

Research & Development Challenges for Regional Stability and Capacity Building



Report of the NSTC
Committee on Homeland and National Security

February 2008

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About this Report

This report documents R&D challenges to support the establishment and maintenance of regional stability and promotion of capacity building by U.S. Government practitioners. These challenges provide a foundation for the development of Federal Government research activities. This report was developed by the Regional Stability Interagency Working Group (RSIWG), and reviewed and approved by the Office of Science and Technology Policy and the National Science and Technology Council.

About the National Science and Technology Council

The National Science and Technology Council (NSTC) was established by Executive Order on November 23, 1993. This cabinet-level council is the principal means by which the President coordinates science, space, and technology policies across the Federal Government. NSTC coordinates diverse paths of the Federal research and development enterprise.

An important objective of the NSTC is the establishment of clear national goals for Federal science and technology investments in areas ranging from information technologies and health research to improving transportation systems and strengthening fundamental research. The Council prepares research and development strategies that are coordinated across the Federal agencies to form a comprehensive investment package aimed at accomplishing multiple national goals.

For more information visit
http://www.ostp.gov/nstc/html/NSTC_Home.html

About the Office of Science and Technology Policy

The Office of Science and Technology Policy (OSTP) was established by the National Science and Technology Policy, Organization and Priorities Act of 1976. OSTP's responsibilities including advising the President in policy formulation and budget development on all questions in which science and technology (S&T) are important elements; articulating the President's S&T policies and programs; and fostering strong partnerships among Federal, state, and local governments, and the scientific communities in industry and academe.

Every fiscal year, OSTP and the Office of Management and Budget (OMB) issue a memorandum entitled "Administration Research and Development Budget Priorities." The memorandum highlights the Administration's research and development priorities and emphasizes improving management and performance to maintain excellence and leadership in science and technology.

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Research & Development Challenges for Regional Stability and Capacity Building

Report of the NSTC
Committee on Homeland and National Security

EXECUTIVE OFFICE OF THE PRESIDENT
NATIONAL SCIENCE AND TECHNOLOGY COUNCIL
WASHINGTON, D.C. 20502

February 7, 2008

Dear Colleagues,

In December 2005, President Bush issued National Security Presidential Directive-44, which outlined the U.S. Government's significant interest in improving its ability to assist stabilization and reconstruction efforts in other countries and regions; and in promoting sustainable, peaceful societies, democracies, and market economies, especially when stability and peace are threatened by armed conflict or civil strife. Many capabilities needed for stabilization and capacity building differ from those specifically designed for major combat operations or diplomatic activities. Merging knowledge from social scientific fields (social, economic, political and behavioral sciences) with those from the traditional physical sciences and engineering fields will generate new techniques and approaches for understanding contingency environments of importance to national security.

A better understanding of the complexities and capabilities needed for both pre-conflict and conflict-impacted environments could enhance the effectiveness of the U.S. in dealing with regional stability issues. The U.S. has a long history of involvement in stability and capacity building operations such as those in Iraq and Afghanistan today. These processes are complex and critical for supporting legitimate but fragile governments, for fostering environments to deal with the causes of conflict, and for restoring or rebuilding a society through application of regionally focused knowledge and understanding. An improved approach to developing such a knowledge base will contribute to more robust stability and capacity building operations.

The accompanying report documents Federal cross-agency research and development challenges identified by practitioners with recent field experience, by analysts and researchers studying past and on-going activities, and by policy makers cognizant of specific operations and outcomes. This report was developed by the Regional Stability Interagency Working Group under the auspices of the National Science and Technology Council's Committee on Homeland and National Security. I trust that this document will serve as an important foundation for the Federal dialog to address key research and development activities to support stability and reconstruction operations in countries and regions of concern.

Sincerely,



John H. Marburger III
Director

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Executive Summary

The President's National Security Strategy of 2006, along with recent U.S. Government (USG) operations in Afghanistan and Iraq, solidified the need for more robust, permanent, and integrated capabilities for regional stabilization, reconstruction, and capacity building. The National Science and Technology Council (NSTC) established the Regional Stability Interagency Working Group (RSIWG) under the Committee on Homeland and National Security (CHNS) to identify the research and development (R&D) challenges that should be addressed to improve future operational capabilities.

This document provides a focused view of operational challenges and R&D topics that were identified through a series of interagency workshops. The RSIWG focused particularly on those R&D areas that straddle USG department and agency responsibilities and examined capabilities for both USG responders and representatives of host nations and regions.

Stabilization and capacity building are complex processes. USG practitioners must be able to evaluate conditions in foreign cultures, identify friendly and neutral forces, reduce drivers of conflict, and cooperate with partner nations to plan and execute institutional changes that enable the emergence of regional stability.

Through interagency discussions and workshops with field experts, the RSIWG defined a vision for future R&D relative to stability and reconstruction

operations that is summarized by five operational goals:

- seamless integrated interagency operations with multi-level collaboration systems;
- operational access to knowledge on cultural principles and on how specific societies function (culturally, politically, socially, and economically) in local, regional and global contexts;
- mission feedback and assessment using valid indicators/metrics to monitor short and long term regional status and national stability;
- regional and national plans and operations for improving regional stability that are enabled by integrated analytic tools;
- strategic communication tools that effectively respond to public perceptions and enhance policy goals.

Meeting this vision requires public and private attention not only in the traditional physical sciences and engineering fields, but also in the social, economic, political, and behavioral sciences - areas that have not been traditional domains of national security R&D investment.

This document outlines key R&D challenges for meeting these operational goals, thus enabling focused international and public-private discussion, as well as fostering interagency collaboration on federal R&D plans and programs.

1. Introduction

The President's National Security Strategy of 2006, along with recent U.S. Government (USG) operations in Afghanistan and Iraq, solidified the need for more robust, permanent and integrated capabilities for regional stabilization, reconstruction, and capacity building¹. The National Science and Technology Council (NSTC) established an Interagency Working Group for Regional Stability (RSIWG) to identify and address the research and development challenges required to improve future operations.

The RSIWG held a series of four workshops beginning in December 2004 with military and civilian representatives from the USG national security community - primarily the responders/users, policy-makers and those involved in defining requirements and needs. The workshops helped to define a vision of future regional stability and capacity building capabilities and achieve consensus on five core research areas.

Several additional interagency workshops were held to discuss regional failure mechanisms and intervention frameworks and methodologies, specific lessons learned, bottom-up integrated technology development and insertion

¹ **'capacity building'** is the creation of an enabling environment with appropriate policy and legal frameworks, institutional development, including community participation, human resources development and strengthening of managerial systems, adding that, UNDP recognizes that capacity building is a long-term, continuing process, in which all stakeholders participate (ministries, local authorities, non-governmental organizations and water user groups, professional associations, academics and others) (United Nations Development Programme, 1991).

opportunities in focused areas, and current and developing R&D activities relevant to stabilization and reconstruction.



IT Training for Women's Empowerment and Capacity-Building in Afghanistan

Collectively, these workshops analyzed current processes and abilities, developed a vision for future operational capabilities and determined key R&D issues that must be addressed for this vision to become reality. The RSIWG focused particularly on those R&D areas that fall between and outside of typical USG department and agency responsibilities, to consider both post-conflict and pre-conflict environments ("conflict" being much broader than "combat"), and to examine capabilities for both USG responders and representatives of host nations and regions.

This document serves as a collective summary of those workshops, and as a benchmark reference for future discussion and planning to meet identified R&D challenges.

2. Emerging Consensus

There is a long history of U.S. involvement in stability and capacity building operations and ample reason to believe that these capabilities will be necessary for the foreseeable future. During just the past 15 years, the U.S. has been materially involved in seven major post-conflict reconstruction and stabilization operations, and contributed significant resources to at least 10 more².

Stabilization and capacity building are complex processes. They are seminal activities for supporting legitimate but fragile governments, for fostering environments and activities to deal with the causes of conflict, and for restoring or rebuilding a society through application of regionally focused knowledge and understanding. The capabilities needed for stabilization and capacity building are distinct from those needed for major combat or traditional diplomacy.

In addition to correctly assessing the conflict, USG practitioners must be able to quickly and accurately evaluate conditions in foreign societies and cultures by identifying friendly, neutral and hostile actors, then plan and execute institutional changes enabling the emergence of local market economies and democratic governance while addressing drivers of conflict.

² *Somalia (93-95), Haiti (93-96), Rwanda (93-96), Bosnia (95-02), Kosovo (99-present), Afghanistan (02-present), Iraq (03-present), Significant resources: Sierra Leone, Congo, Angola, E. Timor, Ethiopia/ Eritrea, Macedonia, Liberia, Sudan, Burundi, Cote d'voire. This list does not include massive aid to disasters such as Hurricane Mitch (Caribbean), the Indian Ocean Tsunami and Pakistan Earthquake.*

On December 7, 2005, President Bush issued National Security Presidential Directive 44 (NSPD-44) outlining the USG's significant interest in improving its ability to assist the stabilization and reconstruction of countries or regions; and in promoting sustainable, peaceful societies, democracies, and market economies, especially those threatened with armed conflict or civil strife. NSPD-44 also directed the State Department's Office of the Coordinator for Reconstruction and Stabilization (S/CRS) to lead USG efforts to coordinate stabilization and reconstruction efforts. Immediately prior to the formal release of NSPD-44, the Department of Defense (DOD) promulgated Directive 3000.05 addressing U.S. military support to Stability, Security, Transition and Reconstruction Operations. Both directives confirm the need for R&D to support future stabilization and capacity building efforts abroad.

U.S. national security objectives that require the stabilization of failed and failing states are hampered by limited USG capabilities in stabilization and capacity building. Though growing, these capabilities are not mature compared to U.S. combat mission capabilities.

Our stability and capacity building capabilities are less mature than our combat capabilities.

In general, new or emerging tools from the social, political and behavioral sciences have not been effectively leveraged, targeted, or developed to significantly contribute to the rebuilding of conflict-torn societies or the stabilization of pre-conflict environments. Historical and contemporary

experiences show that stability and capacity building are complex and time-consuming processes that require strengthening the social, political, economic and security systems within societies. Stabilizing a region immediately after a crisis or an emergency, providing security on the ground and dealing with immediate humanitarian needs, are only the beginning of the process.



U. S. and Indonesia sign agreement for US\$400 million for relief and reconstruction

Capacity building is not just a task of writing laws or building institutions; it involves planning for and enabling the transition of societies toward increasing openness, participation, individual freedom, and competition, based on the rule of law, with institutions that mediate interactions and disputes in ways that instill confidence in the local population toward their government. The transition processes must also include accountability mechanisms responding to the demands/desires of a changing society.

Ultimately, a civil society and its political leaders need to mitigate conditions and factors that might drive a society back into destabilizing conflict.



AMB Carlos Pascual addresses the Regional Stability Interagency Working Group at the 3 December 2004 workshop at the Army & Navy Club in Washington DC. Key note speakers included The Honorable Paula Dobrianski, AMB Carlos Pascual, Dr. Ronald Sega, Dr. John Hamre, MG(R) William Nash, AMB(R) James Dobbins, and MG James Cheatham.

The recent and urgent priority of regional stability operations in very challenging environments caused practitioners to adapt skills and program activities on an ad hoc basis and with varying degrees of success. The future success of regional stability operations will rely, in part, on conscious, deliberate, and sufficiently resourced efforts using scientific and systematic approaches that apply critical lessons learned to the development of future capabilities.

3. Core Research Areas

R&D activities contribute to successful unified action for regional stability and capacity building, and ultimately national security, by improving fundamental knowledge of the underlying behaviors and interactions and by developing and integrating enhanced tools and technologies. The strategic vision expressed by the RSIWG for USG capabilities in stabilization and capacity building is reflected in the following five research areas:

- Seamless integrated interagency operations with multi-level collaboration and planning systems, requiring multiple degrees of security;
- New and improved socio-cultural knowledge on how specific societies function—culturally, politically, socially and economically—in local, regional and global contexts and operational access to that knowledge;
- Mission feedback, assessment, and anticipation/prediction using valid indicators/metrics of regional status and national stability;
- Analytic tools to create, explore and assess regional and national plans and operational capabilities for improving regional stability; and
- Strategic communication methodologies and techniques that effectively respond to public perceptions and prioritize USG policies to target audiences.
-



Just over eight million Afghans—40 percent of them women—voted in the first-ever presidential elections on October 9, 2004

Activities in these five areas can be found throughout the regional stability and capacity building spectrum: from a functioning society where early instability and risk of failure appears, through “failing” societies where conflict is likely or has already commenced, to the extreme cases of restructuring societies during and after conflict. Properly integrated and effective tools are necessary for successful regional stability efforts in all these cases. The following sections outline the R&D challenges in each area.

3.1 Interagency Collaboration

Coordinated, integrated action requires the USG define, develop, and implement government and coalition partner-wide planning and information exchange, and a community-wide common language to ensure coordinated activities and effective transfer of knowledge/information to and from host nations. The NSPD-44 mandate

charges the Secretary of State with coordinating and leading integrated USG efforts. There is much that the R&D community can do to enhance solutions by analyzing and leveraging past operational experiences, integrating collaboration concepts developed by academe and private industry and incorporating appropriate lessons.

With regard to collaboration and information sharing, the R&D community should:

- identify and analyze successful and flawed strategies through case studies;
- develop better understanding of applicable human and physical reactions and resources;
- develop a comprehensive modeling/simulation environment;
- conduct organizational research to further address the interagency/international collaboration problem in the context of regional stability efforts;
- conduct an evaluation of collaboration technology (for information-sharing and distributed planning) that aids in the development and testing of doctrine, plans and procedures for multi-agency operations;
- perform research focused specifically on the types of interactions required for stability and capacity building operations. An example of these interactions might be the challenge of orchestrating disaster/humanitarian relief to an affected area when responding agencies, organizations and groups do not share common mission,

command, logistics and communications systems and processes and where language and cultural differences exist;

- encourage the creation of a theory enabling real world information to be built into testable models.

Successful research on these topics will benefit future operations by eliminating stove-piped thinking, and integrating effective solutions into comprehensive plans and coordinated operations. Techniques and tools that enable USG interagency collaboration will be flexible and scalable to incorporate host nation participants, coalition partners, and private sector players.

3.2 Cultural Understanding

USG actions require understanding of societal functions—cultural, political, social, and economic—in local, regional, and global contexts. Assessments and evaluations of regional situations would be enhanced by common interagency views on cultural, social, and economic domains and regional dynamics; understanding of actors, including leadership, military and political actors as well as influential private citizens or organizations; design and utilization of effective and culturally aware collection efforts and measurements; and language capability for communication and cultural analysis.



Afghan women at bakery preparing flatbreads as part of a program funded by U.S. AID

With regard to cultural understanding the R&D community needs to:

- develop methodologies, systems and metrics for accurately characterizing and measuring underlying political, economic, and social conditions/ dynamics;
 - understand the role of religion and other broadly accepted beliefs in power structures, social norms, legal imperatives and economic realities;
 - create effective information-collection and distribution techniques;
 - develop theories, models and methodologies that build on regional historical frameworks and experiences and reflect regional dynamics;
 - develop effective language translation tools;
 - understand and create methodologies for sustainable private sector venture opportunities that allow for the creation of incentive-based solutions to meet local needs;
- develop techniques for integrating local mores and legitimate legal/extralegal systems into a(n) nationally/internationally recognized rule of law construct;
 - find timely methods for training/educating operatives to be culturally aware and effective in foreign environments (e.g. the rapid development of cultural training support packages relevant to the area of operations);
 - develop programs to sponsor pre-conflict, open source historical and ethnographic research of partner nation societies.

Successful research on these topics will benefit future operations by enabling culturally informed, sustainable solutions that are embraced by local and regional populations. Methodologies and tools that inform USG activities should also assist in the development of partner nation capabilities.

3.3 Assessment and Foresight



Polio immunization for more than seven million children living in Afghanistan, including 350,000 children in Kandahar Province

Operators need tools that will provide anticipatory assessments of when and why states might fail and prepare options for U.S./multinational

intervention in failed or failing states, and to inform decisions regarding the appropriate depth, nature [economic, medical, resource, communication, technological] and level of engagement. Effective stability operations require accurate feedback using direct and indirect indicators of local and regional stability to inform decision-making and resource management that link short-term and long-term goals. This includes an understanding of stability thresholds and tipping points, investments that will help prevent failing states from disintegrating or otherwise going into conflict, and the development of metrics, with appropriate local, regional and/or international norms, to monitor the impact of these tasks.

In particular, the R&D community needs to:

- develop frameworks and models to help guide stabilization missions, and create simulations and analytic models relating potential intervention operations (national or regional in scope);
- improve assessment techniques and methodologies that address institutional performance (e.g. how effective is the government in assuring public health and equitable provision of essential services) and drivers of conflict;
- create models, tools and technologies that support trade off analysis between priorities within a stabilization mission;
- improve and automate statistical techniques such as data mining and network modeling that will allow decision makers to rapidly discern trends or developing situations;

- define criteria and reconstruction standards that reflect regional and local expectations and conditions;
- create rapid infrastructure assessment databases and tools; and design or identify those metrics that capture individual and small group (including businesses) activities within a target region;
- identify regional status indicators and anticipatory/predictive metrics of stable, emerging, failing or failed states/areas at the local and regional levels;
- develop methodologies for the collection, interpretation and aggregation of lower level data/metrics into higher level indicators linking the outputs of activities and projects to intervention outcomes;
- understand and measure the second and third order effects of stability operations and activities;
- develop models of stabilization and reconstruction which use available metrics to produce higher level evidence-based understandings.

Successful research on these topics will benefit future operations by increasing the veracity and comprehensiveness of conflict assessments to include baselines and metric approaches, and conflict analysis tools.

3.4 Intervention and Prevention Operations

Successful operations require an improved understanding of the factors that promote regional stability and those that anticipate and mitigate the drivers of destabilization and societal conflict. USG operators need new analytic frameworks, techniques and tools that incorporate local and regional power relationships, societal and cultural norms and dynamics, and sustainable and acceptable economic and legal parameters.



Iraqi Police Assume Security Mission in Anbar Province City

Specifically, the R&D community needs to:

- Investigate and develop methodologies and technologies to address *security* challenges to include local inter-ethnic violence motivated by retribution and long-term rivalries, politically motivated inter- and intra-ethnic violence linked to power struggles, and economically motivated organized crime networks linked to

illicit trafficking of goods and services.

Research efforts addressing this area should include:

- techniques and tools for detecting, tracking and monitoring the actors and activities driving conflict (war lords, illicit power structures, insurgents, terrorists, militias);
 - identification of motivating factors that lead to violent confrontations and factors/issues that hinder reintegration of military/security forces;
 - tools and approaches for crowd control, the reintegration of police and armed forces, ensuring public order and safety, and dealing with insurgencies;
 - tools and approaches for the integration of military security, law enforcement and justice expertise as these three disciplines are inextricably linked during current operations.
- Develop tools, technologies, strategies, and methodologies to re-establish local and regional *rule of law* including equitable and regionally acceptable laws of the land, standards of operations of the judiciary branch of government, and the judicial infrastructure (court system, prison system, etc). Research efforts addressing this area should include:



Community-based mechanisms, known as *jirga* and *shura*, which have always played a strong role in Afghan society, have further filled the vacuum left by the formal justice system.

- techniques for detecting gray and black market activities as well as tools to assist practitioners in assessing means, motives and opportunities that are culturally grounded;
- effective means to deal with retribution, terrorism, corruption, racketeering and criminal activities, to include strategies and techniques for enticing often locally-acceptable but corrupt governments and organizations, whose interests lie in maintaining the status-quo, to operate within international legal frameworks
- tools, and methodologies to simultaneously re-establish local and regional rule of law and address terrorism, corruption, racketeering and criminal activities, represents a substantial research challenge.
- Develop a better understanding of the *political* history and climate in regional areas and the underlying causes of conflict. Research efforts addressing this area should include:
 - analysis and strategies to entice local war lords, power brokers and criminals to willingly participate in the peace process;
 - developing a basis for better understanding of the nature and implications of the overwhelmingly religious and/or tribal nature of many areas, the societal inter-relationships and the shared history that often stretches over centuries. Alternatives to default approaches, programs and concepts are needed to effectively interact with individuals and organizations from very different tribal and religious contexts;
 - development of an intrinsic educational pedagogy and integrated training methodology for practitioners.
- Develop tools and strategies for bottom-up, citizen-driven *economic and social* activities and enterprises. Research efforts addressing this area should include:
 - strategies to create early successes formulated to engender instances where the local population experiences a positive impact of nascent government or external intervention activities. The early win strategy must be integrated with immediate military, security, and information intervention operations but also linked to long-term development programs;

- research into mental health and illness resultant in familial and societal upheaval, psychological trauma, and criminality being caused by intervention and conflict;
- development of tools to prioritize and coordinate the restructuring of multiple societal factors: cultural, leadership, safety and public order, to include trade-offs between applying most resources to a few chosen areas for greater progress versus a broader, more equitable approach that reaches more areas but less intensively.



Erbil-Ifray Water Supply, U.S. Funded \$2.4B



Co-Op Bank Building - Kenya

- Formulate strategies, simulations and methodologies to assist in (re)constructing regional and local *infrastructures* in a timely and sustainable manner in both pre- and post-conflict. Research efforts addressing this area should include:

- identification and development of technologies to manage risk and maximize the impact of infrastructure (re)construction on individuals, groups and population;
- development of tool(s) to facilitate prioritization, management, communications and logistics of (re)construction efforts; support a shared understanding among the different parties strengthening unity of purpose and effort;
- provision of a means for more complete and effective local participation in stabilization, intervention and reconstruction activities and challenges.

- Finally, a better understanding of the inter-relationships of political, security, justice, economic and social systems is necessary to address the integration of strategies, techniques and methodologies. It is also important to recognize that approaches key to promoting stability in one region may (or may not) be key in another region or in the same

region but at another specific point in time. Research efforts addressing this area should include:

- research to determine how to tailor generic frameworks and/or models to specific environments;
- novel analytic frameworks to enable the understanding of the inter- and intra-relationships of power structures, societal motivations and dynamics, regional cultural and religious values, and economic activities;
- effective means to understand and influence the inter-relationships and dynamics between sectors (political, security, justice, economic and social).

Research is needed to understand the inter-relationships of political, security, justice, economic and social systems and also to determine which features are universal and which are context dependent.

Successful research on these topics will benefit future operations by accelerating the integration of new knowledge, methodologies and models into decision aids that enable deliberate and/or crisis planning linked to specific strategic goals or desired effects. Decision-makers will quickly determine effective courses to drive change and address the balance of near-term stability goals with sustainable longer-term development. Operators could be provided with field capabilities for stability operations that utilize a system

approach tailorable to specific environments that produce sustainable, stable outcomes.

3.5 Strategic Communications

It is vital that the USG be able to effectively communicate its policies and activities and the intent of those policies and activities to influence public opinion domestically, globally and within a host-nation's population.

Strategic communication touches all the actors in the stabilization and reconstruction environment.

Strategic communication includes crafting themes and messages targeted to a variety of audiences that are delivered by the most advantageous mechanisms for enhanced receptivity and understanding of the intended audience; that reach beyond foreign governments by addressing the general public or specific groups/communities; and that promote a better appreciation of U.S. intentions. Strategic communication issues relate to both the disseminating and receiving the information – this entails not only crafting our message and mechanism for distribution, but understanding how the message is interpreted, reinforced, countered and/or modulated by others and monitoring the ultimate impact. Research is needed not only to enhance promulgation of coherent, consistent U.S. communication, but capabilities for understanding the needs, desires and issues of individuals, groups/communities, and governments should be strengthened to enable targeted messages and interpretation of the impact of those messages.



Col. Gary H. Cheek, listens to village elders Dec. 20, 2004 in Waza Khwa, Afghanistan

Strategic communication also includes methodologies and techniques for sustaining access and influence in important sectors of various societies, and touches all the actors in the stabilization and reconstruction environment because it encompasses the cultural and political dimensions of an operation.

In particular, the R&D community needs to conduct basic and applied research/science enabling the development of more effective military and civilian communications, including:

- training in non-partisan reporting, awareness of international law, communication mechanisms, specific cultural norms;
- methods in developing humanitarian programming, and initial media management; strategies for crafting targeted messages, for dealing with “hate” media sources; and tools and techniques for monitoring public/community reaction;
- information on how to target peace-building initiatives such as specialized programs and

activities to counter misconceptions and build confidence (i.e. radio forums);

- techniques to facilitate communication with individuals (i.e. town halls; call in listeners); and methods to intensify support to non-partisan news services and independent reporting.

Successful research on these topics could benefit future operations by enabling healthy dialog between U.S. policy makers, planners, responders and their counterparts, and by enhancing understanding and acceptance of U.S. intent and activities by the populace in the U.S., host nation and other countries.



Excited local children watch construction of a permanent facility to replace the tent school in Zakros.

4. Looking Forward

Many technologies supporting regional stability are relatively mature but lack synchronization with, and incorporation into, other critical component technologies that would provide a new capability. Government R&D action therefore plays an important, integrating role in meeting the challenges raised in this document.

The overall role of government in advancing science and technology is outlined in the NSTC document “Science for the 21st Century,” which states that the four major responsibilities of the federal science enterprise are to:

1. Promote discovery and sustain the excellence of the Nation’s scientific research enterprise;
2. Respond to the Nation’s challenges with timely, innovative approaches;
3. Invest in and accelerate the transformation of science into national benefits;
4. Achieve excellence in science and technology education and in workforce development.

Keeping these four overarching responsibilities in mind, the RSIWG identified the following roles for the government to meet the outlined challenges:

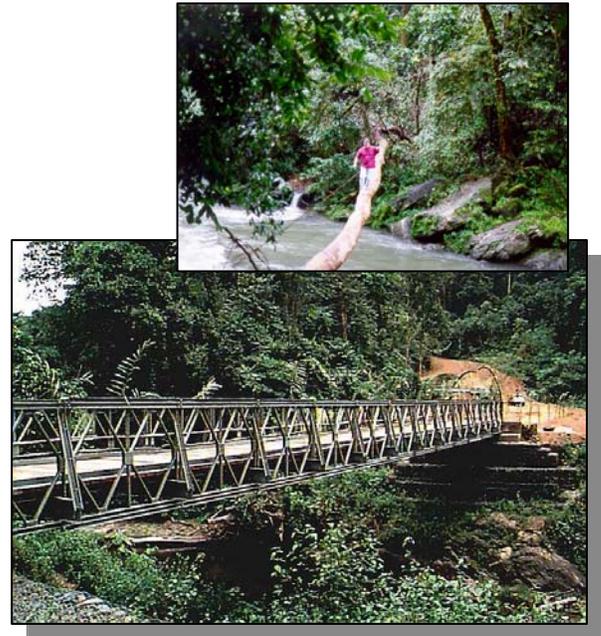
- Assist in the identification of priority interagency and international needs for regional stability and capacity building;

- Describe U.S. government needs in as specific terms as possible so that the R&D community, especially industry and academia, can devote resources to solving real problems;
- Where appropriate, provide resources and/or guidance to overcome those obstacles that the community is unable to provide on its own;
- Maximize efficiency and effectiveness of the federal research, development, testing and evaluation enterprise by:
 - Planning activities across the federal government to meet interagency needs;
 - Selecting activities through competitive, peer-reviewed award and review processes;
 - Ensuring activities meet scientific and privacy-rights standards;
- Strengthen international partnerships in order to foster the advancement of regional stability and capacity building technologies.

5. Conclusion

The key objective of regional stabilization and capacity building operations is to assist fragile, failing and failed regions/states to achieve effective governance, enabling market economics and maintaining a sustainable peace without massive continuing external assistance. The Interagency Working Group formed to develop Regional Stability and Capacity Building R&D Challenges has identified a large number of actors working in this field, tapped their interest and capabilities across the range of associated issues, and developed this compendium of research challenges so that they can be discussed and addressed by government, academe and industry.

The next step for the Federal S&T community is to develop coordinated plans, for both internal USG agencies and with private enterprise, to meet the R&D challenges identified in this report.



Before and After - Cameroon

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