



United States  
Department of  
Agriculture

Natural  
Resources  
Conservation  
Service

Soil  
Quality  
Institute

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# Soil Quality Card Design Guide

A guide to develop locally adapted  
conservation tools



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A guide to develop locally adapted  
conservation tools



United States Department of Agriculture  
**Natural Resources Conservation Service**  
**Soil Quality Institute**

May 1999

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## Preface

This Guide provides assistance to Natural Resources Conservation Service (NRCS) staff and its conservation partners to collaboratively develop Soil Quality Cards with local farmers. Partners such as Soil and Water Conservation Districts (SWCD), Cooperative Extension Service, state conservation agencies, and local groups assist in producing Cards that farmers and other land managers can use to assess soil quality on their land and implement management practices that ensure long-term soil productivity.

To develop a process that enables NRCS and its conservation partners to design locally adapted Soil Quality Cards, the Soil Quality Institute worked with several university extension and research departments and enlisted the expertise of NRCS state and field staff across the country. The outcome is a participatory process through which farmers and conservationists learn together about soil quality and collaboratively develop assessment tools customized to local needs.

The mission of the Soil Quality Institute is to work with partners to develop, acquire, and disseminate soil quality information and technology that helps people conserve and sustain natural resources and the environment. For more information about the Institute and its products and services, visit its Web site at <http://soils.usda.gov/sqi>.

## Acknowledgments

The development of this Guide was a partnership effort. The Soil Quality Institute would like to thank the many people who committed their time and talents to help develop this resource for anyone interested in participatory, locally led conservation.

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- NRCS state office staff in Albuquerque (NM), Bismarck (ND), Bozeman (MT), Portland (OR)
- Oregon, Montana, and North Dakota State University Cooperative Extension Service staff
- NRCS Soil Quality Regional Technical Team, Akron, CO

In addition to the people who contributed to this guide, various written materials were used as resources, including:

- *Participatory Learning and Action: A Trainer's Guide* (1995) J. Pretty, I. Guijt, I. Scoones, J. Thompson, IIED, London, UK
- *Pathway to Learning* (1996) Oregon Leadership State Training Institute, Oregon State University Leadership Training Series
- *On Common Ground* (1994) Workbooks for modules I-IV, National 4-H Council
- *Farmer-Scientist Focus Sessions: A How-To Guide* (1992) D. McGrath, L. S. Lev, H. Murray, R. D. William; Oregon State University Extension Service Publ.

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- *How Farmers Assess Soil Health and Quality* (1995) D. Romig; M.J. Garlynd, R.F. Harris, K. McSweeney. *J. Soil Water Cons.* 50(3):229-236

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# ***About the Guide***

- ❖ What is the purpose of this Guide?
- ❖ What is in this Guide?
- ❖ How do you use this Guide?

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## What is the purpose of this Guide?

This Guide is for you—Natural Resources Conservation Service (NRCS) and conservation partners working with local farmers—to design Soil Quality Cards. The Guide outlines procedures and strategies to actively engage local farmers or other land managers in the card development process. It also serves as a general reference guide for employing a participatory approach in other locally led conservation and outreach projects.

This Guide describes the process for developing and marketing a single Soil Quality Card. If you develop multiple Cards in your state, follow the same steps for each Card.

## What is in this Guide?

This Guide is divided into five parts:

- **Part 1: Overview** summarizes the Soil Quality Card project. Included are the benefits of Soil Quality Cards and a synopsis of the Card design process. Also described are the main features of a farmer-conservationist participatory meeting, which is the core activity of the Card design.
- **Part 2: Getting organized** discusses preparations necessary for designing the Soil Quality Card. The chapter includes ideas on creating local support, assembling a Card design team, and preparing the farmer meeting.
- **Part 3: Putting the Card together** focuses on the design of the Soil Quality Card. Activities to structure the participatory farmer meeting are discussed in detail. Also included are step-by-step procedures for testing Card prototypes, creating the final version of the Soil Quality Card, and printing it.
- **Part 4: Taking next steps** discusses marketing and distribution strategies. You will also find advice on Soil Quality Card support, using the Card within the agency, and integrating it into established NRCS activities.
- The **Tool Box** consists of fact sheets, document templates, and basic tips to facilitate a successful and efficient Card design process. Readings

on participatory approaches and soil quality and a list of supporting references are also included.

## How do you use this Guide?

If you are familiar with the purpose and benefits of Soil Quality Cards and with what is involved in creating the Cards, it may not be necessary for you to read through *Part 1: Overview* of this Guide. In this case you can move directly to *Part 2: Getting organized*.

*Part 2: Getting organized*, *Part 3: Putting the Card together*, and *Part 4: Taking next steps* provide step-by-step procedures and strategies to design local Soil Quality Cards. These strategies, which were tested in pilot projects in Oregon, Maryland, New Mexico, and Montana/North Dakota, provide a framework for working with farmers in your area. Keep in mind, however, that conditions in each region, state, or district are different. Factors, such as agency resources, dominant farming systems, and farmers' concerns, can vary widely. Therefore, adapt the procedures in this Guide to meet your specific needs and resources.

The tools and templates provided in the *Tool Box* are designed for you to photocopy and use. However, the publications in the "Readings" section are copyrighted and their reproduction and distribution require permission.

In the margins of the Guide, you will find symbols that will point you to resources and information:

-  points to sections and pages with related information or to tools and document templates in the *Tool Box*.
-  provides helpful hints for an efficient Card design process.

# ***About the Card***

- ❖ How did the Soil Quality Card project get started?
- ❖ What is a Soil Quality Card?
- ❖ What are the uses and benefits of a Soil Quality Card?
- ❖ What are the key principles of a Soil Quality Card?
- ❖ How scientifically valid are Soil Quality Card assessments?

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## How did the Soil Quality Card project get started?

Two events prompted the development of locally adapted Soil Quality Cards. First, conservationists in Montana came up with the assessment card concept. Later, a group of dairy farmers and university researchers in Wisconsin developed a soil health card for their region. A team of NRCS Soil Quality Institute and university researchers, working in collaboration with local NRCS field office staffs in Oregon and Maryland, used the Wisconsin card as a starting point from which to develop a Soil Quality Card that could be customized to meet user needs in different regions nationwide. Farmers, Cooperative Extension Service agents, and Soil and Water Conservation Districts participated in this process, which was later refined and tested in New Mexico and Montana/North Dakota.

## What is a Soil Quality Card?

A Soil Quality Card is a field tool that is developed collaboratively by local farmers, NRCS, and conservation partners. The Card is used to assess the current status of soil quality and, when utilized over time, to determine changes in soil quality that are affected by field management. A single Card covers a specific eco-region characterized by comparable natural resources and farming conditions. The Card's primary users are farmers and other land managers. However, it can also be used as a communication and learning tool by educators, agricultural support professionals—such as soil conservationists, agricultural industry representatives, and Extension agents—and others who are interested in soil quality and the impact of management practices on soil.

A Soil Quality Card displays farmer-selected soil quality indicators and associated descriptive terms. The indicators are based on farmers' practical experience and intimate knowledge of the local natural resources. Typically, the Card lists soil quality indicators that can be assessed without the aid of technical or laboratory equipment.

Part of a Soil  
Quality Card:

Soil Quality Indicator	poor			medium			good			Descriptive Terms		
	1	2	3	4	5	6	7	8	9	poor	medium	good
Soil tilth										Cloddy, massive or flaky	Some crumbs, balls up	Porous, crumbly, spongy
Water infiltration										Water on surface for a long period after rain/irrigation	Water drains slowly; some ponding	No ponding after heavy rain/irrigation

Examples of such indicators include compacted soil layers, abundance of earthworms, and water infiltration rate. Using a Soil Quality Card involves selecting representative locations in a field and rating indicators guided by descriptive terms associated with each indicator. Users can also record on the Card field notes or observations made during the assessment.



## What are the uses and benefits of a Soil Quality Card?

The use and collaborative development of a Soil Quality Card has benefits to farmers and other land managers, conservationists, and natural resources conservation agencies.

*For farmers and land managers, the Card is a tool to:*

- assess the impact of field management on soil quality (comparing tillage, cover cropping, fertilizer or pesticide treatments).
- keep records of soil quality.
- detect soil quality changes over time (short-term during the growing season and long-term over the course of several years).
- communicate with soil specialists (NRCS, university, and agricultural industry professionals) about issues or problems related to soil quality and soil management.

*For conservationists, the Card is a tool to:*

- approach farmers.
- communicate and exchange ideas with farmers.
- learn about soil quality issues in their area.
- demonstrate soil features important to soil quality.
- identify research topics.

*For NRCS and project sponsors, the development of the Card offers ways to:*

- increase farmers' voluntary conservation efforts.
- foster a systems approach to conservation.
- improve credibility from its constituency.
- enhance collaboration and communication among local groups and state and federal agencies.
- support locally led conservation and outreach activities.

## What are the key principles of a Soil Quality Card?

**The Card meets local needs.** Experience has shown that local ecological and environmental conditions as well as the type of local farming systems must be considered for a qualitative soil assessment tool to be effective. Researchers who worked on the original Wisconsin Soil Health Card confirmed that each Card needs to be adapted to local circumstances.

**The Card is by farmers for farmers.** Farmers need to be involved and have ownership in the Card design. Because farmers are the primary users of the Card, their terminology and preferences determine the soil quality indicators and descriptive terms as well as the Card's format and layout. The role of NRCS and project sponsors is to facilitate the farmers' design process and coordinate production of the Card.

## How scientifically valid are Soil Quality Card assessments?

Using a Soil Quality Card represents a qualitative assessment of soil quality. Because Soil Quality Card assessments do not meet all the traditional criteria associated with data collection in the "hard sciences," soil scientists or agronomists might consider this type of data lacking rigor and accuracy. However, criteria such as reliability (the ability to repeat the inquiry and findings in a similar context) and objectivity (data collection that is free of personal bias) may not be appropriate to determine the validity of Card assessments.

Soil Quality Cards are tools for individual farmers. The assessment of one farmer is not meant to be compared to that of other farmers. The initial assessment for each field or location within a field will become a unique baseline that serves as a personal reference point for each farmer. Because assessments can not validly be compared, Soil Quality Cards are not used in agency record keeping, in monitoring of progress toward a goal that is predetermined by someone other than the farmer, or in any type of compliance program.

Soil Quality Cards list farmer-selected soil quality indicators. These indicators may integrate several soil properties (such as drainage and infiltration) into a single indicator or reveal the connection between management and soil quality. For example, farmers may describe soil tith in

terms of power requirement for spring tillage or seeding. To successfully raise crops and animals, many farmers are able to recognize and manipulate the system of interrelated soil and management factors as a whole. However, in contrast to scientists, farmers do not reduce the system into distinct, quantifiable components.

Scientific inquiry strives to create information that can be used universally and transferred to any location. A Soil Quality Card assessment, on the other hand, is location specific by design. Farmers' local knowledge is finely tuned to continually changing local circumstances and may have limited utility outside its area of origin. The local specificity is, therefore, the greatest strength and weakness of Soil Quality Card assessments. The goal is to integrate scientific and local knowledge and enable farmers and scientists to work together to improve natural resource conservation efforts.

To determine the accuracy of information collected with the Soil Quality Card, an evaluation should focus on the outcome of the assessment process. Questions to ask when evaluating Soil Quality Cards include:

- Has farmers' awareness of soil quality changed?
- Do farmers have an improved understanding of management effects on soil quality?
- Have farmers' field practices changed as a result of the assessment?

# ***About the Card Design***

- ❖ Who is involved in Soil Quality Card development?
- ❖ What are the major steps in Soil Quality Card development?
- ❖ How much time is needed for Soil Quality Card development?
- ❖ What outcomes can you expect from the Soil Quality Card design process?

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## Who is involved in Soil Quality Card development?

Card sponsors and project participants usually include:

- Farmers
- Soil and Water Conservation Districts
- NRCS state and field office staff
- Cooperative Extension Service

The project participants collaborate closely in the Card design. Farmers participate in meetings that are facilitated by NRCS and other Card sponsors. Soil and Water Conservation Districts may host the meetings. Later during the process, farmers work with NRCS to improve the Card prototype that was developed during the initial farmer meeting. The tasks for you and other NRCS personnel are described in detail in *Parts 2 through 4* of this Guide.

Active involvement in the design process by Cooperative Extension Service and Soil and Water Conservation Districts can be very helpful. Because these groups work closely with farmers and are familiar with their concerns, they can make contacts, participate in meetings, and use and disseminate the Cards.

Other groups can use the process described in the Guide to develop Soil Quality Cards or to collaborate with the project participants listed above. Possible partners include:

- State conservation and natural resources agencies
- Local conservation groups
- Farmer organizations
- Agricultural industry

## What are the major steps in Soil Quality Card development?

The major activities in the design process are:

- Preparing for and conducting a half-day farmer meeting
- Creating a prototype of the locally adapted Soil Quality Card
- Field testing the prototype
- Producing the final Card
- Marketing and distributing the Card
- Supporting the use and updating of the Card

A half-day farmer meeting is the central activity in the design process. Planning activities for this meeting include inviting participants, reserving a meeting location, and preparing materials and supplies. After the meeting, the information discussed by the participants is summarized to create a prototype of the Soil Quality Card. During the growing season, the prototype is tested and evaluated in the field. Field testing involves visits to farmers' fields to observe farmers using the Card and to discuss possible modifications. This information is then used to revise and finalize the Soil Quality Card. Finally, the Card is distributed and, if necessary, updated later to accommodate farmers' growing understanding of the impact of field management on soil quality.

## How much time is needed for Soil Quality Card development?

 Page 29:  
Setting a time line

A locally adapted Soil Quality Card is typically developed during a 9 to 12-month period. The *Tool Box* in this Guide provides many of the resources you will need to accomplish the design process effectively and efficiently. A well coordinated team and a successful networking effort will reduce the time required by each person involved in the design process. Your time commitment will be further reduced if Card design steps are integrated into other programs or activities. For example, the prototype Card testing mentioned above can be accomplished during regular field visits.

## What outcomes can you expect from the Soil Quality Card design process?

 Appendices:  
Soil Quality/Health  
Cards

The primary outcome of the design process is the development of a locally adapted Soil Quality Card. Cards developed in different regions will vary, with some similar and some distinct features. For example, farmers in your area may choose soil quality indicators that are technically the same as those listed on other Cards; however, the names of the indicators may be different, because farmers' terminology is area-specific. Farmers may also identify some indicators that are only applicable to their region, making each Card unique.

Farmers in different regions may express similar concerns about Card use, including how to carry the Card, how to complete it in the field, and how to file the data. Although their concerns might be similar from region to region, how farmers choose to address them will depend on local climate,

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resources, and priorities. Their concerns have implications for Card format and layout. The size of the Card, for example, is often a crucial (and hotly debated) issue. Cards may range from letter size (8.5”x 11”) to a small, pocket size (3”x 5”).

Implementing the design process also has less obvious outcomes. Key elements of this approach will affect other natural resource conservation efforts in your region. You may find that listening to farmers’ concerns and facilitating the design of a useful tool will likely result in a number of responses. Farmers may:

- be pleasantly surprised by the NRCS’s willingness to listen and learn about their approach to soil management.
- take pride in providing leadership for creating a soil assessment tool.
- show a sense of responsibility to support the project.
- spread the word about the Card among neighbors and peers.

Another element of the collaborative design process is strengthened partnerships and communication among all Card sponsors, which is invaluable to locally led conservation. This process may lead to additional, coordinated conservation efforts and may increase and improve the outreach efforts of all agencies and groups. The collaborative design approach can serve as a model for future programs or product development in your region or state.



Page 8:  
What are the uses  
and benefits of a Soil  
Quality Card?

## Notes About the Card Design

# ***About Participatory Learning***

- ❖ What is a farmer-conservationist participatory approach?
- ❖ What are the key features of a participatory farmer meeting?

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## What is a farmer-conservationist participatory approach?

To design the Soil Quality Card, farmers and NRCS work in close collaboration using a participatory approach. The type of farmer involvement in this approach goes far beyond the formal public participation procedures often required by local, state, and Federal agencies. It allows farmers and conservationists to practice principles of participatory projects.

“And with the best leaders, when the work is done, the task accomplished, the people will say: we have done this ourselves.”

—Lao-tzu, *China, 4000 BC*

- **In participatory projects, farmers and conservationists learn from each other.** Combining your scientific knowledge and the life-long field experience of local farmers can improve soil conservation efforts and long-term productivity. Mutual respect between you and the farmers is essential for creating a co-learning partnership during the design of the Soil Quality Card.
- **Participatory projects seek multiple perspectives.** Different individuals and groups make different evaluations of situations. Inviting farmers who represent a wide range of cropping systems, sizes of farming operations, and philosophical approaches to farming to participate in the Card project utilizes this diversity of opinion to create a broadly accepted assessment tool.
- **Participatory projects are empowering.** The Soil Quality Card enhances the farmers’ research capability. The Card provides them with a practical tool to evaluate the impact of management treatments such as various tillage practices or crop rotations.
- **Participatory projects require broad and continuous involvement.** Farmers, Districts, and agency professionals are involved throughout the Card design process—from planning the Card to testing and distributing it. This broad and continuous involvement creates ownership and support for the Card.

 Page 33:  
Inviting farmer  
meeting participants

## What are the key features of a participatory farmer meeting?

A participatory farmer meeting is the central event during the design of a Soil Quality Card. The meeting consists of several steps and activities that will help you: (1) learn how farmers determine the impact of field management on soil quality; and (2) capture this information effectively. The steps involve a hands-on activity, “pin card” writing and analysis, a “sticky dots” activity, and a card format discussion.

 Appendices/Readings:  
Farmer-scientist focus  
sessions: A how-to  
guide

The hands-on activity is a facilitated discussion about soil samples that are arranged on tables. Farmers share their experience in evaluating the effects of soil management on soil quality while looking at, feeling, and smelling the soils. “Pin card writing” and “Pin card analysis” asks farmers to write on large pin cards (pieces of paper) the soil quality indicators that they would use in their fields. These pin cards are then posted on the wall and analyzed by the entire group. “Sticky dots” is a technique in which farmers receive a number of self-adhesive color dots that they place on the soil quality pin cards they prefer. This activity narrows the list of soil quality indicators for the local Card. It also forces clarification of the meaning of each indicator during the discussion that follows the vote. A Card format discussion is used to determine Card layout, a scoring system, and other features of the Soil Quality Card. If more than ten farmers attend the meeting, break-out groups are formed to discuss Card format issues in depth.

The selection and order of activities during the farmer meeting are based on six important principles of adult learning:

- **Adults have a variety of learning styles.** Adults learn and process information in different ways. Some people need to see the information, some need to hear it, while others have to experience a situation. Similarly, when processing information, some people prefer activities that allow them time to reflect, and others need opportunities to apply what they have learned.
- **Adults learn best in an atmosphere of active involvement.** Participatory activities support the motivation to learn, and they encourage creative problem solving. Participatory activities are also a way of “leveling the playing field” in a group.
- **Adults have experience and can help each other learn.** Giving adults an opportunity to share insights greatly increases the total pool of knowledge and supports everyone’s learning.
- **Adults learn best in an informal atmosphere.** A familiar place and discussions of topics that relate to the participants’ jobs and interests often create an environment conducive to learning.
- **Adults are voluntary learners.** Adults perform best when they attend a session for a specific reason; they need to know why a topic or activity is important to them.
- **Adults learn best when they have control over and responsibility for the learning process.** Creating opportunities for participants to be part of the planning and implementation of a project greatly increases the chances for successful team interaction and a shared sense of ownership in project outcomes.

# ***Preparing the Soil Quality Card Team***

- ❖ Creating in-state support
- ❖ Identifying the Soil Quality Card team
- ❖ Training the Soil Quality Card team

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## Creating in-state support

When developing a Soil Quality Card, you will need support from several groups, including:

- NRCS management staff, who provides resources and support;
- A team of people who implement the Card design process;
- Local contacts, such as field conservationists, local Extension agents, and SWCD members, who help plan and carry out a farmer meeting; and
- Sponsors, such as the SWCD, Cooperative Extension Service, Farm Bureau, or agribusiness, who contribute to Card production and marketing.

The success of designing Soil Quality Cards depends on the commitment of all these players. Make sure everyone knows why they are involved and what their roles and responsibilities are. When recruiting supporters, sponsors, and local contacts for the Card project, emphasize the benefits to each group. Make an effort to inform the various groups about your activities, and invite them to participate in planning meetings or in Card design activities with the farmers.

 Page 8:  
What are the uses  
and benefits of a  
Soil Quality Card?

## Identifying the Soil Quality Card team

The first step in Card design is to assemble a team who will plan and conduct the design process. A team consists of (1) a core group of three to five people; and (2) a support group of local field conservationists, Extension agents, and/or SWCD officials. If multiple Cards are developed in the state, the core group works with different support groups in different parts of the state. In other words, the core group coordinates the design of all Soil Quality Cards in the state, and the local contacts change with each Card. Testing the process in several states showed that the following professionals have the skills necessary to form an effective Card team:

- NRCS Field Conservationists
- NRCS State Agronomist
- NRCS State Public Affairs Specialist
- NRCS State Resource Conservationist
- NRCS State Soil Scientist
- NRCS RC&D Coordinator
- SWCD Officials
- Local Extension Agent
- Facilitators

 Page 9:  
What are the key  
principles of a  
Soil Quality Card?

Individual abilities are an important consideration when selecting Card team members. Individuals directly involved in the development of the Card must be willing to work as part of a team and to learn from farmers.

Many different skills are needed to carry out Card design. For example, facilitation and recording are essential for conducting an effective farmer meeting, and desktop publishing and editing are needed to produce the Card prototype. Not all skills need to be represented on the Card team. You can use outside help to assist with some tasks. However, when doing so, make sure that the persons you bring in are fully aware of the project objectives and participate in the Card team training described in the following paragraphs.

One or more team members need to assume leadership responsibilities to coordinate the overall design process. The leaders should be broadly trained individuals. They should be familiar with working with farmers and have a well developed understanding of the dominant farming systems, field management practices, and natural resource conditions in the area selected for Card design. The leadership can come from any of the professionals listed above; however, keep in mind that extensive experience in working with farmer groups is essential to this role.

Field conservationists, local Extension agents, or SWCD officials can be very helpful during the development of Soil Quality Cards, because they work directly with farmers and know local field conditions. They may be on the Card team for the development of several cards or work with the Card team on the development of one Soil Quality Card for a particular part of the state.

## Training the Soil Quality Card team

 Use the sheets that separate the chapters in this Guide to produce overheads for use during training.

Training in Soil Quality Card design is offered to NRCS employees and partners by the NRCS Soil Quality Institute. Individuals who participate in these training sessions then pass on the information to other members of their Card team.

Training of Card teams will differ between states, depending on the skills of participating team members. The following suggestions will help you to structure an effective training session:

- Plan on at least one full day of training.

Training suggestions continued:

- Ask trainees to come prepared: distribute the Guide or important sections of it for them to read in advance. However, remember that training activities and discussions are necessary; simply reading sections of this Guide will not provide adequate preparation for an untrained design team.
- Cover all of the topics outlined in *Part One* of this Guide. Make sure everybody clearly understands: (1) what a Soil Quality Card is, including purpose, benefits, and uses; and (2) how the Card is created, emphasizing the farmer-conservationist participatory approach.
- Minimize lectures and maximize experiential learning activities to model the participatory nature of the project. Practice facilitation sessions are very helpful.
- Use Soil Quality Institute training materials in the appendices of the *Tool Box* to prepare your team.

 Appendices:  
Take-home training  
materials



# ***Planning the Design of a Soil Quality Card***

- ❖ Setting a time line
- ❖ Adapting the design process to your needs

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## Setting a time line

Setting a time line is the first task for you and the Card team. The Soil Quality Card process—from initial farmer meeting to final Card production—can be accomplished in less than one year. The major steps of the process suggest a certain time line. The farmer meeting is most appropriately held during times when it conflicts least with farming activities. In most regions of the United States, the most opportune time is during the winter months. Depending on the dominant cropping system in a particular region, other months may be feasible. Creating the Card prototype should be done as soon as possible after the farmer meeting. Enthusiasm and important ideas generated during the meeting may be lost if several weeks pass between the meeting and the drafting of the Card. Card field testing is best accomplished during the growing season, since soil quality indicators often include the condition of the crops. Revising and production of the final Card can be done after the growing season. Marketing and distribution of the Card follow final Card production.

 Page 13:  
What are the major steps in Soil Quality Card development?

An example of a typical time line is as follows:

Oct.	Nov.-Dec.	Jan. -Feb.	March-Aug.	Sept.	Oct.	After Oct.
<ul style="list-style-type: none"> <li>Assemble and train Card team</li> </ul>	<ul style="list-style-type: none"> <li>Plan farmer meeting</li> <li>Invite participants</li> </ul>	<ul style="list-style-type: none"> <li>Conduct farmer meeting</li> <li>Create Card prototype</li> </ul>	<ul style="list-style-type: none"> <li>Field test Card prototype</li> </ul>	<ul style="list-style-type: none"> <li>Integrate feedback &amp; finalize Card</li> </ul>	<ul style="list-style-type: none"> <li>Produce and print Card</li> </ul>	<ul style="list-style-type: none"> <li>Market, distribute Card</li> <li>On-going Card support</li> </ul>

## Adapting the design process to your needs

The basic steps in Card design—preparations, farmer meeting, field testing of a Card prototype, and Card production—are the same in each location. This Guide outlines basic activities; however, you may also find that you need to modify these activities to fit the unique conditions and resources in your state or district.

When you create an action plan during the preparation phase of the project, focus on the people who will participate directly and indirectly in Card design. First, establish clear tasks for all Card team members. Then, create a list of individuals or groups whose support is needed in Card production, marketing, and distribution.

If you modify the Card design process or certain activities, keep in mind that this is a collaborative project involving both the agency and farmers,

with the goal of creating a soil quality assessment tool *for farmers by farmers*. Any modification of the farmer meeting or other design activities should take the following process elements into consideration:



Page 19:  
What are the key  
features of a  
participatory farmer  
meeting?

- Offer a diversity of activities that apply to various learning styles.
- Include participatory activities.
- Encourage sharing of experience among participants.
- Select a setting that relates to participants' own tasks or jobs.
- Clearly explain the purpose, process, and desired outcomes of activities.
- Share control of the learning process with participants.

# ***Preparing the Farmer Meeting***

- ❖ Selecting a farmer meeting location
- ❖ Inviting farmer meeting participants
- ❖ Assigning Soil Quality Card team roles for the farmer meeting
- ❖ Reviewing the farmer meeting protocol
- ❖ Preparing supplies and soil samples
- ❖ Reviewing the farmer meeting preparations

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

A farmer meeting is the first major activity in Card design. The meeting (described in “Farmer meeting step-by-step” in *Part 3* of this Guide) is designed for 10 to 15 farmers plus 4 to 6 members of the Card team. In preparation for the meeting, you need to select a location, invite participants, assign tasks to the Card team, and review the farmer meeting protocol.

 Page 37:  
Farmer meeting  
step-by-step

## Selecting a farmer meeting location

Because farmers are the key participants in this meeting, select a meeting site that is centrally located and easily accessible to them. Consider holding the meeting on the farm of one of the participants. Other possible locations include community centers, local restaurants, or local agency meeting rooms.

The meeting room should accommodate up to 20 people in a seating arrangement that allows interactive group discussion. Sufficient wall space will be needed to post flip charts and large pin cards. If more than ten farmers attend, either the meeting room will have to be large enough to accommodate two break-out groups or an additional room will be necessary. The meeting facility should also be suited to serve the meal the sponsors will be providing.

 Page 87:  
Seating arrangements

## Inviting farmer meeting participants

- **Invite farmers who represent a diversity of farming systems .** Consider inviting farmers whose operations vary in size, major crops grown, and philosophical approaches to farming. Multiple perspectives will enrich the discussion and ensure a more comprehensive Soil Quality Card.
- **Start inviting farmers six to eight weeks before the meeting. Follow up with a confirmation before the meeting.** Local field office staff, Conservation Districts, and Extension agents working closely with farmers can be very helpful in making contacts. Initial direct contacts should be followed immediately by a written invitation and by a confirmation phone call two to three days before the meeting.
- **Contact at least 25 farmers.** The ratio of farmers invited to farmers attending depends on many factors, including personal rapport between farmers and Card team members, farmers’ interests and concerns about

soil quality, scheduling, or incentives (such as meals, financial compensation for travel and attendance, or learning opportunities). A good rule of thumb is to invite twice the desired number of farmers. Because of the uncertain circumstances of farming, you can expect that only about two-thirds of the farmers who confirm their commitment two to three days before the meeting will actually attend.

✓ **Make sure non-farmers don't outnumber farmers at the meeting.**

- **Limit the number of non-farmer participants.** Additional participants to be invited include the Card team members and others who contribute to the design process and Card production. Aim for a ratio of two-thirds farmers to one-third non-farmers. If, for example, you are certain that 12 farmers will attend the meeting, arrange for no more than six non-farmers. The roles of the Card team and other participating non-farmers are discussed below.

## Assigning Soil Quality Card team roles for the farmer meeting

A number of roles have to be filled during the farmer meeting. These include:

- Facilitator
- Recorder
- Process observer
- Specialist (in soils and/or agronomy)

➔ Page 82:  
Roles in  
participatory  
meetings

Review “Roles in participatory meetings” in the *Tool Box* to make sure that each person assigned with a certain role is comfortable with the task and has the necessary skills. When more than ten farmers participate (which is desired), you will need to form two groups for the Card format discussion, which is described in “Farmer meeting step-by-step.” In this case, the team will require two facilitators, two recorders and two process observers. The facilitators should possess a well developed knowledge of local conditions and farming systems; expertise in soils is helpful but not imperative. Specialists, such as soil scientists, conservationists, and/or agronomists, who participate in the meeting can contribute to (*but not dominate*) the discussion with their technical expertise when needed and act as process observers at the same time.

## Reviewing the farmer meeting protocol

Discuss with the team each activity outlined in “Farmer meeting step-by-step.” It is helpful to practice each activity during a dry-run meeting a day or so before the actual meeting. During the dry run, assign some of the team members the role of farmers, while the facilitators and recorders practice their tasks. Discuss worst and best case scenarios for the meeting, such as: (1) an unexpected low number of farmers attends the meeting; (2) the primary facilitator is unable to be at the meeting; (3) the meeting is strongly dominated by a small group or an individual (farmer or specialist); or (4) disruptive side conversations develop.

✓ Conduct a dry-run meeting to become familiar with each farmer meeting activity.

While planning the farmer meeting, review the section in the Guide on “Creating a Soil Quality Card prototype.” This will prepare you for the tasks that immediately follow the farmer meeting. Being clear about the next steps will help the facilitators ask the right questions and help the recorders focus their efforts on capturing all relevant information.

➔ Page 49: Creating a Soil Quality Card prototype

## Preparing supplies and soil samples

Before the farmer meeting, you need to obtain some supplies that may not be readily available in every office. Check the “Farmer meeting supplies checklist” in the *Tool Box* to make sure the necessary supplies will be available for the meeting.

➔ Page 92: Farmer meeting supplies checklist

Among the supplies are several large soil samples, which are used during the “Hands-on activity.” The samples should show impact of field management treatments, such as tillage, cover cropping, crop rotation, or machine passage. Preferably, the samples are 12” deep, shovel-size, and complete soil profiles with surface vegetation and root ball intact. Present two to three pairs of soil, representing different soil types. Within each pair, soils should show different management regimes. Collect sample pairs from adjacent fields under different management practices, or dig one sample inside a heavily managed field and the other just outside the field (near the fence line or field border). Make sure you prevent the soils from drying out.

Ask farmers to bring soil samples from their farms or gather the samples yourself. Asking farmers to bring their soil samples usually results in a lively discussion and fosters the desired open exchange of ideas. However, there are certain risks. Farmers may not find the time to dig the samples as promised, or they may forget them at home. Or you may end up with samples that do not create the desired type of discussion.



This will occur if all samples are from the same soil type or do not show different management regimes.

Bringing the soil samples yourself will give you more control during the “Hands-on activity.” However, the facilitator may have to engage the farmers more actively in the discussion.

## **Reviewing the farmer meeting preparations**

Check the following items before the farmer meeting:

- Meeting location and rooms are selected and secured.
- Farmers are invited: initial contact was followed by a written invitation and phone call to confirm participation.
- Other participants (Extension, SWCD, NRCS) are invited.
- Roles of Card team members and other non-farmer participants are assigned.
- Farmer meeting protocol has been reviewed.
- Farmer meeting activities are clearly understood and preparations for them are complete.
- Soil samples are gathered.
- Supplies are in place.
- Meal, snacks, and beverages are arranged for.

# ***Farmer Meeting Step-by-Step***

- ❖ Setup
- ❖ Meeting introduction
- ❖ Hands-on activity
- ❖ Pin card writing
- ❖ Pin card analysis
- ❖ Sticky dots
- ❖ Meal break
- ❖ Card format discussion
- ❖ Meeting closure

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

A meeting with farmers is the first major step in the design of a Soil Quality Card. Listed below is a set of nine steps that will help you learn how farmers determine the impacts of field management on soil quality and how you can capture this information effectively. A “Farmer meeting protocol” (a short version of the nine steps) can be found in the *Tool Box*. The Card team can use the protocol as a guide and quick reference during the meeting. Also in the *Tool Box* is a “Farmer meeting preparation sheet” to adapt meeting activities to your needs and resources.

 Page 93:  
Farmer meeting  
protocol

 Page 95:  
Farmer meeting  
preparation  
sheet

## 1. Setup

The activities during the farmer meeting are designed for interactive learning among the farmers and between the farmers and the Card team. These activities require a more involved setup than standard discussion or information meetings. Chairs and tables need to be arranged in a suitable configuration, and supplies need to be arranged in advance.

**Objective:** To prepare farmer meeting activities and location

**Time:** 30 minutes

**Procedure:** Arrange seating for interactive group discussion

Arrange necessary supplies

### *General Office Supplies*

- Signs that direct participants to the meeting facilities
- Participant sign-up sheet
- Name tags
- 2 flip charts with easels
- Color marking pens - several dark colors, wide tip
- Mounting tape or pins to display pin cards on walls
- Pens for all participants - wide tip, dark colors
- Tape recorder and C-90 tapes (optional)

### *Special Supplies for Meeting Activities*

- Prepared introductory statement for “Introduction”
- Soil samples on tables for “Hands-on activity”
- Water and paper towels for hand cleaning
- Pin cards for “Pin card analysis”; 3 cards per participant plus 20 extras. Pin cards should be light colored, 11”x17”cardstock (use open faced manila file folders)
- Prepared example pin card(s)
- Self adhesive color dots for “Sticky dots” activity; 3 to 5 adhesive dots per participant

 Page 87:  
Seating  
arrangements

- 
- Prepared flip charts for “Format discussion”

*Refreshments*

- Supplies for coffee, snacks, beverages
- Supplies for meal break

## 2. Meeting introduction

The introduction sets the stage for the meeting. It is essential to clearly explain the purpose, process, and expected outcomes of the day. You may ask a farmer or Conservation District official to give the initial introduction. He or she would have to be prompted with the appropriate information before the meeting. Having this person kick off the meeting adds validity to the meeting, demonstrates the collaborative spirit of the project, and makes other participating farmers more comfortable.

**Objectives:** To clarify the purpose of the meeting  
To build rapport and encourage active participation  
To identify the range of farming systems represented

**Time:** 15 minutes

**Staff:** 1 facilitator

**Materials:** Prepared introduction/purpose statement

**Procedure:** Explain why this meeting is being held; the introduction statement can be modeled after the *Tool Box* sample. Ask farmers to introduce themselves and their operation. Ask non-farmers for a short self-introduction. Summarize the main activities and explain the participatory nature of the meeting.

**Tips:** Emphasize that this is a discussion about changes in soil quality due to field management (and not soil type). This point usually has to be repeated several times. You may show Cards developed by other farmer groups to clarify the purpose of the meeting.

➔ Page 96:  
Farmer meeting  
introduction sample

➔ Appendices:  
Soil Quality/Health  
Cards

### 3. Hands-on activity

This activity consists of a facilitated discussion about soil samples arranged on tables. The best location for this activity is outside or in a room where the floor can be protected. An alternative to using soils on a table is to discuss soil quality issues while walking across fields. Use the same prompting questions as described below. If you are outside, be sure all participants can hear the discussion and have an opportunity to speak.



- Objectives:**
- To encourage farmers to share their experiences in evaluating the effects of soil management
  - To improve non-farmer understanding of farmer terminology
  - To record first set of soil quality indicators for the Card

**Time:** 30 minutes

**Staff:** 1 facilitator, 1 recorder, 1 process observer

**Materials:** Soil samples on table(s): 4-6, 12" deep, shovel-size, complete soil profiles (with surface vegetation and root ball intact) from various soil management regimes; preferably several paired soils of the same soil type under different management.

Hand cleaning towels and water

**Procedure:** Around tables, prompt discussion among farmers about soil quality assessment and effects of management.

Use open-ended questions such as:

- What do you see/feel/smell in these soils?
- How did management affect soil quality in these soils?
- What soil differences do you see in your field?
- How do you determine soil differences?

The recorder records soil quality indicators and descriptive terms mentioned during this discussion either on a flip chart or informally in a notebook.

**Tips:** Encourage farmers to use all senses when evaluating the soil samples: looking, smelling, feeling, tasting. You may have to start the process by breaking the soil samples apart. Make sure the tables are large enough for all farmers to actively participate.

➔ Page 82:  
Roles in participatory meetings

➔ Page 35:  
Preparing supplies and soil samples

➔ Page 79:  
Asking questions that facilitate learning

## 4. Pin card writing

Example of a completed pin card:

Soil structure  
+ breaks apart easily  
o some tightness  
- cloddy  
Before spring tillage

During this activity, farmers are asked to write locally useful soil quality indicators on **three pin cards**. On each pin card, farmers write **one indicator** and terms that describe a range of conditions (levels) for that indicator. Three levels of descriptions are usually adequate. In addition, farmers write the preferred time of day, season, or year to assess the indicator.

**Objectives:** To list a large set of soil quality indicators  
To give every farmer an opportunity to participate

**Time:** 20 minutes

**Staff:** 1 facilitator, 1 recorder, 1 process observer

**Materials:** Pin cards and pens  
1-2 example(s) of pin card(s)  
Instructions for pin card activity posted on wall

**Procedure:** Hand out pens, pin card templates; explain the activity.  
Show/explain example pin card and post it on the wall.  
Collaboratively decide on appropriate terms for levels of descriptive terms (for example, “- : 0 : +” or “poor-medium-good”).  
Review the basic rule of pin card writing: all ideas are welcome and will not be judged.  
Encourage farmers to reflect on and use indicators and descriptive terms mentioned during the soil sample activity.  
Start pin card writing.

**Tips:** You can use an example pin card that uses indicators and descriptive terms unrelated to soil quality.  
At first, this activity may seem foreign, and you may have to explain it more than once.  
Allow farmers to write more than three cards and/or to work together in groups of two or three, if they wish.

➡ Page 97:  
Pin card template

Take a short break after pin card writing, if necessary.

## 5. Pin card analysis

During the pin card analysis, farmers start to select soil quality indicators and descriptive terms that will be featured on the prototype Soil Quality Card. Pin cards are posted on the wall, sorted into clusters of related indicators, and discussed one-by-one.

**Objectives:** To discuss the meaning of the suggested indicator and descriptive terms

To select locally useful soil quality indicators

**Time:** 60 minutes

**Staff:** 1 facilitator, 1 recorder, 1 process observer

**Materials:** Pins or tape  
Flip charts on easels

**Procedure:** Collect pin cards and tape or pin each one on the wall.

Group pin cards: determine doubles; sort loosely into clusters of pin cards with similar content.

Collaboratively determine clusters: **discuss each pin card** with participants, ask group for permission to lump into clusters or break out pin cards.

Encourage farmers to write new pin cards if additional indicators & terms are suggested during the discussion.

Collaboratively determine appropriate indicator name and descriptive terms for each indicator cluster.

**Tips:** The initial clustering of pin cards by the facilitator and assistant speeds up the process considerably. However, keep your own biases in mind, and don't "over-cluster" before farmers give permission.

Be careful not to force certain pin cards into an existing cluster.

Because this is a key activity in the process of developing a Soil Quality Card, invest as much time as needed until clarification and grouping of the pin cards is complete.

## 6. Sticky Dots

Sticky dots is a technique in which meeting participants receive a number of self-adhesive, color dots, which they place near the item they prefer. The “vote” will help later to decide which indicators to include in the Card. At the same time, it demands participants’ active engagement in the process and forces clarification during the discussion that follows the “vote.”

**Objectives:** To further clarify meaning of the suggested indicators  
To narrow the list of indicators and descriptive terms

**Time:** 45 minutes

**Staff:** 1 facilitator, 1 assistant, 1 recorder, 1 process observer

**Materials:** Sticky dots

**Procedure:** VOTE I: Explain sticky dot activity and distribute color dots: each participant receives 3-5 dots (approx. one dot for every ten indicator pin cards).

Ask participants to place dots on pin card clusters they prefer (e.g., all dots on one cluster or distributed over several clusters).

After vote is complete, ask farmers to analyze dot distribution; prompt discussion using open-ended (e.g., What do you see?) and specific questions (e.g., Why did indicator cluster “y” receive only “x” votes?).

Determine whether vote and discussion change the list of indicators or descriptive terms; re-cluster if necessary.

VOTE II (OPTIONAL): Determine 4-6 top vote getters from Vote I; tally on separate paper; move them to another wall.

Vote on remaining indicators by hand; 1 vote/person.

Discuss vote; determine whether vote and discussion change the list of indicators or descriptive terms (re-cluster if necessary).

**Tips:** Different color sticky dots can be used to show differences in voting between groups of farmers. For example, vegetable farmers may receive sticky dots of one color

while tree fruit farmers may receive dots of another color. Be careful not to divide the group into categories that imply a value judgment (e.g., sustainable versus conventional).

To avoid bias toward clusters that receive many votes from the farmers who vote first, you can number the clusters, and ask farmers to write the number of the desired clusters on the dots before they get up to vote.

## 7. Meal break

After more than 2.5 hours, a substantial break is necessary. A hosted meal is an incentive for farmers to participate in the meeting and provides an opportunity to mix informally.

**Objectives:** To refresh  
To build rapport and exchange ideas informally  
To review the course of the second part of the meeting

**Time:** 45 min.

**Procedures:** Mix with farmers informally during the meal  
Meet with facilitation team to assess the progress of the meeting  
Adjust the course for the remainder of the meeting

**Tips:** Adjustments for the remainder of the meeting are only necessary if you think:

- the pin card activity and subsequent discussions did not yield a large enough number of indicators for the Soil Quality Card, or
- there is still a lot of confusion about the listed soil quality indicators, and clarification is necessary.

If one of these two conditions is met, the subsequent format discussion has to be shortened, and more time must be spent on generating additional or clarifying existing indicators and descriptive terms.

Do not allow the meal break to extend for too long. Some participants may lose interest and leave the meeting before it is complete.

✓ **Shortening the farmer meeting:**  
**The farmer meeting steps and time line described here have been implemented successfully many times. However, you may be able to shorten the meeting. Consider, for example, :**

- Eliminating the meal break (taking several short breaks instead)
- Skipping the sticky dots activity
- Using Cards (or certain Card features) developed by other farmer groups as templates throughout

## 8. Card format discussion

Participants discuss various design features of the Card during the format discussion. You may show examples of farmer-developed Cards before participants are separated into two groups (minimum 4 farmers each). A facilitator and a recorder will guide each break-out group discussion.

**Objectives:** To determine Card layout and scoring system

**Time:** 75 minutes

**Staff:** 2 facilitators, 2 recorders, 2 process observers

**Materials:** 1-2 examples of Soil Quality Card(s)  
Prepared flip charts (see below)

**Procedures:** Hand out examples of Soil Quality Cards developed in other states or regions and ask farmers to study them. Discuss adaptability of these Cards to local conditions (Optional).

Break into 2 groups (min. 4 farmers in each group).

Group 1: Use *prepared flipcharts* from set 1 (see below) to discuss Card features and layout.

Group 2: Use *prepared flip charts* from set 2 (see below) to discuss an indicator scoring system.

Decide on recommendations and group speaker; ask each group spokesperson to report recommendations to all meeting participants.

**Tips:** Showing other farmer-developed Soil Quality Cards has advantages and disadvantages. It gives farmers ideas about format, layout, and other Card design features; however, it can also limit farmers' creativity.

You may not reach consensus on all points of discussion. Make sure that you capture in writing why the local farmers prefer one way of formatting over another so that final formatting decisions on topics such as Card size or materials are based on real issues.

Write questions listed in Flip Chart Set 1 and 2 on the top of consecutive flip chart sheets (leave 2-3 blank sheets between the prepared sheets to capture the discussion). Use the issues listed in *italics* to prompt the discussion. It is not necessary to write issues on the flip chart.

### Flip Chart Set 1 - Card Features and Layout

1. What information should be featured on the Card?
    - *General information: date, field location, etc.*
    - *White space: observations, map of exact sampling location, etc.*
    - *Management activities: tillage, fertilizer, etc.*
    - *Other information: crop yield, soil test results, etc.*
  2. How many indicators should be on the Card?  
*Related to time farmers spend in the field for one assessment*
  3. What size, shape, and materials do you suggest for the Card?
    - *Physical size, shape, and materials in regards to how to carry the card, how to complete the card, how to file data, other considerations*
  4. How should the Card be organized?
    - *Number and binding of pages: single pages, multiple pages bound in booklet format, legal pad, loose leaf in 3-ring binder*
- her layout/format suggestions

g Step-by-Step

### Flip Chart Set 2 -Indicator Scoring System

1. What are the advantages/disadvantages of a scoring system in general?
  - *This question leaves the door open for farmers to accept or reject any type of scoring system.*
2. What types of scoring systems are available? What are their advantages and disadvantages?
  - *Self-designed system: every user designs his or her own system*
  - *Standardized system: same scoring system for every user*
  - *Scoring systems that differentially weigh different indicators*
3. What scoring system do you suggest for the local Card?
  - *Range of score: 1 to 3 or 0 to 9, other ideas*
  - *Display of scores: check boxes, write-in scores, other ideas*
  - *Connection of descriptive terms with scoring system: “good” equals a score of 10 and “poor” equals 0, other*
  - *Mechanism to total scores of all or certain groups of indicators*

## 9. Meeting closure

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This activity concludes the farmer meeting. Meeting outcomes are briefly reviewed, and everyone is given an opportunity to make final comments.

**Objectives:** To describe meeting accomplishments  
To prepare participants for future involvement  
To capture final feedback

**Time:** 15 minutes

**Personnel:** 1 facilitator; 1 recorder

**Materials:** 1 flip chart

**Procedure:** Summarize the list of soil quality indicators and Card format features.

Describe future activities and time line for:  
a) completing the prototype version of the Card; b) field testing; and c) final design and distribution of the Card.

Give all participants an opportunity to share impressions about the meeting outcomes and process.

Thank the participants for their time, ideas, and support.

**Tips:** Recording the final feedback is very important. In meetings, farmers often wait until then to offer their contribution or opinion. If recording on a flip chart seems too obtrusive, ask a recorder to capture the comments in a notebook.

# ***Creating a Soil Quality Card Prototype***

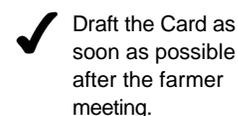
- ❖ Debriefing the farmer meeting
- ❖ Basic steps to create a prototype Soil Quality Card
- ❖ Reviewing the prototype and planning the field tests

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## Debriefing the farmer meeting

Creating a Card prototype means summarizing the farmer meeting discussion and converting the information into a preliminary Card. This is a very sensitive step during the design process, because personal biases can greatly influence the prototype design. Those trained in professional fields, such as agronomy or soil science, will find it tempting to modify farmers' phrases and expressions to more technical terms. However, remember that this product is *by farmers for farmers*. A key element in achieving this objective is to retain farmers' language and intent as much as possible.

It is critical to create the prototype Card as soon as possible after the farmer meeting, while Card team memories are still fresh. If possible, start this process with a debriefing session immediately after the farmer meeting. The objectives of the debriefing session are: (1) assessing the achievements of the meeting, and (2) assigning tasks to Card team members to complete



### Check list for assessing the farmer meeting

- Were you able to discuss all the topics in the protocol?
- Did all farmers contribute equally to the group discussion?
- Did the discussion lead to the desired number of soil quality indicators that will be featured on the Card?
- Did the farmers come to consensus on Card layout and format?
- Is another farmer meeting (with the same or another group of farmers) needed to fill obvious gaps?

the prototype.

Dealing with the issues that arise during the assessment of the farmer meeting will vary from case to case. Some strategies are described in the section, "Basic steps to create a prototype Soil Quality Card."

While assigning the tasks to the Card team members, gather and review all your sources of information, including pin cards, flip charts, notes by process observers, tapes, and Card team members' recollections. Assembling the prototype can be done by one or several members of the team. Several team members can share the tasks to ensure that less personal bias is introduced into the Card.

## Basic steps to create a prototype Soil Quality Card

The following list summarizes the ten steps to create a prototype Card from the farmer meeting discussion. Also included are issues to keep in mind and tips for each step.

✓ Retaining farmers' language is important; don't change farmers' phrases to technical terms.

1. **Summarize the farmer meeting information.** Information sources include pin cards, flip charts, notes, and discussions during the debriefing session that followed the farmer meeting.
2. **Organize the information into two broad categories:** (a) card content (soil quality indicators, descriptive terms, and other information to be displayed on the Card); and b) Card format (size, material, and layout).
3. **Determine the number of desired soil quality indicators.** What was the consensus? If unclear, farmers usually prefer 8-12 indicators for this type of soil quality assessment card.
4. **Name the soil quality indicators on which everybody agreed.** Use farmers' terms that best describe the clusters of pin cards for which a broad consensus was reached. The terms may seem awkward to trained specialists, but they should be retained.
5. **Select descriptive terms associated with the clearly defined indicators.** Most likely, you will not be able to use all of the terms provided by the farmers. Try to get a cross section of their suggestions for each indicator. See example in the margin.
6. **List indicators or indicator clusters and associated descriptive terms that were less clear.** This step is necessary, because the busy program of the farmer meeting may have not allowed complete clarification of all indicator pin cards.
7. **Name and select soil quality indicators and associated descriptive terms that will complete the Card.** Often soil quality indicators and descriptive terms are not clearly separated on farmers' pin cards. You may have to combine descriptive terms or select key descriptive terms to form an indicator. Retain the farmers' intent and language as much as possible.
8. **List and select additional information featured on the Card.** To what other types of information did the farmers want to link the soil assessment? Were they, for example, concerned about the influence of climate or field conditions on the assessment?

Example for selecting descriptive terms from a long list of suggestions:

Indicator: Crop condition  
Suggested terms:

(+) **vigorous plants**, healthy plants, green plants, not wilting, **no signs of stress**, uniform stand some yellow leaves,

(0) **some wilting plants**, stunted growth **some discoloration**

(-) yellow, wilting crop, purple leaves, **stunted growth**, not healthy looking, stressed looking, **uneven stand**

To get a cross section of farmers' suggestions, the **bold** terms were used in

9. **Determine Card layout.** Consider the concerns farmers expressed, such as how to carry the Card, how to complete the Card in the field, and how to file the Cards or transcribe the data to electronic format.
10. **Create the prototype Card.** A simple, easily accessible word processing program is best to produce the prototype Card.

## Reviewing the prototype and planning the field tests

Before the prototype Card is presented to a wider audience, you may decide to review it during a meeting with the Card team members. Consider inviting the farmers who participated in the initial farmer meeting. During the review of the prototype, the author(s) should present:

- What information sources were used
- How conflicting information was handled
- How farmers' suggestions and concerns were integrated into the Card
- Which indicators and prototype features need special attention during field testing

The prototype review meeting is also a good opportunity to plan the field tests. Discuss the purpose, target audience, and methods of field testing to decide on a plan of action. You will find the information on these topics in the next chapter.



# ***Field Testing***

- ❖ About field testing
- ❖ Field testing with farmers
- ❖ Field testing with agricultural support professionals
- ❖ Integrating field testing into NRCS activities
- ❖ Other methods of field testing the Soil Quality Card

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## About field testing

The purpose of testing the Card in the field is to capture feedback from farmers or other Card users to improve the prototype Card. In addition, the field test gives you an opportunity to capture new design ideas that emerge only when a complete prototype has been put together.



If you expect agricultural professionals, such as conservationists, Extension agents, or crop advisors to use the Card, conduct a few field tests with them. It is also a good idea to conduct field tests with people who had various levels of involvement in the design process. People who were not closely involved in the design will see the Card with fresh eyes and may suggest additional ideas to incorporate into the final version.

## Field testing with farmers

Ten to 15 one-on-one field tests with farmers, representing a variety of farming systems and learning styles, are usually sufficient to capture the necessary variety of input. If field tests with groups are conducted, then eight to twelve one-on-one tests should suffice.

Plan to spend 1-2 hours with each farmer. The length of the visit depends on the rapport between you and the farmer, involvement of the farmer in the development of the prototype Card, time constraints, and the farmer's enthusiasm about the Soil Quality Card project. Bring the prototype Card and a list of discussion items that you want to cover during each field test. Review the "Guidelines for conducting field tests" in the *Tool Box* and model your list of discussion items after the "Field test guide sample."

Since the goal is to develop a Card that farmers can use without training or instruction, a hands-off approach is recommended for the first part of the farm visit. Ask the farmer to use the prototype Card while you observe and record comments. Make sure the farmer understands that your interest is in the applicability of the selected soil quality indicators and the practicality of the Card design, and not in his or her evaluation and scoring of the soil. If possible, postpone a discussion on individual soil quality indicators or Card design until after the farmer has completed the Card.

➔ Pages 99-102:  
Field Testing  
Tools

✓ Field testing is a great opportunity to connect with land owners who previously have not been involved in conservation efforts.

✓ Test the Card with people who were involved in the design process **and** those who are not familiar with the project

## Field testing with agricultural professionals

Conservationists and agronomists will use the Card to communicate with farmers about soil quality issues and to discuss soil conservation alternatives. Conservationists and agronomists, therefore, need to understand Card design features and soil quality assessment procedures. To test the prototype, you can expand on the discussion items that you used with the farmers. Add items that address the use of the Card as a communication tool. Employ a hands-off approach similar to the one recommended for use with farmers. This technique will let agricultural professionals experience the use of the Card first-hand and produce insights and ideas for Card improvement.

## Integrating field testing into NRCS activities

Field testing can be integrated into any type of outreach effort. Consider combining field tests with farm visits when conservationists provide technical assistance. Other opportunities include farm tours or Conservation District meetings. Many opportunities exist to partner with Cooperative Extension Service or other state and Federal agricultural/natural resources agencies during the field testing phase of this project.

## Other methods of field testing the Soil Quality Card

One-on-one field tests will give you the most in-depth information; however, you also can test the Card with groups of people during farm tours, presentations, or other outreach efforts. Use an open-ended small group discussion as described above (Field testing with farmers).

Mailing prototype Cards to potential users accompanied by a feedback form (or checklist) is another way of field testing. (Customer survey activities by Federal agencies, including NRCS, are limited by the Paperwork Reduction Act. Contact your State Office administrative or public affairs staff for guidance.) Nonfederal Card sponsors, who find this method of benefit, should keep in mind that there will be no in-depth exchange of ideas about individual soil quality indicators. Without direct observation, it also will be difficult to troubleshoot problems associated with using the Card in the field. Timing of the mailing is crucial. Select a time of the year when users are able to carefully study the Card and fill out the feedback form thoughtfully. Keep in mind that the timing of mailing might be different for farmers and agricultural support professionals.



Page 69:  
Using the Soil Quality  
Card in NRCS activities

# ***Soil Quality Card Production***

- ❖ Final Soil Quality Card design
- ❖ Printing the Soil Quality Card

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

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## Final Soil Quality Card design

The key task during this step is to integrate the feedback from the field testing into the final design of the Soil Quality Card. A step-by-step process similar to “Basic steps to create a prototype Soil Quality Card” can be used.

1. **Separate the feedback information into two categories:** a) Card content (soil quality indicators, descriptive terms, and other information); and b) Card format (size, material, and layout). This step is already accomplished if you recorded the Card content and format feedback on separate note pages.
2. **Review feedback comments and redesign soil quality indicators and descriptive terms.** You may need to add indicators but try to stay within the range of the desired total number (8-12). Farmers’ understanding of the complex nature of soil quality also may require that soil quality indicators be expanded in scope or that separate indicators be combined.
3. **Design Card layout, including scoring system and write-in note space for additional information.** Field testing might reveal that farmers need space to record observations or the exact sampling location in a particular field. They may also want to record various field notes, such as tillage and fertilizer regimes or cropping sequence. You may need to make a priority list of all other Card design features. If a certain Card size is favored, it will become a determining factor for the number of features that can be included in a given amount of space.
4. **Decide how the Card will be organized.** The organization of the Card often will not be decided in the initial farmer meeting. It will be field tested on the prototype. What concerns did farmers express, and how can Card organization address these concerns? Consider the number and binding of pages (single pages, multiple pages bound in booklet format, legal pad, loose leaf in a 3-ring binder). The organization of the Card also needs to address how the Card will be distributed and used. For example, does the Card need to be in a format that allows users to photocopy the pages?
5. **Draft the Soil Quality Card.** Regular word processing software is preferable. If you use more sophisticated desktop publishing software, balance the need for an appealing design with the ability to easily modify and upgrade the Card at a later time.

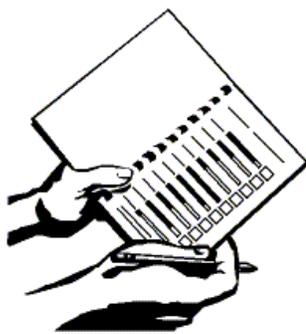


Visit the Soil Quality Institute Web site at: <http://soils.usda.gov/sqi> for clip art to use on your Card.

## Printing the Soil Quality Card

Before printing the Card, make sure the final design includes all relevant information. Items to remember include:

- Card user instructions
- Credits for people who were involved in creating the Card
- Credits for all Card sponsors; often logos of the organizations are used
- Non-discrimination statement, if NRCS funds are used for printing
- Availability statement that explains where and how interested people can obtain additional Card copies



Printing will vary from state to state and from Card to Card. However, a number of characteristics will have an effect on how the Card is printed and on its cost. These include:

- Size of paper (standard versus non-standard sizes)
- Type of paper (standard, cardstock, or write-in-rain)
- Type of binding to combine multiple pages
- Graphic design (photos, color, etc.)
- Number of Cards to be printed

The budget for Card production also depends on financial support from project partners. Co-sponsors such as Cooperative Extension Service, Conservation Districts, or state agencies may be able to print the Cards and provide support in marketing and distributing them. Partners who contribute to these efforts generally develop a greater sense of ownership for the Cards.

# ***Marketing, Distribution, and Support***

- ❖ Marketing the Soil Quality Card to farmers
- ❖ Marketing the Soil Quality Card to agricultural support professionals
- ❖ Distribution strategies
- ❖ Support strategies
- ❖ Developing an NRCS State Technical Note

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## Marketing the Soil Quality Card to farmers

Marketing promotes the Soil Quality Card to farmers and other potential Card users. It informs them about the purpose and availability of the Card. Your marketing strategy will depend on promotional opportunities and resources in your state or district. The following paragraphs list a range of possible marketing activities.

When marketing the Card to farmers you need to decide whether you want to reach as many farmers as possible in a short period of time or initially promote the Card among a select group. You can select different types of meetings, publications, and other media to market the Card. Consider, for example, a “Card roll-out meeting.” In this meeting, farmers who participated in the Card design can present the Card and discuss its benefits and uses with other farmers. A roll-out meeting can be part of other events such as a soil quality workshop or a Conservation District meeting.

Other opportunities to promote the Card include field days, conferences, and agricultural shows that are attended by farmers. At these events you can exhibit the Card in information booths or introduce it during presentations. Presentations also offer an opportunity to publicize the farmer-conservationist participatory approach that you implemented during the Card design process.

Printed materials are another important way of promoting the Soil Quality Card. Consider submitting articles to farmer newsletters, local newspapers, and to the agricultural press. A simple brochure or fact sheet, including information about Card development, use, and availability, is also a cost effective way of advertising your new product. Local radio and TV spots can complement your marketing strategy.

If local farmers and field personnel come from diverse ethnic backgrounds, consider translating the Card, support materials, and marketing materials into the appropriate language(s). This can be an effective way to reach many land managers.

## Marketing the Soil Quality Card to agricultural support professionals

Conservationists, Extension staff, and agricultural consultants learn about the Soil Quality Card through many of the same marketing channels as farmers.

### Marketing Activities:

- Roll-out meetings
- Conference presentations
- Agricultural show information booths
- Field days
- Farmer and agency newsletter articles
- Press releases
- Brochures
- Local radio/TV spots
- Your ideas :

✓ “¿Qué es un indicador bueno de las cualidades del suelo?”

Consider translating the Card and materials about the Card into the language that field managers speak.

Farmers and conservationists often attend the same agricultural shows, field days, and conferences. Their agricultural press readings also overlap.

A marketing strategy aimed specifically at agricultural support professionals needs to include information about the special uses and benefits for them. Consider integrating training on how (and how not) to use the Card during meetings of agency personnel. Creating publications specifically aimed at conservationists is another way of promoting the Soil Quality Card. Publications could include fact sheets, “how-to instructions,” or NRCS Technical Notes. Developing State Technical Notes is discussed below.

## Distribution strategies

Distribution and marketing of the Soil Quality Card go hand in hand. The meetings, field days, conferences, or agricultural shows that are used to promote the Card also offer opportunities to distribute it directly to farmers, conservationists, and others interested in soil quality assessment. Other channels of distribution include mailings and making the Card available at the local Conservation District, NRCS, and Extension offices.

You may want to distribute the Card first to select groups of people who work with farmers. These “multipliers” include the farmers who participated in Card design, NRCS field conservationists, Extension agents, Conservation Districts, Watershed Boards, RC&D Councils, agricultural consultants, and agribusiness field personnel.

If the size of the Card allows, consider creating a simple, folded brochure that includes a sample of the Card. The sample can be photocopied and mailed or handed out to large audiences.

The distribution strategy also depends on the involvement of co-sponsors in Card production. Co-sponsors, such as Cooperative Extension Service, Conservation Districts, RC&D Councils, commodity groups, or Farm Bureau, can use their existing distribution and marketing channels to promote and disseminate the Card.

✓ Don't forget to send a Card and a letter of appreciation to everyone who was involved in the Card design.

➔ Appendices:  
Soil Quality/Health  
Cards

## Support strategies

You can support your Soil Quality Card project in various ways. You have, in fact, already generated support by training a Card team and involving local conservationists and Extension agents in the Card's design. Consider training other agricultural professionals, such as consultants and conservation groups, in the use of Soil Quality Cards.

A guide that complements a Card is another possible support tool. In it, the soil quality indicators that are featured on a particular Soil Quality Card are discussed in detail (see text box). If you consider creating a guide, keep in mind that its development requires considerable resources for writing, editing, printing, and distribution. Because the purpose of the user guide is to integrate farmers' experience with scientific knowledge, both farmers and technical specialists should be involved in its development. Extension agents and specialists and NRCS agronomists and soil scientists are valuable resources. The Soil Quality Card Guide for the Willamette Valley in Oregon and a guide currently in development for Maryland can be used as models for local user guides in other states.

### The Willamette Valley Soil Quality Card Guide

Twenty-five Oregon farmers participated in three meetings that resulted in the development of the Willamette Valley (OR) Soil Quality Card. Farmers liked the idea of a user-friendly, do-it-yourself soil quality assessment tool. However, they felt that to make adjustments in field management, they needed additional information.

The Oregon Card team then developed a Card user guide that describes the farmer-selected indicators in detail. The guide explains why the soil quality indicators are important, discusses how field management may affect the indicators, and provides a range of methods for judging each indicator.

The guide effectively integrates farmers' field experience with scientific knowledge and has received much interest both in the farming and research communities.



Appendices:  
Soil Quality Card  
User Guide Sample

## Developing an NRCS State Technical Note

A State Technical Note is an opportunity to market and distribute the Soil Quality Card to NRCS personnel. You also can use the Technical Note as an educational tool to discuss how the farmer-selected soil quality indicators relate to technical definitions of soil quality. Other content can include a discussion of the types of collaboration between NRCS and farmers or how the Soil Quality Card project fits into strategies for outreach and locally led conservation activities. The following is a list of suggestions to structure the Technical Note in your state:

- Define what a Soil Quality Card is.

- 
- Explain the benefits and uses of the Card.
  - Describe potential misuses of the Card by NRCS personnel.
  - Document the development of one or several Cards (when? where? who? how?).
  - Attach all Soil Quality Cards developed in the state.
  - Discuss how farmers' soil quality indicators relate to technical definitions of soil properties and processes.

 Appendices:  
NRCS State  
Technical Notes

Use and adapt *Part 1: Overview* of this Guide for general information in your Technical Note. Reviewing the Technical Note examples in the *Tool Box* might give you additional ideas for developing your own document.

# ***Using the Soil Quality Card in NRCS Activities***

- ❖ Integrating the Soil Quality Card in conservation planning
- ❖ Supporting locally led conservation
- ❖ Tailoring the Soil Quality Card project to the EQIP Educational Assistance Fund
- ❖ The Soil Quality Card and FACA

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## Integrating the Soil Quality Card in conservation planning

The objective of NRCS conservation planning is to assist farmers and other clients in the sound use and management of natural resources. The Soil Quality Card is one of many tools that conservationists can use to achieve this goal. You can promote the Card as part of many NRCS conservation efforts and programs as long as you keep in mind that the Soil Quality Card is completed voluntarily by farmers to assess soil quality in the fields they manage.



By promoting the use of the Soil Quality Card among land managers, conservation planning and implementation will be more efficient. Farmers will be more involved in the inventory, evaluation, and follow-up steps of planning. They will be able to communicate natural resource concerns and problems more clearly and thus receive better technical assistance. In addition, farmers will be better equipped to evaluate management alternatives and resolve many issues themselves.

## Supporting locally led conservation

A Soil Quality Card project in your state or district is an opportunity to contribute to and support locally led conservation efforts. Both locally led conservation and the Soil Quality Card project are based on the principle that local people are best able to identify and resolve local resource problems. Locally led conservation is a four-step process in which local people: (1) assess conservation needs; (2) prepare an action plan; (3) implement the action plan; and (4) evaluate the results. The Soil Quality Card can play a role in each of these steps. For example, the Card can help in assessing a particular conservation need—such as improving soil quality—and thus shape the action plan that addresses that concern. Or, if farmers test alternative field management practices to address deteriorating soil quality, they can use the Card to evaluate their efforts.

✓ The Soil Quality Card project and locally led conservation are based on similar principles.

During the Soil Quality Card project, you collaborate with Conservation Districts, which coordinate locally led conservation efforts. You also work closely with other conservation groups and agencies and with technical committees within NRCS. These contacts open up communication channels that encourage sharing of experience and improve local conservation efforts, practices, systems, and tools.

The Soil Quality Card project also gives field conservationists and Conservation District members an opportunity to learn about soil quality in general and about specific soil quality issues in a particular area.

## **Tailoring the Soil Quality Card Project to the EQIP Educational Assistance Fund**

The purpose of EQIP Educational Assistance Funds is to fulfill the educational needs of producers to: (1) identify and understand natural resource and environmental conditions; and (2) plan, design, implement, operate, and maintain conservation practices and systems. Certain steps in the Soil Quality Card design process, such as the farmer meeting, clearly meet these criteria and may be eligible for EQIP educational assistance funds.

Both EQIP and the Soil Quality Card project encourage you to promote customer buy-in by employing locally adapted approaches that address the needs of farmers. In addition, both programs advocate resource sharing among cooperating education providers such as Cooperative Extension Service, Conservation Districts, private and non-governmental organizations, and NRCS.

## **The Soil Quality Card and FACA**

The Federal Advisory Committee Act (FACA) specifies regulations for committees that provide advice for Federal agency programs. The local farmer meeting groups do not meet these regulations. Consequently, the Soil Quality Cards produced from these meetings cannot be used by the agency to monitor progress toward compliance with NRCS program guidelines or to determine whether quality criteria in the Field Office Technical Guide are met.

# ***Evaluation and Revisions***

- ❖ Evaluating progress of the Soil Quality Card project
  
- ❖ Updating the Soil Quality Card

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## Evaluating progress of the Soil Quality Card project

The purpose of evaluating progress of the Soil Quality Card project is two-fold: (1) finding out how many and in what ways Cards are being used; and (2) assessing whether management changes and learning are occurring by using the Card. As a result of the evaluation, you may decide to reprint the Card, strengthen your marketing strategies, or revise the current version of the Card.

An initial indication of interest is the number of Cards that are requested by farmers and other users during trade shows, presentations, and in the offices that make them available. However, finding out exactly how many and in what ways farmers use the Cards is more difficult. Your best strategy might be to personally contact those farmers that were involved in the Card's development and ask about frequency of use. Their responses will allow you to estimate how many of the Cards distributed are actually used and whether changes in the current version of the Card are necessary. Consider organizing a follow-up meeting a year after the initial design meeting to collect feedback from the original group of farmers.

Reports from the “multipliers”—conservationists, Extension agents, consultants, and others who received the Soil Quality Card for distribution—are also sources of information regarding the Card's usefulness. A number of follow-up evaluation activities, such as phone surveys, questionnaires, or one-on-one interviews, can be conducted to find out how the Cards are used by farmers or other groups. To conduct these evaluation activities, apply the same guidelines as outlined in *Field Testing Tools*.

### Evaluation Activities:

- Documentation of Cards distributed
- Follow-up meetings
- Reports from “multipliers”
- Phone surveys
- One-on-one interviews
- Your ideas:

 Page 101:  
Guidelines for  
conducting field tests

## Updating the Soil Quality Card

As a result of the evaluation, you may decide to update the current Card. The revisions may involve changes in the indicators and descriptive terms or features of the Card's layout and format. Changes in indicators and descriptive terms may become necessary for several reasons. Frequent use of the Card may reveal that assessment of certain indicators is not satisfactory or feasible and, therefore, requires indicators to be improved, replaced, or eliminated. Adjusting indicators and descriptive terms may also be necessary as farmers' and specialists' knowledge of soil quality becomes more refined. For technical

assistance regarding soil quality indicators, contact the NRCS State Soil Quality Specialist, State Soil Scientist, State Agronomist, Regional Technical Team, or Cooperative Extension Service.

Because of the simplicity of most Soil Quality Cards, changing indicators and descriptive terms should not present a major obstacle. Introducing new layout and format features can sometimes be more difficult. Working with the Card team members who put the original Card together will make the task much easier.

# ***Group Communication Tools***

- ❖ Asking questions that facilitate learning
- ❖ Guidelines for active listening
- ❖ Roles in participatory meetings
- ❖ Seating arrangements

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## Asking questions that facilitate learning

A facilitator uses questions to gather information and to help people learn. The timing of the questions is important; asking the right question at the right time ensures participants stay on task and feel empowered. A skilled facilitator asks questions that systematically lead the learners through a three-step process:

- Describing the situation (what is?)
- Defining a goal or target (where do you want to go?)
- Determining the process to achieve the goal (how do you get there?)

Two types of questions can be used: (1) open-ended questions, also called non-directed or “grand-tour” questions; and (2) closed-ended questions, also called directed questions. Open-ended questions are used to allow the respondent to describe a situation and share with others his or her own experience. Closed-ended questions are used to obtain more specific information, probe responses from open-ended questions, and determine how to achieve particular goals.

### Open-ended questions

#### Open-ended questions :

- Reveal what is on the respondent’s mind.
- Leave open the direction of responses.
- Invite a wide range of answers.
- Cannot be answered with “yes” or “no” or with a number.
- Do not lead to predetermined answers.
- Are not ambiguous.

#### Questions to ask:

- Tell me about...?
- What do think/feel about...?
- What do you like/dislike about...?
- What have you observed at...?
- What was your experience about...?
- What else can you tell me about...?

#### Questions to avoid:

- Don’t you think that...?
- I suppose you feel that...?
- You must mean that...; isn’t that right?
- Why don’t you like...?
- How many...?
- Have you ever used...?

### **Limitations:**

Open-ended questions create responses that may have certain limitations, including:

- Type and amount of information can be extremely variable.
- Information is difficult to prioritize.
- Responses can be biased because of self-imposed pressure to satisfy.

### **Closed-ended questions**

**Use closed-ended questions to:**

- Obtain more specific information.
- Expand on responses.
- Consider alternatives to responses.
- Assess consequences and feasibility of the responses or suggestions.
- Follow up on words and phrases.

### **Questions to ask:**

What does this mean?

How would you...?

What would it take...?

How would...affect your response...?

What would be the effect on...?

What are the consequences of...?

What are other ways of doing...?

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## Guidelines for active listening

---

Active listening is an invaluable element of effective group communication, especially in co-learning and participatory projects. Active listening helps group participants build trust and convey respect for each other's knowledge and opinions. It also helps the group accomplish their tasks by identifying and summarizing each other's ideas.

Active listening consists of two key elements: (1) listening to and (2) supporting the speaker.

### Listening to the speaker:

- Listen to the entire statement before forming opinions about what the speaker is saying or before reacting in some other way.
- Listen for new ideas and unusual points.
- Listen for underlying tension or confusion.
- Try to understand the speaker's perspective and intention.
- Don't hinder the speaker by sending negative verbal or non-verbal messages.

### Supporting the speaker:

- *Acknowledge the speaker's contribution.*  
Communicate your understanding and acceptance with nods or expressions such as "uh-huh" or "mmm."
- *Invite others to tell their story.*  
Use expressions, such as "Tell me more." or "What else?," or open-ended questions to encourage the speaker to expand or continue expressing thoughts or feelings.
- *Paraphrase what the speaker said and felt.*  
Repeat in your own words the main points the speaker made, and ask for confirmation or clarification. Also include what you heard between the lines, such as tension or confusion.
- *Watch your body language and voice.*  
Convey with eye contact, facial expressions, gestures, and posture that you are listening and interested. Be aware that the tone of your voice also reflects your level of support and acceptance.
- *State responses in positive language.*

## Roles in participatory meetings

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The following pages summarize the roles, necessary skills, primary tasks, and guidelines for the participants in Soil Quality Card farmer meetings. The roles are:

- Group participant
- Facilitator
- Recorder
- Process observer
- Specialist

### Role of the group participant

Group participants in the farmer meetings include farmers, agency and district staff, Extension agents, and technical specialists. The role of group participants is to solve problems and make decisions.

**Necessary skills:**      Comfortable working in a group  
                                    Good listening and communication skills  
                                    Adequate background knowledge on the topic of  
                                    discussion

**Primary task:**            Contribute to the group effort.

**Guidelines:**              Listen to and respect the ideas of other participants.  
                                    Follow the group's ground rules.  
                                    Share your opinion.  
                                    Speak only for yourself.  
                                    Build on other participants' ideas.  
                                    Ask for clarification when needed.  
                                    Offer yourself as a resource to the group.  
                                    Facilitate other group members' understanding.  
                                    Take responsibility for group decisions.  
                                    Share meeting management responsibilities.  
                                    Help assure that the facilitator and recorder remain neutral.

---

## Role of the facilitator

The facilitator is the most visible member of the Card team. The facilitator's role is to manage group process, helping the group to work together productively without contributing his or her opinions or views.

**Necessary skills:** Comfortable and familiar working with a diversity of people and group activities

Good listening and communication skills

Adequate background knowledge on the topic of discussion

**Primary task:** Enable the group to accomplish meeting tasks.

**Guidelines:** Help the group members understand their roles as well as your role.

Be explicit about procedures; explain why an activity is necessary to accomplish a particular task.

Focus the group on the tasks.

Empower the group; help all individuals in the group to contribute to the discussion.

Create and maintain group enthusiasm and an atmosphere of trust.

Remain neutral; don't judge group members' contributions.

Promote good communication within the group.

Focus the group on solutions, not problems.

Share leadership with the group; give the group ownership in the process and outcomes of the meeting.

## Role of the recorder

A recorder accurately and legibly captures the group's comments and decisions on flip charts. This type of recording encourages participants to build on ideas of others, prevents repetition, and ensures that latecomers can catch up without interrupting the meeting.

**Necessary skills:** Good listening skills  
Good written and oral communication skills  
Comfortable and familiar working with group process

**Primary task:** Capture participants' comments to create a "group memory."

**Guidelines:** Listen for key words.  
Record accurately what is said.  
Record actual words/phrases of the participants, without paraphrasing.  
Write legibly:  
◇ Use large letters (>1.5").  
◇ Print letters; *don't use script*.  
◇ Use several pen colors (2-3 colors per page).  
◇ Use bullets, numbers, icons, and arrows.  
Ask for clarification when needed (without interrupting the flow of the discussion).  
Remain neutral.  
Don't contribute your own ideas without the group's permission.

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## Role of the process observer

The process observer watches the meeting to record characteristics, such as group dynamics, leadership styles, and participants' behavior. The observer reports observations to the group either during or after the meeting. Reporting during the meeting may allow immediate changes of specific behaviors that are counterproductive to the meeting's goals and tasks. Reporting after the meeting can help to improve future sessions. The process observer may also serve as timekeeper, signaling the facilitator when particular activities exceed the intended amount of time.

- Necessary skills:**
- Good listening skills
  - Good observation skills
  - Good written and oral communication skills
  - Comfortable and familiar working with group process
- Primary task:** Provide the facilitator and the group with feedback on group process
- Guidelines:**
- Record 3-5 meeting characteristics on a prepared notebook chart. Characteristics include:
    - ◇ Who participates and how often?
    - ◇ Are individuals or sub-groups dominating the discussion?
    - ◇ How are decisions made?
    - ◇ How often are participants unclear about the group activities?
    - ◇ How is conflict resolved?
    - ◇ How well do group members communicate with and listen to each other?
  - Remain neutral.
  - Remain inconspicuous.
  - Report your observations to the facilitator or to the Card team during breaks, without judging the group's effectiveness.
  - If the facilitator seems unaware of serious counterproductive behavior, communicate the problem to him or her via written notes or intervene briefly and respectfully.

## **Role of the “specialist”**

A specialist in a particular field (such as agronomy, soil science, or social science) acts as a resource person for the group. His or her contribution enriches the general discussion, enhances learning, and helps the group to carry out their tasks.

**Necessary skills:**

- Good listening skills
- Good communication skills
- Comfortable and familiar working with group process
- In-depth knowledge of the topic of discussion

**Primary task:** Act as a resource person for the group.

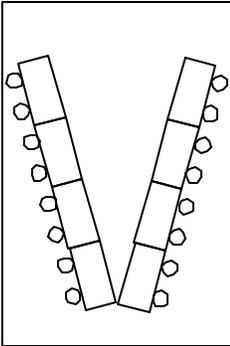
**Guidelines:**

- Assume a learning attitude.
- Respect group participants’ opinions.
- Assist the group in accomplishing their tasks.
- Contribute your expertise to the group discussion when needed.
- Be aware that your depth of knowledge is often matched by farmers’ breadth of knowledge.
- Remain neutral.
- Remain inconspicuous.

## Seating arrangements

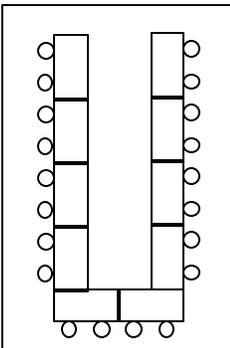
The seating arrangement in participatory meetings supports open discussion and interactions among group members. Consider the pros and cons of the following seating configurations:

### Open V



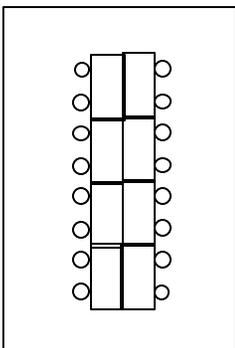
- Pros:
- ◇ All group members have eye contact with each other.
  - ◇ Facilitator can move among participants.
  - ◇ Facilitator has eye contact with all participants.
- Cons:
- ◇ Fewer people fit into the room.
  - ◇ Tables need to be rearranged for break-out groups.

### Hollow U



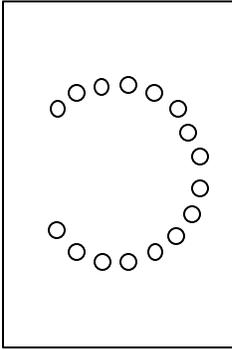
- Pros:
- ◇ Facilitator can move among participants.
  - ◇ Facilitator has eye contact with all participants.
- Cons:
- ◇ Not all group members have eye contact with each other.
  - ◇ Tables need to be rearranged for break-out groups.

### Conference Table



- Pros:
- ◇ Large table is useful for activities.
- Cons:
- ◇ Not all group members have eye contact with each other.
  - ◇ Sub-discussions often form and disrupt the meeting.
  - ◇ Tables need to be rearranged for break-out groups.

### Circle of Chairs (or Semi-circle)



- Pros:
- ◇ Facilitator and group members in same circle; no “top” position.
  - ◇ Everybody has eye contact with each other.
  - ◇ Little rearrangement necessary to break out into smaller groups.
- Cons:
- ◇ No space to work and place materials.
  - ◇ Openness may intimidate shy people.
  - ◇ Great distance between opposite group members (in large circles).

# ***Farmer Meeting Tools***

- ❖ Farmer meeting invitation letter
- ❖ Farmer meeting supplies checklist
- ❖ Farmer meeting protocol
- ❖ Farmer meeting preparation sheet
- ❖ Farmer meeting introduction sample
- ❖ Pin card template

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

## Farmer meeting invitation letter

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The following is a sample invitation letter to farmers. Keep the letter short, yet give farmers an overview of what to expect at the meeting.

Dear *[farmer's name]*:

Many farmers feel that lab tests tell only part of the story of productive soil. They talk about other factors that also affect productivity, like how fast water infiltrates, how easy the soil is to work, and how many earthworms it contains. Without an easy, standard way to assess these factors, farmers have had to guess whether the quality of their soil was improving or declining.

The *[district name]* wants to work with you and other farmers in our area to create a tool that will help you assess soil quality on your farm. Farmers, along with NRCS, Conservation Districts, and Cooperative Extension Service in other states have developed an assessment tool called the Soil Quality Card. We hope to develop a local card that would relate specifically to the soil conditions, farming systems, and management practices in our area. This card would be based on knowledge that you and other farmers have developed over a lifetime.

We would appreciate your help in developing a local card, since you have grappled with soil quality issues for some time. We are planning a farmer meeting in

*[Location]*

*[Date]*

*[Time]*

to decide what a local soil quality card could look like for our area.

We hope you will be able to attend. Your help will ensure that we create a card that is practical and useful for you and other farmers in this area. If you have any questions, feel free to contact me at *[your phone #, email address, mailing address]*.

## Farmer meeting supplies checklist

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### General Office Supplies

- Signs that direct participants to the meeting rooms (if needed)
- Participant sign-up sheet
- Name tags
- 2 flip charts with easels
- Flip charts and color pens (wide tip, several dark colors)
- Mounting tape or pins to display pin cards and flip charts on walls
- Self-adhesive color dots (3-5 per participant)
- Pens for all participants (wide tip, dark colors)
- Tape recorder and C-90 tapes (optional)

### Special Supplies for Meeting Activities

- Prepared statement modeled after the “Farmer meeting introduction sample”
- Soils samples\* (if farmers do not bring their own samples)
- Table for soils and a tarp (if needed for protecting the floor)
- Water and paper towels (to clean hands after hands-on activity)
- Shovel, soil probe, or other tools (if activity is conducted outdoors)
- Pin cards; light colored cardstock, preferably 11”x17”, or use open faced manila file folders (3 per participant + 20 extras)
- Sample pin card(s)
- Prepared flip charts modeled after “Flip chart template”

### Refreshments

- Supplies for coffee, snacks, beverages
- Supplies for meal break

\*Soils: 4-6 samples, 12” deep, shovel-size, complete soil profiles (with surface vegetation and root ball intact) under various soil management regimes; preferably 2-3 pairs of soil samples of the same soil types under different management.

## Farmer meeting protocol

Procedures	Your Notes
<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>• Introduce yourself; explain why the meeting is being held.</li> <li>• Ask farmers to introduce themselves and their operation; then ask non-farmers for a short self-introduction.</li> <li>• Summarize main activities; explain participatory nature of this meeting.</li> </ul>	
<p><b>Hands-on activity</b></p> <ul style="list-style-type: none"> <li>• Around table with soil samples, prompt discussion among farmers about soil quality assessment and effects of management.</li> <li>• The recorder records soil quality indicators and descriptive terms mentioned during this discussion for later reference.</li> </ul>	
<p><b>Pin card writing</b></p> <ul style="list-style-type: none"> <li>• Hand out color pens and pin card templates; explain the activity.</li> <li>• Show sample pin card; post example on the wall.</li> <li>• Collaboratively decide on appropriate terms for levels of descriptive terms.</li> <li>• Review the basic rule of pin card writing: all ideas are welcome and will not be judged.</li> <li>• Encourage farmers to review flip charts (if applicable) and build on indicators and descriptions mentioned during the previous hands-on activity.</li> <li>• Start pin card writing.</li> </ul>	
<p><b>Pin card analysis</b></p> <ul style="list-style-type: none"> <li>• Collect pin cards and tape each one to the wall.</li> <li>• Group pin cards; determine duplications; sort loosely into clusters of pin cards with similar content.</li> <li>• Collaboratively determine final clusters: <b>discuss each pin card</b> with participants; ask group for permission to lump into clusters or break out pin cards.</li> <li>• Encourage farmers to write new pin cards if new indicators and terms are suggested during the discussion.</li> <li>• Collaboratively determine appropriate indicator term for each cluster and appropriate descriptive terms for each indicator.</li> </ul>	

Procedures	Your Notes
<p><b>Sticky Dots</b></p> <ul style="list-style-type: none"> <li>• Explain sticky dot activity; distribute 3-5 color dots to each participant.</li> <li>• Ask participants to place dots on pin card clusters they prefer.</li> <li>• After vote is complete, ask farmers to analyze dot distribution.</li> <li>• Determine whether vote and discussion change the list of indicators or descriptive terms; re-cluster if necessary.</li> <li>• (Optional Vote 2) Determine 4-6 top vote getters from Vote I; tally on separate paper; vote on remaining indicators (one vote/person); discuss vote; determine whether vote and discussion change the list of indicators or descriptive terms; re-cluster if necessary.</li> </ul>	
<p><b>Meal Break</b></p> <ul style="list-style-type: none"> <li>• Mix with farmers during the meal.</li> <li>• Facilitator(s) and assisting staff meet to assess the progress of the meeting.</li> <li>• Adjust the course for the remainder of the meeting if necessary.</li> </ul>	
<p><b>Format discussion</b></p> <ul style="list-style-type: none"> <li>• (Optional) Hand out examples of farmer-developed soil assessment Cards and ask farmers to study them; discuss adaptability of these Cards to local conditions.</li> <li>• Break into 2 groups.</li> <li>• Group 1: <i>Use prepared flip charts</i> to discuss: a) information to be included on the Card and b) physical layout of the Card.</li> <li>• Group 2: <i>Use prepared flip charts</i> to a) discuss advantages/disadvantages of a scoring system in general; b) design 1-3 alternative scoring system(s); and c) decide on one scoring system.</li> <li>• Decide on recommendations and group speaker; ask each group spokesperson to report recommendations to all participants.</li> </ul>	
<p><b>Closure</b></p> <ul style="list-style-type: none"> <li>• Summarize the list of soil quality indicators and Card design features.</li> <li>• Describe Card production, testing, etc.</li> <li>• Ask participants to share impressions about the meeting outcomes and process.</li> <li>• Thank the participants for their time and ideas.</li> </ul>	

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## Farmer meeting preparation sheet

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Use this sheet to adapt meeting activities to your needs and resources. Copy if necessary.

<b>Activity</b>	
<b>Description:</b>	
<b>Objectives:</b>	<ul style="list-style-type: none"><li>•</li><li>•</li><li>•</li></ul>
<b>Time:</b>	
<b>Personnel:</b>	
<b>Materials:</b>	
<b>Procedures:</b>	
<b>Comments:</b>	

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## Farmer meeting introduction sample

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The farmer meeting introduction can be shared by more than one person. You may ask a farmer or Conservation District official to briefly address the group. A farmer meeting introduction should cover the following points:

- Who you are
- Why this meeting is being held
- What the desired outcomes of the meeting are

This is a sample introduction:

“Welcome and thank you for joining us today. My name is [*your name*]. I am [*your title and organization*]. You have been invited to this meeting so we can work together to produce a tool that farmers in our area can use to assess soil quality. We want a tool that relates to our area, is based on your experience with soils, and that’s easy to use. Farmers in other regions around the country are working with NRCS, Conservation Districts, and Cooperative Extension Service on what is called Soil Quality Cards. A Soil Quality Card is a practical, user-friendly tool that you can use to evaluate changes in soil quality. The main objective of these Cards is to give you information about the effects of practices on soil quality over time to help you make better management decisions.

Soil Quality Cards contain a number of indicators that local farmers use to evaluate soil quality. At today’s meeting we want to generate a list of the indicators that relate to your farming systems and get some ideas about how we might evaluate these indicators. We will first spend some time discussing how you determine the effect of management practices on soil quality in the field. Then we will break for [*the meal you planned*] and talk about what a local Card might look like.”

## Pin Card Template

Most effective when this model is used on an 11" x 17" card

# Soil Quality Indicator

Level 1 (least desirable)	
Level 2	
Level 3 (most desirable)	

# Time of Assessment

## Notes About Farmer Meeting Tools

# ***Field Testing Tools***

- ❖ Guidelines for conducting field tests
- ❖ Field test guide sample

✓ Copy the chapter headings (front page of this sheet) on an overhead transparency for presentations or training sessions.

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## Guidelines for conducting field tests

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Field tests are an integral part of the participatory process, reinforcing farmers' ownership of their Card. To achieve this goal, testing requires a carefully planned and sensitive approach. Guidelines to conduct effective field tests include:

### **Use a field test guide.**

A field test guide is a checklist of important topics to cover during the tests, including:

- how applicable the selected soil quality indicators are
- how understandable the user instructions are
- how practical the Card is for use in the field (size, material, etc.)
- how well the scoring system works
- how likely it is that the Card will be used (and if not, why)

### **Be sensitive to and respectful of farmers.**

Setting and timing are important issues to consider when planning field tests. Visiting farmers in the field (“on their turf”) facilitates an open conversation. However, it is still important to be sensitive and non-judgmental and to listen carefully. Farmers will work with you on improving the Card much more enthusiastically if you show genuine interest in and respect for what they are doing.

### **Ask open-ended questions before probing for details.**

Open-ended questions about a particular topic often reveal a great deal of useful information and point to trouble spots on the prototype. Once farmers have had a chance to share their general impressions, use probing questions to explore details about the Card's strengths and weaknesses.

### **Focus on improvements.**

Encourage farmers to provide constructive suggestions that will improve “their” Card.

### **Record the field test.**

Detailed recording of field tests is key to improving the prototype Card. Consider the following guidelines for recording field tests:

- Use a discrete notebook and/or a hand-held tape recorder.
- Ask for permission to record the discussion.
- Record in detail what is said and what is not said (such as hesitation or tension).
- Record who said what (only applicable in a group discussion).
- Make follow-up notes after the test; record details and personal impressions of the test.
- Record notes on individual indicators and Card features separately for easy incorporation of feedback from multiple tests into the final Card.

## Field test guide sample

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Responses may be recorded on tape and/or on paper.

Name \_\_\_\_\_ Date \_\_\_\_\_

#/Type of Fields Tested \_\_\_\_\_

### Card design

#### *General*

- Likes and dislikes about the Card
- Suggestions for improvements

#### *Indicators*

- Applicability/relevancy of each indicator
- Flexibility through write-in indicators

#### *Instructions*

- Suggestions for improving the instructions for completing the Card

#### *Scoring systems*

- Likes and dislikes about the scoring system

#### *Field notes and observations section*

- Suggestions for improving the field notes section
- Amount of space provided for observations

#### *Format and size*

- Size preference
- Binding preference (e.g., spiral bound, 3-hole binder sheets, perforated sheets in a booklet)

#### *Other*

- Suggestions for other information on the Card (i.e., draw-in map of sampling locations, metric conversions, etc.)

### Process

- Length of time it took to complete the Card
- Best time of year to use the Card

### Other

- Differences and similarities between soil quality assessment with the Card and personal/intuitive feelings
- Suggestions for follow-up tools/items that could facilitate use of Card

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## Literature

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### Participatory Approaches

*Participatory Learning and Action: A Trainer's Guide* (1995). J. Pretty, I. Guit, I. Scones, J. Thomson. International Institute for Environment and Development, London, UK.

*Organizing and Conducting Farmer-Scientist Focus Sessions* (1993). L. S. Lev, D. McGrath, H. Murray, R.D. William. *Journal of Natural Resources and Life Sciences Education* 22(2): 148-152.

*Rural Appraisal: Rapid, Relaxed, and Participatory* (1992). R. Chambers. Univ. of Sussex, Brighton, England, IDS.

*Participatory Action Research* (1991). W. F. Whyte (Ed.). Newbury Park, CA, Sage Pub.

*Participatory Evaluation: A User Guide* (1986). J. Pfohl. New York, Private Agencies Collaborating Together (PACT).

### Collaborative/Adult Learning

*Critical Thinking and Adult Learning* (1989). S. Brookfield. San Francisco, Jossey-Bass.

*Adults As Learners: Increasing Participation and Facilitating Learning* (1981). K.P. Cross. San Francisco, Jossey-Bass.

*The Adult Learner: A Neglected Species* (1981). M. Knoles. Houston, Gulf Publishing Co.

*Experiential Learning: Experience As the Source of Learning and Development* (1984). D. Kolb. New Jersey, Prentice Hall Inc.

### Soil Quality

*The Soil Quality Concept* (1996). USDA-Natural Resources Conservation Service, Soil Quality Institute (Ed.).

*Special Issue on Soil Quality* (1995). *Journal of Soil and Water Conservation*. May-June 1995.

*Special Issue on Soil Quality* (1992). *American Journal of Alternative Agriculture*, Vol. 7, Num. 1 & 2.



## Appendices

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### ❖ Soil Quality/Soil Health Cards

1. Willamette Valley Soil Quality Card
2. Maryland Soil Quality Assessment Book

### ❖ Readings (not included in Web version)

1. *Farmer/Scientist Focus Sessions: A How-to Guide* (1993). D. McGrath, L.S. Lev, H. Murray, R.D. William. Oregon State University Extension Service, EM 8554.
2. *How Farmers Assess Soil Health and Quality* (1995). D.E. Romig, M.J. Garlynd, R.F. Harris, K. McSweeney. *Journal of Soil and Water Conservation*. 50(3): 229-236.
3. *The Changing Concept of Soil Quality* (1995). B.P. Warkentin. *Journal of Soil and Water Conservation*. 50(3): 226-228

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### ❖ NRCS State Technical Notes

1. Maryland Soil Quality Assessment Book Technical Note
2. NRCS State Technical Note: Oregon Soil Quality Cards

### ❖ Soil Quality Card User Guide (not included in Web version)

*Sample of the Willamette Valley Soil Quality Card Guide (1998). J. Burket et al. Oregon State University Extension Service, EM 8710. (Contact OSUES at: <http://osu.orst.edu/extension/>, or by faxing 541-737-0817.)*

### ❖ Take-home Training Materials

*Materials provided to (and added to the Guide by) participants in training sessions.*