

EXTENSION IN FORESTRY: LESSONS FROM A CENTURY OF EXPERIENCE

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UDC 630

Received: 19 October 2010

Accepted: 15 February 2011

Abstract

The current Cooperative Extension System in the United States has its roots in two historic pieces of legislation. The first, the Morrill Act of 1862, created the land grant university system, in which a network of agricultural universities was established in each state, followed by agricultural research stations. In 1914 the U.S. Congress passed the Smith-Lever Act, which created the Cooperative Extension System, a joint partnership between the U.S. Department of Agriculture, the state land grant universities, and local units of government in each state. This partnership has endured to the present day, and is often held up as a model for helping farmers, families, and individuals improve their lives and livelihoods. Today, most state Extension Services have statewide programs in the broad areas of agriculture; youth, families, and communities; and the environment and natural resources, including forestry. Hallmarks of extension education include a focus on problem solving, education based on research-based knowledge, education oriented toward client needs, an emphasis on partnerships (particularly at the local level), and an emphasis on evaluation of results. A typical extension model involves engaging stakeholders and partners to identify problems and potential solutions through education, designing educational materials and programs, conducting programs, and follow-up evaluations to determine outcomes in both the short and long terms. A typical example of such a program in Oregon is the Master Woodland Manager Program, which has been in operation for over 20 years. In 2008 this program won a national award for the best Forestry Extension program in the U.S. from the National Woodland Owners Association. Through this program forest owners receive 85 hours of training in 11 modules. They become very knowledgeable in subjects such as silviculture, reforestation, watershed management, and communications. Following completion of the program they become volunteers, assisting other forest owners and often leading them to practice much better management on their lands. Since the inception of the Master Woodland Manager Program, over 400 forest owners have completed the training, and provided over 30,000 hours of volunteer service.

Key words: Forest Extension, Cooperative Extension System, forest owners.

Introduction

Extension, both the institution (Cooperative Extension Service) and

the process of extension education, has played an important role in agriculture, natural resources, and rural development in the United States. All 50 states have

an Extension Service tied to the land grant university and the U.S. Department of Agriculture, and all are still functional after nearly a century of work (Seevers et al. 1997). To be sure, the nature and role of Extension have evolved over the years, and now contemporary topics such as nutrition education, youth and family development, and economic development are now as familiar to users as the more traditional agricultural extension programs.

Although the roots of extension lie within the broad field of agriculture, extension work in forestry and related natural resources management dates back to the early 1920's in the U.S. Critical issues during that time were largely related to protection from rampant wildfires, insect and disease problems (particularly from newly introduced pests from Europe and Asia such as white pine blister rust, Chestnut blight, and the European gypsy moth), and reforestation of cut over and abandoned agricultural lands. Educational programs provided by extension foresters and newly created state forestry agencies assisted farmers and forest owners in dealing with these issues using the best scientific information of the day. Over time, the "generalist" extension foresters were joined by technical specialists such as "extension silviculturists", "extension forest pathologists", "extension forest entomologists", and "extension hydrologists".

Today the Cooperative Extension model in most states employs a statewide network of extension agents working out of local, county-based or regional extension centers, augmented by statewide extension specialists who often work out of the

central university campus or agricultural research stations. However, Cooperative Extension in most states is declining due to reduced funding, particularly at the federal level, where flat year to year funding results in a decrease in real terms (Morse 2009). Given this budget pressure, the need for extension work is greater than ever, with current issues such as climate change, payment for ecosystem services, bioenergy development, invasive species, and economic development requiring more scientific investigation and resultant extension services.

Historical Context

The concept of "extension" dates back to England in the mid 1800's, when British universities first instituted the concept of taking the knowledge of the university to the citizenry outside the halls of academia (Van den Ban and Hawkins 1996). In the United States there was a movement underway during this time to broaden the education of young people in "practical subjects" such as agriculture, mechanical arts, and home economics. In the U.S. universities were based on the European system that focused on classical education in liberal arts and science, primarily for wealthy students. The cry for a new system was heard and in 1862 President Abraham Lincoln signed into law the Morrill Act, which created a state by state network of "land grant" universities. Each state was granted a tract of public domain land that could be sold to fund the new universities, that would be run in partnership with the U.S. Department

of Agriculture. In 1887 the Hatch Act was passed, which led to the creation of Agricultural Experiment Stations tied to the land grant universities. As new agricultural research was developed, the idea of “extension” to the people became more prevalent, and in 1914 the Smith-Lever Act was passed, which created the nationwide Cooperative Extension Service, a joint partnership between the states and the U.S. Department of Agriculture. Today the sub-agency responsible for the Extension Service is the National Institute for Food and Agriculture (NIFA).

Over the years, the extension model has been widely disseminated and adopted throughout the world. For example, the Food and Agriculture Organization of the United Nations summarized their recommendations for organizing and conducting extension programs in two publications (FAO 1986, Sim and Hilmi 1987). In 1993, the International Union of Forest Research Organizations established the Extension Working Party within the Division of Economic, Social, Policy, and Information Sciences, or Division 6 (Johnson 2006). This Working Party has been very active over the years, hosting international conferences in Germany, the U.S. (twice), Kenya, Slovenia (twice), Australia, Italy, and Canada, with resultant proceedings published in print or electronic formats.

Hallmarks of Extension Education

Over the years, certain “hallmarks” of extension education in the U.S. have emerged. They may be considered

unique features of extension that distinguish it from other adult education programs. They are as follows:

- Based on local needs, following a process for engaging stakeholders in identifying issues, problems, and solutions.
- Focused on problem solving through the use of a deliberative educational process.
- Based on the best available scientific knowledge grounded in peer-reviewed research from universities, federal agency research labs, and other credible sources.
- Committed to life-long learning.
- Committed to partnerships with other stakeholder organizations from various communities, including business and industry; local, state, and federal agencies; other educational institutions; and non-governmental organizations.
- Committed to accountability and use of accepted procedures for evaluation and reporting of outcomes in both short and long terms.

To achieve its goals, extension follows a series of deliberate actions. The relationship between the research and extension functions, and the stakeholders or end users are shown in Figure 1. Of importance to note is that the arrows in the diagram flow in all directions. Thus, the researchers are influenced not only by the extensionists, but by the end users as well. For example, Creighton et al. (2009) reported that from 69 to 82 percent of extensionists engage end users in applied research, and an additional 16 to 18 percent currently do not but would like to. Furthermore, this phe-

nomenon occurred throughout the world. Likewise, from 61 to 82 percent of extensionists facilitate peer to peer learning

opportunities with the end users often or sometimes, and an additional 15 to 18 percent do not but would like to.

THE RESEARCH—EXTENSION—USER CONTINUUM

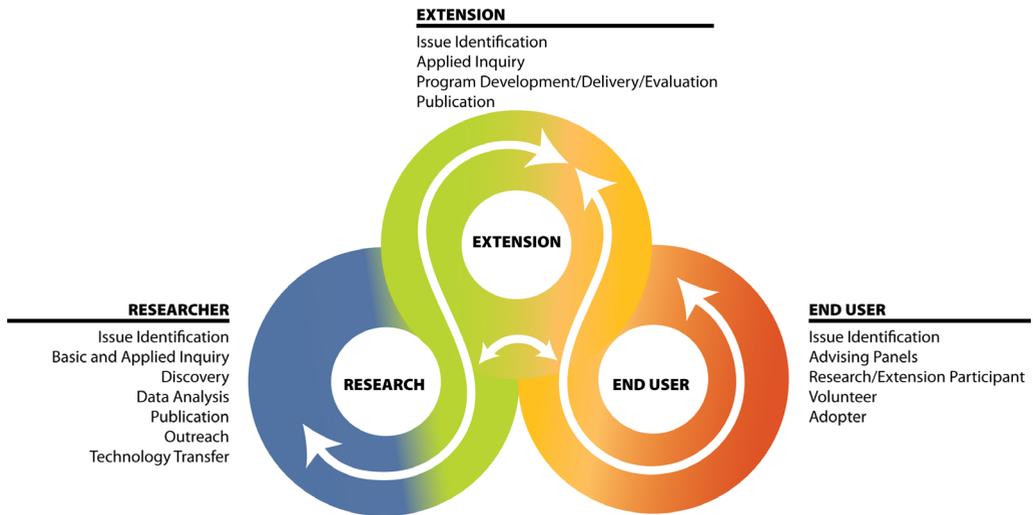


Fig. 1. The relationship between the research and extension functions, and interactions with stakeholders or end users.

A typical approach to utilizing extension would involve the following steps:

- Needs assessment.
- Issue identification.
- Scoping for research-based educational materials.
 - Program development (may include development of educational materials).
 - Program delivery.
 - Evaluation and follow-up.

Interaction with researchers and end users would occur through the various steps, as necessary.

The Oregon Master Woodland Manager Program – a Case Study

A suitable example of a modern extension program in action is the Oregon Master Woodland Manager Program (Fletcher et al. 1985, Fletcher and Reed 1986). Oregon is the ninth largest U.S. state and is heavily forested, with about 50 percent of its land area in forests. Oregon has nearly 12 million ha of forest land. In Oregon, 60 percent of the forest land is owned by the federal government, and 35 percent is in private ownership (OFRI 2009). However, 83 percent of the timber harvested in the

state is from the privately owned forests (OFRI 2009). Thus, the private forests are disproportionately important to the state's economy. Sharing the private ownership with industrial owners are about 150,000 individual or family forest owners. In order to assist these owners in better managing their lands, comply with laws and regulations of the state, and to achieve their personal management objectives, the state relies on education provided by the Oregon Extension Service, technical assistance provided by the Oregon Department of Forestry, and additional services provided by the state's forestry consultants. During the mid-1980's, in an effort to pool resources and develop volunteers, the Oregon Extension Service, Oregon Department of Forestry, and the U.S.D.A. Natural Resources Conservation Service conceived of the Master Woodland Manager Program. The intent was to develop a cadre of trained forest owners who would be empowered not only to practice better management on their own lands, but to also serve as volunteers to assist other forest owners with their educational needs. This model would greatly expand the local capacity of the sponsoring agencies.

A series of 11 training modules was developed, covering 85 hours of instruction in such areas as reforestation and silviculture, watershed management, forest management planning, forest health, forest measurements, and wildlife management. In addition, such topics as communications and leadership were also covered. In exchange for the educational program, the Master Wood-

land Managers would be expected to deliver back 85 hours of volunteer service. In addition, every other year the Oregon Extension Service offers a multi-day mini-college which serves the role of continuing education for the Master Woodland Managers. Both advanced and refresher topics are covered in these sessions. Since its inception, about 400 Master Woodland Managers have been trained, and nearly all complete their voluntary service. The most recent evaluation, conducted in 2003, showed that the volunteers logged 4,815 hours in that year alone, and nearly 27,000 hours total since inception of the program. The volunteer service takes many forms, including conducting educational programs for youth, providing site visits to other properties, service on various committees and task forces, conducting actual stewardship projects, building web sites, and more. The Master Woodland Manager Program received the nation's outstanding family forest owner Extension Award in 2008, provided by the National Woodland Owners Association and the National Association of University Forest Resources Programs.

Conclusion

Forestry and Natural Resources Extension remains a critical part of the Cooperative Extension Service, both at a national level and in many forested states in the U.S. The basic hallmarks of good extension work apply, regardless of the subject area. However, the issues change over time, and the Extension Services need to be adaptive as well.

Embracing new technology is a notable example. Not many years ago only a few forest owners had internet access, and now nearly all do. As a result, web-based educational programs are becoming more common.

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