

Section I
General Information

NOV 13 1997

The following information is essential for keeping project records accurate. Also, please complete or update the "Project Profile" form that is enclosed in this mailing to ensure project information databases are current.

1. Project Number: ENE95-13
Grant Number:
Funding Period: Months or years for which funds were approved
2. Project Title: Whole Farm/Whole Watershed Planning for Sustainable Agriculture
3. Project Coordinator: William H. Zweigbaum
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4. Type of Report: **Final**
5. Date of Report: 11-6-97
6. Reporting Period: From 9-1-95 to 8-31-97
7. Major Participants: Include name and affiliation (only new information or changes)
8. Cooperators: Include name and affiliation (only new information or changes)
Scientists
Cooperative Extension
NRCS
Private, Nonprofit
Farmers (name, address, and brief description of each farm)
Other
9. Project Status: Please check one of the following. The project is:

 New: received SARE Chapter 3 Professional Development Program funding for the first time.
 Continuation: a previously approved project, following revision and competitive review.
10. Statement of Expenditures
You are required to enclose a statement of expenditures from your fiscal officer indicating cumulative expenditures over the period approved for the project.

1. Objectives. Participants will:

1. Develop solutions to problems on a more ecological basis.
2. Create local coalitions for ecosystem planning.
3. Gain an understanding of available computer systems Field Office Computing System (FOCS) for developing sustainable agriculture plans.
4. Understand how to use whole watershed ecosystem components when completing individual farm plans. Understand shortfalls of computer model and what needs to be considered by field staff.
5. Learn to assist landowners/users make decisions based on social, economic, environmental, and cultural considerations.
6. Have videotapes available for future use by individuals and groups when educational programs are needed.
7. Produce an on-farm checklist which can be used by staff in field to facilitate whole farm planning.

2. Abstract. A day long conference was held on February 22, 1996 featuring Marty Strange from the Center for Rural Affairs and Doug Karlen from the National Soil Tilth Lab. Fifty-seven people attended this session. These speakers stimulated new thinking among the participants and did an excellent job of opening up the topics of whole farm planning and systems approaches to farming operations. The group learned a great deal about the direct and indirect consequences of actions taken within the production system and grappled with the complexities of considering the entire ecosystem and watershed when solving problems that are faced as a matter of everyday work. In the month following this session, the participants worked in county field offices on a case farm that was

known to the staff of both Extension and NRCS. These small workgroups looked at devising a farm plan for the operation, looked at the application of the Field Office Computing System and had the opportunity to discuss issues which arose in the course of evaluating the farm. This gave local agency people a chance to interact and share their strengths and weaknesses with each other and to learn from each other about the environmental, economic and social concerns of a farm operation. Six weeks after the initial session the participants were reconvened to discuss and analyze what they had learned by doing the case studies. Twenty-seven people attended this segment of the training program.

A year later, the majority of active participants re-convened to discuss what they had implemented as a result of the previous training sessions. A presentation on the future of New England agriculture and the implications of the changing face of agricultural industries was presented by Marty Strange, the former Director of the Center for Rural Affairs. This was a thought provoking and stimulating discussion which the entire group participated in. After a two hour discussion and lunch the group proceeded to make two farm visits to discuss intensive pasture management, wildlife habitat on farms, watering systems for pasture, use of geotextiles on pasture access roads, impacts of dairy operations on highly erodible lands, manure storage facilities and other topics of interest to the group.

3A. Accomplishments. Extension and NRCS field staff, working together, learned to develop solutions to problems using case studies that allowed them to consider the farm ecosystem and the whole watershed. The exercise created and strengthened local communications between the agency personnel. Extension staff were exposed to the FOCS system and were introduced to the list of effects used by NRCS staff when developing farm plans. Extension staff were able to add to the discussion and with the NRCS staff were able to identify shortfalls of the computer model and identify

other considerations that need to be made when evaluating farm operations. After long discussion, consensus was reached that New England farms are more diverse than the type of operations FOCS was designed for. It was noted that the most effective way to evaluate an operation was through a team approach, as no one person can see the whole farm/ whole watershed effectively. It was also recognized that team approaches are a somewhat inefficient use of time even though they produce superior results.

3B. Publicity. The dissemination of the information learned through this project will be an ongoing activity as the participants work with farmer clientele and become more comfortable with addressing public concerns about the impacts farms have on their local communities. Over half of the combined Extension and NRCS employees in New Hampshire participated in this project. As these public employees work with land users in a more holistic way and assist land users in moving their operations toward more sustainable practices, the word will travel through local communities. Discussions with those that were not able to attend will bring a greater percentage of the agency personnel to an understanding of the concepts taught. This project is the beginning of a new way of interacting with each other and with the public.

4A. Trainee Adoption and Direct Impact.

A survey of the professionals in attendance had these results (based on a rating of 1=poor, 2=fair, 3=good, & 4=excellent, with a mean of 2.50):

During the last year, how good was/were:

your awareness of sustaining agriculture ecosystem?	2.53
your contribution to land user understanding of sustainable agriculture and ecosystems?	2.26
your coordination with other professionals in your organization?	2.63

your coordination with other professionals in other organizations?	2.68
your office's references on sustaining agriculture ecosystem?	2.11

It was felt that staff needed time to incorporate what they had learned into practices that could be applied to working with producers. A copy of the survey instrument used on April 4, 1996 is included in the appendix. At the final session held on June 12, 1997 consensus was reached that coordination with other professionals, discussions with land-users on sustainable agriculture practices and other professional development activities pertaining to whole farm/whole watershed planning had greatly improved over the past year.

4B. Potential Benefits or Impacts. As a result of the discussions which took place at the training sessions a number of potential changes in the way in which agency personnel work with clientele were identified. The issues discussed at these meetings and recommendations by individuals were these:

We need to broaden our knowledge in and help the producer understand:

1. nutrient management.
2. integrated crop management (ICM).
3. not locking in on one best management practice (BMP).
4. economics - labor, insurance, property taxes.
5. valuing and measuring impacts.
6. measurement of water quality.
7. job sheets that fit local needs (NRCS Field Office Computing System (FOCS)).
8. combined plan (one plan with all agencies' input).
9. hard copy of plan that is user friendly and has real numbers.
10. liability for the producer and planner for the conservation effects that are documented in plan.

Items suggested that NRCS and Extension need to work on:

1. Both agencies working together more to help farmers.
2. Extension and NRCS working together on ecosystem effects, and also to get landowners coming to county offices and not UNH.
3. Communication is on-going and good where we are located together.
4. Data bases of soils, etc. are helpful in discussing solutions.
5. Soil, Water, Air, Plant, Animal + Human = ecosystem?
6. Definitions of effects to properly understand the results of actions.
7. Group review and discussion of effects (sharing, learning, training, etc) because no one individual can properly evaluate all effects and benefits alone.
8. Effects list made relevant to New Hampshire.
9. List of important effects for farm areas to review with that landowner.
10. Rotations and their impacts displayed in simple ways.
11. Economic incentives or lack thereof, IE. cost share programs.
12. Farm-a-Syst as a potential useful tool for protecting water quality at farm stands (Maine is working on this and may show us what works, etc).
13. New England niche agriculture has avoided the large pollution problems of large scale agriculture.
14. New England solution to problems are often different (we need to adapt and modify large scale solutions).
15. FOCS does not provide a complete decision making tool for the landowner. (Need better worksheets for environment evaluation). (Also, explore other working areas of FOCS).
16. Need simple short plans to make them user friendly.
17. Merging the NRCS conservation plan and the Extension management plan. (Working together from a plan base).

By sharing the talented people we have, we are broadening our understanding of agriculture and its impacts. We are increasing our comfort level as we provide land use information using a more encompassing approach. We will incorporate local soil, water, air, plant, animal and human concerns

as we help people to plan and implement future uses of their land. Problems recognized by these customers will be addressed in a more holistic manner so the pluses and minuses of potential solutions can also be recognized. These benefits and costs will be expressed in terms of social and economic effects, as well as, environmental impacts so customers can make informed decisions, use our natural resources wisely and continue their prosperous and productive contribution to New Hampshire's way of life.

5. Individuals Involved. Fifty-seven people attended the one day conference held on February 22, 1996. Thirty-one people participated in the case farm studies held in local offices on various dates during March, 1996 and twenty-seven people participated in the follow up session to critique the case farm process and the use of FOCS on April 4, 1996. Twenty six individuals participated in the concluding program held on June 12, 1997.

6. Future Recommendations and Areas Needing Additional Professional Development Efforts.

Suggestions for events and training to help us in the future included:

- Getting Dr. Marty Strange back to talk with us where we concentrate on New Hampshire
- Learning from other people - Producers (i.e. the organic producer in Coos County &/or producers who has done a good job fitting their operation in with their ecosystem (environmental, economic & social)).
- Crop consultants.
- Shelburne Farm people, Shelburne, VT.
- Cathi Roth of the Berkshires, MA.
- Understanding liability - the good and the bad about documenting problems in the conservation plan.
- Increasing our irrigation knowledge. Taking NRCS information on water holding capacity, sizing ponds, and plant needs and expanding it to include other information our

customers need.

- Teaching listening skills.
- Using the video tape of the Feb. 22nd session as a thought provoking review.
- Improving our distribution of good publications.
- Increasing our knowledge of marketing potentials. (Publication resources are available).
- Having ample supplies of new publications for producers (UNH order forms on hand)

7. Photographs. No photographs were taken.

8. List of Participants. See attached list

Survey of Conservation Professionals

April 4, 1996

During the last year, how good was/were:

	Poor	Fair	Good	Excellent
your awareness of sustaining agriculture ecosystems?	1	2	3	4
your contributions to landuser understanding of sust. ag. ecosystems?	1	2	3	4
your coordination with other professionals in your organization?	1	2	3	4
your coordination with other professionals in other organizations?	1	2	3	4
your office's references on sustaining agriculture ecosystems?	1	2	3	4

Concerning the Feb. 22nd Sustaining Ag Conference:

how would you rate the organization and use of the day?	1	2	3	4
how would you rate Dr. Marty Strange's presentation?	1	2	3	4
how would you rate the separate session with Dr. Strange?	1	2	3	4
how would you rate Dr. Doug Karlen's presentation?	1	2	3	4
how would you rate the separate session with Dr. Karlan?	1	2	3	4

NAME: _____