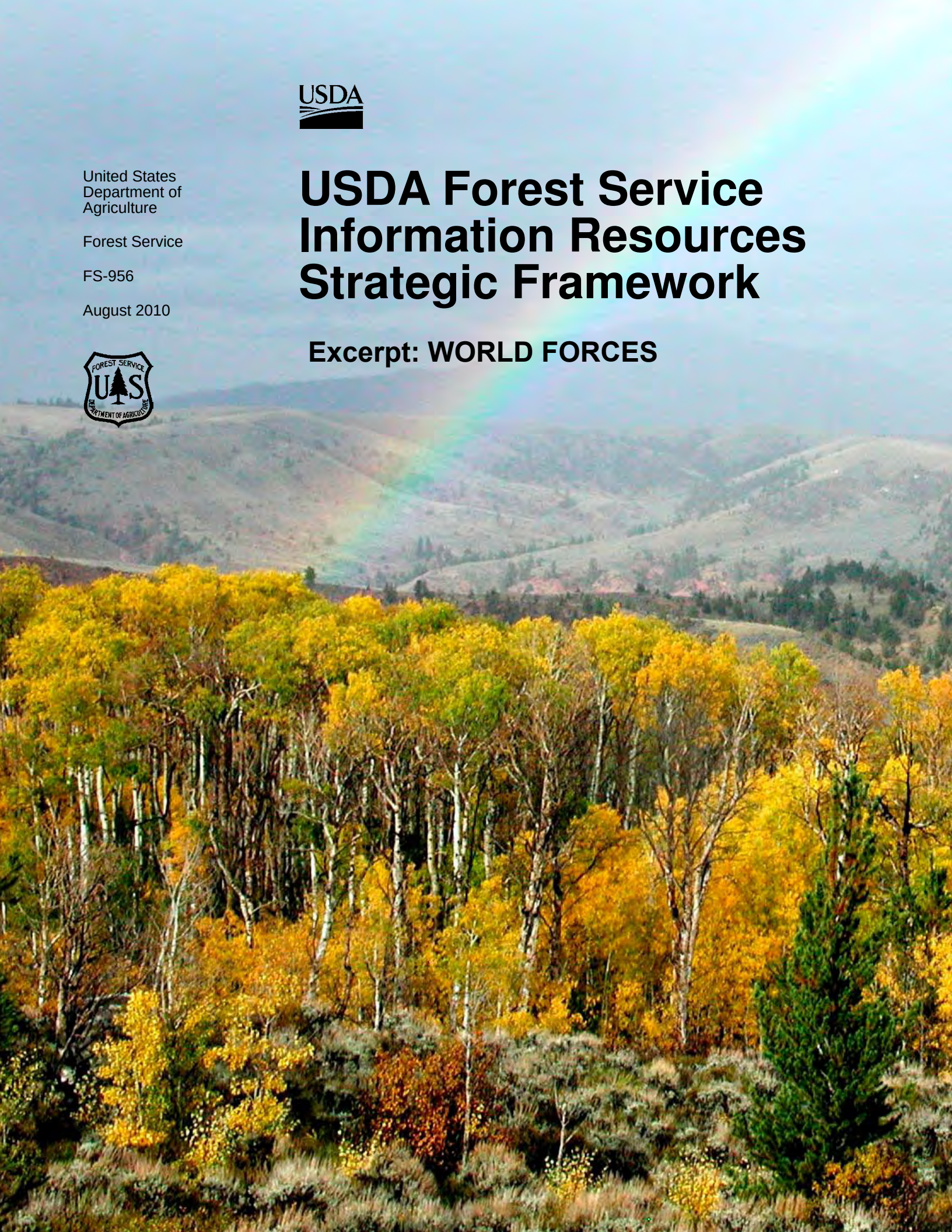

United States
Department of
Agriculture

Forest Service

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USDA Forest Service Information Resources Strategic Framework

Excerpt: WORLD FORCES

2. World Forces

The world in which the Forest Service operates is shaped by an array of driving forces, the most significant of which are increasing population and changing demographics, a rapidly evolving technological environment, the increasing need to manage for the unexpected, increasing citizen expectations for collaboration, changes and variability in the natural environment, and evolving regulation and governmental oversight.

The following emerging and related trends are having a profound impact on the Forest Service at large and, more specifically, on people's capability related to IR. Each trend has opportunity for the agency as well as challenges or risks. Leadership focus with respect to IR, as expressed in the IR Strategic Framework, leverages the opportunities while managing the risk.

2.1 Population Demographics

Changes in national and worldwide population demographics suggest Forest Service customers, as well as the potential workforce, are rapidly evolving in terms of expectations and how they work. A customer base that is increasingly diverse, urban, Internet connected, and digitally empowered will require new methods of communication and outreach.

Potential Opportunity

With increasing turnover in the Federal workforce (e.g., one-third of the Federal workforce is eligible to retire during the next 5 years), the agency has an opportunity to establish itself as an employer of choice. The Forest Service can become an employer of choice by embracing changing demographics and by offering jobs that are highly sought, in part because of 21st century IR that improve employee potential for success.

Associated Risk

Changing demographics also create a risk that Forest Service information and technology will not meet expectations or may not be widely accepted by a new workforce or the public.

2.2 Rapidly Evolving Technology

Technology advancements have had a profound effect on business and government strategy over the past three decades. They continue to change the conditions in which the Forest Service operates, along with the strategic options the agency can pursue.

Potential Opportunity

Emerging technologies (e.g., in social media, online mapping, and unstructured information retrieval through search) offer new ways to collect, manage, and employ information that more fully involves citizens, improves how decisions are informed and "democratizes" the collaboration process. The business of managing public lands must evolve to take advantage of advancements to provide the quality of decisionmaking and level of involvement citizens expect while conserving the resources entrusted to the agency for future generations. These are opportunities that can help the Forest Service redeem its mission in a world where expectations will be determined by the next generation of "digital natives."[3]

Associated Risk

The rate of change in technology creates the risk of leaving the current workforce behind and, on the other hand, the risk of being outpaced by the public we serve. The nearly universal access to automated "publishing" of information is causing an explosion in available material, currently doubling available published information every 18 months. The challenge for the agency is to strategically manage its IR in this environment.

2.3 Managing the Unexpected

Challenges occur every day in the world at large that affect the Forest Service. For example, economic downturns, natural disasters, health pandemics, and political upheavals have an impact on the agency's ability to deliver its mission. The Forest Service also has a long-standing role in successfully responding to catastrophic incidents (e.g., wildland fire, Space Shuttle Columbia disaster, and Hurricane Katrina).

Potential Opportunity

Readiness includes resilience, robustness, and security of Forest Service information infrastructure. Optimally, this readiness allows the agency to take a leadership role in responding to these events.

[3] Digital natives are those who have grown up with, highly value, and are very comfortable with advanced technology, collaboration, and easily accessible information. They have not known a world without pervasive information resources such as the Internet or cellular telephones.

Associated Risk

Forces and events, some unpredictable, in the political, social, economic, ecological, and business arena, will affect the agency's capability to carry out its mission. At risk is the capacity for basic readiness to respond to the unexpected with needed information and technology in order to enable the agency's continuity in mission delivery.

2.4 Demand for Borderless Collaboration

Increasing access to information through new and evolving methods is creating a demand for the Government to provide immediate and transparent access to information anytime and anywhere, and to collaborate through a variety of media. These new methods challenge us to make Forest Service information fully accessible to all potential users.

Potential Opportunity

Rapidly evolving technologies provide unprecedented opportunities for unimpeded collaboration. For example, benefits of "crowd sourcing"—the use of networks of contributors to create solutions—have been touted for Government.[4] The agency also can improve internal and external discussions through increasingly intuitive and transparent around-the-clock information and communication availability, and with the ability to find information from any location.

[4] Kash, Wyatt. June 2, 2009. Government Computer News. "New Federal CTO Chopra reveals early plans."

Associated Risk

Until new methods are fully explored and proven, they heighten the risk of compromised information assets, including the threat of cyber terrorism. Another barrier to adoption of collaborative media technologies is full understanding and acceptance by agency personnel, including overcoming process and cultural inertia.

2.5 Environmental Change

Stewardship of natural resources has taken on a new urgency because of the heightened awareness of major environmental issues, such as global climate change, where information can play a vital role. IR will play a key role as industry, governments, and all citizens consider alternative energy and related technology. The Forest Service must contribute and participate in the development of renewable resources and the conservation of nonrenewable resources. Increasingly, secure global exchange of information will be required, even as threats to that exchange increase.

Potential Opportunity

Agency technology infrastructure can improve the sustainability and efficiency of operations. It enhances the ability of the Forest Service to be leaders in land management, protection, and use. Agency information can play a vital role in the understanding of, and ability to adapt to, environmental change.

Associated Risk

Effects of climate change on management of vegetation resources are creating new challenges for wise management of resources. Lack of access to essential information diminishes the agency's ability to provide leadership in this area.

2.6 Increased Consolidation

Continued efforts emphasize reducing duplication of services throughout the Federal Government.

Potential Opportunity

Consolidation and centralization of services can reduce costs, reduce duplication of effort, and create greater opportunities for sharing.

Associated Risk

Consolidation of services can subject more resources to a single point of failure. "One size fits all" solutions in IR always ignore the variety of agency mission and business requirements.

2.7 Safety

Natural resource management is often inherently dangerous, especially for those working in remote locations, and increasingly for those whose work is in fire prevention and suppression or other disaster situations. Forest Service personnel are also subject to risk from illegal activity as they work in remote areas.

Potential Opportunity

Advances in technology enable safe mobile and remote operations and field work. Increasing use of remote sensing and data collection reduces the need for personnel to do field work in remote and potentially dangerous locations. Early consideration of safety in decisions about IR system design and delivery will decrease overall system costs, improve the working environment for employees, and enhance relationships with partners.

Associated Risk

Advances—especially in mobile technology—tend to encourage, for example, "multitasking," which increases the risk of accidents with already dangerous work.

2.8 Law, Policy, and Regulation

A large body of law and policy underpins and guides the mission and work of the Forest Service. These range from the establishment of the agency, its mission, and how it carries out its work, to requirements ensuring accessibility for all. Since the 1920s, and especially the 1970s, increasing pressure for competing uses of limited resources has given rise to a stream of laws designed to ensure that all interests are considered.[5] Likewise, Federal law, policy, and regulation more specific to IR[6] continues to evolve, reflecting society's increasing desire to ensure that access to information and technology is inclusive, thereby enhancing capability for all, without jeopardizing individual privacy and security. Some examples of those specific to IR include the Clinger-Cohen Act of 1996, Office of Management and Budget (OMB) Circular A-130, and Section 508 of the Rehabilitation Act, as amended, 1998. See also appendix F.

[5] Copstead, R., Summary of Historical and Legal Context for Water / Road Interaction; 1997; Forest Service (internal); San Dimas Technology Development Center report no. 9777-1815.

[6] U.S. Government, Federal Chief Information Officers (CIOs) Council, http://www.cio.gov/index.cfm?function=showdocs&category=it%20related%20laws%20and%20regulations

Potential Opportunity

The legal and policy framework within which the Forest Service operates demands that the agency evaluate natural resource and social values that in some cases are competing. The opportunity to leverage IR to support decisionmaking in this environment is one that the agency cannot afford to treat casually. IR holds a key for the agency to improve its mission performance. For example, decision-informing processes can benefit from Internet-based collaboration and social networking tools; shared information, data collection, and storage systems can improve the agency's capacity to carry out legally mandated decision processes. Evaluating and revising policies that address legal requirements for IR (e.g., the integration of universal design to address section 508) will enhance functionality for all users.

Associated Risk

Inadequate attention to existing laws and policies not only puts the agency in jeopardy, but also prevents the agency from benefitting from their intent. The risk is in responding to existing law and policy for compliance rather than fully engaging the underlying purpose to seek benefits. For example, building IR solutions based on universal design concepts offers the possibility of enhancing all users' experience. This benefit could be lost without sufficient attention to the intent of section 508.