A Tool
for Assessing the Contribution of State, Local and Institutional Policies to Agricultural Sustainability in Massachusetts' Connecticut River Valley

prepared for:

The New England Small Farm Institute

for use in the

Connecticut River Valley Community Initiative for Sustainable Agriculture Project

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I. Introduction

A. Purpose of This Tool

This tool was developed by graduate students at Tufts University in cooperation with the New England Small Farm Institute (NESFI) to increase public understanding of how state and local government and other institutional policies contribute to agricultural sustainability in Massachusetts' Connecticut River Valley. The tool was designed for use by participants in the Connecticut River Valley Community Initiative for Sustainable Agriculture (CISA) Project, and is intended to facilitate public involvement in the process of evaluating and changing institutional policies to achieve a more sustainable food and farming system in the Valley.

B. The Community Initiative for Sustainable Agriculture Project

The Connecticut River Valley in Massachusetts encompasses some of the Northeast's finest farmland and has a rich agricultural heritage. The rural character of the Valley allows its residents to enjoy a high quality of life close to urban and employment centers. This rural character and agricultural tradition in Hampshire, Hampden and Franklin Counties is, however, severely threatened by a variety of factors including high land values, suburban sprawl, increasing regulation costs, concern about environmental impacts, and competition from other regions.

In 1993, the Pioneer Valley Alliance for Sustainable Agriculture (PVASA) held a series of meetings to discuss the threats to agriculture in the Valley. Key concerns included the gap between food prices and farm production costs, environmental and labor regulations, and a lack of public understanding of and support for Valley farmers. Lack of cooperation between the many environmental and agricultural advocacy groups was also seen as a barrier to achieving a sustainable agriculture system. PVASA members and other agricultural interests collaborated in creating the Community Initiative for Sustainable Agriculture (CISA), which received a four year grant from the W.K. Kellogg Foundation's Integrated Farming Systems (IFS) Program in 1994.

The goals of the CISA Project are:

- to help Pioneer Valley farmers find and adopt integrated and resource-efficient crop and livestock systems, and
- to assist members of the Pioneer Valley community in creating a joint vision of a more sustainable food and farming system, and to overcome the barriers to achieving that vision.

The CISA Project is unique in that it seeks to draw on the strengths of existing organizations and work within the current structure of state, regional and local agricultural institutions rather than creating a new organization with its own needs. The Project is governed by a Steering Committee, which supervises the CISA coordinator. An event planning team organized a "Future Search" conference in March of 1995, which formulated a vision of a sustainable Valley food and farming system. A set of "Action Groups" with responsibility for taking steps to achieve this vision emerged from the Future Search. The Action Groups will be assisted by "Key Service Providers," which are local institutions and organizations funded by the Project, as well as by other helping agencies, that deal with farming, environmental and labor issues related to agriculture in the Valley. A diagram of the CISA Project's structure and a list of Key Service Providers can be found in the appendix.

C. The New England Small Farm Institute

Public and institutional policies play an important role in encouraging or interfering with the development of more sustainable agricultural systems. The New England Small Farm Institute (NESFI) is a private, non-profit organization founded in 1978 "to promote the increased and sustainable use of New England's agricultural resources." NESFI's staff work on natural resource management policy; small farm advocacy, education and training; national and regional Sustainable Agriculture Working Group activities; organic farming; and rural community economic development. NESFI is one of the CISA Project's Key Service Providers. One of its roles in the CISA Project is to provide public policy education and policy assessment skills to project participants. NESFI works closely with CISA stakeholder groups to define policy-related issues of concern to the community, evaluate current policies in areas of concern, and develop new policy strategies.

D. How To Use This Tool

The key feature of this tool is a set of worksheets that CISA Action Groups can use to determine whether particular policies encourage or act as barriers to sustainable agriculture in the Valley. Use of the worksheets is demonstrated in several short case studies of state and local government policies that affect agriculture in the Connecticut River Valley. As background for the worksheet, the tool begins with a discussion of some issues in defining what the term 'sustainable agriculture' means - an issue the action groups are likely to confront in the course of their work.

E. Methods and Acknowledgments

The tool was designed in consultation with Kathy Ruhf, co-director of NESFI. The authors did extensive reading on definitions and indicators of sustainable agriculture (see Appendix D for literature consulted). The CISA vision of sustainable agriculture in section II D was developed at the CISA Future Search Conference on March 16 - 18, 1995. The structure for the worksheets was influenced by the group discussion processes employed by Future Search facilitators.

The authors thank Molly Anderson, Maria Brown, Melvyn Colon, Judy Gillan, Fran Jacobs, Elizabeth Kline, William Lockeretz and Vicky Van Zee for their input and assistance on this project.

II. Defining Sustainable Agriculture

There is a lack of consensus on what the term sustainable agriculture means. The CISA project is unlikely to come up with a definition that will please everyone. However, participants can develop a *working definition* that will help CISA begin the process of envisioning and overcoming barriers to a sustainable food and farming system in the Connecticut River Valley.

This section presents four approaches to sustainable agriculture: 1) the Kellogg Foundation's criteria for evaluating sustainability, 2) the definition of sustainable agriculture found in the 1990 Farm Bill, 3) issues in the academic debate over sustainable agriculture and 4) the vision of a sustainable food and farm system that came out of the Future Search conference.

A. Kellogg Foundation Definition

The CISA Project is part of a nationwide Kellogg Foundation program to promote Integrated Farming Systems (IFS). The Kellogg/IFS definition of sustainable agriculture is a vision of farming systems that:

- Are resource-efficient
- Maintain productivity and profitability
- Protect the environment and personal health
- Support rural communities
- Provide increased opportunity

Characteristics of Integrated Farming Systems include:

- Family Farms
- Use of cover crops
- Use of crop rotation
- Conservation of soil and other resources
- High yields

- Containment of nutrients on the farm
- Integration of crops and livestock
- Use of herbicides where necessary
- Farmer networks
- Leadership
- Diversity
- New partnerships
- Community involvement

B. Farm Bill Definition

The United States Congress has also weighed in on the question of defining sustainable agriculture. According to the 1990 Farm Bill; "the term sustainable agriculture means an integrated system of plant and animal production practices having a site-specific application that will, over the long term

- satisfy human food and fiber needs;
- enhance environmental quality and the natural resource base upon which the agricultural economy depends;
- make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls;
- sustain the economic viability of farm operations; and
  enhance the quality of life for farmers and society as a whole."

C. Academic Definitions

The definition of the term 'sustainable agriculture' is a subject of dialogue and debate in the academic community. According to William Lockeretz of the Tufts University School of Nutrition; "'Sustainable agriculture' is a loosely defined term for a range of strategies to cope with several agriculturally related problems causing increasing concern in the U.S. and around the world." It would be difficult to come up with a more specific definition with which all (or even most) of those who say they favor 'sustainable agriculture' would agree.

For this reason, the term 'sustainable agriculture' often means whatever the person who is using it would like it to mean. This can be an advantage as well as a disadvantage. On the one hand, it can bog people down in questions of definition, or to gloss over underlying tensions or disagreements about basic goals. On the other hand, it can allow a diverse group of stakeholders to come together under the same umbrella with the hope of finding common ground.

Although we may not be able to arrive at a definition of sustainable agriculture on which everyone would agree, we can identify several distinct approaches that have shaped the debate about sustainable agriculture. There appear to be at least five strands of thought on what a sustainable food and farm system would look like:*

An *economic* approach focuses on making more efficient use of natural resources and eliminating those farm practices that cause the most harm to the environment. It appeals to farmers because of its emphasis on cutting costs. However, it does not represent a fundamental change in agricultural practices. Federal and state Integrated Pest Management programs exemplify this approach.

Advocates of a *spiritual* approach see a change in the relationship of people to nature as the crux of sustainability. The idea that people (particularly farmers) are stewards of the land underlies recommendations for more environmentally sound farming practices. The goal of sustainability thus takes on a spiritual quality. The writings of Gary Snyder exemplify this strand of thought.

An *agroecological* strand links sustainability with the integration of agriculture into natural ecosystems. Natural systems are sustainable by definition, advocates of this approach say, and human interventions should be kept to a minimum. Wes Jackson's research at the Land Institute, which includes modeling grain production on the ecology of the prairie, is probably the best known example of this approach.

An *agrarian* strand focuses on the impact of modern agricultural techniques on farmers and rural communities. It laments the loss of an organic connection of farmers to their communities and to nature; the depopulation of rural areas; and the loss of traditional farming

* This formulation is based loosely on notes from the class, "Fundamentals of U.S. Agriculture," taught by William Lockeretz, Tufts University School of Nutrition, December 8, 1994. Lockeretz named the economic, spiritual, agroecological and agrarian strands. We have added the social justice strand and the examples of writers or programs that exemplify each of the strands.

skills and knowledge. Arguing that these changes threaten the future of agriculture, advocates of this approach seek to restore what has been lost. Farmer and writer Wendell Berry is a well-known exemplar of this approach.

A *social justice* strand stresses the connections between modern agricultural practices and the problems of hunger and poverty. Its advocates emphasize the contradiction between overproduction of food in industrialized countries and hunger both in those countries and around the world. They argue that issues of social justice and equity should have a place at the table with the environmental, social and economic concerns usually included in the definition of sustainable agriculture. Cornell University Professor of Nutrition Katherine Clancy is a prominent advocate of this approach.

Of course, these approaches are not mutually exclusive. The same person could very well define sustainable agriculture in terms of agroecology *as well as* social justice. However, these categories provide a language for talking about how and why people define sustainable agriculture differently.

D. CISA Future Search Definition

On March 16 - 18, 1995, the CISA Project brought together a diverse group of stakeholders with an interest in agriculture to develop a shared vision of sustainability for the Connecticut River Valley farming and food system. While Future Search participants did not explicitly agree on a definition of sustainable agriculture, a consensus emerged around key elements of agricultural sustainability in the Valley. Eight "theme areas" were identified for future action. According to the Future Search, a sustainable Valley farm and food system should:

1. Promote and increase the consumption of locally produced products;
2. Maintain and increase the land base for agriculture and insure its availability to present and future farmers;
3. Encourage and employ sustainable and appropriate agriculture technologies that are resource-efficient and protect the environment;
4. Provide adequate financing assistance and support for Valley farmers and agricultural entrepreneurs;

5. Be supported by a community that is informed and educated about food and agriculture;

6. Thrive in the context of local and regional land use policies that prioritize and support farming and maintenance of the Valley's rural character;

7. Provide safe and equitable employment for farmworkers;

8. Ensure healthy food, protect the environment, and enhance the quality of life for community members.

This vision of sustainable agriculture is similar, although not identical to the Kellogg Foundation's vision of Integrated Farming Systems. The Future Search is a good starting place for Action Groups to build their own working definition of sustainable agriculture in the Valley. Action Groups' "definitions" of sustainable agriculture will evolve through research and discussion. We have used the principles which emerged from the Future Search to develop our worksheets and case studies.

III. Notes on Policy

Your Action Group is about to discuss how policy could contribute to the development of a sustainable food and farm system in the Valley. To do this, you will need to:

- identify public and institutional policies that affect your group's area(s) of concern;
- evaluate how these policies either contribute to or act as barriers to the sustainability of agriculture in the region;
- consider whether existing policies need to be changed; and
- formulate policy approaches to problems not addressed by current policies.

This section is intended to provide a starting point and a common vocabulary for your group's discussion of these issues. It is meant not as a comprehensive analysis of public and institutional policy (books have been written about small facets of this topic), but as a practical guide to the issues your discussions of policy are likely to raise.

Why think about policy? You may have a very basic question about policy: why worry about it at all? The simple answer is that policy has a tremendous impact on our society and agriculture as well. (If you doubt this, think about the contribution of the Agriculture Preservation Restriction program to farmland preservation). Decisions made by governments and other policymaking institutions bear directly on the goal that your group is trying to achieve. So, even if you don't plan to do any lobbying on Beacon Hill, you will need to think about policy - how you can use it to further your goals and how you can prevent it from frustrating them.

Public policy vs. institutional policy. Most of us think of policy as a set of laws adopted by governments. Indeed, the statutes, ordinances and by-laws passed by federal, state and local legislative bodies have a tremendous impact on public life, including the food and farm system. Legislative policy is backed up by the regulatory and spending power of governments.

However, your policy discussions should not neglect the role of other institutions in shaping policy. Institutions determine the context in which legislative policy is made and often determine whether and how public policies are implemented. Institutions that affect policy could include just about any organization involved in public life -government agencies, businesses, or non-profit organizations. Institutions that have a significant impact on agriculture in Massachusetts include the Department of Food and Agriculture, the land-grant universities, growers' associations and advocacy groups.

Policies vs. Programs. It is important to distinguish policies from programs. A policy is a statement of goals or values. A program is the tool that a government or another institution uses to achieve those goals. For instance, the government might have a policy of reducing traffic accidents. To achieve this goal, it could choose from among a variety of programs - installing more traffic lights, changing the speed limits on certain roads or launching a public education campaign about drunk driving.

Programs are usually the most visible attributes of governmental or other institutional activities. However, understanding the policy behind the program is crucial for evaluating its impact on sustainability. If a program is not advancing the goals you have identified for agriculture in the Valley, is it because the program is flawed, or because the goal behind the policy is flawed? Only through understanding the policy can you determine whether technical modifications to the program are required or whether an entirely new way of thinking about the problem is needed.

Who Benefits, Who Pays? It is easy to get lost in the details of policy - to 'miss the forest for the trees'. One way to cut through to the essential nature of a program is to ask, who will benefit from this program and who will pay for it? The answer to this question will often clarify the motivation of the policy behind the program, and help you determine whether the policy is consistent with your goals.

The 'who benefits, who pays' question can take a variety of forms. For example, you might ask, is a tax being levied on the population as a whole for a program that will benefit a particular group of people? Is a new program or agency being created that will benefit a particular group? Will a new regulation have differential impacts on subsets of those being regulated? You will have to adapt your questions to the specific program you are looking at. But the same logic applies: follow the money, and keep asking how the program might be structured differently in order to benefit different groups of people.

Tradeoffs. Policymaking involves making tradeoffs. Policy goals often conflict, and policymakers must choose between them or find a way to balance them.

Agricultural policy is certainly no exception. As we have seen, definitions of sustainable agriculture - including the vision of agriculture developed at the Future Search conference - include a variety of goals. An important question is, to what extent are these goals compatible? For example, is a return to more traditional farming methods, as envisioned by agrarian thinkers, consistent with the goal of using resources more efficiently and cutting costs? Can agriculture be integrated into natural ecosystems while at the same time meeting the food and fiber needs of a growing population?

Many definitions of sustainable agriculture list a diverse set of goals, perhaps leaving the impression that tradeoffs are unnecessary. For instance, the 1990 Farm Bill defines a sustainable agriculture system as one that will "satisfy human food and fiber needs," "enhance environmental quality," "make the most efficient use of nonrenewable resources" and "sustain the economic viability of farm operations," among other things. Similarly, the Campaign for Sustainable Agriculture calls for a farm and food system that "supports stewardship of the land," "combines economic viability with environmental soundness and social justice" and "ensures a safe and abundant food supply."

It is important to recognize, though, that these goals may indeed conflict. As William Lockeretz of the Tufts School of Nutrition has written:

> There is little recognition that these goals are substantially distinct and independent, so that each has to be achieved in its own right. And rarely is it acknowledged that in designing specific production systems, rather than talking about abstract concepts, there can be incompatibilities that actually make it impossible to achieve them all.

Of course, your group will not be expected to work out all of these potential conflicts on its own. However, you should be sensitive to the potential impact of the policy options you are considering on the goals of the CISA project as a whole, not just those of your group. The perfect policy to achieve your goals may unintentionally exacerbate a problem that another group is trying to address.

Also, whenever possible, try to look for evidence of how policies impact different goals *in practice*. The question of tradeoffs is often easier to resolve in the context of a specific set of circumstances than in the abstract.

Unintended consequences. Often, policies and programs have impacts far different than their makers intended - sometimes even opposite of what was intended. It is important to keep this in mind when evaluating the effectiveness of a policy. Otherwise, looking only at its results on the ground may mislead you about what the authors of the policy intended. In such a case, much of your work in evaluating the policy may involve figuring out what went wrong with the implementation of the policy and why.

Interests and values. Policymaking involves determining not just what is possible, but also what is desirable - particularly in the case of an idealistic goal like a 'sustainable farm and food system.' As such, it involves questions of politics and ethics, as well as technique.

The word 'sustainable' itself may be a source of confusion here. Literally, sustainable means capable of enduring indefinitely. Yet, there are undoubtedly agriculture and food systems capable of lasting for long periods of time that conflict with the goals many people have for sustainable agriculture. For example, James Haskett notes that the Chinese system of paddy rice cultivation, which has lasted for nearly 4,000 years, "has involved extreme hardship, backbreaking, eye-popping labor, and vast disparities in wealth and power. It has resulted in the virtual elimination of what we consider 'wilderness'...."

Haskett argues that designing a system of sustainable agriculture necessarily involves subjective choices about what is desirable:

> Judgments of desirability are necessarily ethical rather than scientific; to avoid them on that basis, however, is irresponsible. Whatever is finally implemented will have ethical characteristics in any case, which should be addressed explicitly.

These types of judgments are the essence of what policymaking is about.

IV. Agricultural Policy Worksheets:
Guidance for Discussion Facilitators

How To Use The Worksheets

The policy worksheets are designed to help your Action Group think about how the policies of the state and local governments, educational institutions, businesses and other organizations encourage or act as barriers to a sustainable Valley food and farming system. The worksheets outline a process for creating and gathering information on institutional policies and programs. Some steps of the worksheets involve brainstorming and group discussion. Most of the information you will need to complete the worksheets will be available from group members or CISA's Key Service Providers. For examples of how the worksheets can be used to collect information, refer to the case studies in Section V.

Keep copies of the completed worksheets on file for future reference for your group and CISA program evaluators.

1. Action Group Goal(s), Objectives, and Indicators:
Whom and what do you want to sustain?

Goals can be stated as the purpose of your Action Group's efforts, or the desired effects of your work. Goals are the mission of your group, the direction the group is trying to move towards. In her discussion of sustainable agriculture, Cornell University Professor of Nutrition Kate Clancy asks "whom and what do we want to sustain?" Some of the "whoms" and "whats" your group is trying to sustain could include farmers, farmworkers, farmland, local food production, the environment and the community, but it is important to be as specific as possible, and to set priorities if you have more than one goal. Being specific about your goals will help you figure out how to achieve them, to define some indicators that will tell you if you're headed in the right direction, and to make choices where progress on one goal comes at the expense of another.

In some cases, your goal may be drawn from the visions of sustainable food and farming systems developed at the Future Search Conference. Alternatively, your Action Group may use the Future Search visions as a starting point to set its own goals. Goals will deal with at least one specific issue area. If, for example, your group's goal was to provide safe and equitable working conditions for farm workers, the issue area would be farm labor.

Objectives are steps towards your goal. They should be stated in a way that will allow you to determine whether or not you are making progress. An objective relating to a goal of providing safe and equitable working conditions for farmers could be to decrease the number of farm accidents that require a visit to the hospital.

Indicators allow you to measure a program's effects against your objectives. They are concrete signs that tell you whether or not you are making progress towards your goals. Ultimately, you want your indicators to help you determine whether or not particular institutional strategies and programs are helping to create a more sustainable food and farming system in the Valley.

The best indicators involve gathering information that is easy obtain, understand and interpret. In order to use indicators to measure progress, you will want to examine how they change over time. Indicators should also attempt to measure the effect of a particular strategy or program, and separate the program's effect from other influences. You may want to select separate indicators for each objective. Finding good indicators can be difficult; be aware of the limitations of the indicators you choose.

2. Institutions:

A.What institutions have a direct impact on the goals and objectives of your Action Group?

While most of us are used to thinking about institutions as large public agencies, the Kellogg Foundation defines institutions broadly to include universities, government agencies, businesses, nonprofit organizations, community-based organizations, and associations. Your group should start off by brainstorming a list of all the institutions you can think of that deal with your issue area(s).

After you have a good list of institutions, you might find it useful to label them by category. There are three sets of categories you can use to organize your list.

1. Label Institutions By Sector

Public Institutions include legislative, administrative and judicial branches of federal, state and local governments, as well as publicly-funded educational institutions.

Legislative bodies include the U.S. Congress, the state legislature, city councils, and town meetings.

Administrative bodies include federal and state environmental, agricultural, and employment and training agencies, government fiscal agents and taxing authorities, local boards of health, local and regional planning boards, and conservation commissions.

Judicial bodies include federal and state courts whose decisions impact agricultural sustainability, as well as certain local government entities such as zoning boards that have the power to interpret laws and regulations that apply to your Action Group's issue area.

Educational institutions include public primary and secondary schools and colleges, including cooperative extension and other research projects and outreach programs that are funded through universities.

Private Institutions include both for-profit and non-profit enterprises, including private educational institutions.

For-profit institutions that have an impact on agricultural sustainability include farm suppliers, food wholesalers and retailers, food and agricultural industry trade associations, real estate agents and developers.

- *Non-profit* institutions include community-based organizations that advocate for farmers, farm workers, economic development, public health, consumers, and the environment. Educational institutions whose mission includes increasing awareness of your Action Group's issues also fit in this category.

2. Label Institutions By Social Mission

Mainstream establishments with a mission that encompasses agriculture, but not necessarily sustainability;

Examples: the Massachusetts Department of Food and Agriculture, Cooperative Extension at the University of Massachusetts, the Farm Bureau.

Mainstream institutions that do not deal specifically with agriculture, but have an impact on the sustainability of the Valley's food and farming system;

Examples: the Massachusetts Department of Environmental Protection, local planning and zoning boards, food retailers, tax assessors.

Social change institutions whose missions include promoting environmental protection, community health, social and economic justice, etc., but not necessarily in the context of agriculture.

Examples: the Massachusetts Public Interest Research Group, Common Cause, the Northeast Sustainable Energy Association.

Social change institutions specifically devoted to sustainable agriculture; whose missions include promoting environmentally, economically sound and socially responsible farming;

Examples: the Northeast Organic Farming Association , the Northeast Sustainable Agriculture Working Group, Nuestras Raices.

3. Label Institutions By Stakeholder Group - Who Does the Institution Serve? There are many possible categories of stakeholders; some organizations may serve several different groups of stakeholders. Here are a few examples:

> Farmer's organizations: Farm Bureau, Farm Credit Administration, farming supply businesses, MA Department of Food and Agriculture, farmers markets.
>
> Farmworkers organizations: Nuestras Raices, Massachusetts Department of Employment and Training, unions.
>
> Environmental organizations: Conservation Commissions, the Massachusetts Department of Environmental Protection, the U.S. Environmental Protection Agency, MassPIRG.
>
> Land use interests: National and local land trusts, local planning and zoning boards, developers.

B. Which are the most important institutions that deal with your issue area(s)?

Choose the institutions from your list that you feel are most likely to help or prevent you from achieving your goals. These might be the biggest institutions on the list, or the institutions that most closely share (or, conversely, oppose) your goals.

3. Institutional Policy Goals:

A. How can you determine the policy goals of the institutions you listed in step #2?

Institutional policies are not always clearly stated. Discovering these policies and goals will usually require some participatory research. How can you determine what a given institution's policy is? Although there is no recipe for deciphering institutional policy, there are several places to look for clues:

> Documentation Some organizations may have mission statements or other written statements of policy that are available to the public. These are a good first source for analyzing institutional policy.
>
> Media News articles about the institution or your issue area may contain evidence on institutional policies.
>
> Money How an institution spends its money is often a good indicator of what its priorities are.

Constituencies An important question to ask when looking at institutional policy is, whose interests does the institution represent? If it is a membership organization, who are its members? Where does its funding come from?

Organizational culture Most organizations have their own way of doing things, habits that are unarticulated but that can have a profound impact on the way the institution operates. Probing organizational culture is almost impossible to do from the outside. To do so, you will either have to spend time observing the institution directly, or talk to someone who works within the institution.

B. Who in these institutions can you involve in your policy discussions?

Institutional polices often change with the leadership and membership of the institution, particularly in political establishments such as state and local government agencies. Expanding your process to involve key players at the institutions you are interested in and members of the community they serve will help you gather information on current institutional policy.

In addition, achieving your goals will probably require changes in institutional goals and policies. Engaging institutional players such as organizational staff people, elected and appointed government officials, members of nonprofit organizations, university faculty, and community volunteers in your policy discussions may facilitate the process of change by increasing these players' understanding and appreciation of your goals.

C. Gather information on institutional policies and report back to group tasks

Designate members of your group to research the policies of your key institutions and report back to the group.

D. How do institutional policy goals relate to your group's goals?

Some institutions may have policies that are similar to or compatible with your group's goal(s). Other institutional policies may be in direct conflict with what you are trying to achieve. Understanding how institutional policies relate to your group's goals will be important in helping you make choices where tradeoffs are involved, and in determining your action strategy later.

4. Institutional Strategies and Policy Tools:

A. What strategies do the institutions you listed use to achieve their policy goals?

Strategies that institutions use to achieve their goals include administration of rules and regulations, distribution of funds, production and marketing of commodities, and development and management of programs to serve a variety of clients. Most institutions use more than one strategy to implement their policies.

Rules and regulations are authorized by legislative bodies. They may set guidelines for conduct, such as the Massachusetts Wetlands Protection Act, or establish a program that creates benefits, such as the Agricultural Preservation Restriction Program. Rules, regulations and government programs are administered by federal, state and regional agencies and local government entities. The people who administer government rules, regulations and programs often have the ability to interpret the underlying policies and make changes in the implementation strategy.

Businesses implement their policies through decisions about what commodities to produce, purchase and sell, which customers to serve, and how to price their commodities. Business decisions of food wholesalers and retailers, restaurants, and institutional food buyers have a profound impact on farmers' ability to make a profit; and this in turn affects consumers, farmworkers, and the environment.

Educational institutions implement policies through decisions about which disciplines to focus on, whom to hire, which research projects to fund, which classes to offer, which students to serve, and how to manage their campuses.

Nonprofit organizations design programs to serve specific constituencies, such as the New England Small Farm Institute's Land-Link program, which connects owners of farmland with farmers who need land.

B. Choose the most important strategies for further research

C. Gather information on institutional strategies

Once your group has listed the different strategies that the institutions in your issue area use to achieve their goals, you should start collecting information on these strategies. Your summary of each strategy should include:

1. Description of Strategy/Name of Program

If the strategy you are focusing on is a federal or state law, you can look it up in the U.S. Code Annotated, or the Massachusetts General Laws. Massachusetts Regulations are listed in the Code of Massachusetts Regulations. Public or university libraries can help you find information on federal and state laws and regulations. Town clerks are a good source of information on local ordinances, by-laws and regulations. For non-government policy strategies, your best source of information will be the staff people of the institution itself.

2. Goals and objectives

What is intended to be changed by this strategy? Whom is it intended to help?

3. Names and roles of key staff

Who makes this strategy work? Who does the day-to-day work of making sure regulations are followed and rules are enforced? Which faculty members at school and universities deal with your Action Group's issues? Who administers the programs that affect the stakeholders your group is trying to serve? List these people by name and think about how to involve them in your work.

4. Theory behind this strategy

Why should this strategy work? Why was it created?

5. Components of the strategy

How does the strategy work? What do rules and regulations require? What benefits do programs provide, and what do the people served have to do to get them? What specific classes and outreach projects do educational institutions offer to achieve their goals?

D. Present research on strategies to the group

5. Program assessment: How are the strategies you listed in #4 related to achieving your goal(s)? Are they likely to help achieve your goal? Act as barriers? Have no impact?

Program assessments are generally performed to determine whether a policy strategy is helping to achieve the goals it was designed to accomplish. Your Action Group will instead want to measure whether the strategies and programs you identify are likely to help achieve *your* goal. Step #3D of the worksheet—comparing the institution's goals to your goals—is the first step in your policy assessment. If the goals are similar or compatible, there is a better chance that the program is contributing to agricultural sustainability than if the institution's goals are in direct conflict with your goals. You should also compare the specific program's goals and objectives with your goals and objectives.

A. Select appropriate indicators

Look over the list of indicators you developed in step #1A. Select a few that seem appropriate to the strategies and programs you are interested in or develop other indicators specific to particular strategies and programs.

B. Use indicators to assess strategies and programs

After you have chosen your indicators, develop a plan to collect the information you will need to measure them. Action Group members need not do the actual work of collecting information and measuring data, but the Group should contract with Key Service Providers or others to perform this task.

6. Conclusions: Program revision and action strategy:

How could the policy strategies you identified and analyzed be changed to help achieve your group's goal? What new programs and approaches are needed?

Selecting and measuring several of the indicators you chose in step #5 should help you determine whether existing policies and programs are facilitating or acting as barriers to achieving your goal. In cases where there are one or more well-funded, broad reaching programs designed to achieve goals similar to yours, you may have good anecdotal evidence that these programs are effective without measuring indicators. Conversely, in cases where there are programs that are designed to achieve objectives in direct conflict with your goals, it may be obvious that these programs require revision.

No strategy or program is likely to be 100 percent successful in achieving an objective or set of objectives. It is therefore useful to ask what else is needed to realize your goals and objectives. In instances where a program advances your Action Group's goal(s) to a significant extent, think about the shortcomings of the program, and how it could be revised to be more effective. If your goals are compatible with the policy and programs of an institution, people within the institution may be sympathetic to the changes you wish to make. Cooperation and education would be good action tools to use when working to modify the policies and programs of these institutions. On the other hand, if you find that an institution's policies and programs are in direct conflict with your purposes, grassroots organizing and political action may be necessary to achieve your goal(s).

V. Case Studies

The case studies are intended demonstrate how the worksheets can be used. The goals stated in the case studies are taken from the Future Search conference. Objectives and indicators were chosen by the study authors. The list of institutions in each study is intended to be illustrative, not exhaustive.

Each case study takes a slightly different approach, and none of the studies contain all the information outlined in the worksheet. The case studies do not include measurement of indicators. Where preliminary conclusions about policies and programs can be drawn from a comparison of program and policy goals and objectives to CISA goals, the authors have included them. Ideas on action strategies are suggestive and not to be interpreted as recommendations.

Case Study #1:
State Agricultural Land Use Policy
and the Agricultural Preservation Restriction Program

1. <u>Action Group's Goals, Objectives and Indicators</u>

Goal : A sustainable Valley food and farming system should maintain and increase the land base for agriculture and insure that farmland is available to present and future farmers. Both farmland and farmers should be sustained; it is not enough to preserve farmland for its own sake or solely for future use.

An important question relative to this goal is whether there is a particular *type* of farming we wish to sustain on Valley land. If the land is not developed, does it matter whether it is used to raise food and livestock versus horses and Christmas trees? Are some types of agricultural land uses more valuable than others? Similarly, are some farmers more valuable than others? What if dairy and potato farms that have been in a particular family for several generations are sold to young urban couples who wish to start Community Supported Agriculture farms

(CSAs)? What if these farms are purchased for use as estate farms by wealthy landowners? Is our goal still being met?

Objectives:

a. To increase the affordability of agricultural land to first-time farm-buyers;

Indicators for Objective A:

1. Price of farmland
2. Sales of farms to first-time farm buyers
3. Age of farmers

b. To provide farmers with economic incentives to keep their land in farming;

Indicators for Objective B:

1. Farm sales
2. Farm income
3. Percent of farmers who have other jobs

c. To retain farmland for agricultural use upon retirement or death of current farmers, and to encourage the tradition of family farms;

Indicators for Objective C:

1. Farm sales by age of farmer
2. Patterns of land tenure

d. To prevent subdivision of farms;

Indicators for Objective D:

1. Approval of subdivision plans for former farms
2. Approval of agricultural districts
3. Approval of zoning changes that protect farmland
4. Acres of farmland protected through purchase by government or land trusts

e. To reclaim viable agricultural land that is currently abandoned or otherwise economically idle for active farming

Indicators for Objective E

1. Increase in land enrolled in 61A program

2. Institutions that deal with agricultural land use:

1. MA Department of Food and Agriculture

   Public, administrative agency
   Mainstream agricultural mission
   Stakeholders include farmers & consumers

2. Local planning boards and zoning boards of appeal

   Public, administrative/quasi-judicial institution
   Mainstream, non-agricultural mission
   Stakeholders include property owners & general public

3. Local government taxing authority

   Public, administrative institution
   Mainstream, non-agricultural mission
   Stakeholders include local government

4. Developers

   Private, for-profit businesses
   Mainstream, non-agricultural mission
   Stakeholders include home buyers, sellers of property

5. Real estate agents

   Private, for-profit businesses
   Mainstream, non-agricultural mission
   Stakeholders include home buyers, sellers of property

6. American Farmland Trust

   Private, non-profit organization
   Social change mission that focuses on agriculture
   Stakeholders include farmers, advocates of open space protection

7. New England Small Farm Institute

   Private, non-profit organization
   Social change mission that focuses on agriculture
   Stakeholders include farmers, rural communities, advocates of sustainable agriculture

8. Local land trusts

Private, non-profit organization
Social change mission that focuses on agriculture
Stakeholders include farmers, advocates of open space protection

B. What are the most important institutions that deal with your issue area?

This case study will address the policies and programs of the Massachusetts Department of Food and Agriculture.

3. <u>Institutional policy goals</u>

One way to determine DFA's policies regarding agricultural land use would be to hold discussions with key players at the agency. A good contact from DFA on land use issues would be Rich Hubbard, director of the Agricultural Preservation Restriction Program.

DFA's major program that deals with land use is the Agricultural Preservation Restriction (APR) Program. See goals of the program below.

4. <u>Institutional Strategy</u>

Program: The Agricultural Preservation Restriction Program

Massachusetts General Law MGL Chapter 132A, section 11
Massachusetts Regulation 330 CMR 22

Established by: state legislature 1977

Administered by: MA Department of Food and Agriculture

Key staff: Rich Hubbard
APR Program Director, DFA

Goal of Policy/Program: To prevent prime farmland from being developed for uses that are incompatible with agriculture

Theory behind program: Development is generally considered to be the "highest and best" use of land; and the economic value of land for development usually greatly exceeds the economic value of the land for agriculture. This creates enormous pressure for farm families to sell their land; especially if the farmer is retired and has no other source of income, of if the farmer dies and leaves his family in debt. The APR program is intended to offer a nondevelopment alternative to farmers and the owners of "prime" and "state important" farmland who are faced with a decision regarding the future use and disposition of their farms.

How it works: 1. Farmer applies to the APR program (state and local officials and farmland advocates sometimes solicit applications). Town comments and includes recommendation on application.

Parcel of land must be at least 5 acres and must be "actively devoted" to agriculture for the two preceding years. (see MA Chapter 61A sections 1-5).

2. Property is inspected by APR program staff.

3. APR staff meet to review the application and make a recommendation to the Agricultural Lands Preservation Committee (ALPC).

ALPC is composed of the Commissioner of DFA, the Secretaries of Environmental Affairs and the Secretary of Community Development, the chairman of the Board of Agriculture, two farmers, and two other citizen members.
Applications are judged on the basis of

a) the suitability and productivity of the land for agriculture based on soils, physical features and location.

b) degree of threat to the continuation of agriculture on the parcel of land

c) the degree to which, if the land is accepted into the program, it is likely to be viable for agricultural use and remain in farming.

4. ALPC votes on whether to reject, hold, or nominate the application for appraisal.

5. Property is appraised to determine highest market value and restricted (agricultural) value.

6. Title review

7. APR price negotiated with farmer. If the difference between the fair market value and the restricted value is more than $10,000 per acre, a bargain sale or local contributions must make up the difference.

8. ALPC considers staff recommendation and votes to commit funding to project.

9. Legal papers are drafted and signed

10. APR is recorded as permanent restriction on the deed.

5. Policy Assessment and Indicators

Comparison of Goals: The policy's goal is basically the same as the CISA goal: to reserve agricultural land for agricultural use.

Comparison of Objectives/Selection of Indicators:

Objective A: To increase the affordability of agricultural land to first-time farm-buyers:

While this is not a stated objective of the APR program, eliminating the possibility that APR properties can be used for development should reduce the selling price of these properties, which should make them more affordable than they would otherwise be.

Indicators for Objective A:

1. Price of farmland: Are the selling prices per acre of APR farms lower than non-APR properties?

How to get information: Bill King, Appraiser for APR Program, has data on selling price of APR properties. Local real estate agents might have data on the selling price of unrestricted farms.

Limitations: a. Selling price *per se* doesn't measure affordability to farmers - APR farms may be cheaper than other farms, but still unaffordable.

b. It might be difficult to gather data on selling price of non-APR land.

2. Sales of farms to first-time farm buyers: Are first-time farmers buying APR farms?

How to get information: Names and addresses of APR farm buyers are available from the Department of Food and Agriculture. Information on buyers of non-APR farms may be available from local real estate agents.

Limitations: a. Data on purchasers of non-APR farms might be hard to get.

b. There might not be enough turnover of ownership of APR farms to measure the program's effect on affordability.

Objective B: To provide farmers with economic incentives to keep their land in farming.

Cash payments for development rights are clearly intended to prevent farmers from converting their land to non-agricultural uses. But while APR farms cannot legally be developed for uses incompatible with agriculture, there is no requirement that APR properties actually be farmed. Farmers are free to spend APR payments however they like; the cash need not be dedicated for agricultural uses.

Indicators for Objective B:

1. Sales of APR farms compared to sales of non-APR farms: Are APR farmers less likely to sell their farms than non-APR farmers?

How to get information: Data on sales of APR farms is available from the Department of Food and Agriculture. Rates of sales of non-APR farms might be available from local real estate agents?

Limitations: a. Data on sales of non-APR farms might be hard to get

b. The rate of farm turnover might not be important if the land continues to be used for desirable agricultural purposes. Low rates of farm turnover of land that cannot be developed is only desirable if the goal is to maintain a particular type of farming or farmer.

2. Level of farming activity on APR Farms: Does farming activity, measured by gross receipts, acres planted, or quantity of livestock raised, go up or down after farm owners receive a cash payment from the APR program?

How to get information: Survey APR farm owner on their farming activity and profits before and after they joined the program.

Limitations: a. Difficult to measure farming activity on individual or groups of farms.

b. Farmers may join the APR program simply to avoid sale of their land during their retirement or after their death. In these cases, farming activity on APR land might go down in the short run, but the land would still be available for agricultural use in the long run.

Objective C: To retain farmland for agricultural use upon retirement or death of current farmers; and to encourage the tradition of family farms

The APR program specifically targets farmers who are facing an imminent decision about the future use and disposition of their farms. The degree of threat to the property due to contingencies such as the owner's death and retirement is a key criteria for accepting land into the program.

Indicators for Objective C:

1. Fate of farms upon retirement or death of farmers Is the APR program preventing sales of farms to non-farmers for economic reasons upon retirement or death of current farmers?

How to get information: The Department of Food and Agriculture, American Farmland Trust, and town planners often work with older farmers to devise a plan for their farms upon retirement and death. These institutions probably have anecdotal evidence about how effective the APR program is in preventing undesirable sales of farms in these circumstances.

2. Transfer of APR farms to family members Are APR farms more likely to remain in the family upon retirement or death of the farm owner than non-APR farms?

Objective D: To prevent subdivision of farms

APRs prohibit development of agricultural land for purposes incompatible with agriculture; therefore, APR properties cannot legally be subdivided. *For the farms that the APR program serves*, this objective should be perfectly achieved; no indicators are necessary.

While it is legally possible to remove restrictions from APR farms, the procedure for release necessitates a finding that the land is no longer suitable for agricultural purposes, and requires that the owner repay funds that were used to purchase the restriction. This process makes it unlikely that APR farms will be subdivided under the current law.

To determine how successful the APR program has been in preventing subdivision of all farmland, appropriate indicators would be the total number of acres of farmland preserved, and the rate of conversion of farmland to non-agricultural uses before and after inception of the APR program.

Objective E: To reclaim viable agricultural land that is currently abandoned or otherwise economically idle for active farming

Farmland that is abandoned or not in active agriculture use is ineligible for the APR program; hence, the program does not currently help achieve this objective. Given that a principal criterion for accepting farmland into the APR program is prime agricultural soils, and that farms which have prime agricultural soils are rarely abandoned, it seems unlikely that the APR program could be used to achieve this objective in the future.

6. Conclusions: Revisions and Action Strategy

Even without measuring any indicators, it seems likely that the APR program provides farmers with economic incentives to keep their land in farming, retains farmland for agricultural purposes upon retirement or death or farmers, and prevents subdivision of farms. While the program probably decreases the selling price of farms with restrictions, more research is necessary to determine whether it makes farms affordable to first-time farm buyers. The program is not helpful in reclaiming abandoned or idle farmland for agricultural use.

While the APR program is effective in preserving *some* farms for agricultural use, it is probably insufficient to achieve our goal in itself. Funds for the APR program are limited, and these funds are distributed around the state. A drive through the three-county region reveals dozens of examples of farmland currently being subdivided and developed for residential uses. One way to improve the APR program might be to increase its funding. And while political considerations are not an explicit part of determining how farms are selected to participate in the program, it is likely that elected representatives advocate successfully for inclusion of farms within their districts.

The APR program is very effective in preserving farmland; but it is also very expensive. It is possible that the millions of dollars devoted to this program could be used to further

CASE STUDY # 2 : FARMERS MARKETS

1. Action Group's Goals, Objectives and Indicators

A. Goal: Promote and increase the consumption of locally produced products

B. Objectives: Increase market share of locally grown foods
Increase opportunities for farmers to market directly to consumers
Create opportunities for farmers to extend the growing season
Increase profitability to farmers of selling locally
Create positive marketing image for local products
Increase consumer awareness of benefits of local agriculture
Improve technical assistance to farmers in developing marketing strategies

C. Indicators: Percentage of food purchased in Valley that is grown locally
Number of farmers and consumers who participate in direct marketing arrangements (farmers markets, farm stands, CSAs, pick your own, etc.)
Profitability to farmers of direct marketing arrangements

2. Institutions That Have Direct Impact on Goals and Objectives

A, B & C. List of Institutions, Descriptions and Stakeholders:

Massachusetts Department of Food and Agriculture
Government agency
Mainstream organization whose primary mission involves agriculture
Stakeholders include Massachusetts farmers & agribusiness, UMass land grant establishment, Massachusetts taxpayers, state senators and representatives, agency employees

Massachusetts Federation of Farmers Markets
Private, non-profit organization
Social change organization whose primary mission involves agriculture
Stakeholders include Massachusetts farmers, market managers and local governments

Local governments
Government bodies
Mainstream organizations that impact agriculture indirectly
Stakeholders include citizens of town, including farmers and consumers

U.S. Department of Agriculture/WIC Program
Government agency
Mainstream organization whose primary mission involves agriculture

Stakeholders include farmers, agribusiness, low-income families, U.S. taxpayers, U.S. senators and representatives, agency employees

D. Rank of Institutions:

This case study will focus on the Massachusetts Department of Food and Agriculture.

III. Institutional Policy Goals

A. Methods of Obtaining Information

Methods of obtaining information included research on state laws governing farmers markets, review of literature on farmers markets put out by the Department of Food and Agriculture and interviews with agency staff. A more in-depth study might also include a survey of farmers and consumers who participate in farmers markets, or methods outlined below.

B. Key Staff People

Staff members at the Department of Food and Agriculture who work on the farmers market program are Janet Christiansen and Anneli Johnson.

C. Information on Policy Goals

State Law (Massachusetts General Laws):

1. Chapter 40, section 10 (adopted 1915-1920):
    a. Any city or town of 10,000 people or more may acquire buildings and grounds in order to maintain a farmers market.
    b. Any city or town which does not have a market must designate a place for such a market upon if it receives a petition signed by five percent or more of its residents.
    c. Local governments may make rules and regulations for the operation of the markets, and may appoint a market master to enforce these rules.

2. Chapter 101, section 15 (adopted 1920, 1929):
    a. Farmers markets are exempted from prohibition in Chapter 101, section 14 on "hawkers and peddlers" selling their wares in public places. Farmers must be selling their own goods in order to qualify for exemption.

Agency Goals:

1. Increase the number of farmers markets in the state.

2. Provide farmers with retail outlets for their produce.
3. Ensure that consumers have access to fresh produce.

D. Comparison with Action Group Goals

The institutional policy goals are generally in accord with the goal of promoting and increasing the consumption of locally grown products.

4. Institutional Strategy: Farmers Market Program

Name of Program: Farmers Market Program

Goals and Objectives: To promote and increase the number of farmers markets in Massachusetts.

Key Staff: Janet Christiansen and Anneli Johnson

Theory Behind the Program: Farmers markets add value to the produce being offered by drawing attention to the fact that it was locally grown and by providing consumers with the opportunity for face-to-face contact with farmers in a convenient location. This direct marketing outlet should maximize profits to farmers while providing benefits to consumers.

Components of the Strategy: The Department of Food and Agriculture acts as a catalyst for the farmers market program by:

1. Initiating the process of starting farmers markets by working with local governments or other institutions (such as the Massachusetts Turnpike Authority, which has established three farmers markets at rest stops along highway).

2. Linking towns that want to set up farmers markets with local farmers who may be interested in participating.

3. Setting up programs with the USDA Division of Food and Nutrition, which allows WIC money to be distributed as vouchers for use at farmers markets.

5. Program Assessment:

Indicator A: Percentage of food purchased in Valley that is grown locally

Farmers markets are not the only source of locally grown foods available to consumers, so it would not be appropriate to judge the success of the farmers market program solely on the basis of this indicator. However, it would be helpful to find out whether farmers markets are serving customers who otherwise would buy out-of-state produce, or customers who would otherwise buy local produce from another source, such as a farm stand. A survey of shoppers at a farmers market and/or a study of the impact of a newly-opened farmers market on nearby farm stands are possible approaches to finding an answer to this question.

Indicator B: Number of farmers and consumers who participate in direct marketing arrangements (farmers markets, farm stands, CSAs, pick your own, etc.)

Currently, there are 93 farmers markets in Massachusetts. Total sales at farmers markets were estimated at nearly $5 million in 1992, almost double the figure of five years earlier, according to an industry report.

One important question is whether the market for farmers market produce is 'saturated', or whether there is additional demand that is not currently being met. One approach to this question would be to survey residents of communities that do not currently have farmers markets. Another approach would be to question supermarket shoppers in communities that *do* have farmers markets to see whether they are aware of the markets, and whether they would consider shopping there.

A related question is whether increased demand for farmers market produce could be created by making people more aware of the benefits of local produce (both direct benefits such as greater freshness and quality and indirect benefits such as preservation of open space) and its availability at farmers markets. A promotional campaign could be designed and tested in selected communities in the state.

Indicator C: Profitability of direct marketing arrangements to farmers

Prices farmers receive at farmers markets are quite high compared with what they would receive from a wholesaler; but their marketing expenses for a farmers market are much higher. Farmers markets have the potential to attract more customers than a farm stand, but again, expenses and travel time are higher. A study could be done to determine whether farmers markets are more profitable to farmers than other possible sales outlets. Since this would entail analyzing farmers' finances, an established institution with high credibility among farmers should be employed to do such a study.

6. Program Revision

Depending on the results of the studies proposed above, the farmers market program could be revised in a number of ways, including changes in the following areas:

1. Resources devoted to forming new markets
2. Resources devoted to promoting the markets.
3. Resources devoted to promoting the value of local agriculture at the markets.
4. Areas targeted for new markets.
5. Hours of operation of the markets.
6. Types of products made available at the markets.
7. Provision for cooperative marketing arrangements for farmers.

This list is by no means comprehensive, and further research could reveal many different areas for revision of the farmers market program, or for new programs.

Case Study # 3

Action Group on Community Health and Environmental Issues

Study of Program Governing the Land Application of Sludge and Septage

1. Action Group Goals, Objectives and Indicators

A. *Goals for the Action Group:*

To encourage and employ sustainable and appropriate agriculture technologies that are resource-efficient and protect the environment.

B. *Specific objectives for the Action Group:*

i) To increase the use of locally available and renewable fertilizer inputs as a means of reducing costs to farmers and levels of solid waste levels in landfills.

ii) To reduce the use of and reliance on non-renewable and locally unavailable fertilizer inputs manufactured from fossil fuels.

C. *Indicators for the Action Group objectives and goals (applicable to both objectives)*

Tons of sludge and septage applied to farms per year
Tons of compost produced and applied each year
Crop yield per ton of off-farm fertilizer purchased
Comparison of off-farm fertilizer purchases from year to year
Cost of purchased off-farm inputs
Number of farmers with composting facilities
Number of farmers using sludge or septage as a fertilizer input
Solid waste inputs to local landfills
Sales of compost and sludge and septage from local suppliers

2. Institutions

A. *Institutions*

Massachusetts Dept. of Environmental Protection - Division of Solid Waste Mgt.
Local Boards of Health
Local and district level waste management authorities
The Nature Conservancy
Natural Resource Conservation Service District Office

B. *Institutional Descriptions*

1. Massachusetts DEP - Division of Solid Waste Management

   Public organization, mainstream, directly and indirectly impacts agriculture with solid waste policies and programs.

2. Local Boards of Health

   Public organization, mainstream, indirectly impacts agriculture.

3. The Nature Conservancy

   Private organization, non-profit, focuses on social change, works directly on some sustainable agricultural issues.

4. Natural Resource Conservation Service (NRCS) District Office

   Public organization, mainstream, focus on agricultural issues (mainly soil conservation programs).

C. *Stakeholder Interests*

1. Massachusetts DEP - Division of Solid Waste Management

   Residents of the Commonwealth, solid waste handling firms, composters, sludge and sewage handlers

2. Local Boards of Health

   Local residents, farmers, farm workers

3. The Nature Conservancy

   Environmentalists, corporate representatives, citizens donating to the organization.

4. Natural Resource Conservation Service (NRCS) District Office

   Farmers, farm suppliers, cooperative extension agents

D. *Ranking of Institutions as they impact Action Group's goals and objectives*

1. Massachusetts DEP - Division of Solid Waste Management
2. Local Boards of Health

3. NRCS District Office
4. The Nature Conservancy

3. Institutional Policy Goals

A. ***How can information on these institutions be obtained***

Massachusetts Dept. of Environmental Protection - Div. of Solid Waste Management

Methods for getting information:	Review the Solid Waste Management Plan Look at solid waste laws & regulations Talk with landfill operators Talk with farmers composting and/or using sludge Talk with officials at Dept. of Food and Agriculture Look at the solid waste management budget

Local Public Health Authorities

Methods for getting information:	Look at local health regulations Talk with local health officials Look at health department records Talk with farmers and local residents Look at the local health budget

B. ***Who at these institutions can be contacted?***

Massachusetts Dept. of Environmental Protection - Div. of Solid Waste Management

Contacts in this organization:	Representative of the district office of MA DEP Commissioner of Massachusetts DEP Director of Department of Solid Waste Mgmt.

Local Public Health Authorities

Contacts in this organization:	Local board of health member Local public health commissioner Mayor and town council members

C. ***Information gathering process. Information is collected from the sources and contacts listed above and then presented to the Action Group.***

D. ***How do the goals of the institutions compare with those of the Action Group?***

Massachusetts Dept. of Environmental Protection - Div. of Solid Waste Management

Policy Goal: *To develop an integrated system of solid waste management which maximizes the reuse of recyclable materials while minimizing inputs of solid waste to local- and state-operated landfills and incinerators.*

How does this relate to the Action Group's goals and objectives?

This appears to be consistent with the Action Group's goal of increasing the use of locally available or on-farm renewable resources as a means of reducing landfill inputs.

Local Public Health Authorities

Policy Goal: *To secure a safe environment for community members by minimizing risks of exposure to potential health hazards.*

How does this relate to the Action Group's goals and objectives?

The Action Group's objectives may pose an indirect threat to the local authority's goal by encouraging the use of sludge and septage. By making the use of these inputs more reliable and readily available and by encouraging their use (as possibly desired in the action group's objectives i and ii), more farmers may begin applying sludge and septage. Even though safe practices will probably be used, there is still a potential health risk that would otherwise not exist if sludge and septage were prohibited.

4. <u>Institutional Strategies and Policy Tools</u>

A. ***What strategies do these institutions use to achieve their policy goals?***

The focus of the remainder of this case study will be on the Massachusetts DEP - Division of Solid Waste Management.

Massachusetts Dept. of Environmental Protection - Div. of Solid Waste Management

Laws and regulations:

Landfill regulations
Laws and regulations for the land application of sludge
Regulations controlling the transport of solid waste

Policy statements

Integrated Solid Waste Management plan

B. *What strategies are most important to the Action Group's goals and objectives?*

The case study will focus on one of the policy tools referenced above: **The land application of sludge and septage.**

C. *Gather information on the laws and regulations for the land application of sludge and septage.*

1) *Description of Strategy / Name of Program*

General strategy:

MA Solid Waste Management Plan

Name of program / policy tool:

Laws and Regulations for the Land Application of Sludge and Septage

Laws

M.G.L. c. 21, ss. 27(9), 27 (12) and 43
M.G.L. c. 21A, s. 2(28)
M.G.L. c. 111, s. 160

Regulations

310 CMR 32.00

Established by:	Massachusetts State Legislature 1992
Administered by:	Department of Environmental Protection - Division of Solid Waste Management

2) *Program Objectives*

i) *General program objectives*

To establish sludge composting and reuse on a large scale in Massachusetts.

ii) _Objective for the regulation governing the use of sludge and septage_

To allow the land application of sludge and septage for beneficial purposes in a manner that will protect public health and the environment from possible contamination which could occur from pathogens, metals, or toxic chemical compounds.

3) *Key Program Staff*

Representative of the district office of the MA DEP responsible for solid waste
District Representative of the NRCS
Local board of health member or local public health commissioner

4) *Theory Behind the Program*

Traditionally, sludge and septage waste from publicly owned treatment works and privately owned wastewater treatment facilities has been disposed of in landfills, incinerated, converted to fertilizer, or dumped in the ocean. Most of these disposal methods are problematic in either having high energy costs (i.e. incineration) or are becoming obsolete in the context of stricter, more sustainable environmental regulations (i.e. some landfills will no longer accept sludge). This clearly poses a problem as there is no shortage of this kind of waste material today or in the future. In anticipation of rapid landfill closings in the short term and long term concerns about waste disposal, the Commonwealth initiated a management policy which would promote the beneficial, land applied, re-use of sludge and septage. The regulations created from this program (for the land application of sludge and septage) were developed to restrict the use of these materials in order to safeguard public health and drinking water supplies. These regulations are deemed necessary in the context of the program which aims to increase the numbers of farmers using sludge and septage as fertilizer inputs.

5) *How the Program Works (Specifically for Type II and III Sludge Applications)*

1) A farmer who wishes to use Type II or Type III sludge and septage on their farm first needs to determine if his/her land meets the general requirements for applying the sludge as specified by the state in section 32.21 of 310 CMR. The criteria examined are as follows and the specific requirements for each can be found in the regulation:

Soil texture	Soil drainage	Depth to groundwater
Depth to bedrock	Soil pH	Slope

Site control measures (soil erosion and drainage control issues)

2) The farmer must then confirm that the land to be fertilized meets the water pollution prevention requirements as delineated in section 32.22 of 310 CMR.

The issues of concern regarding water pollution are as follows:

Protecting public water supplies	Protecting private water wells
Protecting other surface waters	Protecting drainage channels
Groundwater monitoring (sometimes required by the DEP)	

3) The farmer is required to take soil samples prior to first applying the sludge and before applying for the Land Application Certificate. The parameters to be sampled are:

Soil pH	Cation exchange capacity	Total nitrogen
Ammonium Nitrogen	Nitrate nitrogen	Phosphorous
Potassium	Cadmium	Total cad.
Copper	Lead	Mercury
Nickel	Zinc	PCBs

4) If the basic criteria are met, the farmer may then apply for a Land Application Certificate from the DEP. This requires that extensive data about the land be collected and this information supplied to the DEP as specified in section 2.25 of 310 CMR. This information includes the following:

Topography map of the land	Scaled plot plan
Well locations	Location of the sludge storage site
Location of surface waters	Number of acres to be fertilized
Complete soil information	Depth to max. high groundwater
Drainage practices used	Erosion control practices
Results of soil analysis	Info. on crops to be grown on land
Where the sludge is coming from	How the sludge is to be applied
Details about the sludge and septage to be applied	
How the sludge is to be transported to the site	
Information on livestock and wild animals in vicinity of land	

It should be noted that the regulation states, *"The land application or sludge or septage shall be in accordance with good agricultural practices recommended by the Cooperative Extension Service or the Soil Conservation Service [NRCS]."*

5) When the DEP receives a complete application, they notify the applicant and the board of health of the city or town where the sludge is to be applied. The board of health is given 35 days to reject or approve the request. If no response is given, the DEP will use its discretion solely to determine whether or not to approve the application.

6) If the application is approved, the farmer is then permitted to apply the sludge as specified in the application and in concurrence with section 32.23 of 310 CMR. This section regulates the following in regards to the land application of sludge and septage:

Application rate	Incorporation into the soil	Public access
Grazing animals in area	Crops grown / timing	
Seasonal restrictions		

7) Farmers using the sludge are then required to keep extensive records of the following under a separate file with each Land Application Certificate:

   a) The results of all soil samples including when and by whom taken and by whom analyzed
   b) The location of each land application site
   c) The amount of sludge or septage spread per acre annually per site and the total cumulative addition of sludge or septage per site
   d) The date and method of application for each site
   e) The crop grown on the land application site and the use of the crop
   f) What kinds of animals were grazed on the land application site
   g) The address of each location where sludge or septage was stored
   h) The information gathered in applying for the Land Application Certificate

8) Finally, the DEP requires that the farmer submit an annual report detailing the sludge and septage use activities. There is no time limit on the validity of the certificate.

5. Strategy and Policy Tool Assessment

A. ***What are appropriate indicators to assess the laws and regulations for sludge and septage?***

Tons of sludge and septage applied to farms per year
Crop yield per ton of sludge input applied
Comparison of off-farm fertilizer purchases from year to year
Cost of purchased off-farm non-renewable inputs
Number of farmers using sludge or septage as a fertilizer input
Solid waste inputs to local landfills
Sales of compost and sludge and septage from local suppliers

B. ***How can the data be collected? How can the program be compared with the indicators?***

Data Collection

Some of the data can be collected by checking DFA records on composting programs and fertilizer purchases, from DEP records on those farmers applying sludge to their fields, landfill input records, sludge and septage supplier receipts and yearly income records, and crop yield data may be available from cooperative extension or NRCS. Other information can be collected less formally by discussions with farmers using sludge and septage, sludge suppliers, farm suppliers, and cooperative extension agents.

Making the comparison

One way of testing the indicators is to ask appropriate questions. Another is for the Action Group to decide on appropriate limits for the indicators and use these in the assessment process. These limits can be determined with the assistance of Key service providers, COOP extension, or NRCS representatives.

C. ***Assessing the program. Answering the questions.***

A formal assessment will not be provided in this section but a partial list of questions to ask is listed below. Some of these relate directly to our indicators but others do not and may require new indicators to answer them accurately. These questions should be answered objectively using as much information as possible. This objectivity is crucial to properly revising existing programs or creating new ones.

Some questions to ask when making the assessment of this program:

- Will yields be improved or maintained in the context of a better environment? How does this program enhance production?

- Are new farming practices required as a result of this program? Have extension assistance, equipment, or subsidies been provided to ensure a smooth transition to the new techniques? How will the indicators be used to evaluate improvements or prevent further degradation?

- Are external fertilizer and nutrient input consumption patterns altered? Are they decreased because of the program or do they increase?

- Does the program reduce local landfill inputs? Are local sewage and sludge inputs to landfills limited as a result of their use as fertilizer?

- Does the program encourage renewable resource and waste recycling?

- Is the permitting process complicated or easy to work with?

- Does the program encourage use of more fossil fuel or other non-renewable resources than previous programs?

- Do new fertilizer inputs have to come from long distances? How does the sludge and septage get to the farm?

- Will the soil quality improve because of the program (using some of the indicators above) and will its long term capacity be enhanced?

- Is the there a net improvement of the global environment as a result of this program?

6. Program Revision and Action Strategy

A. ***Are the Action Groups objectives being met by this program?***

The program needs to be thoroughly analyzed using the indicators and questions listed above. Make a list of those objectives being met and those not being fulfilled.

B. ***For those objectives not being met, answer the following questions.***

1) Is this program applicable for this objective?

2) If it is, why isn't it achieving the desired end? How can it be modified?

3) If it isn't appropriate, what kind of strategy would be?

Action Group Worksheet for Policy Analysis

1. Action Group Goals, Objectives and Indicators

A. What is (are) the goal(s) of the Action Group?

B. What are appropriate objectives to meet the Action Group's goals?

Action Group Worksheet for Policy Analysis

1. Action Group Goals, Objectives and Indicators (Continued)

C. What indicators of sustainability can best be applied to test these goals and objectives? List as many indicators as possible and think about how these might be measured.

2. Institutions

A. What institutions have a direct or indirect impact on the goals and objectives of the Action Group? List as many as you can.

Action Group Worksheet for Policy Analysis

2. Institutions (Continued)

B. Describe the institutions you have indicated above. List the institutions to be analyzed on the next page and answer the following questions as they pertain to each.

1) Is the institution public or private?

2) If it is private, is it a for-profit or non-profit organization?

3) How would you characterize the institution? Is it a mainstream organization or one focusing on social change?

4) If it is a mainstream institution, is its focus on agriculture, or on other issues which impact agriculture indirectly?

5) If the institution focuses on social change, does it work on sustainable agriculture issues, or on other issues which impact agriculture indirectly?

C. List the stakeholder groups that the institutions serve, represent, or interact with.

D. Rank the institutions in order of their impact on the Action Group's goals and objectives.

Action Group Worksheet for Policy Analysis

2. Institutions (Continued)

Worksheet for describing and ranking institutions in steps 2B through 2D.

Action Group Worksheet for Policy Analysis

3. Institutional Policy Goals

A. List the institutions you have selected as most important, and describe methods of getting information about their policy goals. (Refer to the instructions for details).

B. List people in these institutions whom you could involve in your discussions. List any participants in the Action Group who can help obtain information about the institutions you have selected.

Action Group Worksheet for Policy Analysis

3. Institutional Policy Goals (Continued)

C. Gather information on the policy goals of the institutions you have selected. The information collected will be presented to the Action Group at a subsequent meeting. (Refer to the instructions for details)

D. How do these goals compare with those of the Action Group? Connect those goals matching favorably with the Action Group's with a solid line and those not meeting the goals with a dashed line.

Action Group's Goals	**Institution's Goals**

Action Group Worksheet for Policy Analysis

4. Institutional Strategies and Policy Tools

A. What strategies and policy tools do the institutions you have selected use to achieve their policy goals?

B. Choose the most important strategies for further research.

Action Group Worksheet for Policy Analysis

4. Institutional Strategies and Policy Tools (Continued)

C. Gather information on the institutional strategies.

1) Description of strategy/name of program

2) Goals and objectives

3) Names and roles of key staff

4) Theory behind the strategy

5) Components of the strategy

D. Present research on the strategies to the Action Group.

5. Strategy and Policy Tool Assessment

A. For each strategy and policy you examined, select the appropriate indicator for comparison. List the strategy and policy tools below and the appropriate indicators for each.

Action Group Worksheet for Policy Analysis

5. **Strategy and Policy Tool Assessment (Continued)**

B. How can the program be compared with the indicators? How is the data to be collected? Action Group members should develop a plan for collecting this information.

C. Assess the policy tools and strategies. How well are they doing in terms of the Action Group's indicators? Write a brief assessment for each below.

Action Group Worksheet for Policy Analysis

6. Program Revision and Action Strategy

A. Look at the Action Group objectives you determined in Step 1. List those objectives being met by the strategy and those not being achieved.

Objectives Being Met	Objectives Not Being Achieved

Action Group Worksheet for Policy Analysis

6. Program Revision and Action Strategy (Continued)

B. For those objectives not being met, answer the following questions:

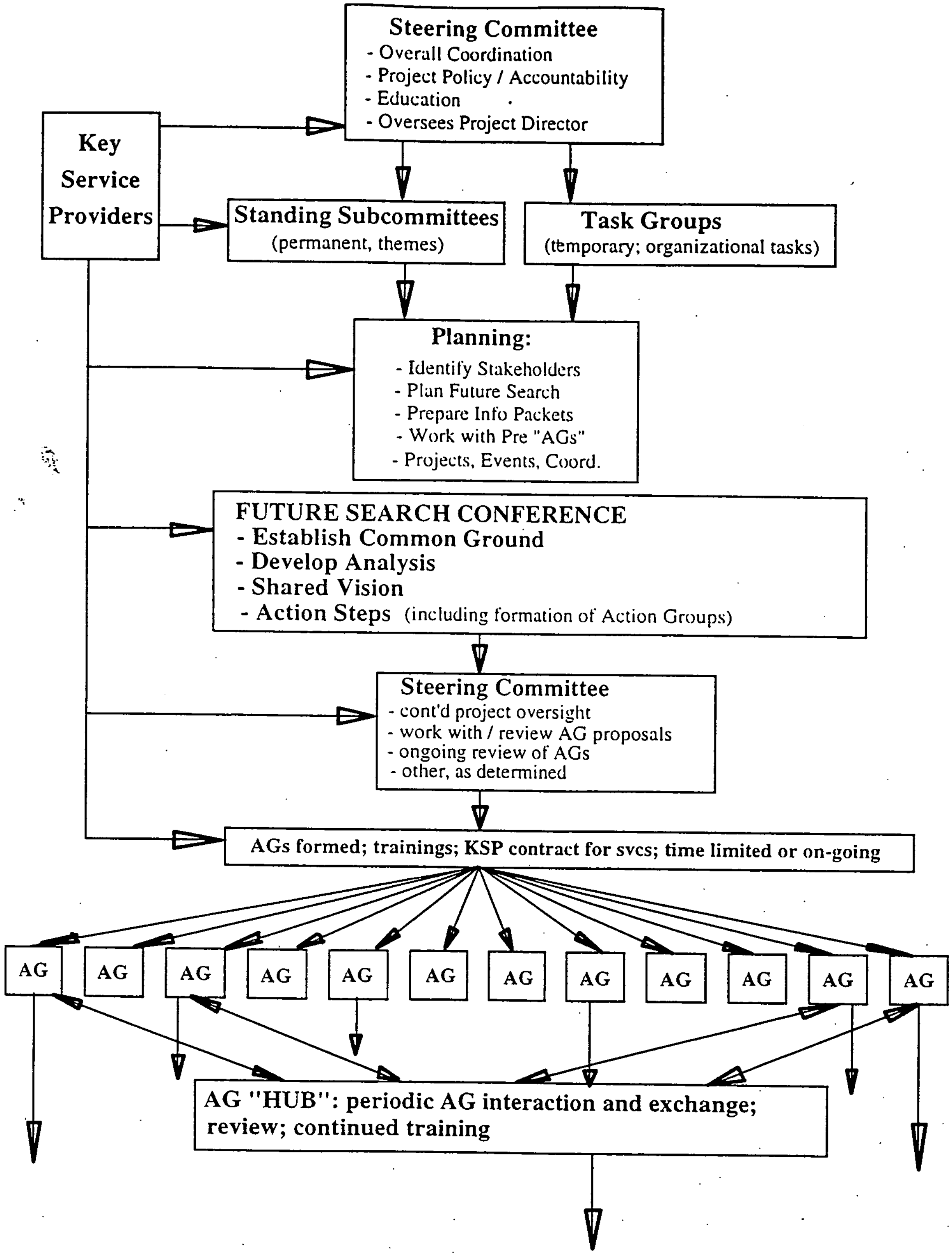
1) Is the policy tool or strategy appropriate?

2) If it is, why isn't it achieving the objective? How can it be modified?

3) If it isn't appropriate, what kind of strategy would be? The Action Group should develop some ideas and devise a plan for achieving the objectives being overlooked.

APPENDICES

The CISA PROJECT



CISA Key Service Providers

1. Earth Arts Institute
   Contact: Alex MacPhail
   Address: 92 Florence Street
   Leeds, MA 01053
   Phone: (413) 586-6372

Description of services provided to CISA project:

- Community outreach and education programs
- Coordinate appropriate placement and supervision of graduate interns with Action Groups (in collaboration with Hampshire College)
- Disseminate and document information and activities of Action Groups to larger community

2. Hampshire College
   Contact: Brian Schultz
   Address: Natural Science
   Hampshire College
   Amherst, MA 01002
   Phone: (413) 582-5486

Description of services provided to CISA project:

- Placement and supervision of undergraduate interns (in collaboration with Earth Arts Institute)
- Demonstration site for sustainable practices at Hampshire College Farm
- Overall fiscal agent for the CISA project

3. Institute for Science and Interdisciplinary Studies
   Contact: Herb Bernstein
   Phone: (413) 582-5582

Description of services provided to CISA project:

- Develop and coordinate the project's participatory evaluation, management and dissemination components
- Coordinate ongoing, participatory evaluation of the project and its service providers, with emphasis on ensuring relevancy and sensitivity to constituent needs
- Co-sponsor (with the University of Massachusetts) workshops dealing with knowledge issues that affect collaboration and project success.

4. New England Small Farm Institute
   Contact: Kathy Ruhf
   Address: Box 937
   Belchertown, MA 01007
   Phone: (413) 323-4531

Description of services provided to CISA project:

- Provide informational resource needs assessment and development; related technical assistance; access to Alternative Agriculture Library/resource matching services
- Help identify relevant policy ideas and strategies for evaluation and change
- Provide links with sustainable agriculture initiatives within and outside the Valley
- Help design demonstrations and implement tours and field days focusing on sustainable practices

5. Nuestras Raices
   Contact: Karen Sutherland
   Address: 410 River Road
   South Hadley, MA 01075
   Phone: (413) 536-8059

Description of services provided to CISA project:

- Assist in developing and maintaining links between the Latino community, farmworkers and farmers

6. University of Massachusetts at Amherst
   Contact: John Gerber
   Phone: (413) 545-4800

Description of services provided to CISA project:

- Develop ongoing leadership development program
- Make research and extension services available to the project

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