Chapter 4 - Socioeconomic Goals, Indicators, and Measures

Restoration projects frequently have social, economic, and cultural goals as well as ecological goals. Systematic measurement of key socioeconomic indicators is necessary to accurately assess how well these goals are being achieved.

The purpose of this chapter is to help community-based multiparty monitoring groups measure social and economic trends that may affect or be affected by forest restoration projects.

Information on socioeconomic sampling methods and data sources can be found in Chapter 6.

Choosing Socioeconomic Goals, Indicators, and Measures

This chapter is organized around sample *goals* – broadly stated social and economic conditions that are either desired results of community-based forest restoration or necessary for the success of community-based restoration projects. These goals are:

1.   Economic vitality

2.   Local industry & workforce capacity

3.   Equity of social & economic opportunities

4.   Quality of life

5.   Community connection to the forest

6.   Capacity for collaboration

7.   Support for multiparty monitoring

Monitoring groups can use the sample goals described in this chapter or add their own to develop practical, locally-relevant variables to measure progress toward project goals.

Each goal is followed by a list of possible indicators that could be used to measure changes in that goal. The text following each indicator explains why it may be a useful indicator and provides examples of measures that may be used to determine changes for each indicator. Measures most appropriate for use at the project level are listed first. Broader measures that may be more appropriate to program evaluation or community-wide assessments are also provided.

Monitoring groups may find that many of the indicators listed are relevant to their community and restoration project. However, not all indicators will apply to all situations, and there will likely be others, not included here, that are more directly applicable to particular situations. The authors do NOT recommend that any group try to apply all of the socioeconomic indicators listed. Each multiparty monitoring group will want to select or develop indicators specific to the local community and restoration effort being monitored. Measures should similarly be developed at the local level and tailored to local conditions.

Collaborative Forest Restoration Program grantees should take particular note the indicators listed under Goal 2 (local industry and workforce capacity), because of the requirement that they assess improvements in local management skills. Since the CFRP legislation lists improved communication and collaborative partnerships as two of its goals, grantees may also want to

consider the indicators listed under Goal 6 (improved capacity for collaboration). However, all multiparty monitoring groups are encouraged to consider these seven goals, and discuss other goals that may be of particular importance to their project or their community.

A number of publications are available that describe how to choose socioeconomic monitoring approaches and variables. These publications can also help explain monitoring methods and provide guidance for interpreting the information collected in the monitoring effort.

- *Measuring Community Success and Sustainability*, by Flora, C.B., M. Kinsley, V. Luther, M. Wall, S. Odell, S. Ratner, and J. Topolsky. 1999.
- *Measures of Success: Designing, Managing, and Monitoring Conservation and Development Projects*, by Margolouis, R. and N. Salafsky. 1998
- *Multi-party Monitoring for Sustainable Natural Resource Management*, by Moseley, C. and L. Wilson. 2002.
- *Measuring Change in Rural Communities: A Workbook for Determining Demographic, Economic, and Fiscal Trends*, by Rasker, R., J. Johnson and V. York. 1998.

Goals, Indicators and Measures

1. Sample Goal: Increase economic vitality

Rationale: Economic vitality is a common goal of community-based forest restoration projects, which are often located in small communities facing economic challenges like high unemployment rates and a diminished tax base. Often a community's economic vitality is measured in terms of local employment rates and wages. These are not the best indicators of vitality in forestry-based economies; however, because forestry-related employment can fluctuate widely over a period of months and changes may not reflect an economic trend in the community. *Business retention and growth* is a better indicator because it reflects longer-term changes that affect economic vitality on the scale of years. *Financial capital* and *local infrastructure* are useful indicators of economic vitality because they measure a community's ability to support a forest restoration economy. Many communities consider *sustainability* – the ability to sustain a viable economic base and a skilled workforce as a critical feature of economic vitality.

Sample Indicators and Measures:

Business Retention and Growth: Trends in the number and capacity of restoration-related businesses are indicators of the business sector's confidence in the restoration industry. Data on the number of businesses, and in some cases on services provided, may be obtained from a state or county economic development department, small business assistance agency, city or town offices, and local chambers of commerce. Other data, such as the existence of business plans, may require visits to local businesses.

Possible project-level measures:

- Number of forestry and forest products businesses in existence in the community/project area since project inception
- Services offered by individual business and by forestry or forest products businesses collectively
- Number of new, related start-up businesses with business plans. *(The existence of a business plan indicates a long-range perspective.)*

Community Sustainability: Sustainable communities are good places for people of all ages to live. In particular, young people can have a good life and earn an adequate living within the community. When there are no jobs, youth cannot stay or return. But if the jobs are not of sufficient stability or quality, the workforce becomes mobile. When young people stay because they have an opportunity for good employment, the community is sustainable. When they stay because they do not have the skills to leave, it is not sustainable. Measures of community sustainability therefore track a community's ability to achieve or sustain a working population and economic base over the long term – on the order of years or even decades. Opportunities for youth can be useful indicators of a community's sustainability. Employers, community and technical colleges, and local schools can be sources of information about youth opportunities and plans. Local people in small town or neighborhoods often are able to tell monitoring groups who has moved in, who has moved out, and who leaves temporarily to find work.

Possible project-level measures:

- Number of youth that use and maintain natural resource management skills
- Variation in the types of value-added processing (saw mills, roundwood, log homes, furniture, crafts, and architectural structures, etc.). *(Business diversity may be a measure of economic resilience.)*

Possible broader measures:

o Migration patterns into and out of community.
o Income sources in the community *(In communities with large numbers of retirees, vacation homeowners, or telecommuters, it may be useful to track income sources to determine if income is from labor (i.e., salaries and wages) or non-labor (i.e., transfer payments, pensions, stocks, bonds) sources.)*
o Number of claims on public assistance (e.g., food stamps, free or reduced lunches, Aid to Families with Dependent Children, etc.)
o Hospital payee categories (i.e., private insurance versus Medicare & Medicaid)
o Rate of employment in natural resource sectors (e.g., forestry and wood products)
o Number of desirable opportunities for youth employment
o Diversity of job opportunities for youth
o Number of opportunities for living wage jobs for youth
o Number of students who hope to return to the community after college or armed forces service.

Financial Capital: Access to financial capital is a useful indicator of economic vitality because without it, new businesses cannot develop and existing businesses cannot expand. Communities may be able to access funds for restoration purposes from a variety of private and public sources, and access to financial capital can be measured in terms of the rates at which these sources provide grants or loans. It may also be useful to monitor funding sources' willingness to use funds for restoration purposes. This information may be determined by examining the written priorities in local chamber of commerce documents, county strategic plans for economic development, state or federal funding plans, and private bank and foundation.

Possible project-level measures:

- Level (number or dollar amount) of public & private investments in forest restoration equipment and technology
- Levels of traditional private sector investment (banks, etc.)

- Levels of state and federal agency investment
- Levels of county investments (also bonds and levies)
- Levels of foundation / non-traditional investment in business
- Funding sources' willingness to use existing resources for forest restoration-related purposes.

Local Infrastructure: The capacity and condition of local infrastructure can be monitored to gauge a community's ability to support a forest restoration economy. Available utilities and their capacity may limit the potential for new restoration projects in some communities, and the state of transportation facilities, especially roads and rail, greatly affect the cost of restoration. Similarly, availability of privately owned equipment (loaders, forwarders, etc.) might measure a community's ability to efficiently complete a restoration project.

Information on public infrastructure and planned capital improvements is available from local and county planning departments. State and federal transportation departments should be contacted for additional information on the capacity of existing and planned transportation facilities. Information on private infrastructure will often be available only from the operators themselves, and can be accessed via interviews, questionnaires, or surveys.

Possible project-level measures:

- Adequate public infrastructure to handle projects
- Adequate private infrastructure to handle projects
- Percent of total regional harvest (volume or value) processed by local companies. *(Sales to non-local companies are less beneficial to the local economy.)*
- Distance from restoration site to the nearest mill or other purchaser
- Value-added processing within community
- Diversity and quantity in species and sizes of wood raw material utilized (raw material volumes by specification (species and sizes)). *(The more restoration byproducts a community can turn into value-added products the more cost-effective the restoration.)*
- Processing capacity at each facility, i.e., small and large log limits, throughput limits, and run-time for each mill. *(Usually, the more restoration byproducts a community can turn into value-added products, the more cost-effective the restoration.)*

2. Sample Goal: Local industry and workforce capacity

Rationale: The existence of a local industry and workforce capable of handling a forest restoration project is so important to the success of these projects that it is also a goal in itself. In order to benefit both the forest and the community, a forest restoration project requires a workforce with an adequate number of workers, adequate skills (including project management skills), and adequate equipment to complete the work in a timely and cost-effective manner.

Sample Indicators and Measures:

Workforce Capacity: The Southwest lost most of its forestry and wood utilization workforce in the 1990s, when the timber industry in this region collapsed. Finding workers who know how to operate forestry equipment and safely conduct logging activities is a challenge in many communities. Local operators in the Southwest often lack mechanized harvesting equipment (many still work with chainsaws) and mechanized skidders and loaders. Because of this, local operators lose in competition with mechanized operators from other regions of the country. A monitoring team may therefore want to ask itself, 'Is there a large enough, skilled workforce to get this job done?' or 'Is the local forestry and woodworking workforce equipped with machinery

that allow them to compete on projects requiring quick work and high low ecosystem impacts?' In most cases, the answers to these questions can only be found through a community poll or survey.

Possible project-level measures:

- Size of local restoration workforce
- Training levels and professional certification levels of local forest restoration workers
- Percent of all restoration projects that use mechanized harvesting, skidding, and loading equipment
- Number of people trained in using mechanized equipment
- Use of equipment that limits site impacts and site rehabilitation time and costs

Possible broader measures:

- o   Training opportunities (formal or otherwise) provided by local schools, agencies, etc.

Organizational Competency: Forest restoration is a new industry in the Southwest, so most communities must create new businesses or partnerships in order to win restoration contracts and grants. Further, in order to sustain a forest restoration program or industry, the community will require well-functioning and accountable project teams capable of building community trust and confidence and accomplishing stated objectives. Data for the measures can be obtained by reviewing project documents or by interviewing project leaders.

Possible project-level measures:

- Existence of written organizational procedures, rules, and operational guidelines
- (e.g. minutes, functioning committees, financial system)
- Existence of an annual work plan
- Existence and use of system for books, receipts, and grant management
- Percentage of grants applied for that is received
- Project managers and agencies opinions as to whether there is sufficient organizational capacity to manage the project
- Number of new restoration-related businesses with business plans
- Percentage of forest sales and contracts offered that are won by local businesses

Value-added Forest Products Industry: In many parts of the Southwest, restoration contracts do not receive bids because operators do not find it cost-effective to cut, remove, and process or market small-diameter wood. Without a wood products industry to process and sell restoration by-products the USDA-Forest Service and communities cannot afford to thin overstocked forests. The existence of value-added processing companies, their total production capabilities, and the overall diversity of wood products that can be processed locally can all be used to measure this aspect of restoration capacity. This data may be available from the USDA Forest Service, state forestry department, or state land grant university, but frequently must be obtained by interviewing or distributing questionnaires to business managers or owners.

Possible project-level measures:

- Number of value-added processing companies available within a defined distance
- Total wood products production and value per unit for the community or project area
- Diversity in species and sizes of wood raw material utilized (raw material volumes by specification (species and sizes))

- Processing capacity at each facility, e.g., small and large log limits for each mill
- Diversity of value-added production capacity (saw mills, round wood, log homes, furniture, crafts, and architectural structures, etc.)

Market for Local Restoration Products: Closely related to the need for an industry that can utilize materials removed from forest restoration sites is the need to maintain and grow industrial capacity by marketing products. Many of the measures listed below may also be used as measures of economic vitality.

Possible project-level measures:

- Investment in marketing by forest-related businesses
- Marketing analysis in forest-related business plans
- Marketing funds (fed, state, county, etc.) available to forest related businesses
- Number of new promotional endeavors related to forest products

Possible broader measures:

o Marketing services available to businesses
o Cooperative marketing initiatives (such as market brand name that develops customer recognition for social and environmental accountability – e.g., Healthy Forests Healthy Communities Partnership in PNW)

Supply of and Access to Forest Resources: In the Southwest, most forested lands are public and are managed by the USDA-Forest Service. As a result, both restoration and wood utilization businesses are highly dependent on access to national forest lands in order to maintain consistent and predictable work and product streams. When access to the national forests is highly variable and unpredictable, restoration and utilization businesses frequently fail, resulting in an overall lack of available workforce and industry capacity. A variety of measures can be used to track trends in production and in factors that may affect supply, such as dramatic changes in the lumber market and the time required for NEPA reviews and appeals. Environmental reviews and appeals often delay local projects. A diversity of forest land ownerships may increase access options and so may be used to measure supply.

For timber supply from national forest lands, data may be obtained from the USDA Forest Service. Other landowners or land managers, e.g., tribal forestry departments, state land departments, etc. will have supply data for the land they manage.

Possible project-level measures:

- Time from start to finish for a project. (Restoration projects frequently encounter delays, due to lengthy NEPA reviews and appeals, litigation, dramatic fluctuations in the lumber market, etc. These delays reduce the supply of products.)
- Time required to complete NEPA reviews

Possible broader measures:

o Trends in harvest volumes from different land ownership types (i.e., federal, state, tribal, private lands)
o Predicted 1-5 year future supplies (agency predictions)
o Policies / Regulations governing access and supply (looser / tighter)
o Number or percentage of projects appealed
o Proposed volumes versus final volumes harvested and sold

o Number of NEPA analyses started and completed, by product type and associated volume. Trends in harvest volumes and values for various forest products. *(Amount of timber harvested is a better measure of timber supply than number of timber sales offered, because not all sales offered are cut. It is important to consider non-timber forest products, as well.)*

3. Sample Goal: Increase the equity of social and economic opportunities

Rationale: The distribution of social and economic opportunities is an important issue in many Southwestern communities, where some groups have frequently been excluded. People with long histories in a particular place are increasingly insisting that their traditional values and practices be incorporated into forest management plans. In the Southwest, Native American and Hispano Land Grant communities have special claims to forested areas they once owned or had rights to use.

Sample Indicators and Measures:

Distribution of Work (both contracts and employment) Within the Community:
Opportunities need to be created for people typically excluded from restoration related work. Distribution of work indicates whether contracts and jobs are going mainly to one business or community group or are shared among many in the community, including those groups historically underserved. Volunteer work, as well as paid work, should be monitored to determine how equitably the load is being shared.

Possible project-level measures:

• Number of youth, minority group representatives, or people from low-income communities completing restoration-related training classes
• Number of youth of labor age, minority group members, or people from lower capacity communities hired to work on the project, and type of work they are conducting
• Number of people receiving restoration-related work contracts for the first time
• People previously in conflict that are now are working together
• Work distribution across social groups identified by communities
• Representatives of all social groups identified by the community reporting that restoration-related work is fairly distributed within the community
• Diversity of skills community members brings to forest restoration projects
• Number of community members who feel under-appreciated or burnt-out by their volunteerism

Possible broader measure:

o Number of contractors whose accounting systems have improved**.** (Improvement in accounting systems may reflect increased skills.)

Distribution of Projects Across Communities: The distribution of projects indicates how equitably the agencies and other source of projects or funds (e.g., foundations) distribute resources. All of the sample measures below refer to projects funded and/or contracted by the USDA Forest Service. Data for all of these measures is available from the USDA-Forest Service. The agency is required to gather information on the number of service delivery opportunities used to increase the capacity of underserved communities, according to the USDA Forest Service Interim Strategic Public Outreach Plan (FS-665).

Possible project-level measures:

- Agency uses existing authorities (approved mechanisms for entering into agreements with private entities) and creates new authorities for reaching out to underserved communities

Possible broader measures:

- o Agency personnel, especially procurement officers, are trained to work with different communities
- o Number of "potentially underserved communities" that receive grants by year. *Note: We recommend that monitoring teams use the definition of "potentially underserved communities" provided in the USDA Forest Service Interim Strategic Public Outreach Plan (FS-665).*
- o The number of grants, agreements, contracts, conservation activities and other service delivery opportunities used to increase the capacity of underserved communities to become involved and contribute to land management planning decisions.

Traditional Forest Users' Values: Although the authors have suggested measures for this indicator below, in all cases traditional forest users should be contacted and asked to identify measures that may be used to track the extent to which their knowledge and practices are utilized. Native American/Indigenous groups and tribes are a special category of traditional forest users with unique rights. The federal government requires consultation with Native American groups when projects occur on federal land historically or currently used by these groups.

Possible project-level measures:

- Traditional forest users have been consulted regarding the project and agree that their input has been incorporated
- Number of traditional forest users involved in restoration projects who agree that they have been invited to contribute and agree that their input has been heard
- Number of projects that included traditional knowledge within the required social analysis as part of the decision-making process
- Forest restoration project managers have adequately consulted with all Native American interests and have adequately responded to questions and concerns raised by Native Americans
- Forest restoration project implementation provides opportunities for Native American businesses and individuals

4. SAMPLE GOAL: Improved quality of life

Rationale: Quality of life is defined differently in every community, yet it is the feature of a community that many people consider most important and therefore it should be monitored. The most useful indicators in any community will be locally defined quality-of-life values that have been identified through a community-wide process.

Sample Indicators and Measures:

Employment Conditions in Restoration-related Industries for local and mobile workforce: Access to restoration-related jobs, money earned in those jobs, benefits received, and job safety are all measures of employment conditions that affect quality of life.

Possible project-level measures:

- Average wages in restoration-related jobs for local and mobile workforce
- Number of employees who receive health benefits from their employer
- Average commute times to place of employment
- Number of local operators that carry adequate insurance (health, workers compensation, liability)
- Number of local operators that use and are trained to use appropriate safety gear

Possible broader measures:

o Number of local operators that can put up performance bonds
o County forestry and wood products employment as a percentage of the county's total employment
o Forestry and woodworking employment as a percentage of the county's wood wholesale and retail employment
o Number of community residents with high-skill jobs

Restoration Workers' Ability to Participate in Family and Community Life: When people must work long hours or travel long distances to work, the quality and quantity of their time available for their families and community is diminished. This in turn diminishes the overall quality of life in the community.

Possible project-level measures:

- Number of nights spent at home
- Number of days available for leisure activities with family and friends
- Number of community events held each year and number of restoration workers who participate in them

Possible broader measure:

o Number of hours spent in local volunteer activities

Community Access to Forest Resources: In many southwestern communities, access to national forest lands is critical to residents' ability to heat their homes and access food, medicinal, and fuel for cooking. Most restoration businesses also are dependent on access to national forest land.

Possible project-level measures:

- Number of families heating with wood who receive adequate amounts of fuelwood
- Number of such families who have to buy fuelwood
- Number (or percentage) of homes to which the project provides fuelwood
- Number of families who have access to locally important non-timber forest products
- Number of restoration businesses operating at full production capacity

Possible broader measures:

o Number of families who have access to traditional forest food sources. (For example, in some Southwestern communities, whether or not a family has elk to eat in winter is an important quality-of-life measure.)
o Number of forest products businesses needed to meet product demand

Risk of Catastrophic Wildfire: A major goal of restoration activities in the Southwest is to reduce the threat of catastrophic wildfire to human communities.

Possible project-level measures:

• Number of acres of defensible space created
• Number of families with an evacuation plan

Possible broader measures:

 o Distance from community to nearest fire station
 o Number of families with fire or home insurance protection
 o Number of homes lost to catastrophic wildfire
 o Number of businesses lost due to catastrophic wildfire
 o Number of recreational opportunities lost due to catastrophic wildfire
 o Number of cultural sites lost due to catastrophic wildfire

Locally Important Quality-of-Life Values: Specific quality-of-life indicators should reflect values that the community defines as important to its quality of life. Measures developed for these indicators should track changes in quality-of-life values **as they relate to the restoration project.**

Possible measures:

• There are innumerable variables that communities may find important to measure, such as community safety, recreation, and education

5. SAMPLE GOAL: Improved community connection to the forest

Rationale: Restoration projects require high levels of support from people who live near project sites, and from the general public, if the projects are to be implemented and completed successfully and in a timely manner. Projects without public support are vulnerable to appeals and litigation before the project begins, and vandalism once it has broken ground. Failure to engage the community before implementing a forestry project may also damage relationships among community members or groups. The extent to which people feel connected to the forest surrounding or adjacent to their community affects their willingness to engage in forest restoration activities. In many communities, however, community connection to the forest has declined in recent years, at least in part due to the rapid decline in resource-based employment opportunities and decreased leisure time.

Sample Indicators and Measures:

Community Understanding of Forest Health Issues: People who understand how Ponderosa pine forests have changed and why current conditions are considered "unhealthy" are more likely to support efforts to restore those forests. In most cases this data must be gathered through community interviews or a questionnaire or survey. Simple quizzes or questionnaires applied before a project is begun and at different times thereafter can measure whether the community's understanding of forest health issues has changed, and how it has changed.

Possible project-level measures:

• Number of forest health issues community members can discuss knowledgeably

- Community members involved in the project know more about forest issues than community members who have not been involved in the project
- Number of community members who can explain how thinning improves forest health
- Number of community members who can explain the role of fire in the forest ecosystem
- Number of trees poached from thinning sites. (In the Southwest, poaching of large trees from forest restoration sites is a common problem. A reduction in the rate of poaching, therefore, may measure the extent to which community members understand the thinning prescription and goals of the restoration project.)
- Extent of local and indigenous knowledge about the forest and fire ecology

Possible broader measure:

  o Number of community members who can explain how fires and forests have changed in the past 100 years

Community Understanding of Connections Between Community Health and Forest Health: When people understand the inter-relationships between the state of the forest and their own well-being, they are more likely to feel connected to the forest and to support forest stewardship. This data can be gathered by polling community members before a project begins and at intervals (e.g., annually) thereafter.

Possible project-level measures:

- Number and kinds of ecosystem "services" (e.g., wood products, water supply, habitat, traditional uses) that community members can identify
- Number of different forest-related professions community members can identify

Educational and Training Opportunities in Forest Restoration: Opportunities to learn more about forest restoration and receive job-related restoration training will encourage community members to become more involved in forest management. Data should be available in project or program documents from organizations that provide such training.

Possible project-level measures:

- Number of local residents who receive training in prescribed burning
- Number of local residents who receive USDA-Forest Service red cards
- Number of local residents who receive training in thinning techniques and demonstrate an increased understanding of thinning through field evaluations
- Hours of training or educational opportunities provided
- Types of training and educational opportunities provided
- Size and number of local work crews
- Number of youth involved in the monitoring process

Possible broader measure:

  o Number of different forest-related professions community members are able to name and explain

Opportunities for Families within the Community to Appreciate a Healthy Forest: People value places they know. Data for the measures listed below will likely be available from only from restoration workers or their families, and can be gathered through community polls, surveys, or interviews.

Possible project-level measures:

o   Number of families who go hunting, camping, picnicking, or fishing
o   Number of hours worked to support family, seasonally and year-round
o   Number of hours available for leisure activities in the forest, seasonally and year-round

Level of Community Participation in Forest Restoration: The extent to which community members participate in restoration-related activities reflects the level of their interest in the forest.

Possible project-level measures:

• Number of people attending community meetings about forest restoration project
• Number of permits issued for collecting fuelwood
• Number of people who participate in forest maintenance projects (e.g., raking pine needles, cleaning irrigation ditches)
• Number of households who receive fuelwood from the community
• Number of community-based projects started or maintained since inception of forest restoration project.
• Diversity of stakeholders/groups contributing to the project

Possible broader measure:

o   Number of people who feel taken advantage of or burnt out by their volunteerism

Youth Opportunities in Forest Restoration and the Motivation to Take Advantage of Them: While adults should also have opportunities to engage in forest restoration, youth opportunities and evidence that youth are taking advantage of these opportunities better measures the extent to which skills and values connecting community members to the forest will be maintained in the long term.

Possible project-level measures:

• Number of youth who attend community meetings or participate in restoration projects
• Number of opportunities that relate to restoration work that youth can identify
• Number of high-skill, long-duration training opportunities for youth
• Number of grants, contracts, or cooperative agreements that go to youth-serving organizations and number of youth these contracts affect
• Number of youth who participated in YCC program or other youth-serving organizations who remain in restoration and natural resource fields

Possible broader measures:

o   Number of community members who believe youth involvement should be supported
o   Number of opportunities to partner with non-profit youth-serving organizations

Cultural Ties to Forest Ecosystems and Traditional Lifestyles: People who use the forest are more likely to value it. These data will only be available through community polls, surveys, or interviews.

Possible project-level measures:

• Number of people collecting medicinal products from the forest
• Number of families with adequate firewood for heating and cooking

- Number of households with access to traditional building materials

Possible broader measures:

- o   Number of people earning a living from the forest
- o   Number of people who report using the forest for spiritual purposes

6. SAMPLE GOAL: Increased capacity for collaboration

Rationale: Americans are known for their competitiveness, and our business laws are designed to encourage competition and avoid collusion. In order to successfully engage in collaborative projects, however, we also need strong communication skills. Since multiparty monitoring and community-based forest restoration are expressly intended to be collaborative efforts, it is important to monitor the community's, project leaders', and agency's capacity for collaboration.

Sample Indicators and Measures:

Communication skills and techniques: Public communication requires skills, experience, and resources to be effective. Adequate communication and access to information is vital to effective project management and important for project documentation. This information may be gathered by reviewing project documents, observing project activities and meetings, or by interviewing project participants.

Possible project-level measures:

- Number of project members for whom communication is defined as a work task, and proportion of their time allocated to communication activities
- Effectiveness of scheduled project meetings
- Proportion of project meetings / discussions that are facilitated
- Number or frequency of regularly written project updates

Possible broader measure:

- o   Availability of communication training

Communications Resources: Good communication requires commitment of financial and personnel resources. This information should be available in project documents, including budgets, written job descriptions, event agendas, sponsor lists, mailing / contact lists, and participant lists. Interviews are an alternative but less reliable data collection method for these measures.

Possible project-level measures:

- Percentage of budget dedicated to communication
- Number of staff hours devoted to communication and outreach
- Regular meetings and communication processes for the project
- Level and diversity in participation in workshops, field trips, demonstrations, press briefings, etc. related to the project

Possible broader measure:

- o   Number of local organizers and speakers used to organize public events. (Utilization of local organizers and speakers may be a measure of locally available skills and knowledge and also community commitment and support.)

Representation and Understanding of Diverse Community Perspectives and Interests: Community members are more likely to support a restoration project if they see that it reflects their values, interests, and sense of place.

Possible project-level measures:

- Diversity of project team membership
- Different forest restoration interests and perspectives identified and addressed in project documents and activities
- Extent that community values and perspectives have been documented
- Number of youth participating in the monitoring process
- Project goals address a broad range of interests and the community context. *(As opposed to goals that reflect the personal goals of project leaders.)*

Extent of Community Participation in Restoration-related Activities: The number and diversity of participants is a measure of the success of efforts to be collaborative.

Possible project-level measures:

- Number of identified stakeholder groups that are actively involved (have a defined role) in the project
- Number of different people who speak during meetings
- Co-sponsorship of educational and demonstration events by public land agency, local government, and civic organizations pertaining to the project.

Quality and Timeliness of USDA Forest Service Communication: A common complaint of community groups and forest restoration contractors is that they cannot get information from the USDA-Forest Service in a timely fashion. This may include information about available funding, contracts, resource information, and payment for services. These data should be available from the USDA-Forest Service but may be more readily obtained by polling or interviewing community members and/or contractors.

Possible project-level measures:

- Time elapsed from when a question is asked until it is answered in relation to this project
- Important documents pertaining to restoration projects are available in the primary language spoken in the community
- Percentage of project-related meetings per year attended by both agency decision-makers and community leaders
- Number of days between proposal submission date and notification date
- Length of time between invoice submittal to agency and payment by agency

Community Involvement in Decision-making: Both the level of and opportunity for involvement provided to community members indicate the agency or other decision-maker's willingness to collaborate with the community.

Possible project-level measures:

- Number of public meeting participants who report that they believe the agency heard and will seriously consider their input specific to the project
- Ease with which community members can obtain information about decisions being made before, during, and after they occur
- Number of new agency decisions or policies that are recognized by the community as being in their interests
- Number, duration, and dollar value of contracts community members receive
- Number of people or stakeholder groups who say they wanted to be included in the process but were left out
- Percentage of community members who report that they support the project
- Percentage of community members who participate in project implementation
- Evidence of open consultation and dialogue with Native American communities and community members, as well as other stakeholders at local and regional levels

Possible broader measures:

- o Number of USDA-Forest Service decision-making meetings to which public is invited (unless specific to project)
- o Number of contracts given to local community members or organizations
- o Number of new policies that reflect community concerns toward contracting, jobs, training, and money allocations

Community Understanding of the Political Context around Forest Restoration: The extent of community understanding of the legal and policy hoops required to complete a restoration project may facilitate collaboration between a community and the USDA-Forest Service and also empower community members to work directly with those who influence restoration decisions, such as Congressional staff and appellants. Project mailing/contact lists and event participant lists can be analyzed to determine extent of community leader/policymaker interactions.

Possible project-level measures:

- Community members understand the factors that contribute to federal natural-resource decision-making better than they did before the project began
- Number of community members that can name interest groups working on forest-related issues in their area
- Number of different perspectives on forest restoration that community members have heard about and discussed
- Number of community leaders and policymakers engaged in restoration events or activities

Possible broader measures:

- o Number of community members who can explain the USDA-Forest Service appeals process
- o Number of community members who can describe opportunities available through the National Fire Plan
- o Number of community members who know the role of Congress in determining agency operations
- o Number of community members who can explain the difference between appropriations and authorizing legislation

    o   Number of community members who can identify which Congressional committees work on forestry issues

7. SAMPLE GOAL: Support for multiparty monitoring

Rationale: The multiparty monitoring system itself is an important aspect of community-based forest restoration projects, and its effectiveness will affect the success of the overall restoration effort. It is therefore useful to monitor how committed the project participants are to monitoring, and to doing it in a multiparty fashion.

Sample Indicators and Measures:

Commitment to Monitoring: Monitoring is typically under-funded and under-staffed. If specific allocations are not made, monitoring may not occur at all. The amount of resources (dollars, hours, etc.) dedicated to monitoring can measure commitment to monitoring. Data may be found in project documents like budgets, minutes of meetings, and monitoring plans.

Possible project-level measures:

- Time elapsed between project implementation and development of monitoring plan
- Percentage of budget – in actual dollars and in staff time – devoted to monitoring
- Frequency with which monitoring committee meets
- Frequency and methods with which monitoring committee reports its findings

Balance of Perspectives on Monitoring Team and in Monitoring Plan: Openness to external input and willingness to consider different perspectives are measures of collaborative learning. Monitoring plans should reflect a balance of economic, ecological, and social values: we treasure what we measure. A review of project documents may reveal the extent to which monitoring is organized around collective exploration and learning as opposed to a technical-scientific external review.

Possible project-level measures:

- Ecology, economy, and community are balanced in the monitoring plan
- Monitoring plan promotes learning from diverse participants
- Monitoring is organized around collaborative learning among diverse participants
- Evidence that monitoring team has utilized external assistance, monitoring plans, tools, and events

Technical Assistance in Forest Ecology, Fire Behavior, Monitoring Methods etc.: Extent to which monitoring team accesses outside technical assistance or educational expertise may be a measure of collaborative learning.

Possible project-level measures:

- Record of technical or educational presentations by ecologists and other experts
- Hours spent with technical experts discussing restoration-related issues
- Number of sources used for technical assistance

Adaptive Management Orientation: Application of adaptive management principles helps build accountability and trust.

Possible project-level measure:

- Documented evidence that monitoring team is tracking progress toward goals and recommending adaptive changes to improve progress toward goals

Sense of collaborative learning: A primary goal of multiparty monitoring is that participants learn from one another.

Possible project-level measures:

- Existence of a monitoring committee
- Written documentation of "lessons learned" or other evidence that new information and recommendations are being utilized
- Number of youth involved with monitoring