Planning for a residential agricultural and environmental education program at the Iowa 4-H Education and Natural Resources Center

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Planning for a residential agricultural and environmental education program at the Iowa 4-H Education and Natural Resources Center

Abstract
Education programs are needed to increase awareness and implementation of sustainable agriculture goals and practices. Hands-on experiences, such as those offered by residential environmental and agricultural education programs, are an excellent way to spread the word about sustainable agriculture. A participatory planning process was used to determine the feasibility of providing this sort of program at the Iowa 4-H Center. An advisory group reviewed existing programs, evaluated target audience survey results, and began to develop a program plan.

Keywords
Human systems, demographics and beginning farmer programs

Disciplines
Agricultural Education
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**Background**

"Agricultural literacy" is a concept developed by a National Research Council (NRC) committee in 1988. According to the NRC, agricultural literacy implies "an understanding of the food and fiber system, including the history and current economic, social, and environmental significance to all Americans." Providing educational opportunities to increase knowledge about the potential of sustainable agriculture is one way of encouraging agricultural literacy.

Residential environmental education programs can be particularly beneficial in increasing awareness about environmental issues. (A residential program includes at least one overnight stay, along with long-term hands-on experiences.) Research findings suggest that residential-type field experiences provided the greatest advances in students' conceptual knowledge of the environment.

The Iowa 4-H Education and Natural Resources Center is a possible site to provide Iowans with hands-on experiences in applying sustainability principles. (This is Iowa’s only agricultural education center with residential facilities.) The Center, a 1,100-acre residential facility located 20 miles southwest of Ames, is operated by Iowa State University Extension to Youth and 4-H. It includes 130 acres of row crops, with the remaining acres comprised of pasture land, mixed cropland and lowland forest, streams, ponds, wetlands, and restored prairies. Activity, meeting, and overnight facilities are available for more than 400 people.

The Iowa 4-H Center has offered sustainable agriculture demonstrations on topics such as vegetative filter strips, pond and wetland management, wildlife food plots, woodland and prairie management, ridge-tillage, and a large teaching garden. Some sustainable agriculture programming has been offered, notably "Sustainable Agriculture and Wildlife—Piecing Together a Habitat Puzzle" which was developed specifically for the Center’s use. They have also held agricultural field days in 1989, 1992, and 1996.

But the 4-H Center is without a comprehensive residential agricultural and environmental education program plan. Currently, the Center staff lacks the time to develop, implement, and maintain a new program area. Involving other organizations in the development stage would speed up the process.

Objectives for the project were these:

1) Bring together a group of interested individuals and organizations who will work cooperatively as an advisory group to develop a plan for an education and demonstration program within which each organization will participate.

2) Evaluate existing sustainable agriculture residential demonstration and education programs for youth and family audiences.
3) Research target audiences who are interested and able to participate in residential and sustainable agriculture programs.

**Approach and methods**

In the beginning phase, a project associate was hired and research funds were allocated. The exploratory phase called for evaluation of existing agricultural and environmental education programs and curricula for youth and families. The review, conducted in 1995 and 1996, included both quantitative and qualitative research data gathered through literature reviews, on-site observations and participatory visits, and personal and phone interviews.

Also during the exploratory phase, project leaders brought together representatives from agricultural and environmental groups traditionally viewed as being at odds on land use issues. Group members were chosen on the basis of their involvement in agriculture, their interest in education, and their demonstrated ability to work well with others. These individuals formed an advisory group to develop a plan for an educational program within which each organization would participate. At their first meeting, they were introduced to the Iowa 4-H Center facility and resources, discussed common experiences and goals, reviewed evaluations of existing programs, and developed similar ideas for use at the Iowa 4-H Center.

Participants on the steering committee came from these organizations: Iowa Beef Industry Council, Iowa Farm Bureau, Iowa 4-H Education and Natural Resources Center, Practical Farmers of Iowa, Magic Beanstalk CSA, Iowa Department of Natural Resources, Iowa Department of Education, Wallace’s Farmer, Heartland Area Education Agency, Leopold Center for Sustainable Agriculture, Iowa Department of Agriculture Organic Agriculture Program, and Iowa State University Departments of Animal Ecology, Agronomy, and Agricultural Education.

During the planning phase, research was done on target audiences for educational programs. A survey was devised to gauge educator attitudes and interest in residential educational experiences as well as interest in agricultural and environmental programming. Surveys were sent to two sample groups of educators; one was from a statewide list of educators receiving Food, Land, and People educational materials and the other included Heartland Education Agency schools, most of which are within 50 miles of the Iowa 4-H Center.

Survey results were presented to the advisory group at the second meeting. This helped reinforce common goals and shape the direction of the residential program planning at the meeting. Members of the steering committee were asked for a long-term commitment to join a formal advisory board charged with continuing the planning process.

**Results and discussion**

The survey sent to educators posed questions in three areas; residential education programs, proposed agricultural and environmental research programs at the Iowa 4-H Center, and teacher training workshops. Three hundred surveys were mailed and 51 were returned, a 17 percent response rate. The educators on the Food, Land, and People (FLP) mailing list reported a lower percentage (28 percent) of experience with residential programs, but a higher percentage had received agricultural curriculum materials. The Heartland group was more likely to have residential experience (55 percent), but less likely to have received agricultural curriculum items (19 percent). One hundred percent of the educators who had a residential educational experience in the past considered it positive.
The FLP group was slightly more enthusiastic toward proposed residential education programs focusing on agriculture and the environment; 91 percent were interested in participating in this kind of program compared with 81 percent of the Heartland list expressing interest. Barriers to residential visits and field trips for school children included lack of funds and transportation. Other negative factors listed were lack of planning time and teacher training, and the difficulty of getting parent chaperones.

Seventy percent of those responding would be more willing to bring a class to a residential program if the residential staff provided all of the programming. Eighty-three percent said it would be helpful for the program staff to give an in-school presentation on the program. Respondents agreed that the two most important factors in choosing a residential program were cost and location. Ninety percent recommended a maximum cost per student of $50. If a sponsor provided a portion of the program cost, 93 percent said that they would be more willing to participate. Educators generally expressed more enthusiasm for this type of program, with some resistance to programs requiring more than a one-night stay.

Both groups expressed nearly equal approval of the proposed teacher training program where educators would be provided with hands-on experience in agriculture and the environment, familiarized with activities and procedures that are unique to a residential program, and encouraged to plan strategies for their class to visit the Iowa 4-H Center. Seventy-three percent of the FLP group and 71 percent of the Heartland group indicated interest in the teacher training workshops. Overall, interest shown in both the residential program centered on agriculture and the environment and the teacher training workshops was highly positive.

The advisory group determined from the curriculum research and the results of the educator survey that there was sufficient need and interest to further pursue planning of a residential agricultural and environmental education program at the Iowa 4-H Center. Consensus was that a "soil to product"-based education program would provide the best, most comprehensive content. (An example was a program on "Milk from Grass to Grocery.") Because of the constraints on school visits to the Center (mainly cost and transportation) highlighted by the survey results, the advisors suggested that the programmers look to include other target audiences such as nonschool youth groups, as well as international visitors, businesses, and other adult groups. Another idea was the creation of a small, working farmstead that would demonstrate sustainable agriculture concepts and techniques.

Implications

In line with the original evaluation criteria, the project associate viewed several sustainable agriculture programs, received over ten curricula sets, and synthesized the results for the advisory group. Results of personal interviews and mail surveys were summarized and distributed to the advisory group. Research results indicated enough interest in this type of program to proceed with further planning and development. Whatever programs ultimately emerge from the process will have the potential to educate thousands of visitors to the Iowa 4-H Center about the connections and interactions between agriculture and the environment that are at the center of sustainable agriculture.

There was sufficient organizational participation on the advisory group and interest in the planning process to make it successful, even with groups that traditionally have not shared the same goals for the future of agriculture in the state. Thus, the planning process in and of itself made gains toward increasing understanding and support of sustainable agriculture. Ten of the early group members agreed to serve on the official advisory board, ensuring that they will continue to be involved in raising awareness of agricultural sustainability. Their experiences on the board will give them opportunities to share more information about sustainable agriculture with their parent organizations.