration of bare land and rangeland in the Gobi Desert. The exchange of information also addressed policy and strategic planning issues to more generally support resilience-based rangeland management in this desert. The workshop was followed by a two-day technical workshop on groundwater modeling for the Gobi Desert. Finally, this engagement will be used to help shape some of the themes for the 2018 Regional Environmental Security Forum, which will be hosted in Mongolia.

### **C. Maldives—Maldives National Defense Force (MNDF) Environmental Capacity Building**

*Approved: \$30K; actual: \$30K*

Planning for this event was conducted in FY15; however, because of host-nation constraints, execution of the project was delayed until FY16, which consisted of events in August and September 2016. PACOM and U.S. Marine Corps Forces Pacific (MARFORPAC) worked with the MNDF to establish environmental management procedures at training bases to improve waste management. This included a site visit to the Maafilafushi Training Island and MARFORPAC seminars with the MNDF engineering and medical staffs on four initiatives:

- Environmental Management System Plan
- Spill Prevention and Control Plan
- Hazard Communication Plan
- Globally Harmonized Labelling System

As U.S. forces train in the Maldives, these initiatives contributed to interoperability and force health protection.

### **D. Malaysia—Southeast Asia Maritime Environmental Security Workshop**

*Approved: \$0K; actual: \$30K*

The engagement with Mongolia was more limited than originally proposed, so PACOM requested and OSD authorized, the re-allocation of \$32K to support an emerging requirement since the submission of the original DEIC FY16 proposals. This new requirement was to conduct a workshop with Malaysia, focusing on maritime environmental security, which was executed 7–9 September 2016. While the majority of the sixty-one participants were from Malaysia, participants also came from Cambodia, Indonesia, Thailand, and Vietnam. Military, civilian government, and non-governmental organization (NGO) personnel were represented. The themes of the workshop were

(1) military-civilian opportunities for collaborative approaches to environmental security issues; (2) marine resource protection and food security; and (3) maritime park management and wildlife protection.



## **7. U.S. Southern Command (SOUTHCOM) Execution of DEIC Projects**

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ASD(EI&E) approved \$387,000 in projects for the SOUTHCOM AOR and another \$269,000 in projects eligible pending the availability of funding. Actual funding for this AOR was at the approved level of \$387,000 for 13 projects, with some modifications to the originally approved set of projects.<sup>9</sup> Of the \$387,000, SOUTHCOM reported following the end of the fiscal year that it planned return approximately \$3,000 to OSD, resulting in a final execution of \$384,000. The executed projects in the SOUTHCOM AOR and some of their key themes or findings are described in the sections that follow.

### **A. Honduras—Toward Net-Zero Waste for Contingency Operations, Environmental Awareness, and Waste to Energy**

*Approved: \$105K for three individual projects; actual: \$43K*

Executed over five days in May 2016, this event combined three projects (originally proposed as three separate events), drawing on U.S. expertise from U.S. Army Corps of Engineers (USACE) and the Army National Guard (ARNG): (1) net-zero waste for contingency operations, (2) waste to energy, and (3) general environmental awareness. The engagement was on building partner capacity with the 35 Honduran participants, who came from the military, civilian, academic, and NGO communities. The overarching themes were to review current policies in both the United States and Honduras on renewable energy, climate change, and sustainability practices used at military installations. Within those themes, more specific topics included solid waste management, disaster preparedness, encroachment, deforestation, and the use of GIS.

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<sup>9</sup> For example, the solid waste reduction workshop planned in the Dominican Republic was cancelled because of personnel changes. Consequently, the regional environmental awareness workshop, as well as a waste to energy workshop, was combined with the net-zero waste workshop and all were held in Honduras. The workshop with Chile on energy and water assessment, scheduled for August 2016, was cancelled by Chile because of other events.

## **B. Guatemala—Toward Net-Zero Waste for Contingency Operations**

*Approved: \$40K; actual: \$40K*

This two-day event (27–28 April 2016 in Guatemala City) focused on the development of Guatemala’s debris management plan, covering all of its aspects including reduction, reuse, and recycling with the goal of zero net waste in contingency or other debris-causing operations. Presentations also touched on DOD roles in disaster preparedness and the impact of flooding on critical environmental infrastructure. Twenty-eight Guatemalan participants came from the country’s MOD, emergency response agency, the corps of engineers, and other civilian agencies, while U.S. participants were drawn from SOUTHCOM, USACE, and the Arkansas ARNG.

## **C. Chile—Mission Sustainability SME Exchange**

*Approved: \$9K; actual: \$9K*

This engagement covered the costs of hosting a senior-level Chilean delegation in the United States in May 2017. The events included meetings in the Pentagon focused on mission sustainability and operational energy, as well as preparations for the annual DCC meetings.

## **D. Brazil—Rapid Integrated Strategic Assessment (RISA) for Water Security**

*Approved: \$0K; actual: \$50K*

On 13–14 September 2016, approximately 100 Brazil participants from central, regional, and local government agencies, as well as academia, convened with U.S. SMEs in Sao Paulo, Brazil, to discuss water-related issues. A briefing and demonstration highlighted RISA’s utility in addressing water security as a non-traditional threat and included information about a new mobile-enabled network for RISA that offers new data collection capability. The meetings included panels with both U.S. and Brazilian experts on topics such as water resource databases, water assessments, water resource anticipatory analysis, and satellite imagery.

## **E. Colombia—Renewable Energy and Water Sustainability**

*Approved: \$25K; actual: \$16K*

In planning its approved engagements with Colombia in 2016, SOUTHCOM identified an opportunity to combine a workshop on renewable energy with its project to help develop a climate change plan. It also was able to add another topic—encroachment—

to the agenda and was thus able to address this topic with minimal additional costs. As a result, all three events were combined during workshops held 3–5 and 14–15 May 2016 in Colombia. The workshop brought together more than 30 representatives from Colombia’s Air Force, MOD, Navy, police, Ministry of Environment, and military industry. Topics covered included the following:

- operational energy
- sustainability and energy reduction initiatives
- water conservation
- climate change and encroachment
- other environmental challenges

Of particular note, the discussions on renewable energy and water sustainability were so well received that a phase two workshop was hosted, also in Colombia, on 15–19 August 2016. It resulted in a declaration of commitment for a sustainable partnership by all participants.

## **F. Colombia—Climate Change Plan Development**

*Approved: \$5K; actual: \$4K*

This event was combined with the renewable energy and water sustainability workshop in May 2016, as described above in section E.

## **G. Chile—DCC Environmental and Energy Subcommittee**

*Approved: \$45K; actual: \$42*

The DCC’s Environment and Energy Subcommittee met in 2016 to refine its work plan in three core areas: (1) operational risk management (identifying environmental risks for steady-state operations and ways to mitigate those risks); (2) energy, water, and waste aspects of mission sustainability; and (3) better understanding the potential effects of climate change on the military. Finally, in April 2016, Chile hosted a seminar on climate change implications, with the participation of U.S. SMEs.

## **H. Colombia—Encroachment/Incompatible Land Use Impacts on Military Training**

*Approved: \$0K; actual: \$4K*

This event was approved subject to the availability of funds. As a result of cost savings and combining the topic of encroachment with other approved engagement topics, this was addressed in a May 2016 workshop after the one described above in section E.

## **I. Colombia—Meteorological and Oceanographic Capability and Needs Assessment**

*Approved: \$0K; actual: \$13K*

SOUTHCOM reported that this event was conducted in August 2016, but as of February 2017, no after action report has been provided, so no additional description of this event was possible (as of February 2017).

## **J. Trinidad and Tobago—Energy and Water Assessment**

*Approved: \$28K; actual: \$12K*

This event was combined with another engagement with Trinidad and Tobago, described next in section K. The combined workshop was held 18–22 July 2016, and the cost of this project was thereby reduced.

## **K. Trinidad and Tobago—Regional Engagement on Disaster Waste Management**

*Approved: \$0K; actual: \$47K*

Drawing on feedback from previous engagements with Trinidad and Tobago, this workshop was held on 18–22 July 2016 and focused on the development of an initial draft Disaster Waste Management Contingency Plan for the central (national-level) Government of Republic of Trinidad and Tobago. As it is refined, this plan will become effective and practical for the country’s agencies to use for planning and execution of debris management preparation, resilience, and response. U.S. experts included representatives from SOUTHCOM, National Guard Bureau, U.S. Army Corps of Engineers (USACE), Naval Facilities Engineering Command (NAVFAC), and the Federal Emergency Management Agency (FEMA). The 28 Trinidad and Tobago participants came from the defense forces, the Office of Disaster Response and Management, and from numerous local, regional, and national-level government agencies.

## **L. Environment and Energy Education & Training Working Group**

*Approved: \$0K; actual: \$10K*

This project involved outreach by SOUTHCOM to several different organizations to raise awareness and provide exposure to the concepts of environmental and energy security. For example, SOUTHCOM and the Western Hemisphere Institute for Security Cooperation (WHINSEC) have identified a mutual interest in developing an environmental and energy security course for its curriculum. As part of this effort, SOUTHCOM

representatives participated in a Current Operations Discussion Panel held 12–14 April 2016 in support of the Command and General Staff Officer Course in Columbus, GA. SOUTHCOM’s presentation addressed environmental and energy considerations during disaster relief operations to almost 60 students, primarily majors and lieutenant colonels. The success of this event resulted in WHINSEC extending an invitation to SOUTHCOM to participate in all future WHINSEC conferences and to assist in continued planning for an environmental and energy elective.

### **M. Contractor Support**

*Approved: \$0K; actual: \$97K)*

SOUTHCOM provided a total of some \$97,000 for contractor support to assist in the planning and execution of seven of its FY16 projects. This funding became available when project execution costs were lower than their projected costs (for example, when three separate projects with Honduras were combined into one event covering all three topics).



## **8. Program Support Project Executed under the DEIC Program**

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ESOH also uses DEIC money for programmatic support. In FY16, ASD(EI&E) approved a total of \$161,000 for this activity, which was raised to \$192,000 when the DEIC final budget came in higher than originally projected. Actual execution was at the final approved amount.

### **A. Programmatic Tracking and Research Support to DEIC**

*Approved: \$161K; actual: \$192K*

As part of its execution of the DEIC program, ESOH relies on support from IDA, a federally funded research and development (FFRDC), to track DEIC activities throughout the year and to participate in several engagement initiatives. During FY16, IDA research staff participated in the following engagements:

- workshops with Sweden and Finland to complete an annex on cold regions to supplement the previously developed Environmental Toolbox for Deploying Forces
- a workshop with the South African Defense Force's environmental team on "Working to Balance Military and Civilian Community Needs"
- participation in the Environmental Protection for Heavy Weapons Ranges working group led by Finland

These activities were described in more detail in Chapters 2 and 4. FFRDC support also included preparation of this document.

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## 9. Assessment of the DEIC Program

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### A. FY16 Accomplishments

The DEIC program continues to serve as a successful engagement tool with other nations on environmental issues. It is a valuable mechanism to help develop and strengthen military-to-military relationships and interagency contacts not only between the United States and the partner nation(s), but also within and among those partner nations. Importantly, it also contributes to U.S. mission sustainment objectives and has, in a number of cases, supported the warfighter and saved U.S. resources.

### B. Qualitative Impacts

The impact of the DEIC program can be assessed in a number of ways. Table 2 lists each of the 33 projects executed by the CCMDs, and the types of qualitative impacts that each project has had in support of broader DOD objectives. These impacts, in turn, are some of the criteria that the three-member Advisory Group uses in making its recommendations about which projects DEIC should fund, as described in Chapter 1. As Table 2 makes clear, at least two categories are applicable to every project.

**Table 2. Impacts of DEIC Projects Executed by the Geographic CCMDs**

Projects by CCMD	Support the (US) Warfighter	Contribute to Interoperability and/or Mission Sustainment	Build/Enhance Partner Capacity and Capability	Create/Strengthen Relationships with Other Countries	Promote Interagency Cooperation	Contribute to Others' Regional Leadership Capacity or to Regional Stability	Save U.S. Resources
<b>AFRICOM</b>							
Oil Spill Preparedness and Response (Morocco)			√	√	√	√	
Horn of Africa: Water Capacity Building Workshop (Ethiopia)		√	√	√	√		
Niger River Basin Flood Mgmt (Nigeria)			√	√			
DEFCON Support, Wildlife Trafficking, and Outreach for Mission Sustainability (S. Africa)		√	√	√	√	√	
Energy as an Engagement Activity (Burkina Faso)			√	√	√	√	
Disaster and Oil Spill Response (Seychelles)			√	√	√		
<b>CENTCOM</b>							

	Support the (US) Warfighter	Contribute to Interoperability and/or Mission Sustainment	Build/Enhance Partner Capacity and Capability	Create/Strengthen Relationships with Other Countries	Promote Interagency Cooperation	Contribute to Others' Regional Leadership Capacity or to Regional Stability	Save U.S. Resources
Projects by CCMD							
Developing Environmental Standard Operating Procedures (SOPs) for Afghan National Security Force (Afghanistan)	√	√	√		√	√	
<b>EUCOM</b>							
Arctic Security Forces Roundtable (ASFR) 2016 (Norway)				√		√	
Environmental Considerations in Cold Regions in Support of ASFR (various)	√	√		√			
Defense Network (DEFNET)		√		√	√	√	
Natura 2000 and Range Management Outreach (Italy)	√	√		√	√		√
Sustainable Range Management Regional Engagements (Baltics)	√	√	√	√		√	√
Environmental Protection and Sustainable Range Management (Israel)			√	√			
Environmental Considerations in Military Operations Regional Workshop (Montenegro)			√	√		√	
Implications of Climate Change on Military Activities (Bulgaria)			√	√	√		
Sustainable Range Management Bilaterals (Balkans and SE Europe)	√	√	√	√			√
<b>NORTHCOM</b>							
Arctic Capability Advocacy: 3 <sup>rd</sup> Biennial International Arctic Collaborative Workshop	√	√		√	√		
<b>PACOM</b>							
FY16 Regional Environmental Security Forum (RESF) (Fiji)		√	√	√	√	√	
Ecological Restoration of Degraded Mining Areas (Mongolia)			√	√	√		
Maldives National Defense Force Environmental Capacity Building (Maldives)	√	√	√	√			
SE Asia Maritime Environmental Security workshop (Malaysia)			√	√	√	√	
<b>SOUTHCOM</b>							
Toward Net-Zero Waste, Environmental Awareness, and Waste to Energy (Honduras)			√	√	√		
Toward Net-Zero Waste (Guatemala)			√	√	√		
U.S.-Chile Defense Consultative Commission (DCC): Mission Sustainability (Chile)		√		√		√	
Rapid Integrated Strategic Assessment (RISA) for Water Security (Brazil)			√	√	√		
Renewable Energy and Water Sustainability (Colombia)		√	√	√	√		
Climate Change Plan Development (Colombia)			√	√		√	
U.S.-Chile DCC Environmental and Energy Subcommittee: Follow-Up Activity (Chile)		√	√	√			

	Support the (US) Warfighter	Contribute to Interoperability and/or Mission Sustainment	Build/Enhance Partner Capacity and Capability	Create/Strengthen Relationships with Other Countries	Promote Interagency Cooperation	Contribute to Others' Regional Leadership Capacity or to Regional Stability	Save U.S. Resources
<b>Projects by CCMD</b>							
Encroachment/Incompatible Land Use Impacts on Training Areas (Colombia)		√	√	√			
Meteorological and Oceanographic Capability and Needs Assessment (Colombia)			√	√			
Energy and Water Assessment (Trinidad & Tobago)			√	√	√		
Disaster Waste Mgmt Contingency Plan (Trinidad & Tobago)		√	√	√	√		
Environment and Energy Education Training Working Group			√	√			

The following synopses<sup>10</sup> describe some of these effects in more detail. These examples are not meant to be exhaustive but illustrative of the value of DEIC-sponsored events.

### 1. Support the Warfighter

During 2016 EUCOM-led bilateral meetings and range site visits with counterparts from Estonia, Latvia, and Lithuania uncovered and resolved EU Natura 2000 restrictions on range construction projects. Under EU regulations, construction activities in special protected areas require notification to the national ministries of environment. The environmental components of the ministries of defense were able to submit the required notifications in time to allow European Reassurance Initiative-funded projects to proceed.

### 2. Promote Interoperability and Force Protection

PACOM and U.S. Marine Corps Forces Pacific (MARFORPAC) worked with the Maldives National Defense Force (MNDF) to establish environmental management procedures at training bases to improve waste management. Because U.S. forces train in Maldives, this initiative contributed to interoperability and force health protection for U.S. forces as well as for the MNDF.

<sup>10</sup> These synopses are drawn from the following source: DOD Environment, Safety, and Occupational Health office, "Defense Environmental International Cooperation Program" (Washington, DC: Office of the Deputy Assistant Secretary of Defense (Environment, Safety and Occupational Health), ODASD(ESOH), November 2016), <http://www.denix.osd.mil/international>.

### **3. Build or Enhance Partner Capacity and Capability**

With changing mission requirements and coalition bases being turned over to Afghanistan, CENTCOM's workshop with the Afghan National Defense and Security Forces (ANDSF) sought to develop the latter's environmental awareness and capacity.

Senegal asked AFRICOM and the United Nations Environment Programme to host a symposium on building resiliency in the face of climate change. Senegal's Ministry of Environment estimates that its coastline is eroding by at least one meter per year on average, but indications are that it is up to 10 times worse in vulnerable coastal towns such as Saint-Louis. More than 85 stakeholders participated in the symposium, including representatives from the Ministries of Defense, Environment, and Justice. This was the first time these organizations collaborated on an environmental issue. This symposium promoted the capacity of military and civilian authorities to develop a whole-of-government approach for natural disaster planning, prevention, preparedness, response, and recovery. It also focused attention on a topic of increasing concern in Africa and elsewhere: disasters exacerbated by climate change's devastating effects of erosion.

### **4. Create or Strengthen Relationships with Other Countries**

NORTHCOM supported the 2016 Arctic Collaborative Workshop, which brought together 78 people from 4 countries and 34 organizations. As a biennial event, the workshop focuses on developing an international community of interest (comprising government, industry, and academia) to address arctic challenges in the areas of defense, environmental safety, and arctic capability advocacy.

SOUTHCOM and OSD have continued robust collaboration with Chile throughout 2016, including an environmental and energy SME exchange of more than 100 people on board the Chilean naval vessel, *Aquiles*, and a workshop on mission sustainability in Santiago.

### **5. Promote Interagency Cooperation**

RESF has, as one of its underlying tenets, the commitment to have the U.S. delegation drawn from across government agencies and to show by example the value of whole-of-government approaches.

Over the years, numerous DEIC engagements in the AFRICOM AOR have demonstrated the lack of contacts and communication across host-nation government agencies. By bringing representatives together in these workshops, such as on the Morocco oil spill and Burkina Faso energy workshops, DEIC has provided opportunities for these agencies to establish those relationships and better understand each other's roles and responsibilities in a given area such as oil spill response.

## 6. Contribute to Others' Regional Leadership Capacity and Regional Stability

The Southeast Asian regional engagement held in Malaysia focused on ways that the participating nations (Cambodia, Indonesia, Thailand, and Vietnam, in addition to Malaysia) could enhance their role and facilitate military-civilian collaboration on the following:

- environmental security issues
- marine resource protection and food security
- maritime park management and wildlife protection

## 7. Save U.S. Resources

A number of the EUCOM engagements focused on sustainable range management, notably in the Baltics (Estonia, Latvia, and Lithuania), Italy, and the Balkans (Croatia and Montenegro). By working together to ensure its sustainability, the U.S. military is better assured of being able to, and continue to, use these partner-nation training areas. As a result, the United States saves both manpower and money by not having to create or manage its own (additional) training ranges in Europe.

## C. Quantitative Metrics

In addition to these identifiable impacts, some quantitative assessments can also be applied to DEIC activities. Such quantifiable metrics and their results (to the extent they are available) for all 33 DEIC projects executed in FY16 are provided in Table 3 .

**Table 3. Quantifiable Metrics for the DEIC Program and FY16 Results**

Type of Metric	FY16 Results
<b>Related to quantity of foreign engagements</b>	
• Percentage of DEIC projects involving interaction with other nations	100% (36 of 36)
• Ratio of the number of engagements with other nations to DEIC funding	36: \$1.581M, or \$43.9K average cost
• Number of foreign nationals engaged	1,100+
• Number of foreign nations engaged	79
<b>Related to leveraging funding from other sources</b>	
• Percentage of all DEIC projects that leveraged other funding	41.7% (15 of 36)
• Percentage of total spending on DEIC projects that was from other funding sources	37.4% (\$945K of \$2.526M)
• Number of CCMDs that leveraged other funding	3 (of 6)

## **D. Addressing IDA's Previous Recommendations**

In IDA's FY14 assessment of the DEIC program, it offered recommendations of ways to improve the program:<sup>11</sup> The recommendations distilled into three core ideas:

- Tighten the timeline of the DEIC review and approval process.
- Consider fully funding DEIC in the first quarter of the Continuing Resolution (CR), assuming CRs continue, or at least ensure that all CCMDs receive some funding in the first quarter; and
- Increase the DEIC budget to fund the unmet need demonstrated by the CCMD proposals that could not be funded within the approved budget. Also, with the creation of ASD(EI&E), if operational energy were added to DEIC's mandate, to further increase DEIC's funding line.

The capability of OSD to consider these recommendations for the FY15 program was limited by staff turnover within the organization. However, for the FY16 program, action was taken in the first two of these recommendations with notable success.

The review and approval process was moved up in order to better align with the fiscal year start. The Advisory Group met in early August 2016, the recommendations were provided to ASD(EI&E) in a timely fashion, and ASD(EI&E) issued the memorandum approving the FY16 program on 1 October 2016, the first day of the new fiscal year for U.S. government.

Marked improvements were also evident in terms of funding under the CR. OSD worked diligently to obtain inputs from the CCMDs about near-term funding requirements and succeeded in obtaining a sizable amount of funding under the CR. This funding was then applied equitably across the CCMDs, taking close account of the stated requirements of each. In short, in the case of the first two recommendations, program management of DEIC was much more effective than in previous years.

## **E. A Comparison of Metrics**

Finally, IDA's qualitative and quantitative metrics have now been applied to two consecutive years of DEIC. A comparison of these metrics for the FY15 and FY16 programs, captured in Table 4, shows that the program is consistently engaging a large number of representatives from countries throughout the world at a low cost per project. In fact, the average project for FY16 was about one-third less than projects in FY15.

Consistent with trends since the DEIC program's inception, both years also show a much greater demand signal from the CCMDs than the DEIC budget can support, and

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<sup>11</sup> Susan L. Clark-Sestak, *Review of the Fiscal Year 2014 (FY14) Defense Environmental International Cooperation Program*, IDA Document D-5413 (Alexandria, VA: IDA, May 2015).

additional resources from other U.S. government and non-government sources have been brought to bear for a number of projects to help ensure as great an impact as possible.

**Table 4. Comparisons of Metrics for FY15 and FY16**

<b>Type of Metric</b>	<b>FY15 Results</b>	<b>FY16 Results</b>
<b>Related to quantity of foreign engagements</b>		
<ul style="list-style-type: none"> <li>Percentage of DEIC projects involving interaction with other nations</li> </ul>	95% (20 of 21)	100% (36 of 36)
<ul style="list-style-type: none"> <li>Ratio of the number of engagements with other nations to DEIC funding</li> </ul>	20 engagements: \$1.346M, or \$67.3K average cost	36 engagements: \$1.581M, or \$43.9K average cost
<ul style="list-style-type: none"> <li>Number of foreign nationals engaged</li> </ul>	1,000+	1,100+
<ul style="list-style-type: none"> <li>Number of foreign nations engaged</li> </ul>	61	79
<b>Related to leveraging funding from other sources</b>		
<ul style="list-style-type: none"> <li>Percentage of all DEIC projects that leveraged other funding</li> </ul>	62% (13 of 21)	41.7% (15 of 36)
<ul style="list-style-type: none"> <li>Percentage of total spending on DEIC projects that was from other funding sources</li> </ul>	35.3% (\$733K of \$2.079M)	37.4% (\$945K of \$2.526M)
<ul style="list-style-type: none"> <li>Number of CCMDs that leveraged other funding</li> </ul>	4 (of 5)	3 (of 6)

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# Appendix A.

## Defense Environmental International Cooperation (DEIC) Fiscal Year 2016 Call for Proposals and Meeting Participation

  
ENERGY,  
INSTALLATIONS  
AND ENVIRONMENT

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE  
3400 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3400

JUN - 9 2015

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF DEFENSE (SECURITY COOPERATION)  
DIRECTOR, JOINT STAFF  
CHIEF OF STAFF, UNITED STATES AFRICA COMMAND  
CHIEF OF STAFF, UNITED STATES CENTRAL COMMAND  
CHIEF OF STAFF, UNITED STATES EUROPEAN COMMAND  
CHIEF OF STAFF, UNITED STATES NORTHERN COMMAND  
CHIEF OF STAFF, UNITED STATES PACIFIC COMMAND  
CHIEF OF STAFF, UNITED STATES SOUTHERN COMMAND

SUBJECT: Defense Environmental International Cooperation (DEIC) Program – Fiscal Year (FY) 2016 Call for Proposals

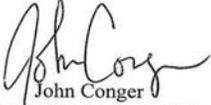
This memorandum provides the guidance and schedule for submitting proposals for consideration in the DEIC Program allocation of FY 2016 resources. The DEIC Program provides expertise and funding to support security cooperation (e.g., build partnership capacity, address environmental risk management, and sustain mission resilience).

Eligible DEIC Program activities must include engaging with foreign defense ministries on environmental and energy topics that have implications for military installations, training or operations. I encourage you to submit proposals that include civilian agencies, international organizations and non-government organizations.

The planned milestones for the DEIC FY 2016 proposal submission process are:

- No later than July 24, 2015 – Please submit FY 2016 DEIC Program proposals based on the guidance provided in Attachment 1.
- Early September 2015 – My staff will meet with representatives from the Office of the Deputy Assistant Secretary of Defense (Security Cooperation), and with the Office of the Chairman of the Joint Staff to evaluate the proposals, as outlined in Attachment 2.
- Early October 2015 – I anticipate announcing the approved FY 2016 DEIC Program.

My point of contact is Mr. Shah Choudhury, at [shah.a.choudhury.civ@mail.mil](mailto:shah.a.choudhury.civ@mail.mil) or 571-372-6809.

  
John Conger  
Performing the Duties of the Assistant Secretary of Defense  
(Energy, Installations and Environment)

Attachment:  
As stated

Figure A-1. John Conger, Memorandum: Defense Environmental International Cooperation (DEIC) Program Fiscal Year (FY) 2016 Call for Proposals (Washington, DC: Assistant Secretary of Defense (Energy, Installations and Environment) June 09, 2015)

**Defense Environmental International Cooperation (DEIC) Program  
Fiscal Year (FY) 2016  
Proposal Submission Guidance**

Combatant Commands (CCMDs) should consolidate their proposals and submit them by July 24, 2015, for FY 2016 resource consideration. A cover memo signed out at the GFO/SES level is appropriate. They should be emailed to Ms. Susan Clark-Sestak at [sclark@ida.org](mailto:sclark@ida.org), with a copy to Mr. Shah Choudhury, OSD at [shah.a.choudhury.civ@mail.mil](mailto:shah.a.choudhury.civ@mail.mil). The format of the proposals should be as follows:

1. Title of the proposal.
2. Organization (spell out) originating request, including Department of Defense (DoD) action officer, email address, and commercial and DSN phone number.
3. Description – Explain why this proposal and the country(ies) to be engaged are important and what the desired outcomes are:
  - a. General description of who, what, where, when, and how.
  - b. Why? Cite support to specific objectives of the Guidance for the Employment of the Force and your Theater Campaign Plan. This is extremely important. The more context you provide, the more competitive your proposal is likely to be. We anticipate that this section of your proposal will be classified and should be submitted in a separate classified document to [susan@ida.pentagon.smil.mil](mailto:susan@ida.pentagon.smil.mil) and [shah.a.choudhury.civ@mail.smil.mil](mailto:shah.a.choudhury.civ@mail.smil.mil).
4. Documentation deliverables: For example, report, handbook, workshop, proceedings, etc.
5. Planned schedule for execution (include key planning meetings and events). Please consider the “80/20” rule – 80 percent obligation by end of July is mandatory. No more than 20 percent of funding may remain unobligated after that date.
6. Resource requirements: Provide a detailed excel spreadsheet that identifies:
  - a. The amount of funds requested from the DEIC Program.
  - b. How funds will be spent (e.g., number of travelers, transportation cost, per diem, publication costs, contractor support). The DEIC Program is operation and maintenance funding, and subject to all restrictions of that appropriation.
  - c. Other resources that have been requested (e.g., Traditional Commander Activities, Title 10, other government agencies, international organizations, non-governmental organizations, manpower, etc.). While it is not required that other resources be leveraged for all proposals, it is an important indicator of the value that others place on the proposal.

7. Additional Comments: Include any clarifying information that will aid our understanding in evaluating your proposals. This information should be clear, succinct, and proposal-specific.
8. Priority: CCMDs must prioritize their proposals if submitting more than one.
9. Compliance with all current guidance governing travel and conferences (if applicable) is required.

**Defense Environmental International Cooperation (DEIC) Program  
Advisory Group Meeting**

The purpose of the DEIC Program's Advisory Group is to review, prioritize and recommend projects to the Assistant Secretary of Defense (Energy, Installations and Environment) (ASD(EI&E)) for the Fiscal Year (FY) 2016 funding. The Advisory Group is comprised of three voting representative from: the OASD(EI&E); the Office of the Deputy Assistant Secretary of Defense (Security Cooperation); and the Office of the Chairman of the Joint Staff. Decision-making authority for the DEIC Program lies solely with ASD(EI&E).

The Advisory Group will meet on Wednesday, September 9, 2015, from 0900 to 1600 at the Institute for Defense Analyses (IDA). The following outlines expected Combatant Command (CCMD) participation in this meeting:

- The CCMDs are requested to participate in the Advisory Group meeting via conference call. There will be a 30-45 minute window designated for each CCMD during which Advisory Group questions about the CCMD's proposals will be addressed. As the meeting agenda is developed, the time zone differences for the various CCMDs will be taken into account.
- If the designated representative from any of the CCMDs already plans to be in the Washington, DC area during the Advisory Group meeting, attendance in person is welcome. In such a case, the following must be done by August 31, 2015:
  - ✓ Provide the name and contact information (email and phone number) of the representative you are planning to send to Ms. Susan Clark-Sestak, [sclark@ida.org](mailto:sclark@ida.org).
  - ✓ Visit requests must be faxed to IDA Visitor Control, 703-845-2588 (phone: 703-845-6900) or sent via JPAS (IDA's SMO code is 7A2934). Please do so by August 31, 2015.
- For all CCMDs participating by conference call, please provide the name of the CCMD representative(s) and telephone number(s) to Ms. Clark-Sestak by September 4, 2015.
- No formal briefing presentation by telephone or in person will be expected or accommodated.
- The conference calls will need to be conducted at the unclassified level, so it is important that any classified supporting documentation be sent to Ms. Clark-Sestak at [susan@ida.pentagon.smil.mil](mailto:susan@ida.pentagon.smil.mil) so that hard copies may be provided to the Advisory Group members. This information should be provided when proposals are submitted (by July 24, 2015).

Taking under advisement the Advisory Group's recommendations, the ASD(FI&E) will subsequently issue a memorandum announcing the officially approved program, pending receipt of FY 2016 funds.

If you have any questions or need assistance, please contact Mr. Shah Choudhury at 571-372-6809, [shah.a.choudhury.civ@mail.mil](mailto:shah.a.choudhury.civ@mail.mil). For questions related to IDA, please contact Susan Clark-Sestak at 703-845-2166, [sclark@ida.org](mailto:sclark@ida.org).

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# Appendix B.

## Defense Environmental International Cooperation (DEIC) FY16 Approved Program

  
OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE  
3400 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3400

OCT 01 2015

ENERGY,  
INSTALLATIONS  
AND ENVIRONMENT

MEMORANDUM FOR CHIEF OF STAFF, UNITED STATES AFRICA COMMAND  
CHIEF OF STAFF, UNITED STATES CENTRAL COMMAND  
CHIEF OF STAFF, UNITED STATES EUROPEAN COMMAND  
CHIEF OF STAFF, UNITED STATES NORTHERN COMMAND  
CHIEF OF STAFF, UNITED STATES PACIFIC COMMAND  
CHIEF OF STAFF, UNITED STATES SOUTHERN COMMAND

SUBJECT: Defense Environmental International Cooperation Fiscal Year 2016 Approved Program

This memorandum announces the approved Fiscal Year (FY) 2016 Defense Environmental International Cooperation (DEIC) Program, to be funded by the Office of the Assistant Secretary of Defense for Energy, Installations and Environment, subject to the availability of funds. This was done in accordance with the guidance provided in my memorandum dated June 9, 2015 (Attachment 1). Implementation shall comply with the Department of Defense guidance pertaining to travel, meetings and security cooperation.

The table (Attachment 2) lists all the proposals received and funding levels for approved projects. My office is ready to work with your staff on the details for execution of proposals in the "Approved" column. The "Approved Pending Funds" and "Also Valid" columns reflect proposals that will be eligible for funding if additional funds become available. My DEIC program manager will inform your DEIC program manager if and when this occurs. In addition, your program manager should consult with mine prior to any significant change to approved projects such as modification of topic or of host nation that may be necessary due to execution challenges.

Your staff should feel free to contact my DEIC program manager, Mr. Shah Choudhury, at 571 372-6809 or shah.a.choudhury.civ@mail.mil, with any questions about execution of the FY 2016 DEIC Program.

  
John Conger  
Performing the Duties of the Assistant Secretary of Defense  
(Energy, Installations and Environment)

Attachments:  
As stated

cc:  
Director, Joint Staff  
Deputy Assistant Secretary of Defense (Security Cooperation)

Note: Attachment 1 referred to in the above memorandum is shown as Appendix A and is omitted in this appendix.

Figure B-1. John Conger, Memorandum: Defense Environmental International Cooperation [DEIC] Fiscal Year 2016 Approved Program (Washington, DC: Assistant Secretary of Defense (Energy, Installations and Environment) October 01, 2015)

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Table B-1. DEIC FY16 Project Proposals

	Requested FY16 projects	Approved (80%)	Approved Pending Funds (30%)	Also Valid
<b>DEIC Program FY16 Funding Level (thousands)</b>	<b>\$1,705</b>	<b>\$1,364</b>	<b>\$512</b>	
<b>Summary Totals (thousands)</b>	<b>\$3,029</b>	<b>\$1,364</b>	<b>\$519</b>	<b>\$442</b>
<b>TITLE</b>				
Oil Spill Preparedness and Response: Executive Level Workshop (Gabon)	67	55	0	12
Horn of Africa Water Capacity Building Workshop (Ethiopia)	63	63	0	0
Niger River Basin Flood Management (Nigeria)	42	42	0	0
DEFCON Support and Outreach for Mission Sustainability (South Africa)	46	46	0	0
Regional Integrated Coastal Area Management in West Africa (Cameroon)	40	40	0	0
Operational Energy as an Engagement Activity (Burkina Faso)	48	30	18	0
Transition to the Urban Environment (Kenya)	36	36	0	0
Oil Spill Preparedness and Response: Executive Level Workshop (Mozambique)	64	0	64	0
Integrated Training Area Management (South Africa)	39	0	0	39
Wildlife Trafficking (Botswana)	86	0	86	0
Climate Change Adaptation: Effective Civil-Military Partnerships... (Madagascar)	85	0	0	85
<b>AFRICOM Total:</b>	<b>\$616</b>	<b>\$312</b>	<b>\$168</b>	<b>\$136</b>
Developing Environmental SOPs for Afghan National Security Force	15	15	0	0
Climate Change-Shipping Contributions to Air Quality Degradation in ROPME(GCC)	132	0	0	0
Great Green Fleet Training for the Combined Maritime Forces (Bahrain)	19	0	0	0
Strait of Hormuz Traffic Data Center (GCC - Bahrain, Oman, UAE)	132	0	0	0
GCC Engagement/Participation in Horn of Africa Water Security	0	0	40	0
<b>CENTCOM Total:</b>	<b>\$298</b>	<b>\$15</b>	<b>\$40</b>	<b>\$0</b>

## DEIC FY16 Project Proposals

Arctic Security Forces Roundtable (ASFR) 2015 (Norway)	95	65	0	0
Environmental Considerations in Cold Weather in Support of ASFR (various)	34	17	17	0
Defense Environmental Network (DEFNET)	7	7	0	0
Natura 2000 and Range Management Outreach (Italy)	34	34	0	0
Sustainable Range Management Regional Engagements (Baltics)	30	30	0	0
Environmental Protection and Sustainable Range Management (Israel)	36	18	0	18
Environmental Considerations in Military Ops Regional Workshop (Montenegro)	22	22	0	0
Implications of Climate Change on Military Activities (Bulgaria)	29	0	29	0
Sustainable Range Management Bilaterals (Balkans and SE Europe)	25	25	0	0
Sustainable Range Management Bilaterals (Black Sea region)	27	0	27	0
<b>EUCOM Total:</b>	<b>\$339</b>	<b>\$218</b>	<b>\$73</b>	<b>\$18</b>
Arctic Capability Advocacy: 3rd Biennial International Arctic Collaborative Workshop	68	55	0	13
<b>NORTHCOM Total:</b>	<b>\$68</b>	<b>\$55</b>	<b>\$0</b>	<b>\$13</b>
FY16 Pacific Environmental Security Forum (PESF) (Fiji)	219	200	0	0
Ecological Restoration (Replanting) of Degraded Mining Areas (Mongolia)	152	96	0	0
Maldives National Defense Force Environmental Capacity Building (Maldives)	30	30	0	0
Remote Area Solid Waste Management (Mongolia)	127	0	0	95
Shared Vision Land Use Planning in Post-Earthquake Nepal	147	0	0	97
<b>PACOM Total:</b>	<b>\$675</b>	<b>\$326</b>	<b>\$0</b>	<b>\$192</b>

### DEIC FY16 Project Proposals

Toward Net-Zero Waste - Contingency Ops Workshop (Honduras)	72	45	0	0
Solid Waste Reduction Workshop (El Salvador)	35	25	0	0
Toward Net-Zero Waste - Contingency Ops Workshop (Guatemala)	57	40	0	0
Environmental Awareness Workshop (Regional - Honduras)	40	30	0	0
Waste to Energy Workshop (Regional - Honduras)	40	30	0	0
US-Chile Defense Consultative Commission (DCC) SMEE: Mission Sustainability	9	9	0	0
Rapid Integrated Water Assess (RISA) for Water Security SMEE (Peru)	51	0	51	0
Energy and Water Assessment Workshop (Chile)	45	0	45	0
Renewable Energy and Water Sustainability SMEE (Colombia)	25	25	0	0
Risk Mitigation of Climate Change SMEE (Brazil)	54	0	0	0
Climate Change Plan Development SMEE (Regional - Colombia)	44	0	40	0
Solar Energy and Water Sustainability SMEE (Brazil)	33	0	33	0
US-Chile Defense Consultative Commission (DCC) SMEE: Follow-Up Activity	59	45	14	0
Encroachment/Incompatible Land Use Impacts on Mili Training (Region-Colombia)	43	0	0	43
Meteorological & Oceanographic Capability/Needs Assessment SMEE (Colombia)	17	0	0	0
Bathymetry/modeling Coastal Areas Flooded by Climate Change (Brazil)	37	0	37	0
Energy and Water Assessment SMEE & TTX (Trinidad & Tobago)	28	28	0	0
Climate Change in Caribbean-Impacts to Mili Ops Workshop (Regional)	18	0	18	0
Disaster Waste Mgmt Contingency Plan SMEE (Jamaica)	83	0	0	0
Disaster Waste Mgmt Contingency Plan SMEE (Barbados)	83	0	0	0
Regional Engagement on Disaster Waste Mgmt	0	0	0	40
<b>SOUTHCOM Total:</b>	<b>\$873</b>	<b>\$277</b>	<b>\$238</b>	<b>\$83</b>
Programmatic Tracking and Research Support to DEIC (IDA)	160	161	0	0
<b>PROGRAM SUPPORT Total:</b>	<b>\$160</b>	<b>\$161</b>	<b>\$0</b>	<b>\$0</b>

Note: This spreadsheet did not include \$40K for the last proposal of the U.S. Southern Command (SOUTHCOM). The total for SOUTHCOM should therefore be \$915K and the total for all requested projects should be \$3,071K.

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## **Appendix C.**

# **Defense Environmental International Cooperation (DEIC) FY16 Spreadsheet**

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As described in Chapter 1, this spreadsheet (see Table C-1. ) presents the complete list of projects proposed by the Combatant Commands (CCMDs) for DEIC funding in Fiscal Year 2016 (FY16). The Advisory Group identified projects that should have highest priority (funding for which is listed in the “Approved” column), those that were also approved pending the availability of funds (listed in the “Approved pending funds” column), and those that were also eligible for DEIC support but were a lower priority (listed in the “Also valid” column). The amount of funding expended for each project is listed in the “Actual” column, and the amount of other funding is listed in the “leveraged funds” column.<sup>1</sup> For ease of identifying projects that were executed in FY16, these projects are all highlighted in blue.

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<sup>1</sup> See Chapter 1 for more detail on how the Advisory Group evaluated each project and allocated funding.

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Table C-1. DEIC FY16 Projects

	Requested FY16 projects	Approved	Approved pending funds (30%)	Also Valid	Actual	Lever- aged Funds
<b>DEIC Program FY16 Funding Level (thousands)</b>	<b>\$1,705</b>					
<b>Summary Totals (thousands)</b>	<b>\$3,071</b>	<b>\$1,557</b>	<b>\$427</b>	<b>\$442</b>	<b>\$1,581</b>	<b>\$945</b>
<b>TITLE</b>						
Oil Spill Preparedness and Response (Morocco)	67	55	0	12	55	64
Horn of Africa Water Capacity Building Workshop (Ethiopia)	63	63	0	0	41	45
Niger River Basin Flood Management (Nigeria)	42	42	0	0	42	37
DEFKOM Support, Wildlife Trafficking, and Outreach for Mission Sustainability (South Africa)	46	46	0	0	87	53
Regional Integrated Coastal Area Management in West Africa (Cameroon)	40	40	0	0	0	0
Energy as an Engagement Activity (Burkina Faso)	48	30	18	0	75	68
Transition to the Urban Environment (Kenya)	36	36	0	0	0	0
Oil Spill Preparedness and Response: Executive Level Workshop (Mozambique)	64	0	64	0	0	0
Integrated Training Area Management (South Africa)	39	0	0	39	0	0
Wildlife Trafficking (Botswana)	86	0	86	0	0	0
Climate Change Adaptation: Effective Civil-Military Partnerships... (Madagascar)	85	0	0	85	0	0
Disaster and Oil Spill Response (Seychelles)	0	0	0	0	42	12
SME Support from ERDC to AFRICOM Activities	0	0	0	0	46	0
<b>AFRICOM Total:</b>	<b>\$616</b>	<b>\$312</b>	<b>\$168</b>	<b>\$136</b>	<b>\$388</b>	<b>\$279</b>

	Requested FY16 projects	Approved	Approved pending funds (30%)	Also Valid	Actual	Lever- aged Funds
Developing Environmental SOPs for Afghan National Security Force	15	15	0	0	15	0
Climate Change-Shipping Contributions to Air Quality Degradation in ROPME(GCC)	132	0	0	0	0	0
Great Green Fleet Training for the Combined Maritime Forces (Bahrain)	19	0	0	0	0	0
Strait of Hormuz Traffic Data Center (GCC - Bahrain, Oman, UAE)	132	0	0	0	0	0
GCC Engagement - Oil Spill Preparedness and Response (Oman)	0	0	30	0	0	0
CENTCOM/Egypt Participation in Horn of Africa Water Security	0	0	10	0	0	0
<b>CENTCOM Total:</b>	<b>\$298</b>	<b>\$15</b>	<b>\$40</b>	<b>\$0</b>	<b>\$15</b>	<b>\$0</b>
Arctic Security Forces Roundtable (ASFR) 2016 (Norway)	95	65	0	0	65	45
Environmental Considerations in Cold Regions in Support of ASFR (various)	34	17	17	0	17	16
Defense Network (DEFNET)	7	7	0	0	7	0
Natura 2000 and Range Management Outreach (Italy)	34	34	0	0	34	12
Sustainable Range Management Regional Engagements (Baltics)	30	30	0	0	39	10
Environmental Protection and Sustainable Range Management (Israel)	36	18	0	18	18	14
Environmental Considerations in Military Ops Regional Workshop (Montenegro)	22	22	0	0	8	33
Implications of Climate Change on Military Activities (Bulgaria)	29	0	29	0	5	44
Sustainable Range Management Bilaterals (Balkans and SE Europe)	25	25	0	0	25	8
Sustainable Range Management Bilaterals (Black Sea region)	27	0	27	0	0	0
<b>EUCOM Total:</b>	<b>\$339</b>	<b>\$218</b>	<b>\$73</b>	<b>\$18</b>	<b>\$218</b>	<b>\$182</b>
Arctic Capability Advocacy:3rd Biennial International Arctic Collaborative Workshop	68	55	0	13	55	0
<b>NORTHCOM Total:</b>	<b>\$68</b>	<b>\$55</b>	<b>\$0</b>	<b>\$13</b>	<b>\$55</b>	<b>\$0</b>

	Requested FY16 projects	Approved	Approved pending funds (30%)	Also Valid	Actual	Lever- aged Funds
FY16 Regional Environmental Security Forum (RESF) (Fiji)	219	200	0	0	218	338
Ecological Restoration (Replanting) of Degraded Mining Areas (Mongolia)	152	96	0	0	48	0
Maldives National Defense Force Environmental Capacity Building (Maldives)	30	30	0	0	30	0
Remote Area Solid Waste Management (Mongolia)	127	0	0	95	0	0
Shared Vision Land Use Planning in Post-Earthquake Nepal	147	0	0	97	0	0
Southeast Asia Maritime Environmental Security workshop (Malaysia)	0	0	0	0	30	146
<b>PACOM Total:</b>	<b>\$675</b>	<b>\$326</b>	<b>\$0</b>	<b>\$192</b>	<b>\$326</b>	<b>\$484</b>
Toward Net-Zero Waste - Contingency Ops Workshop (Honduras)	72	45	0	0	43	0
Solid Waste Reduction Workshop (Dominican Republic)	35	25	0	0	0	0
Toward Net-Zero Waste - Contingency Ops Workshop (Guatemala)	57	40	0	0	40	0
Environmental Awareness Workshop (Regional - Honduras)-combined w net zero	40	30	0	0	0	0
Waste to Energy Workshop (Regional - Honduras)-combined w net zero	40	30	0	0	0	0
US-Chile Defense Consultative Commission (DCC): Mission Sustainability	9	9	0	0	9	0
Rapid Integrated Strategic Assessment (RISA) for Water Security (Brazil)	51	0	51	0	50	0
Energy and Water Assessment Workshop (Chile)	45	0	45	0	0	0
Renewable Energy and Water Sustainability SME Exchange (Colombia)	25	25	0	0	16	0
Risk Mitigation of Climate Change SME Exchange (Brazil)	54	0	0	0	0	0
Climate Change Plan Development SME Exchange (Regional - Colombia)	44	5	40	0	4	0
Solar Energy and Water Sustainability SME Exchange (Brazil)	33	0	33	0	0	0
US-Chile Defense Consultative Commission (DCC) SME Exchange: Follow-Up Activity	59	45	14	0	42	0
Encroachment/Incompatible Land Use Impacts on Military Training Areas (Colombia)	43	0	0	43	4	0
Meteorological & Oceanographic Capability/Needs Assessment SME Exchange (Colombia)	17	0	0	0	13	0
Bathymetry/modeling Coastal Areas Flooded by Climate Change (Brazil)	37	0	37	0	0	0
Energy and Water Assessment SME Exchange & TTX (Trinidad & Tobago)	28	28	0	0	12	0
Climate Change in Caribbean-Impacts to Military Ops Workshop (Regional)	18	0	18	0	0	0
Disaster Waste Mgmt Contingency Plan SME Exchange (Trinidad & Tobago)	83	0	0	0	47	0

	Requested FY16 projects	Approved	Approved pending funds (30%)	Also Valid	Actual	Lever- aged Funds
Disaster Waste Mgmt Contingency Plan SME Exchange (Barbados)	83	0	0	0	0	0
Regional Engagement on Disaster Waste Mgmt (Guyana)	42	0	0	40	0	0
Emerging Engagement Opportunity (Argentina)	0	0	0	0	0	0
Environment and Energy Education Training Working Group	0	0	0	0	10	0
Contractor support for SOUTHCOM events	0	0	0	0	97	0
<b>SOUTHCOM Total:</b>	<b>\$915</b>	<b>\$277</b>	<b>\$238</b>	<b>\$83</b>	<b>\$387</b>	<b>\$0</b>
Programmatic Tracking and Research Support to DEIC (IDA)	160	161	0	0	192	0
<b>PROGRAM SUPPORT Total:</b>	<b>\$160</b>	<b>\$161</b>	<b>\$0</b>	<b>\$0</b>	<b>\$192</b>	<b>\$0</b>

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## **Appendix F. Abbreviations**

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AAR	after action report
ACW	Arctic Collaborative Workshop
AFRICOM	(U.S.) Africa Command
ANDSF	Afghan National Defense and Security Forces
AOR	area of responsibility
APAN	All Partners Access Network
APRI	Asia Pacific Regional Initiative
ARNG	Army National Guard
ASD(EI&E)	Assistant Secretary of Defense for Energy, Installations and Environment
ASFR	Arctic Security Forces Roundtable
CCMD	combatant command
CENTCOM	(U.S.) Central Command
CR	Continuing Resolution
CSIR	Council for Scientific and Industrial Research
DCC	Defense Consultative Commission
DEFCOM	Defense Committee
DEFNET	Defense Network
DEIC	Defense Environmental International Cooperation
DFARS	Defense Federal Acquisition Regulation Supplement
DOD	Department of Defense
ERDC	(U.S.) Army Engineer Research and Development Center
ERI	European Reassurance Initiative
ESOH	Environment, Safety and Occupational Health (Office of)
EU	European Union
EUCOM	(U.S.) European Command
FEMA	Federal Emergency Management Agency
FFRDC	Federally Funded Research and Development Center
FY	fiscal year
GCC	Gulf Cooperation Council
GIS	Geographic Information System

IDA	Institute for Defense Analyses
IDF	Israeli Defense Forces
K	thousand in U.S. dollars
M	million in U.S. dollars
MARFORPAC	(U.S.) Marine Corps Forces Pacific
MNDF	Maldives National Defense Force
MOD	Ministry of Defence
MOE	Ministry of Environment
NAVFAC	Naval Facilities Engineering Command
NGO	non-governmental organization
NORTHCOM	(U.S.) Northern Command
ODASD/ESOH	Office of the Deputy Assistant Secretary of Defense for Environment, Safety and Occupational Health
OSD	Office of the Secretary of Defense
PACOM	(U.S.) Pacific Command
PESF	Pacific Environmental Security Forum
PM	program manager
RESF	Regional Environmental Security Forum
RISA	Rapid Integrated Strategic Assessment
ROPME	Regional Organization for the Protection of the Marine Environment
SANDF	South African National Defence Forces
SE	southeast
SME	subject matter expert
SMEE	subject matter expert exchange
SOP	standard operating procedure
SOUTHCOM	(U.S.) Southern Command
TCA	Traditional Commander's Activity
TSC	Theater Security Cooperation
TXX	Trinidad and Tobago
U.S.	United States
UAE	United Arab Emirates
UNEP	United Nations Environment Programme
USACE	U.S. Army Corps of Engineers
USAREUR	U.S. Army Europe
WHINSEC	Western Hemisphere Institute for Security Cooperation

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