

## Tools Prospectus

Decision support tools for working lands are proliferating, particularly in the form of mobile applications and websites. These tools can improve ease of delivery for science-based information to working land managers. Where tools are individually limited in some way – such as geographic scope or regarding up-to-date science on climate variability and change – SERCH plans to employ a four-facet approach (fig. 1) to take full advantage of existing tools by:

- **Extending** existing climate variability and change tools across sectors and scales (both geographic and temporal)
- **Amending** existing tools that do not currently address climate variability and change with relevant scientific information enabling them to address climate variability and change
- **Creating** new tools that integrate existing tools of all types to realize complementary and synergistic opportunities
- **Maintaining** tool delivery systems that ensure effective and efficient dissemination along with needs assessments to guide future tool development

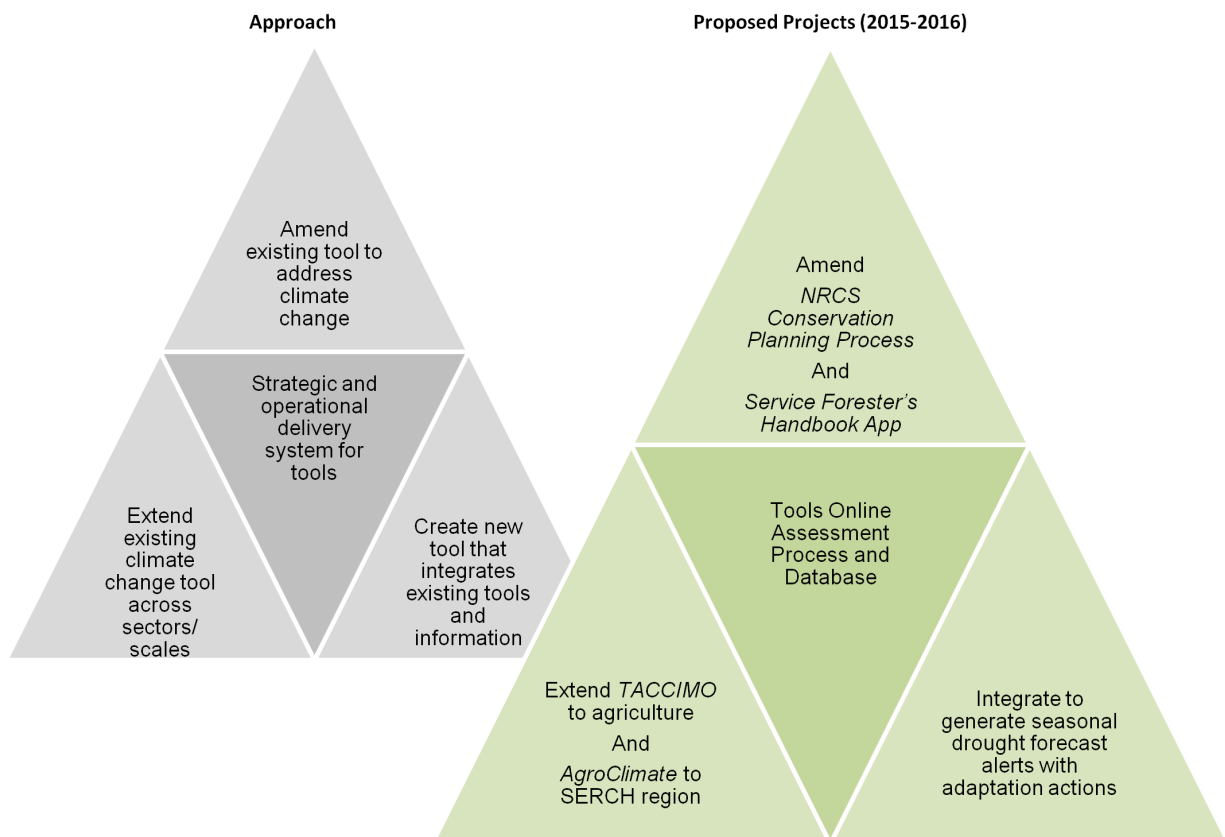


Figure 1—SERCH approach to tool development, integration, and delivery with 2015-2016 proposed projects.



## SERCH Proposed Projects 2015-2016

- The ***Service Foresters' Handbook*** is a staple of forest management decision making for decades and was recently developed into a mobile application through SREF. Neither the Handbook nor the app considers the impact of changing climate variability in their guidance. As increasing climate variability creates new challenges for forest managers, it is imperative that these long-trusted resources include up-to-date science on managing forests in the face of a changing climate.
- ***AgroClimate*** is a web platform containing a suite of tools lead by the University of Florida researchers to assist farmers in the southeastern US in making climate-informed decisions. AgroClimate integrates real-time climate into its decision support tools and translates that science into locally-scaled, user-specific information. However, its geographic scope is limited, with most tools only covering five states in the Southeast, and some tools covering even less area.
- The ***Template for Assessing Climate Change Impacts and Management Options (TACCIMO)*** is a web-based knowledge management system containing an adaptive information infrastructure supporting the development and delivery of scientific information for land management decision support. TACCIMO was originally developed and parameterized for forests and ecosystems but could be expanded to address other sectors, including the core working land sectors of SERCH (i.e., croplands, livestock, and grazing lands). After TACCIMO is populated for a new sector, it can serve as the basis for amending other tools (e.g., *Service Foresters' Handbook* and the *NRCS Conservation Planning Process*) with the information needed to help them address climate change.
- The ***NRCS Conservation Planning Process*** is the method that NRCS uses to deliver technical assistance and incentives to producers. The process includes 163 practices that address 44 general resource concerns commonly encountered among producers. The proposed approach is to assess the 44 resource concerns in the context of climate change and variability. The potential vulnerabilities of each concern will be aggregated across specific resource types (e.g., crops, agroforestry, etc.).
- The ***SERCH LIGHTS (Lately Identified Geo-specific Heightened Threat System)*** will integrate sources of information coupled with a subscription service to notify users when climate conditions may threaten resources within their geo-specific area. The initial prototype version of SERCH LIGHTS will notify subscribers with the NOAA Climate Prediction Center forecasts changes in drought conditions in their geo-specific location and couple that forecast with adaptive management information from TACCIMO, AgroClimate, NRCS Conservation Planning Process, and the *Service Foresters' Handbook*.
- The ***Tools Online Assessment Process and Database*** is a national Hub effort led by SERCH to provide a framework for inventorying tools and assessing their attributes for working land managers. The *Tools* database enables SERCH to identify candidate tools most appropriate for land manager use to maximize their short- and long-term working land productivity, sustainability, and economic gain.

SERCH was established in 2014 to assist working lands managers in adapting to climate variability and (to a lesser extent) change. SERCH priorities include modifying existing decision support tools to include climate variability science into their design and expanding tools geographically or by sector. SERCH is partnering to expand the scope and improve the functionality of these tools in the face of changing climate variability. By modifying tools, rather than creating new ones, information will reach land managers while efficiently using existing personnel and funding resources.

Contact the SERCH Director Steve McNulty at [smcnulty@fs.fed.us](mailto:smcnulty@fs.fed.us) or 919-515-9489. Visit SERCH at <http://globalchange.ncsu.edu/serch/> and <http://www.climatehubs.oce.usda.gov/southeast-hub>.



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