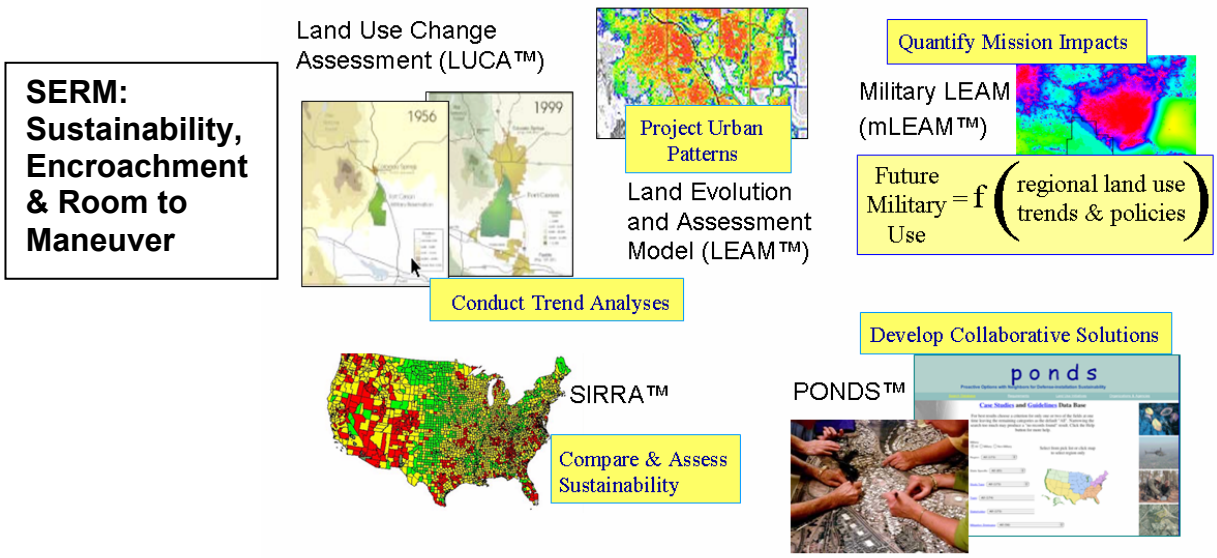
Sustaining Military Training Capabilities

SIRRA™ LUCA™ mLEAM™ PONDS™

ERDC/CERL TN-03-1 **rev. April 2005**



Problem

The ability to use dedicated lands, seas, and airspace to maintain mission readiness is being impacted by dynamic social and land use changes all across the world. To preserve future training capabilities, it has become very important to: (1) identify key measures that can indicate when an installation or range might lose training/testing opportunities, (2) monitor those changes in the surrounding areas, (3) predict risks to training and testing associated with projected land use development patterns and other pressures, and (4) develop opportunities to mitigate these risks.

Approach

The Sustainability, Encroachment, and Room to Maneuver (SERM) research program has developed technologies and data to help services and installations protect the sustainability of DoD's critical existing capabilities and assets.

While pressures to limit training and testing increase because of growing incompatible land use change, larger areas are required to support changing weapon systems and doctrine. Finding adequate training and testing areas is challenging because:

- Weapons fire farther.
- Vehicles travel faster.
- The number of bases and ranges has fallen.
- There has been a transformation and evolution of units, mission, and doctrine.
- There are more environmental laws protecting (excluding from use) on-post resources.

The combination of encroachment impacts and increased space demands for training and testing complicate service and installation planning requirements. Fort Future™ tools and data will help DoD address these planning requirements. The Fort Future™ research program is designed to produce capabilities critical to the Army's ability to transform its installations in the tight timeframe required to support our emerging forces. Fort Future™ and SERM research and development is being conducted by the U.S. Army Engineer Research and Development Center (ERDC) in support of the Assistant Chief of Staff for Installation Management (OACSIM), and the Offices of the Secretary of Defense for Readiness (DUSD (R)), and Installation and Environment (DUSD (I&E)).

SERM Capabilities

Compare and Assess Sustainability
SERM conducts national- and regional-scale analyses of relative vulnerability with respect to nine sustainability issues: (1) air, (2) energy, (3) urban development, (4) threatened and endangered species (TES), (5) locational issues, (6) water, (7) economic issues, (8) quality of life, and (9) infrastructure. For more information about the web-based Sustainable Installation Regional Risk Assessment (SIRRA™) effort see ERDC/CERL TN-03-3, available through URL: https://ff.cecer.army.mil/ff/sirra.do

Conduct Trend Analyses
SERM collects and portrays historic and current trends and risk factors by analyzing landscape changes in the region/vicinity of one or several military installations. Trends are drawn from the analysis of historic land use and land cover maps, satellite images, and other sources. For more information on Land Use Change Analysis (LUCA™) see ERDC/CERL TN-03-4.

Project Land Use Patterns
With the military Landuse Evolution and impact Assessment (mLEAM) suite of software tools and analyses you can analyze current and proposed city, county, and state regional plans to understand the implications of those plans on your installation's future opportunities to support different training and testing missions. Regional planning decisions that can be tested include:

- location of new highways
- construction of new limited access highway ramps
- major land purchases
- purchase of development rights
- construction of new roads
- zoning plans
- installation buffers.

ERDC/CERL TN-01-2 describes the mLEAM Model.

Quantify Mission Impacts
mLEAM evaluates projected urban growth patterns with respect to military installation opportunities to test and train. Regional training and testing areas can be identified that will be acceptable to future neighbors. (For more details, see ERDC/CERL TN-01-2.)

Develop Collaborative Solutions
When impacts on military installation training are understood, alternative future plans must be developed and tested. Installation planners can work with local stakeholders to consider options such as:

- changes in property right ownership
- development of parks, wildlife areas, forests
- location of major highways and access
- development of utility grids.

The Proactive Options with Neighbors for Defense installation sustainability (PONDS™) effort includes a web-based database on mitigation approaches, guidance, and options for regions across the nation. PONDS is described in ERDC/CERL TN-04-3, available through URL: http://ff.cecer.army.mil/ponds/home.htm

Status

These Fort Future™/SERM capabilities have been developed to help military decisionmakers better understand land use conflicts and sustainability risks to avoid constraints to the mission and disruption to local communities. ERDC/CERL team members are always available to help our customers analyze their situation and develop strategic options for the future.

Contact

U.S. Army Engineer Research and Development Center (ERDC)

James Westervelt
Phone: (217) 373-4530
E-mail: James.D.Westervelt@erdc.usace.army.mil

William Goran, Strategic Program Planner
Phone: (217) 373-6735
e-mail: William.D.Goran@erdc.usace.army.mil
SERM: https://eko.usace.army.mil/cop/serm/
Fort Future™: http://ff.cecer.army.mil/

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