Creating and Sustaining Successful Water Quality Programs:
Lessons Learned from Across the Nation and Support for Success at Home

Defining Successful Water Programs

Characteristics of a successful program, as defined by symposium planners:

- **Relevant** – contributes to the missions, goals, and objectives of partner organizations.
- **Focused** – goals are measurable, achievable, and targeted toward improving social, economic, environmental, or civic conditions.
- **Scale-appropriate** – designs approaches at local, state, multi-state, or national scales, effectively addressing the program focus
- **Innovative** – integrates research findings and collegial knowledge and experience
- **Collaborative** – cultivates and nurtures authentic and appropriately diverse partnerships.
- **Integrated** or incorporating research-based knowledge and methods – brings together the three components of the agricultural knowledge system (research, education, and extension) around a problem or issue (definition from CSREES Competitive Programs), and involves research and Extension colleagues in both program design and implementation.
- **Adaptive** – develops and implements continuous feedback and improvement strategies that include strong program planning and evaluation components, and exchanges information about processes, outputs, and outcomes with colleagues at local, state, multi-state, and national levels.
- **Visible** – interprets processes, outputs, and outcomes in a format that is understandable and accessible to partners and decision-makers.
- **Effective** – achieves outcomes that meet intended and unanticipated program objectives.
- **Sustainable** – develops and implements mechanisms to sustain the production of impacts over time, as appropriate to the duration and priority of a public need

Knowledge Foundations for Determining Program Characteristics[1]

- Adult education and learning theory
- Communication
- Evaluation
- Organizational development and management
- Civic empowerment and citizen participation
- Community development
- Leadership
- Program planning

[1] Compiled by Elaine Andrews, University of Wisconsin Environmental Resources Center, January 2007

Adult education and learning theory

Adult *learning* is a complex and little understood element of human development, but is generally described as a psychological and social process (Mezirow, in McDonald, 1999, p. 163). McDonald compiled the following definitions (1999, pp. 162-163).

For adults, learning is:

1. Described in terms of outcomes, that is, as a change in behavior (Merriam & Caffarella, 1991).
2. "A process of being freed from the oppression of being illiterate, a means of gaining knowledge and skills, a way to satisfy learner needs, a process of critical self-reflection that can lead to transformation" (Cranton, 1994).
3. A meaning-making process based on life experiences that may or may not be goal-directed (Jarvis, 1992).
4. "The process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience in order to guide future action" (Mezirow. 1991).
5. Implicit in all experience, whether we are conscious of it or not (Vaill, 1996).
6. Adaptation to a changing environment (Jaynes, 1990).
7. A political act of emancipation and the primary means by which humans overcome being victims of oppression (Friere, 1970, 1994; Gadotti, 1996).

Adult *education* is the social system that facilitates adult learning. The question is not "Will they learn?" It is "*What* will they learn?" Adults appear to be more motivated when learning something relevant to their "current development tasks, social roles, life crises, and transition period" (Brookfield, in McDonald, 1999, p. 29).

Key considerations include (Merriam & Caffarella, 1999):

1. *Learning* implies the intersection of the learner; the context; and the process.
2. An adult needs time to examine a problem or respond to a situation.
3. Adults are not inclined to engage in learning unless it is meaningful.
4. Acquisition of information may be slower than with children due to age-related factors, but because accumulation of knowledge is seen as crucial to the integration of new learning, adults are in a better position to learn new things than children.
5. Adults are "problem finders" (adults "notice" a problem) and engage in dialectical thinking (the art of reasoning about matters of opinion).

Finally, adult educators are involved in a moral activity, and will want to evaluate potential implications of their endeavor. "Regardless of our specific role or the organization that employs us, we are engaged in bringing about change, and the change process . . . Education . . . is a form of social intervention, which is defined as "any act, planned or unplanned, that alters the characteristics of another individual or pattern of relationships between individuals" (Kelman & Warwick, in Merriam & Caffarella, 1999, p. 13).

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Civic empowerment and citizen participation principles

By citizen participation, we mean an "*interaction among individuals through the medium of language"* (Renn, 1995, p. 40). In participatory democracy, "each citizen [should] be able to co-determine political decisions that affect his or her livelihood." According to this theory, "democratic institutions must be responsive to the social psychological character of the citizenry" (Renn, p. 21). Participation is thought to enhance the responsiveness and legitimacy of public institutions, as well as help to implement decisions and reduce or resolve conflict (Renn, p. 23). "The ability of democracy to function is measured by the soundness of the decisions reached in the light of the needs of the community and by the scope of public participation in reaching them" (Bachrach, in Renn, 1995, p. 21).

To reflect values of political equality and popular sovereignty, the participatory process should manifest the general goals of *fairness* and *competence*. "Fairness is key to producing a *forum* where equality and popular sovereignty can emerge and personal competence can develop. When participation is fair, everyone takes part on an equal footing. This means that people are provided equal opportunities to determine the agenda, the rules for discourse, to speak and raise questions, and equal access to knowledge and interpretations."

Competence refers to the *functionality* of the system and the exercise of individual liberties. When the purpose of public participation is to produce a collective decision, competent understandings about language use, the natural world, the social-cultural world, and the subjective worlds of individuals are all essential(Renn, p. 38-39). Citizen participation models include citizen advisory committees, citizen panels, citizen juries, citizen initiatives, negotiated rule making, mediation, compensation and benefit sharing and study groups.

Modern societies exhibit a growing complexity, scale, and social differentiation. This dynamic generates increasing policy problems for which regulatory enforcement, programmatic entitlement, market incentive, and professional intervention prove inadequate. New forms of civic trust, cooperation, deliberation and learning enhance the likelihood that society will identify effective policies.

To accomplish this goal,

- "Citizens and civic organizations need much greater knowledge and capacity to learn amidst uncertainty;
- They need to interact with a broader array of stakeholders unlike themselves; and
- They need to learn to build trust while monitoring the behavior of those who have many incentives to act opportunistically and with whom they might regularly come into conflict."

Civic renewal entails investing in civic skills and organizational capacities for public problem solving on a wide scale and designing policy at every level of the federal system to enhance the ability of citizens to do the everyday work of the republic (Sirianni, 2005, pp. 1, 122-3).

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Communication principles

Communication involves a *source* sending a message through a *medium* to a *receiver* who responds. This process requires an *encoding stage* to package the message and a *decoding stage* where the receiver interprets the message and responds. *Gatekeepers* regulate the flow of information from source to receiver. Feedback, such as an action by the receiver, allows the source to adjust the message; thus receivers become senders if their response is captured in some way. Communication is a two-way system, where both the source and the receiver must be listening (Jacobson, 1999, pp. 4-11).

Communication and diffusion instruments, when effectively applied, have the potential to influence various drivers of behavior, such as personal capabilities and constraints; habit and routine; values, attitudes, beliefs, and personal norms; and the social context, "but cannot directly affect the broader social, economic, or technological contexts. They cannot make inconvenient behaviors convenient, make expensive behaviors inexpensive, or remove institutional or legal barriers to behavioral change. They often cannot even get people to put environmental actions high enough on their personal to-do lists to get them done, even if they are convinced to act" (NRC, 2002).

"Environment-related actions must compete with other demands on a person's time and energy. It follows that when such contextual factors stand in the way of a target behavior, communication and diffusion measures by themselves will have little effect. Similarly, when the target behavior is seriously impeded by lack of information, social support, behavioral models, and the like; regulatory and economic instruments by themselves may have little effect" (NRC, 2002, pp. 202-203).

For greatest effect, the following generalizations apply (NRC, 2002, pp. 204-210):

1. Design the intervention from the behavor's perspective.
2. Build on interpersonal communication.
3. Use multiple channels to communicate the message.
4. Apply psychological principles for message design.
5. Use clear and simple language.
6. Maintain a program's momentum (repetition of the message).
7. Set realistic expectations (communication and diffusion takes time to be effective).
8. Continually evaluate and modify programs.
9. Attend to the political and policy context, which affects the likelihood that the communication or diffusion instrument will have an impact. The communication or diffusion campaign may need to be supplemented with efforts at community capacity building in local finances, administrative expertise, and civic involvement, for example.
10. Communication and diffusion instruments can be combined with other policy instruments, such as incentives, regulations, or improved access to technology – to much greater effect.

References

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Community development principles[2]

Water programs rely on communication and diffusion methods to get the word out and to build skills for change. When educators apply these techniques in a community development context, they help to build an infrastructure for change that is sustainable, equitable, and empowering. An integrated effort is more likely to enhance a community's *environmental policy capacity*, or the community's ability to engage in collective action that secures environmental public goods and services (NRC, pp. 161, 187).

At the most general level, community development definitions incorporate an underlying theme relating to the betterment of people. Most define community development as people initiating a social action process to improve their situation through a variety of methods such as self-help, technical assistance, and conflict. Successful community development efforts incorporate problem-solving to generate action; community building to establish broad ownership for that action; and systems interaction to give necessary direction to the action.

Problem solving generally refers to a systematic approach to identifying needs, establishing shared goals and objectives, and working collectively toward the successful implementation of an agreed upon agenda. Both the *process* and the *outcome* are important. The process is important in terms of empowering the people involved to successfully embrace change and enhance their ability to deal with both the immediate issue and future situations. The outcome is important in that particular issues are successfully addressed.

Key Characteristics of the Community Development Process

- Participation comes from a broad cross-section of the community.
- Deliberations are made on the basis of well-informed participation.
- Decisions are the result of consensus or democratic majority rule decision-making.
- The process purposefully fosters group building, leadership development and capacity building as an essential element, while striving to successfully address a substantive issue as well.
- Processes are largely focused on a purposeful and systematic approach to addressing a local concern(s).
- Community issues or problems are investigated holistically, linking issues and appreciating the complexities of the community in assessing and resolving the issue.
- Processes are flexible and not rigidly structured to only deal with an initial concern.
- Processes have a strong reliance on professional staff facilitation and coordination.
- Processes are characterized as being locally initiated and entrepreneurial, although some efforts may be championed by community colleges, state extension programs, or state or regional agencies furthering programmatic agendas.

References

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[2] Adapted from Andrews (1998) based on a background paper prepared by Greg Wise.

Evaluation principles[3]

Evaluation is the systematic collection of information about activities, characteristics, and outcomes of projects to make judgments about the project, improve effectiveness, and/or inform decisions about future programming (adapted from Patton, 1987). Evaluation is not merely the accumulation and summary of data and information about a project. It provides managers with well-documented and considered evidence to support the decision-making process.

Project evaluation serves two general purposes:

1) To determine the project's merit (does it work?)
2) To determine the project's worth (do we need it?).

Additionally, evaluation documents project (and program) accomplishments. If the project has been designed properly with well-articulated objectives that specify what must be accomplished, to what degree, and within what time period, the evaluation can determine whether or not the objectives are being met and why a project is or is not meeting its objectives. The most common reason for conducting a project evaluation is the desire to understand, in a systematic way, what is and is not working in a project.

Additional benefits include:

- Participant Benefits –Identify the degree to which participants benefit directly, short-term and long-term, from the experiences or services.
- Project Improvement – Identify project strengths and weaknesses. Map out the relationships among project components.
- Public Relations – Data can be used to promote the products and services of the project. Statements based on evaluation results will be viewed as more substantial and justifiable.
- Funding – Grant managers frequently require the implementation of a comprehensive, outcomes-based evaluation. Evaluation results are often helpful in determining if a project should be continued, scaled backed, discontinued, or enhanced.
- Improved Delivery – Help clarify the purposes of the project, allowing decision-makers to examine project components against well-thought-out criteria.
- Capacity Building – Engaging staff, volunteers, and stakeholders in the design and implementation of an evaluation provides opportunities for skill building and learning.
- Clarifying Project Theory –The evaluation provides an opportunity to revise the project theory – how things work or how people learn or even how organizations change.
- Taking Stock – Evaluation provides an opportunity to document where the project has been and where it is going, and consider whether the project is doing what its designers hoped it would do. Taking stock is more than accumulating information about the project, it is learning through the project.

References

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[3] This evaluation overview is adapted from Simmons (2004a).

Leadership principles

Leadership develops from opportunities to be in decision-making situations and take an active part in all phases of an initiative. Leadership is a skill that can be learned and practiced when opportunities arise. It is a shared process – more than one person can be involved in carrying out a leadership role for a particular situation. Leadership is demonstrated when people, as a group, select and act on an area of concern to them, choose a plan to solve a problem, and actively take the necessary steps to reduce or eliminate the problem.

Interfacing with leaders of target audiences has three goals:

1) Build the trust that is essential for working together on program planning
2) Collaboratively identify educational needs
3) Develop and improve decision skills among leaders (Marshall, 2000).

Approaches to identifying the leadership of a group (Cary & Timmons, 1988 in Marshall, 2000):

- Decision-making – identifies leaders who are active and involved in community issues.
- Social participation – in which leadership is assumed to be acquired through membership and holding office in voluntary organizations.
- Reputational – identifies influentials who are presumed to have broad knowledge of the decision-making processes of the target group, and to be in a position to identify those leaders who have the influence to affect a number of issues of interest to the target group.
- Positional – in which power is assumed to rest in the top leadership positions (offices) in formal organizations that are relevant to the educational programming.

Potential leaders can be identified in several ways (Cary & Timmons, 1988 in Marshall, 2000):

- People who provide much of the information on which decisions are made and often have major responsibility for carrying out the decisions.
- People who have technical knowledge needed for a project, or have special information about a particular issue, and whose involvement may identify them as potential leaders for more general community leadership.
- People who have a special ability to work with groups.
- Customers, clients and members of organizations who work together on community projects. Their capacities and interest in the community serve to identify them for other leadership roles.

Key leadership skills include (Kahl, D. & J. Besthorn, 2001):

- Building and maintaining a group
- Dealing with change
- Take stock: how is your organization doing?
- Developing trust and cooperation within your volunteer group
- The role of a meeting facilitator
- How groups decide: the consensus method
- Leadership in a learning organization
- Situation leadership: balancing tasks and relationships

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Organizational development and management principles

Organizations can facilitate public participation in policy development, provide leadership, disseminate information, help in problem diagnosis, and enhance decentralized decision-making (Andrews, 2002). When an organization is the focus or implementer of an initiative, its effectiveness can mean the difference between a successful and sustainable initiative and a temporary event. While organizational development is not a primary focus for water educators, an ability to analyze organization strengths and weaknesses enables educators to identify and recommend relevant strategies.

The major areas of organization management include:[4]

- Organizational planning
- Leadership
- Communications
- Evaluation
- Organizational structure
- Finance and accountability
- Fundraising

What is an organization? Our conception is evolving. An organizations was thought of as a mindless entity, or an unminded system. We analyzed its workings using analytical thinking, the science of dealing with independent sets of variables. Current thinking views the organization as a *sociocultural* entity. With this perspective, we analyze it using holistic thinking, the art and science of handling interdependent sets of variables. This *systems thinking* perspective imagines the organization as focused more on *purpose* than on a goal. That is, "it can produce 1) the same outcome in different ways in the same environment and 2) different outcomes in the same or different environment." This view encourages analysis of organizational effectiveness in the context of society, a larger *purposeful* whole, and from the point of view of its members, *purposeful* individuals (Gharajedaghi, 2006, pp. 9, 12-13).

According to this theory, organization systems are defined by five principles: openness, purposefulness, multidimensionality, emergent property (a quality larger than any one part), and counterintutitiveness (social dynamics are so complex that they can be difficult to analyze). Guidance and control are achieved by agreement based on a common perception (Gharajedaghi, pp. 29-49).

One method for facilitating organization development is through application of a strategic planning process. Strategic planning is a disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it. Benefits to an organization include promotion of strategic thought and action, improved decision-making, enhanced organizational responsiveness and improved performance, and strengthened teamwork and expertise among organization members (Bryson, 1995, pp. 5-7).

References

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[4] Innovation Network, http://innonet.org/?

Program planning principles

Whatever the circumstance, the educator or water resource professional must: analyze the situation; determine the "teachable moment"; and bring whatever communication and teaching skills he or she has to bear on the situation. Human progress is the goal. A tall order! A great idea is not enough to ensure a great program. Enthusiasm and concern must be accompanied by leadership and legwork. Taking an organized approach ensures that you have thought about what you are trying to do and how you will get there. It also provides an opportunity to look at what resources the community already has available, what it needs and what the audience wants and needs. Involving the target audience and other stakeholders in the process can help empower and invigorate community leaders, resource managers, young people, and others who are concerned but do not know how to proceed. Planning also helps ensure that you use human and financial resources wisely and efficiently (Andrews, 1995).

Elements which are addressed as part of outreach planning include:

- Mission of the hosting organization
- Networks, partners, and resources
- Program design
- Community needs assessment or situation analysis
- Goals and objectives
- Program delivery
- Evaluation

Best education practices derived from program planning principles

1. Use effective instructors and good instructional design
2. Provide effective management, including: effective marketing, good facility or location, appropriate scheduling, appropriate pricing, customer support
3. Follow the principles of program planning established in research literature:
    - Planning should be flexible and based on client needs
    - The client system and planning context should be thoroughly analyzed
    - Clients should be involved in the decision-making process of program planning
4. Create and maintain positive relationships and supportive environments
5. Pay attention to factors which enhance success of the learning environment:
    - Practical/real-life focus; Monitoring participant reactions and learning; Motivated and prepared participants

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