

*Extension Miscellaneous 8818
November 2002*

A Primer on Rural Community Sustainability

*A product of the OSU Rural Studies Program prepared
by Emery N. Castle*



OREGON STATE UNIVERSITY
EXTENSION SERVICE

Foreword

THIS PRIMER IS INTENDED TO SERVE Extension personnel and community leaders as they work in local communities facing decisions with long-range implications. Some communities may engage in long-range planning without any compelling reason to do so, except that they believe it is a good thing to do. More communities will need to face current issues with long-range implications. For example, an industrial firm may wish to irreversibly alter the local landscape, an urban expansion may threaten a historic building, or a proposed school consolidation plan may result in losing the local school and busing the local children long distances.

When decisions like this must be faced, no easy answers or “cookbook” formulas apply. Each situation is different, including the process used to arrive at a decision. Yet this primer is based on the assumption that certain principles and planning procedures are helpful in such circumstances. This primer is not intended for an ambitious educational program involving large numbers. Rather, I designed it to help local groups build consensus on decisions likely to affect the direction their community takes over time.

Principles and general information are found early in the primer, followed by examples and problems. The purpose of both is to stimulate group discussion in a workshop setting. As you read through the primer, I hope group discussion and deliberation can illuminate the questions you formulate.

Even though the primer is short, less than 20 pages, it deals with weighty subjects and I made considerable effort to ensure it is correct technically. Representatives of different academic disciplines have reviewed the manuscript, as well as those familiar with local conditions. Reviewers include Peter Bloome, Bruce Weber, Bill Jaeger, Ron Hathaway, Sandy Macnab, Carol Whipple, John Bliss, Roger Bairstow, Erik Fritzell, and Andrew Duncan. These people are not responsible for shortcomings; only I am accountable for those.

Emery N. Castle, Director
*The Rural Studies Program at
Oregon State University*

A Primer on Rural Community Sustainability

What Do We Mean When We Say “Sustainability”?

According to a recent publication from the Oregon State University Extension Service, a common theme runs through most definitions of sustainability. The definition that popularized sustainability and made it a political force originated with the “Bruntland Commission,” so named after the commission chair, Gro Harlem Bruntland. Actually, the official name was the World Commission on Environment and Development, a creation of the United Nations. In 1983 this group issued a report under the title “Our Common Future,” which referred to sustainable development as “a form of development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

Much lies beneath the surface of these few words. They reflect the importance of human needs both now and in the future. They place a heavy responsibility on the present generation of humans to consider not only their own needs, but also the needs of succeeding generations. The definition calls attention to outcomes, or needs, rather than how those outcomes are to be achieved. That is left to the present generation of decision-makers. This primer was written to help those who make such decisions.

An important criticism of the above definition pertains to the ambiguous nature of the word

“needs.” When the meaning of “needs” is probed, such terms as “necessities,” “luxuries,” and “satisfaction” come into the conversation, but these are just as ambiguous as “needs.” Clearly, “needs” is a subjective term and is incapable of being defined in an absolute sense. Yet, most will agree that what can be achieved in the future may well be affected by the way present needs are addressed. To restate the message of the Bruntland report: *If sustainability is to be achieved, the present generation must conduct its affairs so that future generations will have the opportunity to achieve a level of living comparable to that of the present generation.* Such a requirement imposes considerable discipline on any social group that takes it seriously.

The Bruntland definition, standing alone, says nothing about *how* present or future needs are to be met. The *end* is sustainability; how it is to be achieved is the *means*. And usually the possible means are many. The natural environment; the number, health, and experience of people; accumulated wealth; and the norms and networks among people that pass from one generation to another are all important in meeting future needs. The Bruntland definition, as such, does not identify one as being more important than another. An argument for preserving any one of these items to achieve sustainability must give attention to the effect such preservation will have on all of the other items, and then demonstrate that the needs of future generations will be compromised unless preservation occurs.

The Changing Rural Community

Rural communities have been under great stress in recent years. Some have experienced rapid growth. Others have been stable or declined, while some have had a moderate growth rate. Even though growth patterns among rural communities have differed, all have been greatly affected by urban centers and global markets in recent decades. Many communities have a tradition of group cooperation and action to improve local conditions.

Just as is true for “sustainability,” the word “community” also suffers from ambiguity. Shared, or common, interests among individuals are fundamental to its meaning. Common interests may arise because people live in a particular geographic area or place. Additionally, a common ethnic or religious background may give rise to shared interests, and business associations or similar circumstances may have the same effect as well.

The term “rural community” arises because some people live in less densely populated rural places. Residents of the traditional Euro-American rural community often had many common interests because they lived and worked in the same place. A common occupation, such as farming, often established a bond among many residents. The local school provided a common focal point for others. The residents of such traditional rural places often shared a common ethnic or religious background. The values and the networks that typically developed were deeply embedded in the social fabric of the traditional rural community. Many informal customs and habits affected individual behavior. The term “it is customary” often was sufficient to persuade an individual to behave in a certain way. This has become much less common. Of course, Native Americans occupied this land long before Europeans arrived, and their communities were even more “traditional” than the “traditional” rural community referred to here.

When economic and social change is widespread and persistent in the larger society, the rural community is affected as well. Occupations must change if the local economy is to remain vibrant, or even

survive. The rate at which people migrate into or out of, rural areas often increases. Contacts between the local economy and the outside world grow rapidly. The general-purpose, traditional, rural community with many shared interests among residents is likely to be supplemented by newly shared interests between residents and those who live and work elsewhere. Informal customs and habits typically give way to more formal or “business-like” transactions.

The contemporary, compared to the traditional, rural community, then, is often distinguished by the number of groups within an area bound by some common interests. Yet rural people often have extensive contacts and shared interests with others outside their community. The term rural community still has meaning if the people who live there continue to have common interests, and find ways to coordinate their actions in order to fulfill their aspirations. A desire to provide for the future of the rural community may be among these aspirations. This is the link between “sustainability” and “rural community.”

Regardless of location, the contemporary rural community is closely tied to, and is affected greatly by, urban influences. Most rural people are keenly aware that decisions and events away from their rural community significantly affect them. They also know that under our system of governance they have been accorded a degree of autonomy in the conduct of their affairs. Further, they have a tradition of cooperation within the community as they seek to fulfill their individual aspirations. In no arena is this of greater importance than providing for future generations. It was not by accident the Brundland Commission report was entitled “*Our Common Future*.”

Forces outside the rural community often affect it in profound ways. Even though such forces are beyond the control of local people, the people must react and adapt; this is one reason why a degree of local autonomy is important. The ways communities react and adapt has a great deal to do with sustainability.

Community Sustainability

In getting to community sustainability issues, first we must consider general principles of planning for sustainability. These are followed by a description of the Oregon approach. Issues especially relevant to rural communities are then discussed.

General Principles

In 1997 the International Institute for Sustainable Development, Manitoba, Canada issued a report entitled “Assessing Sustainable Development: Principles in Practice,” which lists 10 widely accepted principles in planning for sustainability. To establish a general framework, I have abstracted those principles below; the first nine are concerned with how to assess progress toward sustainable development. The tenth principle pertains to how sustainability can be maintained.

1. Be guided by a clear vision of sustainable development and goals that define that vision.
2. Include a review of the whole system as well as its parts. Consider the well-being of social, ecological, and economic sub-systems, and the interactions of the various parts of the system (holistic perspective).
3. Consider equity and disparity within the current population and between present and future generations. Consider the ecological conditions on which life depends, economic development, and other non-market activities that contribute to human/social well-being (essential elements).
4. Adopt a time horizon long enough to capture the needs of future generations as well as those of the present generation (adequate scope).
5. Develop an organizing framework that links vision and goals to indicators and assessment criteria. Include a limited number of key issues for analysis and a limited number of indicators or combination of indicators to provide a clear signal of progress. Standardize

measurement wherever possible to permit comparisons. Compare indicator values to objectives (practical focus).

6. Make the methods and data accessible to all; make explicit all judgments, assumptions, and uncertainties in data and interpretations (openness).
7. Address the needs of users. Draw from indicators that will engage decision-makers; aim for simplicity and clear language (effective communication).
8. Obtain broad participation to gain recognition of diverse and changing values.
9. Be iterative, adaptive, and responsive to change and uncertainty. Adjust goals, frameworks, and indicators as new insights are gained. Promote collective learning and feedback to decision-making (ongoing assessment).
10. Clearly assign responsibility and make provision for support for the decision-making process. Provide institutional capacity for data collection, maintenance, and documentation. Support development of local assessment capacity (institutional capacity).

The above principles are intended to provide guidance for those who support citizen groups engaged in planning activities with long-run implications.

The Oregon Approach—A triple bottom line

Oregon’s approach to sustainability involves the simultaneous consideration of three systems that affect the world around us—economic, environmental, and social—and the needs (there’s that word again) associated with each of these systems. An assumption is also made that the three systems overlap; that is, they are interdependent. Therefore, satisfying the needs of one system is affected by meeting other needs within the system. In the words of Oregon Governor John Kitzhaber, “we must,

therefore, strive to ensure that our efforts result in simultaneously meeting environmental, economic, and community needs throughout the state” (Tyrens, J. and B. Silverman, 2000).

As a practical matter, an empirical modeling of these systems and an estimation of areas of overlap would be an enormous undertaking. Probably the closest Oregonians can come is to examine measurements made by the Oregon Progress Board. The procedure followed there has been to compare the Oregon Benchmarks with the 10 principles outlined above. When this was done, the conclusion was reached that Oregon’s benchmark indicators compare favorably with the 10 principles (Tyrens and Silverman). To a considerable extent, Oregon’s accomplishments are due to an institutional framework (a part of Oregon’s capital stock) that provides public decision support for the three systems identified.

You may wish now to reflect on what has been written to this point. The substance of the sustainability concept can be reduced to a few commonsense words such as: “the needs of those living and making decisions now should not compromise the ability of those who will live in the future to meet their needs.” Many accept the principle involved here, but find it difficult to put into practice. This will be especially true if they hope for concrete and specific measurements either of actions to be taken or results to be obtained. But there is another way of looking at the matter. An important contribution of the sustainability concept is to identify a new way of thinking about an important issue.

The Community, Total Capital, and Sustainability

A classification system is now introduced that will permit sustainability at the community level to be discussed in more specific terms than have yet been used. The system was developed to help people in a community relate their current needs to future needs in a logical way. The economic concept of “capital” is central to this classification system.

“Capital” is used to refer to durable and useful items that result from investments or foregone consumption by someone in society. A Nobel Laureate economist, Robert Solow, wrote this concerning sustainability: “It is absolutely essential that ‘capital’ be interpreted in the broadest sense to include everything, tangible and intangible, in which the society can invest, including knowledge” (Solow, R.M., 1992). When “capital” is used in this way it has ecological, economic, and social dimensions. The classification system I introduce next rests on this interpretation of capital. This permits one system to be used for community sustainability, rather than the three—economic, ecological, and social—that are used at the state level.

This single system does not require that traditional economic goals be given priority over social or ecological objectives. It does require that economic, social, and ecological objectives all be considered when the concept of capital is applied. Total capital, as advanced here, consists of four components: human capital, human-created capital, natural capital, and social capital. Some have argued that a fifth, cultural capital, should be included as well. This would not fundamentally change the system, but the four capital components used here include cultural capital items. The four components are defined as follows:

- Human capital includes all investments people have made in themselves that enable them to be more capable of satisfying their needs now or in the future than if such investments had not been made. Individuals, families, and communities have long made investments in people through formal education; all—individuals, families, and communities—benefit from such investments.
- Human-created capital pertains to tangible items created by individuals or groups in society. The ownership of human-created capital may rest with individuals or be held in common. A tractor and a community library both provide examples of human-created

capital. Cultural items, such as a painting, would be included here as well.

- Natural capital encompasses the entire natural environment, including items of current economic value, as well as those that have potential or implicit economic value. Thus, if something in the natural environment is used in the present so that it cannot satisfy future needs, a disinvestment in natural capital has occurred. Humans have modified a great deal of the natural environment; for example, tile may be added to farmland to improve drainage, or a fence built to establish boundaries. In such circumstances, the farmland should be considered a combination of natural and human-created capital. However, if tiled and fenced land does not serve the needs of future generations, such “investments” now may later turn out to be “disinvestments.”
- Social capital, which includes habits, customs, laws, and institutions, pertains to the human norms and networks, or formal and informal group activities, that permit individuals to better realize their aspirations. Families are an important form of social capital. Some social capital arrangements, as for other forms of capital, may become obsolete or counter-productive. Some, such as the family, may endure indefinitely or for very long periods. Including “norms” in the definition provides for the inclusion of certain cultural capital items. Different social arrangements may be combined to accomplish particular objectives. For example, a close relationship may exist between families and schools, or between families and religious institutions.

Social capital arrangements are frequently thought of, and referred to, in the context of small groups, such as the family or local community organization. Yet all forms of cooperation depend on trust and an expectation of reciprocity among those participating. As used here, reciprocity does not necessarily mean that a reciprocal action will be identical to the

action that triggered it. For example, I dispose of garbage for my neighbor; he reciprocates by loaning me his tree pruners. Still, trust and an expectation of reciprocity are the glue that makes social capital arrangements possible. As we move to, say, state or national levels, the “glue” is likely to become more formal and impersonal. Perhaps the ultimate in formality is a body of law that emerges over time. But that body of law will not command respect and compliance without trust and an expectation of reciprocity. Few people would willingly report their income to the IRS unless there was trust that most other people, unknown to the individual taxpayer, are doing likewise.

The use of both social capital and trust terms in sustainability discussions has been criticized because they may serve ends that are not in the best interests of society. For example, a small group of terrorists may be bound together by trust, an expectation of reciprocity, and information exchange. It is easy to address this criticism. An item constitutes “capital” only if it contributes something of value to the decision-makers. If one takes the point of view of the terrorist group, their organization constitutes a form of social capital to the community of terrorists, even though it inflicts harm on others. From the standpoint of the larger society, the terrorist organization does not qualify as social capital. Consider, for example, a group bank robbers who use very fast get-away cars. Would cars fail to qualify as capital when used in other ways, just because bank robbers also used them? The issue here is that a group within a larger society pursues ends that are inconsistent with the ends of the larger group.

The relationship of economic growth to sustainability is important. As used here, “economic growth” refers to the improved capacity to satisfy needs over the time frame defined by the economic system itself. It does not necessarily, or automatically, make allowance for future

generations. Economic growth is attractive because some, perhaps many or all, members of the social group can enjoy more of the goods and services provided by the economic system. Such growth requires that some of the capital stock be used. If some of the growth is saved for investment, the capital used to help generate growth may be offset, or more than offset, and disinvestment will not occur. The question then arises, how can one know whether there has been a net increase or decrease in the capital stock if one form of capital increases but another decreases? This is not a problem if there is a common denominator, but a common denominator may not be agreed on when there is great uncertainty regarding the future. This is the essence of the sustainability problem. In one way or another, the remainder of this primer is concerned with how this question can be addressed in a practical way at the community level.

I make no attempt here to develop a common denominator for all forms of capital. If I choose a common denominator, it likely would come from one of the three systems involved—economic, social, or ecological. I could not establish such a common denominator without attributing greater importance to one system than to the other two. For much planning and decision-making it is not necessary to do so. As noted, it is possible, within limits, to substitute one form of capital for another in order to accomplish particular objectives. In most situations all four capital forms probably exist in some variable proportion.

The capital stock available is a measure of the capacity of a society, or in this case a community, to accomplish future objectives or goals, but by no means does it ensure any particular future target or objective will necessarily be achieved. Nevertheless, leaving capital stock for succeeding generations, equivalent to what is currently available, provides the means for future generations to meet their needs at a level comparable to our own.

An inventory of the four forms of capital will draw on knowledge about and aspirations of those concerned with economic, ecological, and social systems. An advantage of the total capital concept is

that it permits all of these systems to be integrated in a single decision-making model. This can be demonstrated by considering each class of capital in turn. When this is done, it will become clear that each class of capital includes items for which market prices exist or can be readily estimated, as well as items for which this is difficult. Consider further:

Human capital

Many dimensions must be examined when you consider the human capital of a community. Are the people fully employed, are some under-employed, or are some unemployed? Would investment in human capital likely improve any under-employment or unemployment that exists? Most communities consider a certain level of education as an individual entitlement and no one is required to reimburse the community for the cost of K–12 education. In looking to the future, will greater human capital investment be needed if the human capital in a community is to maintain its relative position in the larger society? A human capital inventory requires that both market and non-market considerations be involved, and judgments must be made about how the two are related if logical decision-making is to occur. This requires integration of economic and social systems.

Human-created capital

An inventory of all human-created items, both public and private, would be an enormous undertaking even for a small rural community and is unnecessary for most decisions a community will face. Yet some decisions may cause these capital items to become a focal point of sustainability discussions. Consider for example an historic Grange hall that must be demolished or moved if a proposed business is to locate on the site. There are two dimensions to the possible value of the Grange hall. One pertains to how it is regarded by current community residents; the Grange hall may provide a connection to the history of the community that is important to some current residents. Yet people who live outside the community may have an interest in the culture and norms of the traditional rural

community as well. Preservation of the Grange hall may help attract visitors or potential future residents to the area. Therefore, sustainability considerations will require the Grange hall to be considered as a capital item in any decision that will affect its future.

For a different example, consider the durability and future attractiveness of buildings that may be created when a new business locates in a community. Many rural communities are left with abandoned buildings or physical structures when a business decides to relocate and leave a rural place. It may be impossible to predict if a prospective business will remain if it locates in a community, but it may be possible to imagine what will be left behind if it does not. A rural community cannot require a business to remain if it is unsuccessful. Nevertheless, the community may be able to protect itself by requirements or specifications for human-created capital items that will be left behind if the business leaves the community.

Natural capital

The natural environment falls into two broad categories: one includes that part of the natural environment that has economic value, is subject to private or public ownership, and is considered real property. This includes farm and forestry land, land in cities and towns, as well as various mineral lands. Most of the natural environment in this category has been modified from its natural state by human action. These modifications may either enhance or detract from the economic value of the resource in its natural state. If economic values have diminished as a result of human action, then disinvestment has occurred. Appropriation for economic use has not yet occurred for the second category of the natural environment, either because a use has not yet been found for it, or because it has not been appropriated for that purpose. Traditionally, economists have included only the first category in planning activities, but a great deal of recent thought and literature discourages such practice. Because a resource lacks current value doesn't mean it never will be of value. To assume otherwise may encourage use that amounts to a disinvestment

without considering the consequences. Further, a more holistic view recognizes interdependence and that a distinction between priced and non-priced resources may be arbitrary when the needs of future generations are considered.

When natural capital is placed on equal footing with the other capital items, ecological considerations will be integrated with economic and social systems.

Social capital

Recent research has shown that the way individuals relate to one another in groups helps explain performance and productivity among social groups. There is no longer much controversy as to whether social capital exists, but there is controversy over whether social capital has been decreasing as economic development occurs, and how new forms of social capital come into existence.

Social capital is affected as economic change occurs; a great deal of social capital has been a by-product of economic activity. Consider an historical example: at one time the least expensive grain harvesting technology involved the use of a stationary threshing machine. Neighborhood groups would organize around threshing runs as the threshing machine was moved from farm to farm. The threshing crews usually consisted of growers trading work as the threshing moved around the neighborhood. The stationary thresher was made obsolete by the mobile combine that required less labor and was priced so that individual farm ownership of combines was justified if larger acreages were farmed. This meant that one reason for the existence of a neighborhood group (a type of social capital) no longer existed. This did not mean necessarily that neighborhood groups disappeared. Rather, it meant that neighborhood groups had a different role to play than they did when stationary threshers were used.

As economic and social development occurs, less reliance is placed on social capital arrangements that depend on well understood, embedded community values. Transactions among individuals

become more formal and impersonal. Such a trend does not necessarily mean there is less need for social capital, but rather that the kind of social capital needed has changed. More specialized social capital arrangements are likely to arise, and they may disappear when the need for them no longer exists. A moment's reflection will reveal that many rural community issues and problems can be adequately addressed only with some type of group action. Social capital continues to be of importance even as economic development occurs.

Group action is of great importance when rural community sustainability is being considered. There is no ready substitute for group consensus when certain decisions are made about providing for the needs of future generations.

Three World Views

The views that people have of the world in a general sense will affect the approach they take in making sustainability decisions. Three world-views are outlined below. There are likely to be some people in any rural community that will have sympathy with each of the world views presented or with other world views that are not described.

World View I

People with this view believe the natural world is finite and nearly fully utilized at present. Those with this view believe sustainability discussions should emphasize measures that will accommodate a finite natural environment. Herman Daly, an economist and advocate for this point of view, has summarized his public policy recommendations as follows (Daly, 1991; p 44–45):

- 1.** Human activity should be limited to the carrying capacity of the globe and therefore sustainable.
- 2** Economic growth should be limited to the extent that technical change can reduce natural resource use per unit of output.

- 3.** Use rates should not exceed regeneration rates, and waste emissions should not exceed the renewable assimilative capacity of the environment.
- 4.** Non-renewable resources may be exploited, but only at a rate equal to the creation of renewable substitutes.

Those who hold World View I believe natural resources are a limiting factor in economic growth and that there are limited opportunities for substitution of other forms of capital for natural capital.

World View II

Those who hold this view believe there are many opportunities to substitute human capital or knowledge, and human-created capital, in the form of new technology, for natural capital. Nevertheless, those with this view will grant there are limits to such substitution. Scenic vistas such as those provided by the Grand Canyon are examples of unique resources where there are no practical possibilities for substitutions. Rather than emphasizing a finite natural environment generally, however, those of this perspective will emphasize discovery, innovation, and a dynamic economy.

World View III

Those holding this view emphasize that the future is unknowable and great uncertainty exists. They argue the substitution debate can never be settled once and for all because the answer lies in the future, which can never be known. People who ascribe to this view ask what the consequences would be if World View I is adopted and it turns out to be wrong. They answer their own question by saying the economic welfare of people, both currently and in succeeding generations, will be reduced. They turn next to World View II and ask about the consequences if this policy position were adopted and turns out to be incorrect. The costs here, of course, could be high as well. For example, such a policy might allow the extinction of a species that could have provided a cure for cancer or some other valuable function for the current or

future generations. After noting the cost of a wrong decision for holders of Views I and II, those who hold View III then have an obligation to offer strategies to deal with the uncertainties they believe are inherent in sustainability discussions. That is the subject discussed in the next section of this primer.

What Do We Do Now?

We can now draw three conclusions. First, rural community sustainability decisions often require some type of group decision-making activity at the local level. This does not mean that individual consumption or production decisions are unimportant to sustainability. On the contrary, the cumulative effect of individual decisions is of great importance. Yet some type of coordination, other than unregulated markets, is often required if individual aspirations for the rural community are to be realized. Some group decisions may be made through formal institutions such as the local government; others result from less formal arrangements, perhaps arising to deal with a particular problem or difficulty. To be effective, groups require trust and an expectation of reciprocity among the participants. These groups reflect the social capital of a community. Group activities typically make use of the social capital of a community or may cause the development of new social capital.

Second, a significant sustainability issue in many rural communities is the meshing of local objectives with those of state and federal policies and programs. In rural Oregon, rural school funding and the administration of land-use laws provide examples of policies that make such “meshing” difficult. In a democracy, the local viewpoint needs to be articulated when such policies and programs are formulated or being modified. Yet local decision-makers need to accept existing state and federal policies and programs even though they work within broader communities to influence them.

A third major conclusion is that most of the important decisions about rural community

sustainability take place with great uncertainty, much of which stems from the larger society that encompasses the rural community. What will be the role of the rural community in the future? Will its principal contribution be, for instance, to supply agricultural and forest products to the larger society? (Agriculture now provides about 10 percent of the income generated in non-metropolitan places.) Or will other goods and services become increasingly important? What will be the future of outdoor recreation in rural areas and how will it be provided and managed? What about rural residences, part- or full-time, for people whose income derives from urban sources? What requirements will be placed on the rural community to provide environmental quality for those who live elsewhere? (Most of the land, atmosphere, and water of the nation, as well as other aspects of the natural environment, is rural.) This list of questions will be long and will vary among rural places. Our system of government provides rural communities considerable autonomy in many collective decisions. Nevertheless, people living elsewhere make many private and public sector decisions, which have enormous impact on rural places. Such decisions, reflecting societal trends, are the source of much uncertainty affecting rural places.

Not all rural communities will survive in their present form. Indeed, rural America is changing constantly and communities are a part of that change. Even though a particular community grouping disappears, the people who remain need to establish new associations. The identifications of groupings and associations that will serve best in the future may be an important sustainability consideration.

Certain principles have been established for decision making in the face of uncertainty and can be used in achieving rural community sustainability. These principles can be reduced to provide some form of adaptability or flexibility; the basic notion here is the ability to change directions rapidly and with low cost when new information becomes available. If one has confidence the future can be predicted, plans need not provide for adaptability or

flexibility and costs will be lowered accordingly. Yet the history of rural communities demonstrates that great change has occurred that was not predicted, and probably was not predictable. The avoidance, or minimization, of irreversibilities is a time-honored technique for preserving adaptability. Generally speaking, providing for diversity also contributes to long-term stability. Any use of capital that reduces its value in a different use reduces reversibility. Sustainability discussions often center on the natural environment or natural capital and the question is asked whether present use will permit future generations to use the resource. This, of course, is most appropriate. Yet sustainability discussions may, just as appropriately, raise the same type of question about any form of capital. Will human capital investments (education) help a person become more adaptable in society, or will it prepare that person only for a particular niche? How adaptable will the rural landscape be if a prospective new industry fails after a decade, and abandons the site where it has built buildings and changed the landscape?

The above discussion is necessarily somewhat abstract. Yet it deals with issues that arise in our daily lives. People often make use of these principles in a regular and routine way in conducting their own affairs. They take on greater meaning when applied to actual situations.

Three Examples—The Klamath Basin, Yamhill County, Sherman County

Three rural places in Oregon are described as examples so that the sustainability principles I have discussed can be applied to realistic situations. I hope that these examples, though brief, will provide a basis for a discussion of sustainability issues facing the people who live there. There is no one “correct” way any of these places should proceed, and you should be able to identify the principal problems associated with finding a sustainable trajectory for the community.

The Klamath Experience

Water allocation decisions in 2001 in the Klamath Basin attracted national attention and caused major economic and social adjustments there. The Bureau of Reclamation was unable to deliver water from the Upper Klamath Lake to the Klamath Reclamation Project, stemming from biological opinions of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service. These biological opinions were required under the Endangered Species Act because of the endangered status of the suckers in Upper Klamath Lake, the bald eagle, and the threatened status of Coho salmon. These opinions required that waters of Upper Klamath Lake be maintained at a certain level, and that the downstream flows in the Klamath River be maintained at specified levels as well.

Klamath Reclamation Project lands are some of the most agriculturally productive lands in the Klamath Basin. Consequently, the biological opinions reduced the agricultural output of the Basin significantly. The economy of the basin, of course, involves more than just agriculture. The City of Klamath Falls has considerable economic activity that does not depend on agriculture, although the unemployment rate in Klamath County was one of the highest in Oregon. The year 2001 was a severe drought year, and similar conditions might not occur again soon. However, the possibility that water delivery to the Klamath Reclamation Project might again be curtailed raises serious questions about the sustainability of irrigation on those lands, as well as elsewhere in the basin. In addition to water required for species preservation, Native Americans have treaty-based claims to significant amounts of water for in-stream uses. These claims have not yet been resolved.

Analysis of the Klamath experience draws attention to two major issues. One is the great uncertainty associated with water rights in the Klamath. Another pertains to an adjudication process that has been underway for some time. Progress has been slow because of conflicting

claims to water. For example, irrigators would like to have some considerable water used out-of-stream. Native Americans and commercial fishermen, downstream on the Klamath River, would like to have water left in-stream. A closely related issue pertains to management of water within the Klamath Basin.

There is evidence that, in 2001, if water had been taken from lands less agriculturally productive than those in the Klamath Reclamation Project, the economic and social impact would have been less. However, the Klamath Reclamation Project is managed by the Bureau of Reclamation, which makes it subject to mandates of the Endangered Species Act.

What does this mean for community sustainability? The correct answer is “a lot.” The 2001 water problems did not arise entirely because 2001 was a drought year. They arose, in part, because different agencies of the Federal government took inconsistent, or conflicting, actions. They also arose out of the uncertainty created by conflicting claims to water by irrigators and Native Americans. Nevertheless, the evidence suggests that if all of the water of the basin had been considered, it would have been possible to meet Endangered Species Act requirements in 2001 with much less reduction in agricultural productivity than occurred.

A basic decision needs to be made as to whether there will be major out-of-stream water uses permitted in the future, or whether most of the waters will be reserved for in-stream uses. If it is decided both will be permitted, will greater flexibility and more alternatives be incorporated into water management decisions than was the case in 2001? It has been suggested that water markets would be one way to provide for greater adaptability and flexibility in water management. Yet water markets require that water rights be defined so that transactions in water can occur. However, the conflicting claims to water need to be resolved before the adjudication process can be brought to a conclusion.

The problem of the Klamath began with consideration of water resources, a type of natural capital. It is impossible to manage this natural capital form in the most logical way because of conflicting government programs and ambiguous water rights. What modifications and adjustments are required to permit the waters of the Klamath Basin to be used in a sustainable way? Will it be possible for the local people, including Native Americans, to play a leadership role in identifying a route the community may follow, or will the local community likely find itself reacting to state and federal mandates even in the distant future?

The City of Lafayette, Yamhill County

The City of Lafayette in Yamhill County also has a water problem, but it is of a different nature. The city water system does not provide safe and adequate water. Engineers, of course, can determine what it would take to provide water to local people. However, the technical problems of providing water are not the difficulty, the difficulty lies with the city being unable to get the problem to that stage.

Several past city councils have studied water and sewer problems, but have not advanced a plan of action to the public. Recently the Oregon Department of Environmental Quality and the Department of Health required the city to take action on water and sewer problems. The City Council decided on a plan and proposed the project be funded by municipal bonds. The funding of the bonds would have required a sharp increase in water and sewer bills. No provision had been made for public input as the project was being planned, or on how it was to be funded. The public was confronted with a project, and associated costs, without substantive knowledge of either. The public apparently blamed the council, and voted them out of office in a recall vote. At this time, it is not clear that a workable plan will be developed unless the economic and social environment in the City of Lafayette is examined.

Many of the city's residents are at the lower end of the income scale; some are retired. The cost of fixing a community water system may be greater than many are willing to assume voluntarily.

Apparently, there is not enough mutual trust among members of the community for effective group action to occur.

Prescribing a solution for a problem that reflects deep-seated social and economic maladjustment on many issues needs greater depth than is provided here. Nevertheless, two possible adjustments can be identified that are consistent with rural community sustainability.

Clearly some type of economic development would help improve average income levels within the city. Lafayette has many attractive features. It is within easy commuting distance of McMinnville and is located on a highway roughly 33 miles from the Portland metropolitan area. Yet until some municipal services are improved, Lafayette may not be attractive to outside investment either for production or consumption purposes. School quality is considerably important in attracting higher income, younger residents. And, of course, it is important for those with children who live there now. The low property taxes in Lafayette are attractive to low-income families and to area builders as well. However, municipal services and the local political atmosphere make for an unpredictable building environment. Wherever possible, the city may wish to integrate its planning and strengthen its ties with McMinnville and Yamhill County. The citizens of both McMinnville and Yamhill County have a stake in a viable Lafayette. It may be in their interest to help Lafayette with its problems, where possible.

The lack of mutual trust among residents should not be ignored, but rather attacked directly. Social scientists agree that trust among members of a society is necessary for the proper functioning of social institutions. There is much less agreement, however, on how trust can be created when it is in short supply. One approach is to identify projects that require group participation but are non-threatening, financially or otherwise, to participants. In other words, it may be necessary to solve some small problems before the big ones are tackled. The

progress of such projects, civic beautification for example, should be readily observable. The resulting networks are important building blocks for trusting relations as projects of greater complexity are addressed. Communication is essential for establishing the trust that social networks must have. Reliable information is an important ingredient in using communication to establish trust.

The City of Lafayette is a classic example of inadequate social capital limiting rural community sustainability. It may be necessary to start with some form of natural capital, but progress toward sustainability is likely to be slow or nonexistent unless other forms of capital are considered. Social capital appears to be the most limiting factor for Lafayette.

Sherman County

A visit to Sherman County reveals much that is admirable. The level of education of the residents is greater than that of the average Oregonian. Sherman County residents demonstrate considerable civic pride. The County Museum is of high quality. The Meyer Trust found the community worthy of a substantial grant to assist group efforts to provide athletic facilities for the high school. Sherman County has easy access to the Columbia highway. Portland, Bend, and Pendleton are accessible by only a two- or two-and-a-half hour drive.

Yet beneath this pleasant surface there are problems. For example, the human population has been stable at slightly less than 2,000 people for the past decade. This population also is aging, and the percentage that is under 18 years old is declining. Since state school funds are allocated largely, but not entirely, on a per-student basis, the people of the county fear for the viability of their public school system. As enrollment declines, it becomes increasingly difficult to maintain the quality of education. The people of the county recognize that the quality of their school system is exceedingly important; for one thing it is important to the welfare of the young people whether or not they remain in the county.

Of course, many have found it necessary to leave because of limited economic opportunities within the county. Additionally, many residents of Sherman County also know that a viable school system will likely be a major factor in attracting businesses and residents.

Farming is an important economic activity in Sherman County. The farmers there have long been concerned with the conservation of their soil and water resources as related to farming sustainability. Yet farming technology is constantly changing. Under Sherman County conditions, the technical change that has occurred on farms has made it possible to substitute human-created capital for human capital. Improved labor efficiency has resulted in increased farm size and fewer people on farms.

The leaders in Sherman County affairs assign a high priority to attracting additional economic activity to the county. A change in the mix of economic activity is needed if a sustainable trajectory for the community is to be found. The present trajectory clearly is not sustainable indefinitely, a fact many people in the county recognize well. Yet the people of Sherman County also know there are many more rural areas that desire greater economic activity than there are businesses looking for such locations. What should the people of

Sherman County do that they are not doing? Would modifications in state or federal policies and programs help? If so, which ones and in what way?

Two possible avenues of adjustment are discussed here. One is economic development. For this there needs to be recognition that the supply of rural places seeking outside investment is greater than the demand for such places. Sherman County is favored by proximity to the Columbia River Gorge and is near growing non-metropolitan places such as The Dalles and Hood River. The prospects for economic development in the near future are highly unpredictable. They are much better in a longer-term setting.

The fate of Sherman County schools will be of great importance to the future of the county. Most outside investment will be affected by the quality of social services, especially education. Questions arise, however, about how well education policies serve low enrollment rural schools. How much flexibility do rural educators have in providing the best educational experience for their students?

If economic development is not forthcoming in Sherman County and if local schools disappear, the existing social structure will not be maintained. In this case, rural community sustainability will require a drastic change in where people live and the way farming operations are conducted.

Summary and Conclusions

Sustainability issues arise in rural communities whenever decisions are made that affect the future livability or productivity of the community. The sustainability question runs along the following lines: “Will the decisions we make today compromise the ability of those who live in the future to meet their needs?”

To answer this question you must know the capital stock in the community and know how that stock will be affected by the decisions the community makes. All forms of capital need to be considered—human, human-created, natural, and social capital. If sustainability is to be achieved, reductions in one form of capital will need to be offset by increases in one or more of the other forms of capital.

Social capital considerations are of great importance in achieving rural community sustainability. I described three communities facing decisions that will affect their sustainability;

in all cases rural social capital was important. Sustainability issues often are framed in terms of natural capital (the natural environment). Few would deny the importance of natural capital in achieving sustainability, but it will be counterproductive to do so to the exclusion of other forms of capital.

The people in rural communities typically have a range of world views as outlined in the text. Some people believe present consumption trends will result in a depletion of community capital stocks; others take a more optimistic view. Some believe humans do not have the capacity to predict the future and that planning must occur in an atmosphere of great uncertainty. The challenge facing communities as they make decisions affecting their future welfare is to identify an alternative or alternatives that will reflect the divergent world views of the residents in those places.

Exercises

Part One

I designed this exercise to give you practice in classifying different forms of capital. Keep in mind that more than one form of capital may be present in a single item. For example, a farmstead consists of land and buildings. Prior to improvements made by humans, the land in its natural state was natural capital. The improvements made are human-created. Therefore, the farmstead should be classified as natural and human-created capital.

Please use the following key as you give your answers:

- A.** human capital
- B.** human-created capital
- C.** natural capital
- D.** social capital

1. ____ farmland with installed drainage tiles
2. ____ a building used as a library
3. ____ books in a library
4. ____ a parent-teacher association
5. ____ an accomplished pianist
6. ____ a hospital
7. ____ a veterinarian
8. ____ a stonemason
9. ____ a school board
10. ____ a volunteer soup kitchen

(Answers provided on page 19.)

Part Two

- A. For each of the three situations described—Klamath Basin, City of Lafayette, and Sherman County—state what you believe to be the principal obstacle to sustainability as these places make current decisions with long-run effects.
- B. Describe an actual situation where a community has a major difficulty in addressing a current problem with long-term implications. Provide enough information about the community so the reader can form a judgment about the condition of the capital stock of the place, and what the principal problems may be in achieving sustainability.

(Space provided for answers on following page.)

References

Daly, H. 1991. "Elements of Environmental Macroeconomics," in *Ecological Economics: The Science and Management of Sustainability*, Robert Constanza, ed. New York: Columbia University Press. pp. 44–45.

Hardi, P. and T. Zdan. 1997. *Assessing Sustainable Development: Principles in Practice*. Winnipeg, Manitoba: International Institute for Sustainable Development.

Solow, R.M. 1992. *An Almost Practical Step Toward Sustainability*. Washington, DC: Resources for the Future.

Tyrens, J. and B. Silverman. 2000. "Measuring Sustainability: The Role of Oregon Benchmarks," in *Achieving the Oregon Shines Vision: The 2001 Benchmark Performance Report*. Salem: Oregon Progress Board.

World Commission on Environment and Development. 1987. *Our Common Future*. Oxford; New York: Oxford University Press.

Answer key for Exercises, Part One:

1. **C, B** 2. **B** 3. **B** 4. **D** 5. **A** 6. **B** 7. **A** 8. **A**
9. **D, A** 10. **A, B, D**

© 2002 Oregon State University

This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

Oregon State University Extension Service offers educational programs, activities, and materials—without discrimination based on race, color, religion, sex, sexual orientation, national origin, age, marital status, disability, or disabled veteran or Vietnam-era veteran status. Oregon State University Extension Service is an Equal Opportunity Employer.

Published November 2002