

Enhancing Global Health Security: US Africa Command's Disaster Preparedness Program

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ABSTRACT

US Africa Command's Disaster Preparedness Program (DPP), implemented by the Center for Disaster and Humanitarian Assistance Medicine, partnered with US Government agencies and international organizations to promote stability and security on the African continent by engaging with African Partner Nations' (PN) civil and military authorities to improve disaster management capabilities. From 2008 to 2015, DPP conducted disaster preparedness and response programming with 17 PNs. DPP held a series of engagements with each, including workshops, strategic planning, developing preparedness and response plans, tabletop exercises, and prioritizing disaster management capability gaps identified through the engagements. DPP partners collected data for each PN to further capacity building efforts. Thus far, 9 countries have completed military pandemic plans, 10 have developed national pandemic influenza plans, 9 have developed military support to civil authorities plans, and 11 have developed disaster management strategic work plans. There have been 20 national exercises conducted since 2009. DPP was cited as key in implementation of Ebola response plans in PNs, facilitated development of disaster management agencies in DPP PNs, and trained nearly 800 individuals. DPP enhanced PNs' ability to prepare and respond to crises, fostering relationships between international agencies, and improving civil-military coordination through both national and regional capacity building. (*Disaster Med Public Health Preparedness*. 2019;13:319-329)

Key Words: civil military, humanitarian aid, disaster preparedness, Ebola response, disaster response

“We have to change our mindsets and start thinking about biological threats as the security threats that they are—in addition to being humanitarian threats and economic threats. We have to bring the same level of commitment and focus to these challenges as we do when meeting more traditional security issues.”

President Barack Obama

The potential for disasters in Africa—both epidemics of disease and other disruptive catastrophes—poses a significant threat with worldwide implications.¹⁻⁵ The capability and capacity of governments to manage these threats are critical to global health security, as well as national and regional stability, and indicative of the fundamental responsibility of any state to protect vulnerable populations from the impact of disasters. Government agencies play key roles in preparing for and responding to disasters in collaboration with non-governmental and international organizations to provide essential services such as security, logistics, communications, and health care to affected populations. When a government visibly demonstrates its resolve to mitigate or respond effectively to catastrophes, trust in government by the population is validated, resulting in increased stability and security.⁶⁻⁸ Conversely, it is evident that with increasing levels of disaster severity and ineffective governance to support

the basic needs of the citizenry, trust in government fails, leading to high-risk environments for instability.⁹⁻¹³

The notion of “health security,” or the protection from threats to population health, has recently risen to the forefront of international security discussions—particularly in light of Ebola and Zika virus outbreaks in the past few years.¹⁴ Twenty-five percent of global non-conflict emergencies, and 44% of deaths related to these emergencies, occurred in developing countries with restricted ability to prepare for and respond to such types of emergencies.¹⁵ In addition, according to the recent Sendai Framework for Disaster Risk Reduction, “effective disaster risk management contributes to sustainable development.”¹⁶

The Center for Disaster and Humanitarian Assistance Medicine (CDHAM),^a established within the Uniformed Services University of the Health Sciences, is postured by the Department of Defense (DOD) to advance the understanding and delivery of disaster medical care and humanitarian assistance worldwide.

^aThe Center for Disaster and Humanitarian Assistance Medicine (CDHAM) has recently been renamed (as of March 2016) to the Center for Global Health Engagement (CGHE). Given that the programming occurred under the CDHAM organization, all references to this organization in this paper will be to CDHAM.

From 2009 through 2015, CDHAM functioned as the primary implementing agent for the US Africa Command (USAFRICOM) Disaster Preparedness Program (DPP), which was designed to promote stability and security by enhancing African Partner Nations' (PN) national capacities to plan for and respond to disasters.^{17,18} In concert with interagency and international partners, CDHAM organized and conducted education, training, planning sessions and evaluation exercises to assist PN militaries and civilian authorities to better prepare for, respond to, and mitigate disasters, thereby promoting greater stability and security on the continent. By improving coordination and forging regional strategic partnerships within the USAFRICOM Area of Responsibility, DPP has been instrumental in significantly advancing the DOD's aim to develop long-term disaster management capacity in Africa and promote greater stability and security on the continent.

DPP represents USAFRICOM's, and arguably the US Government's, most established and effective vehicle for capacity building to combat all-hazard disaster threats on the African continent, having been founded upon lessons learned from 2 previous programmatic efforts. DPP evolved from its predecessors, the Pandemic Response Program (PRP), which was initiated in 2009 and merged with the all-hazards-focused Disaster Planning and Preparedness Program (DP3) in 2012. PRP and DP3 both sought to identify the necessary resources, management constructs, and national systems of roles and responsibilities for dealing with all aspects of humanitarian emergencies—from mitigation to preparedness and response, through recovery, in order to lessen the impact of human suffering and save lives. Many of PRP and DP3's founding principles and best practices were incorporated into DPP, leading to the creation of a more effective and inclusive methodology for addressing the whole-of-government disaster management and preparedness needs of African PNs.

The overarching goal of this initiative, governed by the Office of the Secretary of Defense and the Defense Security Cooperation Agency, was to assist African PNs to prepare for, respond to and mitigate disasters, as well as to develop strategic partnerships on the continent. DPP supported global health security through adherence to the following objectives (Table 1).

PROGRAM AND PROCESS DESCRIPTION

DPP is built on several basic principles that facilitate resiliency and meet the national security objectives of both the United States and its PNs. These principles are integrated into the planning, development, execution, and evaluation of each engagement:

1. Effective partnerships are built on trust, which must be gained over time.
2. Health engagements should always be aligned with strategic objectives.

3. Improved partner nation population health is a primary goal.
4. Partner nation participation and visibility in a leadership role is critical.
5. Sustainable capacity building should always be a goal, and requires longitudinal engagement.

Utilizing these principles, DPP has emerged as a model for longitudinal DOD engagement with long term, sustainable capacity building as the primary outcome. The program utilizes a whole-of-government approach by focusing on the roles and interoperability of civilian and military government agencies, while including international and non-governmental organizations in all relevant engagements. The DPP methodology has defined specific steps to achieve desired outcomes, yet maintains flexibility to adapt to the relative situation in each PN. These steps include:

1. *Establishing a commitment by government leaders* and identifying key focal points from the multiple ministries responsible for disaster preparedness and response.
2. Conducting a *Disaster Management Capability Assessment* using a multi-stakeholder process.
3. Developing a *Disaster Management Strategic Work Plan* (DMSWP) to move toward the desired end states.

The DPP concept of operations (CONOPS) represented below served as a strategic framework for DPP engagement with each PN. Implementation details were tailored to an individual nation's priorities, capabilities, and circumstances. Phases are denoted by the CDHAM to conceptualize components of the DPP, and were not intended to indicate an inflexible sequence of events (see Table 2 for a summary of all phases listed below).

PHASE 0: PREPARATION

Disaster Management Capabilities Analysis (DMCA) Report

The DMCA was an iterative process designed to provide PNs with a platform to consider their respective ways forward for long-term disaster management development. The DMCA applied country-specific relevant information from 3 primary sources of information: (1) a thorough literature review of various data sets, (2) anonymous self-assessment survey data, and (3) information from targeted in-person interviews. The critical strengths and weaknesses highlighted by the analysis were then summarized in a comprehensive DMCA report and returned to each PN to help prioritize future initiatives, mobilize resources, and create collaborative partnerships towards sustained capacity in disaster preparedness and management.

The DMCA process objectives were to improve disaster management capabilities, to include preparedness and response strategies, and specifically identify gaps within the

TABLE 1

Disaster Preparedness Program (DPP) Objectives With Activities**Objective 1: enhance or build civil-military relationships in support of disaster response capacity***Activities*

- Assist national-level civil and military authorities in identifying roles and responsibilities within the disaster-response framework
- Support civilian-military integration efforts related to the use of military forces and assets in disaster response
- Create opportunities for senior and mid-level civilian and military leadership to prepare and train together in disaster management, humanitarian assistance, and pandemic preparedness
- Provide mechanisms for validation of both civilian and military response plans

Objective 2: strengthen the national-level disaster management capacity of PNs*Activities*

- Promote “whole of government/society” interoperability to enhance the capability of PNs to respond to emergencies
- Improve the capacity of PNs to mitigate the effects of disasters through increased planning and improved response capabilities
- Promote the adoption and implementation of appropriate policies and legal frameworks related to disaster preparedness and response at the national level
- Encourage cross-ministerial communication and cooperation
- Support the implementation of new technologies and the adoption of best practices
- Assist PNs in assessing their baseline preparedness for disasters and develop a prioritized list of gaps to serve as a roadmap, or disaster management strategic work plan, for continuous improvement of disaster management capabilities and capacity
- Provide a mechanism for PNs to enhance relationships with the international community (international organizations, non-governmental organizations, regional governments)

Objective 3: strengthen the disaster management capacity of regional entities*Activities*

- Promote the adoption and implementation of appropriate policies and legal frameworks related to disaster preparedness and response at the regional level
- Develop sustained engagement through education, training, and capacity building activities that will foster regional support and cooperation
- Enhance communications, the coordination of efforts and networking at the regional level
- Support the implementation of new technologies and the adoption of best practices
- Provide a mechanism for both civilian and military response plans to be validated at the regional level
- Support disaster/humanitarian response training initiatives with African Standby Forces
- Support building and training regionalized assessment capacity

Abbreviation: PN, Partner Nations

following areas: planning, workforce development, infrastructure, communications, and financing.

(A) *Planning*: support the development of disaster contingency plans to include national all-hazards and threat-specific plans which designate roles and responsibilities for civilian and military entities alike during disaster response operations. Identify gaps in existing disaster preparedness capabilities and work toward development of a roadmap to fulfill those gaps, utilizing both internal and external resources.

(B) *Workforce development*: promote accredited training of disaster management staff and specialists (ie, Geographic Information System, risk-assessment analysts) including sustainable train-the-trainer programs. Conduct preparedness drills at the district and national levels to exercise disaster preparedness and response contingency plans.

(C) *Infrastructure*: support the establishment of an in-country designated facility housing a national disaster management agency to include a functioning Emergency Operations Center (EOC), adequate logistical capabilities as well as passive and active surveillance networks for rapid response to critical incidents at both the district and national levels.

(D) *Communications*: identify and foster use of critical communication linkages and reporting networks within the national government, disseminate key information to the

general public and maintain open channels of communication between PNs and their relevant regional and international stakeholders to strengthen coordination efforts for effective disaster management. Develop national and regional multi-sectorial communication plans within PN ministries/agencies, including the military, as well as among neighboring countries and regional multilateral institutions (ie, the Economic Community of West African States [ECOWAS]) for rapid response to disaster emergencies.

(E) *Financing*: advance in-country (first priority), donor countries', international organizations', regional banks', and non-governmental organizations' commitment for funding local, national, and regional disaster management capacity building activities.

PHASE I: DEVELOPMENT OF COUNTRY ENGAGEMENT STRATEGY**Initial Planning Meetings**

DPP conducted an initial in-country visit to engage the US Embassy Country Team (namely the Office of the Chief of Mission, Office of Security Cooperation, the United States Agency for International Development [USAID], the Centers for Disease Control and Prevention and others), PN government authorities and disaster management focal points, as well

TABLE 2

Phases of Disaster Preparedness Program (DPP) Operation

Outcome/End State	Enabling Events	Details
<p>Phase 0: Preparation DPP team will have extensive background information on the prospective PN</p>	<p><i>Country context report</i>—developed to familiarize current and future DPP personnel with the background demographics, geography, government, cultural practices, disaster management structure, etc. for each new PN</p> <p><i>Disaster Management Capabilities Analysis (DMCA) Report</i>—developed based on a thorough literature review of layered data sets to outline existing national DM capabilities in the areas of planning, workforce development, infrastructure, communications, and finance</p>	<p>Duration: 3-8 weeks Location: headquarters Required personnel: 2-3</p>
<p>Phase I: Development of country engagement strategy Understanding of DPP program objectives by key PN stakeholders Introduction of key DPP personnel to PN stakeholders Commitment/buy-in for DPP implementation</p>	<p><i>Initial planning meetings</i>—to obtain PN and US Embassy country team buy-in, gather background information, begin to build relationships with key stakeholders, and develop an initial timeline for implementation of the program</p> <p><i>DMCA report draft delivery</i>—electronic delivery to PN</p>	<p>Duration: 3-4 days Location: in-country Required personnel: 3-4 Conducted as a follow-up to the initial planning meeting and in preparation for Phase II</p>
<p>Phase II: Capabilities review and analysis PN has a comprehensive DMCA report which assesses their national disaster management capabilities and gaps Optional: PN has conducted a high-level exercise</p>	<p><i>DMCA Report Review</i>—distribute an anonymous survey and conduct a facilitated DMCA review to validate data and, if necessary, strengthen gathered data or gather missing data through additional means</p> <p><i>DMCA report finalization and delivery</i>—incorporation of additional findings, completion of a final draft and electronic delivery to the PN</p> <p><i>High-level exercise (if requested)</i>—with 25 senior PN government officials to: (1) increase awareness of the importance of disaster preparedness and response activities; (2) demonstrate gaps in existing capabilities; (3) increase government buy-into DPP engagement</p>	<p>Duration: 5 days Location: in-country Required personnel: 2 Duration: 3 weeks following completion of the in-country review Location: headquarters required personnel: 3 Duration: 1-3 days Location: in-country Required personnel: 5-7</p>
<p>Phase III: Plan development and validation PN has a national Pandemic Preparedness and Response Plan PN has a comprehensive written plan for Military Support to Civil Authorities (MSCA) for disasters PN has a national Ebola Preparedness and Response Plan PN has validated its plans through a hybrid all-hazards exercise PN has a Disaster Management Strategic Work Plan (DMSWP) towards achieving its desired national disaster management capabilities^a</p>	<p><i>Initial draft plans development</i>^b</p> <p><i>Facilitated planning discussions (FPD)</i>—with 30 inter-ministerial PN participants to draft task lists for a: (1) National Pandemic Preparedness and Response Plan; (2) National Ebola Preparedness and Response Plan; and/or a (3) MSCA Disaster Contingency Plan (for all-hazards).^c</p> <p><i>Facilitated plan reviews (FPR)</i>—with 30 inter-ministerial PN participants to review line-by-line and validate the aforementioned draft plans</p>	<p>Duration: 2 weeks/plan Location: headquarters Required personnel: 1-2 Duration: 2-3 days/plan Location: in-country Required personnel: 2-3 Drafting of full plans following the FPD: 1-2 months Location: headquarters Required personnel: 1-2 Duration: 2-3 days/plan Location: in-country Required personnel: 2-3 Editing and finalization of plans following FPR: 2-3 months Location: headquarters Required personnel: 1-2</p>

TABLE 2

(Continued)

Outcome/End State	Enabling Events	Details
	<p><i>National disaster preparedness exercise development and DMSWP review</i>—with 8-10 key PN focal points at CGHE to:</p> <ol style="list-style-type: none"> (1) finalize the exercise scenario; (2) Plan for exercise participants and logistics; (3) conduct a DMSWP Development Workshop to outline a roadmap (including projects, projected timelines, and estimated costs) for future disaster management capacity building activities <p><i>Plan handover and familiarization</i>—with 30 suggested PN participants to provide an overview briefing on the newly developed plans to familiarize all exercise participants with plan contents.^d</p> <p><i>National Disaster Preparedness Exercise and DMSWP Review Workshop</i>—with 60 suggested PN participants to:</p> <ol style="list-style-type: none"> (1) exercise and determine gaps in existing national disaster response capabilities; (2) validate, test, and train on the plans developed during the FPR process; and (3) finalize the DMSWP to better determine projects and steps toward improved national disaster management capabilities 	<p>Conducted ~2 months after the FPR Duration: 5 days Location: headquarters Required personnel: 4-5</p> <p>Conducted 4 weeks before or immediately preceding the exercise Duration: 2 days Location: in-country Required personnel: 2-3 Can be conducted 1-2 months after the PDF (depending on PN socialization/ adoption of plans) Duration: 5 days Required personnel: 10-15 and 5 PN facilitators</p>
<p>Phase IV: Regionalization and plan validation Establishment of a Regional framework for communication/ collaboration/networking on disaster preparedness Regional PNs are familiar with one another's disaster response planning efforts Regional exercise in response to a “regional” disaster Development of a Regional Strategic Work Plan</p>	<p><i>Regional Disaster Management Workshop and Exercise</i>—with 40-50 suggested PN key stakeholders to:</p> <ol style="list-style-type: none"> (1) establish a regional framework for communication/collaboration/networking; (2) familiarize regional PNs with each other's disaster response planning efforts; (3) conduct a regional exercise of response to a “regional” disaster; and (4) develop a regional work plan—to include discussion of mutual aid agreements 	<p>Conducted at any time when regional PNs have sufficient advancement/engagement on national disaster planning efforts Preparation time: 1-2 months Duration: 5 days Required personnel: 10-15 and 5 PN facilitators</p>
<p>PN Validation and ownership transition Increased use of national and continent subject-matter experts for conduct of the DPP program</p>	<ol style="list-style-type: none"> (1) Identify local national talent to engage and build capacity throughout DPP process; and (2) Hire local nationals to conduct/facilitate/participate in DPP program efforts 	<p>Ongoing</p>

Abbreviation: PN, Partner Nations.

^aEach activity is optional and can be selected based upon the particular needs of each PN.

^bBased on the requests of each PN.

^cEngagement with a given country on multiple plans can result in economies of scale with additional planning efforts incorporated for much lower costs.

^dMay be combined with activity below.

as other appropriate partners and stakeholders to discuss the program's CONOPS and the way ahead, should the PN decide to move forward with DPP engagement. Background information was gathered to further define the structure of program engagement and prepare a timetable for next steps in accordance with the phases of implementation. DPP also focused on building relationships with key stakeholders in-country through ongoing discussions and collaboration.

PHASE II: CAPABILITIES REVIEW AND ANALYSIS

High-Level Exercise (If Requested)

Each PN had the opportunity to determine if an up-front exercise was necessary to raise awareness about the gaps in existing disaster management capabilities and increase buy-in of high ranking government officials. As a result, this step was optional and left to the discretion of each PN.

PHASE III: PLAN DEVELOPMENT AND VALIDATION

Plans Development/Review

If the need for new or enhanced disaster preparedness and response plans was identified, CDHAM worked directly with the PN's civilian and military planners to develop these plans through a facilitated plan development process. Previous plan requests made of the DPP have included Military Support to Civil Authorities (MSCA) Disaster Contingency Plans, National/Military Pandemic Influenza Preparedness and Response Plans, Ebola Preparedness and Response Plans and national DMSWPs. For countries with a more mature planning system, planning requests could include enhancements to existing plans, mid-term evaluation and revision of plans, and targeted sub-planning efforts to help meet existing national action plans.

National Disaster Preparedness Tabletop Exercise

If deemed necessary by the PN, a hybrid functional/tabletop exercise was conducted to validate new and existing plans and to enhance "whole of society" cooperation between civilians, the private sector, government institutions, and the military. The objectives were as follows: provide the opportunity to identify the gaps in existing disaster management capabilities, increase buy-in of high-ranking government officials, ensure all appropriate PN stakeholders are effectively integrated into the national disaster preparedness and response efforts, and ensure mechanisms are in place to support a rapid involvement of international organizations, non-governmental organizations, and regional organizations.

PHASE IV: SUSTAINED ENGAGEMENT STRUCTURE

The goal of the final phase, led by USAFRICOM, was to develop a follow-on engagement structure through sustained interactions with PNs. CDHAM continued to support engagement and sustainment activities as requested, as additional components of the DPP grant or through separate funding and statements of work.

ALL PHASES—DETAILED DESCRIPTION

Regionalization

Throughout implementation of DPP, a common focus was on increasing regional communication and collaboration in disaster management and preparedness. This took the form of cross border invites and training, mentoring, support for development of mutual aid agreements, potential regional exercises or symposia, and potential regional strategic work plan development. Development of regional activities was based on interaction with regional and national partners through DPP engagements.

Partner Nation Validation and Ownership Transition

It is important to note that during all phases of the DPP program, there was an increased emphasis on using subject-matter experts (SME) and existing capabilities from African PNs. Identifying and hiring Africans to conduct, facilitate, and participate in DPP program efforts aided in reducing program costs, increased PN ownership of the process, and served to validate PN governments by recognizing their existing capabilities and strengths.

OUTCOMES AND BENEFITS

To date, a number of obvious outcomes of DPP-implemented engagement have been realized at organizational, national, regional, and international levels. These identified benefits included, but were not limited to the following:

Partner Nation	Regional Collaboration	USAFRICOM/CDHAM
<ul style="list-style-type: none"> • Identification of current disaster management capabilities and gaps • Institutionalization of National Disaster Management authorities • Development of national and military disaster and pandemic contingency plans • Exercises to test disaster management capacity • Establishment of legal frameworks • Increased support from international organizations 	<ul style="list-style-type: none"> • Development of regional networks for disaster preparedness and response efforts • Working as a community of African nations in mutual support of one another • Sharing of best practices and lessons learned • Execution of regional exercises and training activities • Establishment of a cadre of SMEs from across the continent 	<ul style="list-style-type: none"> • Sustained relationships and ongoing dialogs with PNs • Increased disaster management capability on the continent • Increased civil-military cooperation • Improved US national security • Enhanced interagency situational awareness, synergy, and cooperation

Following the recent Ebola epidemic in West Africa, DPP was used to frame the execution of the West Africa Disaster Preparedness Initiative (WADPI). WADPI leveraged the network of SMEs developed through the previous 6 years of the program, and relationships with the Kofi Annan International Peacekeeping Training Center and the National Disaster Management Organization of Ghana. As a result, WADPI was able to successfully train nearly 800 individuals from 12 PNs in the West and Central Africa sub-regions. Topics of training included EOC operations, Ebola awareness,

FIGURE 1

Key Disaster Preparedness Program Partner Nations.

Key DPP Partner Nations

West Africa

- Benin
- Burkina Faso
- Cote d'Ivoire
- Ghana
- Guinea-Bissau
- Liberia
- Mali
- Nigeria
- The Gambia
- Senegal
- Togo

Central Africa

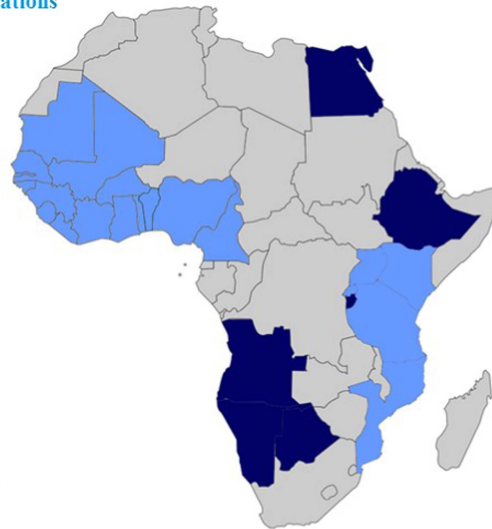
- Cameroon

East Africa

- Kenya
- Rwanda
- Tanzania (Zanzibar)
- Uganda

Southern Africa

- Mozambique



Other DPP

Participating Nations

North Africa

- Egypt

West Africa

- Mauritania
- Guinea
- Sierra Leone

East Africa

- Ethiopia
- Burundi

Southern Africa

- Angola
- Namibia
- Botswana

Built a network of **2,000+** disaster management focal points, subject matter experts, country and organization officials since 2009

Abbreviation: DPP, Disaster Preparedness Program.

One Health disease surveillance, open-source and web-based disaster and information management tools, and first responder training.

DPP has, in total, engaged 26 African nations, including 17 key PN's, over the past 8 years (Figure 1). DPP disaster preparedness capacity building activities have reached an audience of over 2000 people and built a sizable cadre of African disaster management experts—many of whom have served as facilitators for DPP-assisted exercises in their neighboring countries as well as for the duration of the WADPI training and exercise activities.

Throughout the lifespan of DPP, the program team has partnered with these 17 key PN's to assist in developing:

- 10 National Pandemic Influenza Preparedness and Response Plans
- 9 Military Pandemic Preparedness and Response Plans
- 12 National Ebola Preparedness and Response Plans
- 9 Military Assistance/Support to Civil Authorities (MSCA) Disaster Contingency Plans
- 11 DMSWPs

To improve upon and stress-test these 50+ plans, over 20 national disaster preparedness and response exercises were designed and implemented by CDHAM in conjunction with African national facilitators.

Table 3 depicts key milestones for each of the DPP PN's, and indicates where each currently stands within the phased CONOPS. While many of the steady-state DPP PN's have opted to complete the majority of program activities, the newer PN's brought into the DPP fold through WADPI remain in the early stages, with numerous opportunities for continued enhancement of their existing disaster management capabilities.

As a result of the efforts involved with development, review, and finalization of the products above, DPP has achieved a number of its aforementioned programmatic goals and objectives and manifests extraordinary, long-term bi-lateral engagement affecting measurable change in the capacity and capabilities of numerous PN's. While the total number of PN engagements measures in the hundreds, there are a few prime examples of the measurable impacts of DPP (Figure 2).

CASE STUDY: REPUBLIC OF LIBERIA

In April 2014, DPP facilitated a historic engagement, the Republic of Liberia Government High Level Disaster Response Meeting, held in Monrovia. The meeting was opened by the Honorable Joseph Boakai, Vice President of the Republic of Liberia, and the Honorable Deborah Malac, US Ambassador to Liberia. After the opening remarks and introductions, 30 very senior members of government, including Ministers, Deputy Ministers, and Executive

TABLE 3

Disaster Preparedness Program (DPP) Products

Steady-State Program

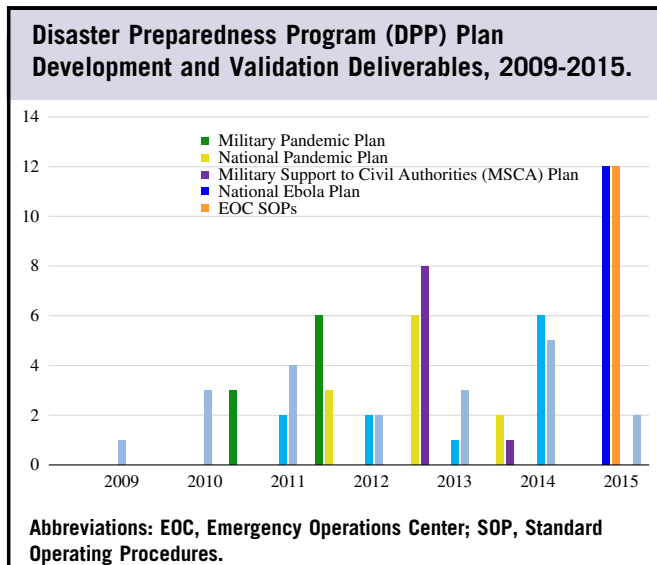
Phase/ Activity	Phase 0	Phase I	Phase II	Phase III					Phase IV	
	Background Research/Data Collection	Initial Planning Meetings	Disaster Management Capabilities Analysis	Military Pandemic Influenza Contingency Plan	Pandemic Influenza Preparedness and Response Plan	Military Support to Civ. Authorities Disaster Contingency Plan	Disaster Management Strategic Work Plan (DMSWP)	Ebola Preparedness and Response Plan	National Disaster/Pandemic Preparedness and Response Exercise	USAFRICOM Sustained Engagement Structure
Benin		2009	Updated 2015	2012	2013	2013	2014	2015	Jun-2010 Mar-2014	
Burkina Faso		2011	Updated 2015	2012	2013	2013	2014	2015	May-2012 Jul-2014	
Ghana		2010	Updated 2015	2012			2011	2015	Dec-2011 Aug-2012	
Kenya		2009		2011	2012	2014	2011		Aug-2010	
Liberia		2013	Updated 2015		2013	2013	Draft (2014)	2015	Apr-14 (High-level) Nov-15 (National)	
Mozambique		2012	2013		2013	2013	2014		Aug-2014	
Nigeria		2011	Updated 2015		2013	2013	2013	2015	Oct-2011 Nov-2013	
Rwanda				2011					Jul-2011	
Senegal		2010	Updated 2015	2012	2013	2013	2014	2015	Jul-2011 Jun-2014	
Tanzania (Zanzibar)		2010		2012	2012	2013	2014		Mar-2011 (Tanzania) Sep-2011 (Zanzibar) Feb-2014 (Tanzania) Feb-2015 (Zanzibar)	
Togo		2009	Updated 2015	2012	2012		2012	2015	Jun-2013	
Uganda		2009		2011	2013	2013	2012		Oct-2009	
TOTAL	All	All	9	9	10	9	11	7	10	0

New PNs Under WADPI

Phase/ Activity	Phase 0	Phase I	Phase II	Phase III					Phase IV	
	Background Research/Data Collection	Initial Planning Meetings	Disaster Management Capabilities Analysis	Military Pandemic Influenza Contingency Plan	Pandemic Influenza Preparedness and Response Plan	Military Support to Civ. Authorities Disaster Contingency Plan	Disaster Management Strategic Work Plan (DMSWP)	Ebola Preparedness and Response Plan	National Disaster Preparedness and Response Exercise	USAFRICOM Sustained Engagement Structure
Cameroon			2015				Task List Only	2015		
Cote d'Ivoire			2015				Task List Only	2015		
Guinea							Task List Only			
Guinea-Bissau			2015				Task List Only	2015		
Mali			2015				Task List Only	2015		
Mauritania			2015				Task List Only			
Sierra Leone							Task List Only			
The Gambia			2015				Task List Only	2015		
TOTAL	All	0	6	0	0	0	0	5	0	0

: Complete as of December 31, 2015.

FIGURE 2



Directors, explored how their country would respond to a major pandemic disaster event through use of an exercise scenario led by CDHAM.

One key contributor to the successful outcome of this meeting was the input from representatives of neighboring ECOWAS countries. Members of national disaster management organizations and legislatures from Ghana and Nigeria shared with the Liberian leaders how their respective countries had overcome obstacles to pass legislation and develop their respective national disaster management organizations. Mr Ebenezer Kofi Portuphy, National Coordinator of Ghana's National Disaster Management Organization, explained how this was mandated by ECOWAS for member states and recommended by the United Nations in the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters.

After several hours of discussion, a group of the senior leaders held an ad hoc Cabinet meeting to address the need for moving the proposed legislation forward to create Liberia's autonomous National Disaster Management Agency. This draft legislation had previously stagnated for almost 2 years due to political obstacles. With media in the room, the Minister of Internal Affairs, the Honorable Morris M. Dukuly, announced that the proposal would be presented to the full Cabinet in 2 weeks and then proceed on to the legislature. As a result, this piece of legislation was eventually voted through the House of Representatives and the Senate, and has now become law.¹⁹

To summarize the DPP-facilitated event, Deputy Executive Director of the Liberian Environmental Protection Agency, the Honorable Stephen Neufville, commented that, "what happened Tuesday was a masterpiece." This serves as one of many examples of the effectiveness of DPP efforts in the region.

CASE STUDY: REPUBLIC OF SENEGAL

Prior to the recent Ebola outbreak in West Africa, DPP had partnered extensively with the Government of Senegal since 2010, working with focal points within the Ministry of Interior, Ministry of Health, Ministry of Defense and others involved in disaster management processes to develop national civilian and military contingency plans. As the Ebola virus continued to spread across the region in 2014, DPP team members remained in regular contact with these focal points, as a steady flow of communication is a key aspect of the relationship-building component of the DPP process. In these exchanges, a key point of contact from within Senegal's Ministry of Interior reported that the Republic of Senegal Pandemic Influenza Preparedness and Response Plan (developed through assistance from DPP), had been utilized to curb importation of new cases into Senegal as well as limit the spread of Ebola within their national borders after the first few cases had been confirmed.

All DPP-facilitated pandemic influenza plans are designed to be comprehensive, but also flexible enough to be adapted and used in the event of any major disease outbreak. It is for this reason that the Ministry of Interior credited Senegal's quick action in the Ebola response, in part, to having an existing national pandemic plan. In later months, the DPP team returned at the request of the Government of Senegal to formally adapt the national pandemic influenza plan into a complementary Ebola Preparedness and Response Plan to be used in the event of a future outbreak.

DISCUSSION

There is a critical need for agencies across the African continent to develop disaster preparedness and response plans.²⁰⁻²⁴ In response to these increasing global health security concerns, efforts to build capacity in infectious disease and all-hazards disaster preparedness and response among developing and developed countries alike are of urgent, if not emergent priority. Since 2005, when DOD Directive 3000.05 put stability operations on an equal priority to combat operations, the role of health engagements has grown as an important platform for security cooperation.^{25,26} In May 2013, Policy Guidance for DoD Global Health Engagement (GHE) was released as a cable stating GHE activities, "...are a means to partner with other nations to achieve security cooperation and build partner capacity...." This document also lists disaster preparedness and response, and disease surveillance and prevention, key components of DPP, as means to achieve combatant command strategic objectives.^b By working with over 2000 local and regional partners in the development and execution of exercises and contingency plans, DPP provided a visible opportunity for partner nations to demonstrate to their populations how they were improving their

^bDepartment of Defense Policy Guidance for Global Health Engagement. May 15, 2013. Available upon request.

ability to protect them from disaster and disease, contributing to stability and security.

Within the last 8 years, DPP has engaged extensively with 17 key African PNs from various sub-regions of the continent to assist with the development of new pandemic and disaster preparedness plans and has been the lead coordinating program in the implementation of numerous disaster management preparedness and response tabletop exercises. DPP has established a wide array of trusted relationships within each PN, enabling the program to effectively assist nations in beginning to close daunting gaps in existing disaster management capabilities. DPP has contributed to advancement in the political process of several nations through technical assistance in promoting their adoption and implementation of these plans, while also encouraging establishment of autonomous national disaster management agencies. As well, DPP has helped instill a philosophy of and mechanisms for cooperation and mutual support across regions of Africa that will likely continue to facilitate self-sustainment amongst African partner nations.

As such, DPP has proven to be a successful model for building lasting personal and organizational relationships in order to assist in the development of institutional capacities within these nations and across regions to better prepare for and respond to disaster events. The combination of sustained engagement and improved national disaster management capabilities directly contributes to USAFRICOM's overarching goal of improved security and stability of these nations. These efforts and outcomes of DPP are also in keeping with the highest order of United States Government policy and strategy in foreign investment.^{27,28} Namely, the tenets of the National Security Strategy, the National Military Strategy, DOD Policy Directives for GHE, and the Global Health Security Agenda are, in part, met through the long-term application of DPP programming.²⁹⁻³³ One may argue that few, if any, DOD programs supportive of meaningful capacity building and aligned to the imperative of averting health security threats have shown such sustained engagement and such breadth of impact.

LIMITATIONS

There are arguably some weaknesses in the approach defined in the DPP. Some may contend that it is not the role of the US DOD to conduct such activities, and that they are best left to civilian agencies—although there is a long history of DOD collaboration in such capacity building efforts. Even if DOD health engagement activities are accepted as legitimate, frequent personnel turnover in military jobs may hamper continuity and effective implementation of programs. Lack of strategic focus has been a criticism of DOD GHE in the past. Funding streams may also not be consistent for such activities, although this weakness is often encountered in such work conducted by civilian agencies. Coordination with additional civilian agencies (NGOs, international organizations) performing similar work would help synergize and sustain this and other DOD GHE efforts.

CONCLUSIONS

The sustained engagement methodology and principles of engagement used in DPP have arguably demonstrated their value, both for building capacity in PNs and achieving strategic security objectives. One of the most difficult aspects of partnerships is building strong relationships based on trust. This requires commitment and consistency over time. The Center for Global Health Engagement, which evolved from and replaced CDHAM in early 2016, is now postured to explore opportunities on behalf of the US DOD to work with PNs in collaboration with other US Government agencies as well as international partners to implement this and similar effective models in regions around the world.

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Conflicts of Interest

The authors declare that there are no conflicts of interest.

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