

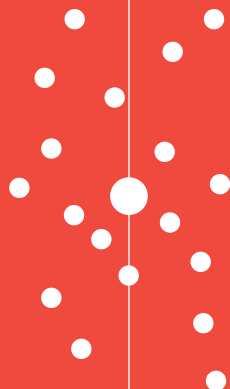
When the sparks *fly*:

Building Consensus when the Science is Contested

by Gail Bingham

Leaders today face problems made increasingly difficult by complex science and competing interests. When this is combined with the rich diversity of interests and perspectives of our modern world, the process of finding solutions to problems only becomes more entangled. RESOLVE's goal is to give leaders and their publics the tools to untangle these problems together. Dialogue, negotiation, and collaboration do work. People can sort out even the most tangled of knots. It's not easy, and people don't succeed every time. However, given the stakes inherent in today's issues, we have no choice but to try. The problems requiring public attention and action today are too important.

Hank Habicht
CEO, Global Environment & Technology Foundation



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Acknowledgements

The ideas in this monograph build on the intellectual capital of many other individuals. Howard Raiffa's work provided the specific foundation, by clarifying the notion of joint gains and by integrating game theory and negotiation theory. Larry Susskind, Scott McCreary, and others further elaborated the concept of joint fact-finding as a strategy for finding joint-gains solutions.

Of all that has been written about negotiation, mediation, and collaborative problem solving, however, no single book has equaled the impact of *Getting to Yes*, by Roger Fisher and Bill Ury.

I am inspired by their success in turning descriptively accurate observations into straightforward, prescriptively useful advice, and I hope that *When the Sparks Fly* will offer additional tools for situations when negotiations are made even more difficult by complicated or contested science.

Peter Adler and Juliana Birkhoff more recently led two projects that add significantly to our ability to untangle science-intensive public disputes. They identified "rocks in the road" to resolution and then laying out useful advice for what to do about them.

RESOLVE is proud of the opportunity to have supported these projects with the U.S. Institute for Environmental Conflict Resolution and the Western Justice Center Foundation for *Managing Scientific and Technical Information in Environmental Cases: Principles and Practices for Mediators and Facilitators*, and with the Policy

Consensus Initiative and The Keystone Center for *Building Trust: When Knowledge from "Here" Meets Knowledge from "Away."* The ideas in this monograph build on their work. Personally, I also want to thank Leah Haygood, who assisted in the production of this monograph. Copy editing was done by Jennifer Thomas-Larmer.

Further, we are all indebted to the parties who sought resolution in the many public disputes that have been mediated over the past three decades. The challenges you have faced and the tools you have created significantly informed the ideas that follow.

Finally, I want to thank Bruce Babbitt, of Latham & Watkins and former Secretary of the Interior and Governor of Arizona; Lee M. Thomas, President, Consumer Products, Georgia-Pacific Corporation and former Administrator of the U.S. Environmental Protection Agency (EPA); and Hank Habicht, CEO of Global Environment & Technology Foundation and former Deputy Administrator of EPA, for sharing their insights about the challenges of leadership in the 21st century at RESOLVE's 25th Anniversary Symposium. They are leaders who set the standard for us all.

Leaders in democratic societies increasingly speak the language of dialogue and consensus building. They seek to understand the interests and concerns of diverse communities, and to craft solutions that are influenced by the insights and wisdom of those constituencies. Such leaders know that finding solutions to many public issues requires the active engagement of multiple individuals and groups, and that this happens best when the stakeholders are involved in a collaborative manner. This is no easy task under almost any circumstances. It is particularly difficult today when public policy decisions involve such complex scientific and technical issues.

“The significant problems we face cannot be solved at the same level of thinking we were at when we created them.”

Albert Einstein

Leadership through the Looking Glass

Leaders today must often look to science to help inform policy decisions. The imperative to make well-informed decisions has never been more important, and the need is the same whether the decision is made collaboratively or not. Population growth and the increased affluence of (some) human populations create conflicts with the natural environment that raise new questions and call for new solutions. The problems that emerge can surprise us, and it takes good science to understand the causes well enough to produce effective responses. Also, the decisions we make may have unanticipated consequences themselves, which require additional advances in science to overcome and, in turn, raise new questions.

The challenge, however, is that science does not provide the crystal clear answers we seek. Leaders often feel like Alice peering down the rabbit hole, or even falling into another world where it's difficult to distinguish fact from fiction. What can leaders do to “get the science right” when experts present conflicting information or widely differing predictions about the consequences of a decision? How much information is enough? What can we do when the science runs out?

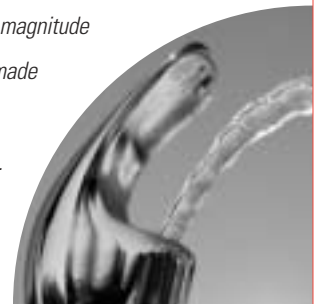
Newspaper headlines across the country and around the world call our attention every day to public decisions involving contested science. Leaders are asked about and constituencies care about such diverse and complicated problems as: What level of naturally occurring arsenic is safe in drinking water? What policies should govern our new abilities to produce pharmaceuticals in plants or to grow organs in animals for transplant into humans? What is causing the rapidly rising incidence, particularly in minority children, of asthma, and what are some effective public health responses? How should water be allocated in the Klamath River basin between farms and fish? How do we manage our national forests to reduce the danger of fires, protect habitat, and support human uses of the land? What levels of mercury in the Great Lakes or PCBs in the Delaware River are too high, and who should do what to achieve reductions, if needed? To what degree — and why — is antibiotic resistance growing? What role should renewable sources play in providing for the energy needs of the country, and what decisions are needed when licensing or siting hydroelectric dams, wind turbines, and other facilities?

Questions such as these involve not only competing interests and passionately held values, but also scientific and technical uncertainties about what will and will not work.

What can collaborative leaders do when looking into the Wonderland of competing interests and contested science? Imagine successful leadership in these circumstances. We must, because the problems are only getting harder and the success of our democratic institutions is so important. We do know what is at the heart of leadership — it is timeless vision — but we may be losing confidence in our ability to achieve it. A great leader is a superb listener, clear about the results that need to be achieved and able to inspire others to work together to produce them. It sounds so simple, and yet it is increasingly hard to do.

I *Imagine yourself in the shoes of officials at the U.S. Environmental Protection Agency almost ten years ago, knowing that the disinfection of drinking water supplies has been one of the most significant advances in the history of public health, yet seeing growing scientific evidence suggesting that cancer and reproductive health risks may be associated with the chemical byproducts of disinfection. Some experts are telling you that the cancer risks may exceed 10,000 per year in the United States alone; others criticize the methodology used in these studies. All worry about increasing the risk of waterborne disease just when the number of people with compromised immune systems is rising and wonder whether enough is known about the effectiveness of different*

engineering solutions. The cost of changing water treatment systems around the country could be astronomical, and even calculating those costs will be controversial. You know that the stakes are high, that you don't have enough information, and that you don't have the resources to get more information in any reasonable period of time. It is a risk/risk tradeoff, requiring many kinds of expertise. It is both a risk assessment and a risk management decision, with significant interests that have differing attitudes toward risk and toward incurring costs before understanding the nature and magnitude of the risk. EPA and its stakeholders have made major strides in resolving these problems through a series of negotiated rulemakings.



What's the Problem?

A successful leader is eager for and able to create opportunities where all sides can share their differing perspectives on a given problem and can contribute to shaping solutions that satisfy as many needs and concerns as possible. Public disputes, however — whether over policy, natural resources, public health, or other public policy issues — are difficult to resolve for many reasons. Introducing a consensus process will not magically make these challenges go away. But leaders can be more successful if they keep a few common challenges — and some possible actions to overcome them — in mind.

Multiple Forums/Changing Incentives

Problem: Frequently, the same or related issues may be the subject of simultaneous administrative, legislative, and/or judicial action, sometimes at more than one level of government. Different forums may be preferred by different parties, based on the chances they see for them to achieve their objectives. Thus, parties' incentives to negotiate may go up or down depending on what forum the dispute is in at the time. The parties involved may have as many different views about whether negotiation is in their interest — and about how to structure any negotiating relationships — as they have different views on the issues.

Action: *In such circumstances, it is good practice to conduct a feasibility assessment and shared process design. That way, parties can determine if they have something to gain from a consensus-building process. The assessment should uncover any of the challenges below (or others). It should also result in an agreement (often mediated) among the parties as to who will participate and in what way, the scope of issues, any deadlines, the frequency of meetings, information needed to make sound decisions, who the mediator will be (if any), and other ground rules.*

Multiple Parties and Issues

Problem: Because environmental disputes usually affect large numbers of interested parties and involve many interrelated issues, organizing a negotiation or consensus-building process can prove difficult. In addition, disagreements often arise about how the issues are framed.

Action: *Representation issues can be solved in several ways. Coalitions can be formed, for example, allowing several parties to be represented by one negotiator. True conversations also are possible with large groups. This can be accomplished by establishing subcommittees, structuring simultaneous “roundtable” conversations with small groups, hosting “open houses,” creatively using the Internet, or simply creating a sufficiently positive climate that parties are patient with the constraints of a very large table. Most critical is that the parties view the choice as constructive. The process of organizing and framing the issues requires even more consultation. It may be possible to manage a large number of issues with subcommittees or with a “single-text” draft of agreements from which everyone works. Consulting with stakeholders about what issues are on the table for discussion and finding a way to frame the issues that encourages people to see that their concerns will be discussed may be the leader’s single most important task.*

Institutional Dynamics

Problem: Environmental and resource management conflicts typically arise among organizations or groups rather than among individuals. Therefore, the individuals at the table must get proposals ratified by others who are not participating directly.

Action: *Because each entity has its own internal decision-making process, it helps to know the degree to which each representative can speak for his or her organization or constituency, make proposals, and commit to an agreement. It may also help to ask representatives to conduct regular internal briefings with those not at the table. Then the negotiation group can address together any questions that are being raised and can determine how best to “make the case” back home.*

Inequality of Resources

Problem: Mediation and other consensus processes cost money, just like any other decision-making process. Parties need funds for travel expenses, information collection, evaluation, and expert advice during the process. While government agencies and private corporations generally have financial resources and are represented by paid staff, other parties may lack the financial and technical resources to represent their interests effectively. Local nongovernmental organizations, for example, nearly always rely on unpaid volunteers.

Action: *For the principle of inclusiveness to be realized in practice, adequate resources for participation and informed decision making must be available to all the parties. In cases where parties have unequal resources, the most successful approaches have relied on progressive project sponsors, who recognize the resource needs of all participants. Examples include the Avista Corporation in the re-licensing of two dams on the Clark Fork River and government agencies such as the EPA in negotiated rulemakings.*

The Public/Political Dimension

Problem: By definition, controversial public policy issues are resolved (or not) in public forums, with laws, governmental institutions, and the media all playing significant roles.

Action: *Attention must be given to open-meeting laws, the role of the media, and communicating the process and rationale for decisions in a way that can withstand public scrutiny and comment. The applicability of the Federal Advisory Committee Act (FACA) and other laws raises special legal questions. Experience (particularly at the EPA) suggests that FACA not only does not inhibit a consensus-building effort, but actually can contribute to the perceived legitimacy of the decisions that result.*

Complex Scientific and Technical Issues

Problem: Sound scientific and technical information is essential for creating solutions that work. Leaders face numerous obstacles to achieving this goal, however.

Action: *The remainder of this monograph sets forth different obstacles that arise in science-intensive disputes and discusses options for avoiding or overcoming them.*

The Knots that Tie Up Science-Intensive Disputes

The problems that entangle efforts to reach solutions that are consensus-based and well-informed by the science are so numerous that one almost wonders whether it is possible to straighten them out. The key, however, is to select strategies to match the cause of the problem. The problems fall into five broad categories.

1 Adequacy of the information for the problem.

However exponentially the amount of data and information has grown in recent decades, it is rare to face a policy problem where the information lights the way to an obvious solution. Often, parties do not have the information they need because:

- there's not enough data;
- there's too much data to absorb;
- the data that does exist is outdated;
- access to data is restricted;
- the data is inconclusive or isn't relevant to the decision at hand;
- existing studies have different objectives, assumptions, or methods of data collection and analysis; or
- data exists but it hasn't been analyzed sufficiently to provide useful information.



2 Clarity of the decision-making process with respect to science.

The problem doesn't always start with the science, however. A key to informed decision making is to clarify what questions need what kind of information. Sometimes the first step is to plan (or rethink) the decision-making process, especially when:

- parties define the problem differently;
- decision makers haven't thought through their objectives clearly enough;
- the conceptual framework for issue definition is shifting;
- parties disagree about the methods for data collection and/or analysis; or
- science is being used as an argument, even though the conflict is really about something other than the science.

3 Problems parties have dealing with the data.

In some situations, differences among the parties cause problems. This can arise when:

- some parties have access to the data and others don't (either because the information is confidential or because parties have unequal scientific and technical resources);
- some parties have more expertise and can understand the data better than the other parties; or
- the parties have different tolerances for complexity.

4 Problems scientists have among themselves and in communicating with stakeholders.

Scientists are people too, and the differences among them need to be understood and managed when:

- the information and expertise of scientists from different disciplines is required;
- the issues of interest to scientists are not those of most interest to the stakeholders;
- the decision-making process is on a shorter timetable than is the science;
- scientists' values influence the questions they are asking; or
- the parties have unrealistic expectations of the scientists.

5 Problems of trust.

It also is more difficult to draw on the full range of information that may be available when:

- the parties do not accept information from studies paid for by their opponents; or
- information has become politicized.

The Avista Corporation took a leadership role in convening representatives of federal, tribal, state and local interests early in the preparation of its application to relicense the Cabinet Gorge and Noxon Rapids dams on the Clark Fork River in western Montana and Northern Idaho. Scientific and technical questions about gas bubble disease in migratory fish populations were

among the many complicated issues the parties had to deal with. Avista built trust and created a shared information base credible to all sides by sharing the decision making about scoping the studies and selection of consultants to do those studies. The application submitted by Avista was based on agreements it reached with its stakeholders through this collaborative process.

Untangling the Knots

In its specifics, each situation is unique — and it may look like a mess. Tools do exist to untangle that mess. However, these tools are only useful in context. Just because one has a hammer doesn't mean that everything is a nail. For any of these tools to be utilized effectively, leaders must have good diagnostic skills. They must be able to choose which tool to use when and tailor it to each situation. There are no cookie-cutter solutions. However, there are guiding principles and questions to ask to help you make choices about which tool(s) to use and how to use them.

The following five principles will help you make better choices when faced with a public decision tangled by contested science.

1 Clarify the questions jointly before gathering more data.

Too often, we find ourselves in disputes where data exists but people still feel their questions aren't being answered. One of the problems may be that people aren't yet clear about what questions each of them cares about — and which ones of these can be answered within the framework of the decision-making process. The key is to gather stakeholders together and have them determine jointly which questions are and are not part of the scope of the discussion. Because stakeholders may see the questions differently, this often means seeking answers to questions of importance to one another.

2 Focus on decision-relevant information.

The problems that confront us clamor for good information. But in some cases, each side may be shouting so loudly about their own data that they can't hear each other at all. Once the parties have agreed on the questions, they also need to discuss and agree on what information is needed to come up with the answers. With that as a foundation, people are often more able to review existing information, determine what they agree on, and focus any further data collection or analysis on filling agreed-upon gaps.

The DuPont Company owned land with significant titanium deposits outside of Folkston, Georgia and near the Okefenokee Swamp. Their interest was in the question of how to conduct mining operations in an environmentally sound manner.

Some stakeholders agreed, while others' view was that it was essential to question whether to permit mining operations at all. With the assistance of mediators from RESOLVE, the parties were able to engage in negotiations involving both sets of questions.

3 Let science be science, and don't confuse it with policy.

Science is needed to inform policy, but the choice of what information to collect and why almost always is shaped to some degree by someone's policies and priorities. In each case, ask who set the underlying assumptions and whether the policy makers and their stakeholders shaped the questions being researched. Too often, leaders look to scientific information that was gathered for other reasons. Too often, also, we look to science for answers it doesn't have. For example, science can't tell us what tradeoffs to make or how much risk to accept.

4 Learn together.

The key to success is as much an attitude as it is a set of skills. Leaders need to see the policy making process as one of inquiry and to include those who will be affected by a decision in the thought process from the beginning. The steps are the same as in any inquiry — clarifying the questions, asking what information is needed, identifying what information we already have and what we need to get, creating a well-thought-through process of data collection and analysis, deciding who will conduct the studies, and learning from the results. The process of collaborative inquiry does not necessarily have to be burdensome, although it does need to be intentional. It may require as little as a few meetings or workshops to ensure that the decisions that shape the thought process are transparent and supported by the stakeholders to the eventual policy decision. In other cases, the level of controversy, complexity or stakes to the parties may warrant the investment in a joint technical working group to guide the process together.

Parties with a shared interest in increasing the amount of energy produced from wind have found themselves caught in disputes over the potential impacts of wind turbines on birds, particularly threatened and endangered species.

RESOLVE has facilitated an ongoing dialogue through the National Wind Coordinating Committee, producing a series of consensus reports that clarified the questions researchers thought needed to be

asked, defined shared methods and metrics so studies across different sites could be compared, and reached agreement on what is known about avian/wind interaction and what questions remain. These reports are used by the wind industry to guide their research and site selection and government agencies and citizen groups when reviewing permit applications. Future issues include assessing cumulative impacts and effects of wind development on bird populations.



5 Remember that science isn't necessarily the underlying cause of disputes – and draw on other basic consensus-building principles and tools.

People do find themselves in disputes over science. However, in almost all cases, they would not be arguing over the science unless something else was at stake. Perhaps the most important problem-solving skill any leader can have is to bring the underlying interests and concerns to light. The classic advice is to “focus on interests not positions” (Fisher and Ury, *Getting to Yes*). Issues are the question being asked. Positions are the parties' preferred answers, and interests are why those answers are important to them. Checking to make sure you know what the problem really is can save a lot of time and effort, if competing positions about science are a surrogate for something else. Other basic negotiation principles can help the process of learning together work more smoothly. These include using objective criteria and addressing people problems directly rather than letting them affect the substance.

The rise of nutrients in the Chesapeake Bay has been a problem for decades. At one point, disagreements over whether nitrogen or phosphorus was the major contributor held up the adoption of a water quality planning document for the Patuxent River that was required for the State of Maryland to receive EPA grant funds under the Clean Water Act. Mediator John McGlennon was hired to help the scientists sort out the dispute. The document they created — describing what they agreed was known and not known — was useful to policy makers. Just as useful, however, was the mediator's ability to help the policy makers name the underlying issue of concern

to them — which counties along the river would be allocated how much of the grant funds for what projects. The three upstream counties were suburbs of Washington DC, and sought additional funds for sewage treatment plants (which would help control phosphorus reductions). The three downstream counties were more rural, and sought funds for non-point source controls (which would help control nitrogen). The explicit conversation about funding that was needed succeeded with the assistance of the mediator.



Tools or Actions to Consider.

The following are a few actions to consider that have proven useful to others.

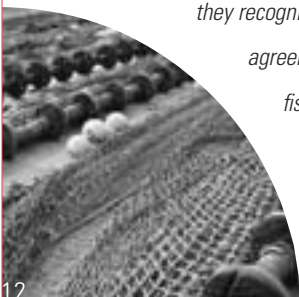
In deciding what approach to take when, it is important to understand where you are in the process. Consensus processes typically have three stages — assessment, dialogue or negotiation, and implementation. Problems about (and opportunities to integrate) complex scientific and technical information arise at each stage in different ways. Thus, to achieve the desired outcomes of each stage, leaders need to do different things at different times.

Stages In Consensus Building

<i>Stage</i>	<i>Desired Outcome</i>
CONVENING	Agreement On: <ul style="list-style-type: none">• purpose• product• process (who, when...)
SUBSTANTIVE DIALOGUE <ul style="list-style-type: none">• Opening• Middle• Closure	<ul style="list-style-type: none">• Shared understanding of the problem• Exploration of possible outcomes• Recommended solutions
IMPLEMENTATION	Observable Change

World Wildlife Fund and Unilever developed a partnership built on a shared interest in protecting marine resources to develop a market-based approach to encourage consumers to buy seafood from sustainable fisheries. They founded the Marine Stewardship Council, based on a vision of certifying and labeling sustainable fishery products. However, they recognized that controversy and lack of agreement over what constitutes sustainable fisheries could prevent the Council from succeeding. To build consensus on principles and criteria defining

sustainable fisheries, the partners worked with RESOLVE to design and conduct a facilitated consultation process that met the need to address complex scientific issues and to gain broad public input on proposed approaches. A diverse group of experts met to draft principles and criteria, which were then presented to and discussed by stakeholders at workshops around the world. The experts reconvened to consider input from the stakeholders and finalize the principles and criteria. Through this process, the Marine Stewardship Council gained a broadly recognized and accepted basis for awarding certification of sustainable fisheries.



Solving Data Problems in the Assessment Stage.

The key to managing scientific and technical information during the assessment stage is to diagnose the challenges early — and to communicate with stakeholders about them.

- Conduct an assessment as part of designing the process — and include questions to help identify any barriers to it being a joint inquiry.
- Call and consult people about what questions they think are important to ask, what information is needed, what data exists, what methods of data collection and analysis are most appropriate, what studies might be needed ahead of time, and which credible experts could undertake those studies.
- Talk explicitly about trust, uncertainty, and the role of information in the decision-making process.
- Name the areas of disagreement over information and plan a decision-making process that addresses these differences and builds trust.

EPA's series of negotiated rulemakings on microbial and disinfection by-products required the expertise of scientists and engineers from many disciplines, as well as the insights of non-technical policy representatives. At several stages, RESOLVE mediators worked with EPA and the parties to organize technical workshops, with the objective of creating a common vocabulary and understanding of the key issues not only for the non-technical stakeholders but also for scientists from such

diverse disciplines as civil engineering, toxicology, epidemiology and cancer risk assessment. Topics and experts were chosen collaboratively. Where the science was in dispute, specific questions were posed to a panel of scientists relied upon by different stakeholders, and the interactive discussion among them was conducted in a "fish bowl" setting with 100-150 stakeholder participants observing and learning.

Solving Data Problems in the Dialogue Stage.

The key to reaching well-informed decisions that meet the interests of as many stakeholders as possible is to establish the proper tone and structure for learning together. This also helps avoid fights over the science and experts competing with one another over their studies. The following are some approaches to keep in mind.

- Generate multiple problem definitions and use them to agree on the scope of issues.
- Continue to ask, “What information is essential for solving the problem?”
- Respect different types of knowledge and different ways of knowing.
- Find adequate resources to enable all parties to obtain necessary technical expertise to participate effectively.
- Convene a workshop of scientists from each interested party to create a shared picture of what is and isn’t known — and what remains in dispute.
- Conduct jointly designed studies (“joint fact finding”) and/or create shared models.
- Use interactive panels of scientists (selected by the parties) to address stakeholder questions.
- Establish collaborative technical work groups of scientists selected by the parties.
- Plan the scope of studies and select experts to conduct them in consultation with others.
- Synthesize scientific and technical information in the users’ vocabulary and create an explicit role for a “translator” — someone to help policy-oriented and technically oriented participants understand each other.
- Take field trips, jointly planned by those with experiential and scientific knowledge.
- Build confidence intervals around controversial data — ask “what if?” for different points in the range.
- Focus on interests.
- Consider multiple options.
- Use interest-based criteria to evaluate options.
- Decide what you can, based on the information available, and agree upon next steps to gather the additional information needed and to discuss remaining questions.

Solving Data Problems in the Final Agreement/Implementation Stage.

The keys to successful implementation are to plan ahead and to invest in an iterative process of learning, action, evaluation, and new learning. Before concluding the dialogue stage, parties should consider the following questions and actions.

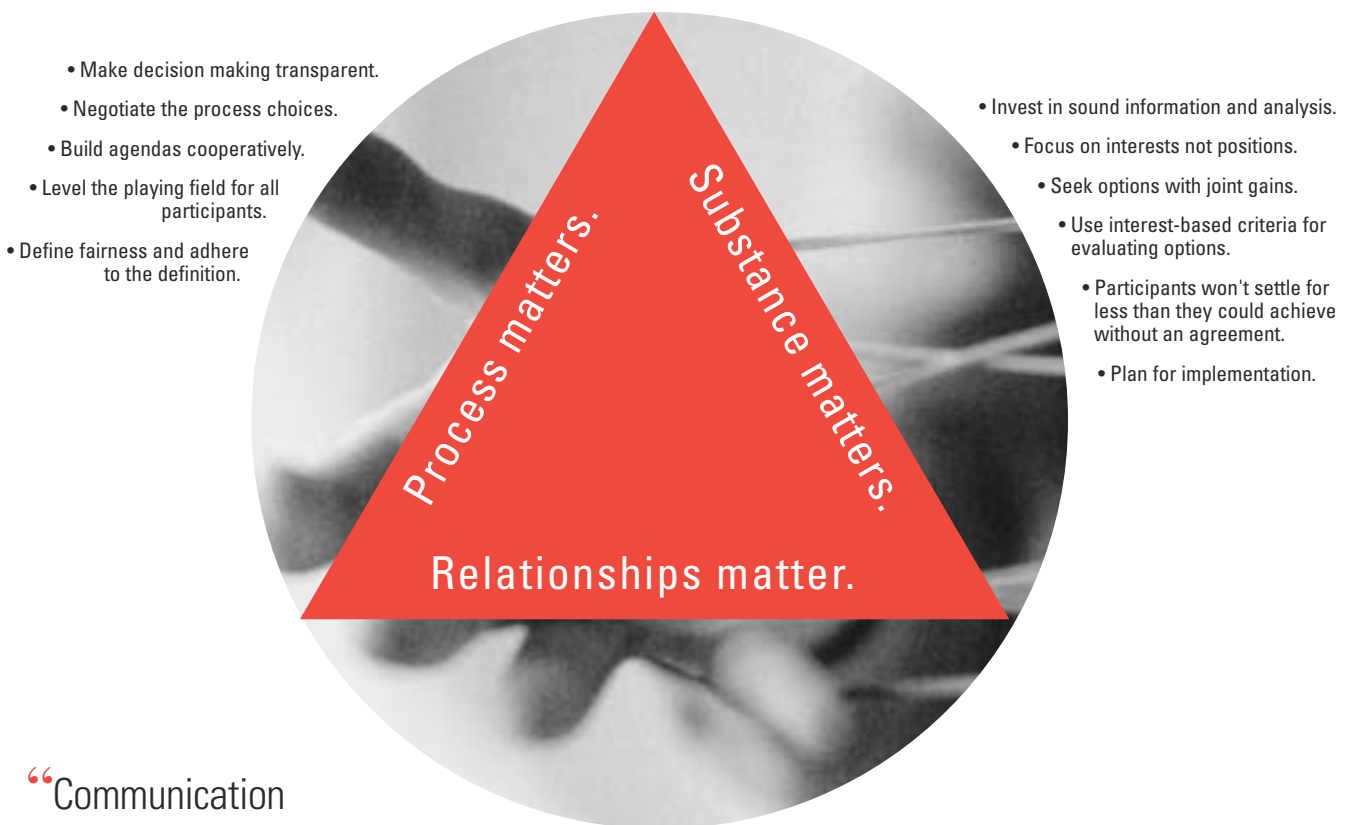
- Are key questions answered?
- Is the solution technically sound?
- Is the solution balanced and fair to all interests?
- Are implementation safeguards in place?
- Is the agreement able to be reopened if new data emerge?
- Openly discuss the implications of ongoing uncertainty.
- Make contingent agreements.
- Identify remaining questions and make a plan for what to do with them next.

When Portland General Electric proposed to decommission a 90-year-old hydropower project in a scenic area close to Portland, few models existed for how to do it in an environmentally sensitive and cost-effective way. Environmental issues included protecting endangered salmon and preventing damage from the release of sediments accumulated behind the dams. Working with RESOLVE, Portland General Electric formed a dialogue group composed of representatives of government agencies, businesses and public interest groups to jointly examine the issues and develop a plan for the decommissioning. Taking a collaborative approach to the technical issues, Portland

General Electric retained experts respected by all of the parties to provide real-time information on questions that arose and develop a model to examine alternative scenarios for the dam removal. Participants reached a comprehensive settlement agreement that will provide long-term regional benefits, including the establishment of a scenic recreation area. A key element of the agreement recognized uncertainties about the effects of changes to the management of the wild and hatchery fisheries and provided for future management based on the results an agreed monitoring plan.



Finally, it's important to understand what success will look like. This can help guide your choices about which actions to take and which tools to use — and how to implement those actions and tools. The attributes people mention most when they describe a successful consensus process can be grouped into three categories: relationships, process, and substance. Below are general principles that can help you to achieve success in each of these dimensions. These principles not only apply generally to any aspect of a negotiation, but also specifically to how you implement tools for dealing with complex scientific and technical information.



- Make decision making transparent.
- Negotiate the process choices.
- Build agendas cooperatively.
- Level the playing field for all participants.
- Define fairness and adhere to the definition.

- Invest in sound information and analysis.
- Focus on interests not positions.
- Seek options with joint gains.
- Use interest-based criteria for evaluating options.
- Participants won't settle for less than they could achieve without an agreement.
- Plan for implementation.

“Communication is about who is listening, not who is talking...”

Anonymous

- Be inclusive.
- Get to know one another as individuals.
- Check your assumptions — ask questions and listen with respect.
- Talk about values.
- Don't sacrifice doing what will help create positive solutions just because you have problems with certain people.

We must all be leaders, each in our own way, working together to seek solutions to the complex policy issues of today and tomorrow. Strong evidence exists that such solutions are possible when we think explicitly about how we frame the questions that need to be answered and when we invest in serious efforts to learn together. Conflict per se isn't the problem. Often, conflict is what gives rise to important social debates and allows us to pay attention to new questions and concerns. Conflict itself has value — sometimes — in helping people redefine ourselves as a community or as a nation and discover new paths to take us where we want to go. But conflicts also can tear at the fabric of communities and institutions of government. New tools and collaborative approaches are demonstrating success in helping people deal with their differences in ways that yield productive outcomes. Untangling the scientific complexities that arise in many of these issues is an essential part of learning together and producing results through consensus.

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RESOLVE is celebrating its 25th anniversary. This report is meant as a small gift back to the leaders of today and tomorrow to say “thank you.” RESOLVE hopes these ideas give you a lens through which you can see the knots in science-intensive public issues more clearly and can find some useful tools to untangle them.



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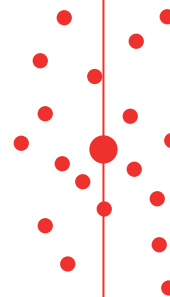
American Bar Association Section on Energy and Environmental Resources

US Geological Survey

“Environmental disputes pose powerful challenges to civil societies. More often than not, they are complex and hard-fought affairs that present urgent and practical problems to be solved. Frequently, they are laden with contested scientific and technical information and important collisions of social and economic values. Inevitably, they are also political fault lines in larger ideological wars.”

Peter Adler and Juliana Birkhoff

Building Trust: When Knowledge from “Here” Meets Knowledge from “Away”



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