Iraq Ministry of Water Resources Capacity Building

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Iraq MoWR Capacity Building

- Introduction
  - Background
  - Goals
- Needs Analysis
  - Data & Evaluation
  - Results
- Training Plan
- Progress to Date
- Way Ahead
Background

• The Iraq Ministry of Water Resources (MoWR) established in 2003
  – Goal: improve the planning, construction, operation, and management of water resources in Iraq
  – Primarily a restructuring of the Ministry of Irrigation with added functional elements
  – Changes to many of the existing roles and responsibilities within the MoWR

• USACE is supporting the MoWR through a training program designed to build capacity within the MoWR to meet its future demands
Previous Organization

- **5 Commissions, 11 Companies**
- **12,000 Employees**
What is Capacity Building?

- Visible leadership in the form of meaningful commitment by senior staff
- A participatory process that is organization-wide
- An open and transparent process to achieve capacity building
- Effective communication of capacity building goals and objectives at all levels
- General buy-in and acceptance of the capacity building program
- Techniques, methods, and metrics adapted to the local situation and needs that encourage risk, failure, success
- Clear objectives and priorities phased according to resources and workload
- Management accountability through open decision-making and explicit responsibilities
- Sufficient time and resources

Needs Analysis

- Verify **mission, vision, roles, and responsibilities** of the functional elements within the MoWR
- Conduct detailed discussions of desired competencies, roles, and responsibilities with **special attention to knowledge gaps** by MoWR functional element to identify training needs and priorities
- Assess MoWR **physical infrastructure** to identify office and laboratory facilities, equipment, and training capabilities necessary to construct and operate a state-of-the-art integrated MoWR
- Provide MoWR with an overview of typical water resources management agency **organizational structures and technological advances** in the field of water resources
- Summarize the findings of the **initial consultation** team with respect to MoWR capacity building needs and desires
- Recommend further actions to be carried out in a **detailed capacity building plan**
Initial Consultation Team

- John Hunter (CELRN), Michael Bishop (CEERD-EL), Matt McPherson (CEIWR-HEC)
- November-December 2004, Baghdad
Initial Consultation

**Overviews**
- Goals and objectives
- Water resources agency management & organizational structures
- Advances in water resources management technologies

**MoWR Self-Assessments**
- Functional element roles and responsibilities

**Interviews**
- Commission for Irrigation and Drainage
- National Survey and Mapping Center
- Commission for WRM: Environmental Studies Center
- Commission for WRM: Groundwater Studies Center
- Commission for WRM: GIS and Remote Sensing Center
- Commission for WRM: Water Control Center
- Commission for WRM: Hydrologic Studies Center
- Commission for Engineering and Design
Physical Infrastructure: Headquarters

- Offices of the Minister, key department heads, administrative staff
- Meets the needs of the Ministry
- Present system of satellite and cell phones is unreliable
- No centralized computer system for payroll, human resources, email, networking, or multi-user access to database systems
- Firewalls, routers and other computer equipment needed for secure computer communication not evident
Physical Infrastructure:
Headquarters
Needs Analysis Results

1. Needs Analysis

- Research and Development
- GIS and CADD
- Water Resources Management
- Operation of Environmental Analysis Center
- Establishment of a regulatory or compliance authority
- Development of program and project management capabilities
Needs Analysis Results

- Training for personnel staffing a Water Control Center
- Demonstration and hands-on training of snow and water gaging systems
- Short- and intermediate-term training for GIS, surveying, mapping, and CADD
- Formal classes on H&H software tools for water resource management
- Specific training for personnel dealing with irrigation issues
- Training for dam safety and assessment
- Demonstration training for personnel developing regulatory functions
- Training in research and development for hydraulics, environmental, and soil salinity laboratory personnel
- Training for personnel establishing an Environmental Analysis Center
- Specific training for program management of water resource projects
- “Reach-back” training and technical support for MoWR staff elements regarding training opportunities, equipment, software, etc.
- Leadership training for managers and supervisors
- Training for administrative personnel in budgeting, accounting, and financial management
- Training for IT personnel integrated across all ministries that deal with water
Activities By Others

- Hydrologic and hydraulic modeling at USACE HEC (USAID)
- GPS, Remote Sensing, and GIS training provided by ESRI in Jordan
- CADD training in AutoCADD and AutoDesk in UAE/Jordan
- Hydrometeorological gaging training from USACE HEC and US Geological Survey (USGS) (leveraged by us)
- On-going University training for future MoWR staff
- Technical assistance in irrigation, drainage, data acquisition, from Agricultural Reconstruction and Development for Iraq (ARDI)
- UNESCO training in water resource management and water project monitoring
- UNESCO to perform Phase I of a National Water Master Plan (USACE HEC involved)

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Training Plan

Objectives:

- Provide examples of water resources management to define organizational structure, operations, and policies
- Strengthen staff in the technical skills and personal leadership skills necessary for managing organizational change and growth
- Create internal and external training programs
- Develop and support peer-to-peer information exchanges
- Provide education, training, development, and career management guidance to support a sustainable Training Center
- Demonstrate business and financial processes, program and project management, and management of human resources
Training Plan

• 4 Components:
  – Focused Technical Training (FT)
  – Core Cadre Training (CC)
  – Water Resources Management Training (WRM)
  – Technical Support (TS)

• Recognize all sources of training
  – Public sector
  – Private sector
  – Universities
<table>
<thead>
<tr>
<th>Type of Training</th>
<th>Method</th>
<th>Selection Process</th>
<th>Venue</th>
<th>Time</th>
<th>Performance Metrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused Technical (FT) Training</td>
<td>Face-to-face</td>
<td>Selection</td>
<td>Iraq/ME</td>
<td>Refresher (1 week)</td>
<td>FT trainees implement technology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selection</td>
<td>Iraq/ME</td>
<td>In-depth (3-4 weeks)</td>
<td>FT trainees implement technology and provide support to others</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nomination and Competitive</td>
<td>U.S.</td>
<td>In-depth (1-2 months)</td>
<td>FT trainees implement technology</td>
</tr>
<tr>
<td></td>
<td>Virtual</td>
<td>Selection</td>
<td>Iraq/ME</td>
<td>Intermittent</td>
<td>Successful completion of technical training module</td>
</tr>
<tr>
<td>Core Cadre (CC) Training</td>
<td>Face-to-face</td>
<td>Nomination and Competitive</td>
<td>U.S.</td>
<td>In-depth (1-2 months)</td>
<td>CC trainees develop implementation plans for FT classes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Selection</td>
<td>Iraq/ME</td>
<td>Refresher (1-4 weeks)</td>
<td>CC trainees perform successfully as trainers in FT classes</td>
</tr>
<tr>
<td>Water Resources Management (WRM)</td>
<td>Face-to-face</td>
<td>Selection</td>
<td>Iraq/ME</td>
<td>Refresher (1 week)</td>
<td>WRM trainees implement technology into functional element</td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td>Selection</td>
<td>Iraq/ME</td>
<td>In-depth (2-4 weeks)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nomination and Competitive</td>
<td>U.S.</td>
<td>In-depth (1-2 months)</td>
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<td>WRM trainees implement technology into functional element</td>
</tr>
</tbody>
</table>
| Technical Support (TS)           | Virtual (unless in-country resource is available) | N/A | Iraq | Less than a week | FY06: Joint PDT-MoWR TS program  
|                                  |             |                            |         |                     | FY07: MoWR-run TS program                                                           |
| Business Practices               | Consultant  | N/A                        | Iraq    | To be determined    | WRM trainees implement technology into functional element                              |
Training Plan

- **77 training opportunities identified ($2.5M unfunded)**
  - GIS, Surveying, Mapping, CADD
  - Hydraulic and Hydrology
  - Water Resources Management
  - Research and Development
  - Information Technology
  - Sediment Management / River Training
  - Environmental
  - Strategic Planning / Project Management
  - Engineering and Design
  - Project / Construction Management
  - Business Practices, Budgeting, Accounting, and Financial Management
Training Courses (next few months)

- Support to USAID Streamgaging (USGS and USACE, May 2005)
- GIS Core Cadre (June-July 2005)
- Dam Safety (USBR and USACE, August 2005)
- Water Resources Management for Senior Managers (August-September 2005)
- H&H Core Cadre (August-September 2005)
- Water Resources Management Core Cadre (September-October 2005)
- Instructional Training for Core Cadres
Progress to date

- Streamgaging training
  - Supported with equipment and logistics
  - by James Hathorn, CESAM and Steve Lipscomb, USGS
  - Very favorably received by MoWR
Progress…

• GIS Core Cadre training outcomes
  – Mission, vision, goals
  – Strategic plan for GIS development
  – Preliminary database structure
  – Database development plan
  – RS, GIS, H&H training
  – Web site & poster
  – Training materials
  – Educational materials
Iraq MoWR Capacity Building
Way Ahead

- Continue planned training
- Search for additional funding
  - Interim training center at Dokan
  - Unfunded training needs
  - Hydromet gaging critical
- Bright future for MoWR
  - New technology
  - Capability to manage water resources for competing needs
  - Build relationships with technical people in the US