SD12

SUSTAINABLE DEVELOPMENT

Consensus Building for Sustainable Development

+ Risk Perception

ENVIRONMENT AGENCY

GA Sustainable Development -Box 3

Contents

Consensus Building for Sustainable Developement

1. Introduction

1.1 The Agency and Sustainable Development

The principal aim of the Environment Agency is to contribute towards the objective of achieving sustainable development, having regard to its responsibilities and resources and by the discharge of its functions. To assist in the achievement of this aim the Agency has set out the following criteria to guide its work. These are:

- because the environment is shared, collective action is necessary;
- decisions should be based on the best possible scientific information and analysis of risks;
- where there is uncertainty and potentially serious risks exist, precautionary action may be necessary;
- ecological impacts must be considered, particularly where resources are non-renewable or effects may be irreversible;
- cost implications should be brought home directly to the people responsible – the polluter pays principle;
- a holistic approach should be taken to environmental objectives;
- a long term perspective should be taken;
- biodiversity should be conserved and enhanced and natural heritage protected;
- a contribution should be made to protecting the global atmosphere;
- the scope for reconciling the needs of the environment and those of development with regard to regulated organisations should be investigated;
- close and responsive relationships should be developed;
- high quality information and advice should be used by the Agency and provided to others; and
- judgements will have to be made about the weight to be put on these factors in particular cases.

These criteria can be used in helping to make difficult decisions. There is therefore a need for collective, partnership approaches to decision making.

1.2 Achieving Agreement and Promoting Action

The Agency has to address how it can achieve the guiding principles of sustainable development. It must look particularly at how it can promote a consensus on objectives, on judgements that should be made, how costs and benefits should be weighed and the priorities for, and means to achieve, sustainable development.

Agenda 21 – a global action programme for sustainable development – stresses the need to achieve a consensus among all relevant parties, including the public. This is not easy. It implies the need to adopt new decision-making methods which go beyond traditional consultative frameworks to involve groups and individuals in a partnership approach. Such an approach emphasises the need to identify the range of issues and concerns and to resolve differences of opinion and conflicts between different interests so that solutions are built that meet the various points of view.

The Agency must address these needs in its own work and functions. However, it has no duties or responsibilities in some areas which can have a significant impact on its work, such as local air quality, transportation, land-use planning and local Agenda 21. It must therefore also work in partnership with others, including local authorities, an increasing number of which have already embarked on consensus building approaches in their local Agenda 21 programmes.

1.3 Purpose of the Document

The purpose of this document is to explore communication and consensus building techniques. Specifically, it:

- defines communication and consensus building;
- defines the nature and basis of public concerns as a means of understanding the potential role of, and design requirements for, effective communication;
- identifies different communication techniques and their relative effectiveness;
- provides case studies of the application of consensus building techniques; and
- considers the Agency's functions and the relevance of the techniques to different circumstances.

The document is intended to promote discussion within the Agency about the use of consensus building and communication techniques. The Agency's "An Environmental Strategy for the Millennium and Beyond" puts forward a new environmental approach and states that is will develop and use methods to ".....resolve conflicts by building consensus where matters are

complicated and views are varied and extreme." This document forms part of the examination and development process for this new approach.

The document builds upon a report called *Public Perception and Communication: Issues for Waste Management*. This report addressed how the public can more effectively be involved in the planning, siting, operation and regulation of waste facilities.

Both reports were written by Dr Judith Petts, Centre for Hazard and Risk Management, Loughborough University.

Other relevant documents in the Sustainable Development Series include:

- "Introductory Guidance on the Agency's Contribution to Sustainable Development" – SD1
- "Sustainability Examples from the USA and Canada" – SD5
- "The Agency's Contribution to Sustainable Development: Case Studies" – SD9

2. Definitions

2.1 Communication

Traditional views of communication between authorities, decision-makers, experts and other interested parties, including the public, have been based on concepts of information provision, education or consultation. The basis for such views has been in legislative requirements relating to consultation, but also an inherent belief that decisions are taken on behalf of the public and that their involvement in consultation be based on preferred proposed solutions to environmental problems. However, it has become apparent that members of the public are now seeking more direct involvement in decision making. In an increasingly able and informed society, people wish to participate more directly in decisions made by those who represent them.

In this document, communication is defined as a two-way process of dialogue rather than as a one-way process of information provision. Although information provision still has a role to play, the objective of dialogue is to build consensus, which requires communication techniques that provide a greater opportunity for public input and discussion.

2.2 Background to Consensus Building

The modern basis of consensus building in environmental management is in the United States' (US) Alternative Dispute Resolution (ADR) processes. The increasingly burdensome character of the US litigation system has driven the search for alternative decision-making mechanisms which can mediate between different (often conflicting) interests and, through some form of negotiative process, seek a mutually acceptable resolution of disputed issues. In the UK, consensus building activities are being driven by (i) recognition of increasing public expectations of their role in decision making, and (ii) local Agenda 21.

The principle of consensus is paramount in dispute resolution. In its purest form the parties to an environmental mediation agree at the outset to work towards a settlement that every party can support but which does not necessarily satisfy the concerns of every party. The UK Environment Council defines the critical quality of consensus building as *agreement by consent*, with the end result of such agreements being commitment: both to the agreement and to its purpose. However, stress is laid upon how this consensus is gained – that is, the process – because how consensus is reached shapes both the consensus itself and how people feel about it. *Building* is an appropriate word to summarise the process, because it may have to be slow but steady.

The concept of consensus building is often misinterpreted. The negotiative decision processes that underlie US ADR suggest a defined purpose and the use of formal and structured decision approaches. People sometimes equate a consensus with full agreement about a decision by all parties, or even that there is majority agreement with the final decision. Alternatively it can be seen as a fudge, rather "weak and woolly". Some view consensus building as a costly and time-consuming process which inhibits the making of decisions.

In reality, consensus building can take many forms and have a range of purposes in sustainable development decision making: the most important characteristic of its use is the spirit in which the process is adopted.

2.3 Communication versus Consultation

Consensus building is a non-adversarial approach to decision-making which goes beyond the traditional consultative processes. The latter rely primarily on decision makers, proponents and/or experts defining a problem and the preferred solutions, and then seeking public comment on their proposals. Consultation is a top-down process which often displays the decision making characteristics of the initiating body. Commitment to a preferred policy, plan or development makes consultation primarily a legitimising activity.

Although the opportunity for public comment is given and mechanisms for concerns to be heard are provided, only limited changes or amendments to the basic proposal are likely to arise.

By contrast, consensus building is a primarily bottom-up process where stakeholders are enlisted into the drawing up of initial proposals as well as the consideration of the preferred proposals or solutions. Consensus building processes provide forums for exchange of information, predictions, opinions, interests and values. Those initiating the process have to be open to the potential need for change and to be prepared to work with different interests to develop plans or to amend or even drop existing proposals.

The bottom-up strategy is portrayed as the polar opposite of the top-down, and this in itself creates difficulties in terms of promoting its advantages. The bottom-up approach is seen as challenging the traditional focus of power, and for elected representatives in particular can be viewed as a threat to their role in a democracy.

The reality of consensus building is more complex. Between the two extremes are approaches which recognise the problems of the top-down strategy in terms of public acceptability and recognise the benefits of greater dialogue, but within limited parameters: for example, the agenda is still set by the decision-authority or proponent although additions or amendments may be welcomed. The balance of power does not change but there may be promotion of power sharing. Fundamentally, consensus building requires a new approach to communication. *The key to effective communication is to find the right approach for the particular decision which has to be made and for the interested parties to that decision.*

2.4 Stakeholders

There are many stakeholders (those with a stake or interest) in sustainable development: government (national and local); regulatory authorities and agencies; non-statutory bodies; industry; professional and industry bodies; national environmental and conservation groups; local interest and community groups, and individual members of the public.

Stakeholder responsibilities, interests, objectives and priorities are divergent and sometimes contradictory. Particularly apparent points of tension arise at the local level in relation to the development and operation of industrial facilities. Members of local communities may respond to protect their immediate interests in relation to potential threats to amenity, health and the environment. Tensions may arise because of conflicting interests and timescales.

There is no single group or interest which can be defined as "the public". The term provides an easy catch-all to describe interests other than those of a proponent, operator or responsible authority. Experience indicates that the majority of the public will take no interest in a decision-making process.

Decisions relating to sustainable development take place in a broad and often fluid context. Changes in policy; development pressure; the relative roles of the private and public sectors; public questioning of the role of experts; the status of community groups; levels of education and understanding; environmental priorities and evidence of links between activities and harm to the environment, all affect the response of different stakeholders at any point in time and consequent demands upon information and communication. Understanding stakeholder concerns is therefore essential for effective consensus building (see Section 4).

3. Sustainable Development and Consensus Building

3.1 Encouragement to Consensus Building

Sustainable development is about charting a new course which reconciles economic demands and social needs with the capacity of the environment to cope with discharges and pollution and to support human and other life. It incorporates economic, social and environmental needs. The two core meanings of sustainable development are quality of life and equity.

Agenda 21 places great emphasis on the need for all sectors of society to participate in the formation of effective national strategies for sustainable development. Principle 10 of Agenda 21 stresses that:

- environmental issues are best handled with the participation of all concerned citizens;
- at the national level each individual should have appropriate access to information held by public authorities concerning the environment; and
- everyone should have the opportunity to participate in decision-making processes.

Chapter 28 of Agenda 21 stresses the need to involve all groups when preparing local Agenda 21s. Chapter 28.3, for example, refers to local authorities "learning through consultation and consensus building". Particular mention is made of drawing in women and young people; involving all groups in society and not just the more

articulate, and of trying to generate consensus. Participation is promoted as being an integral part of the Agenda 21 process, no longer an optional extra in decision making.

The UK sustainable development strategy considered the need for different interests to "work together". The formation of the UK Round Table for sustainable development has had the specific remit to encourage discussion between people from different positions and with different responsibilities. Citizen initiatives are seen as being focused on local communities and individuals, through local Agenda 21 in particular. The strategy identified the aim to "increase people's awareness of the part their personal choices can play in delivering sustainable development, and to enlist their support and commitment".

The Agency can consider the relevance of the principles of consensus building to its own responsibilities, and how these interact with those of other agencies and the local authorities in particular. The statutory guidance on the Agency's contribution to sustainable development states that it has to build and develop close and responsive relationships with the public, local authorities and other representatives of local communities and with other groups with environmental responsibilities in order to work together to achieve sustainable development. While the Agency must ensure collaboration which will achieve its own aims it also has to consider the aims of others.

3.2 Experience

The Agency is investigating the application of consensus building and communication techniques to its work. For example, the Consultation Report of the New Forest LEAP concentrates on the prioritisation of issues relevant to the Agency and the identification of possible actions and associated costs. Thirty-three issues were identified in the New Forest area. They evolved from an assessment of the state of the local environment and the pressures/activities placed upon it.

Actions highlighted in the Consultation Report potentially have cost implications for both the Agency and external organisations and these needed to be weighed up against the benefits any actions may bring. The Agency commissioned the Environment and Society Research Unit of University College, London to develop a framework and practical guidelines for the prioritisation of issues and actions in the LEAP.

To do this a stakeholder group was recruited for the New Forest Area to try to achieve a consensus on what the priority issues for the Area were. The establishment of a stakeholder group represents an essential part of a wider consultation process. This consultation practice is based on the idea that decisions will be more robust if based on a measure of consensus between those with a stake in what happens. It is designed to ensure that the Agency takes account of the local community whilst helping to build partnerships to implement the actions.

The Stakeholders

The criteria for membership of the LEAP stakeholder group were as follows:

- must live/or work within the LEAP area
- must command authority within their own organisation
- are able to represent their constituency
- possess excellent local knowledge
- are skilled in assimilation and assessment of technical information
- can work to a tight timetable
- can attend all workshops

Representatives from the following sectors were subsequently chosen.

Public Sector
New Forest District Council (Officer)
New Forest District Council (Member)
English Nature
Environment Agency

Voluntary Sector
RSPB (also represented Hampshire Wildlife Trust)
Hampshire CPRE and New Forest Association
New Forest Friends of the Earth
Brockenhurst Manor Fly Fishing Club (freshwater fishing)
Calshot Sailing Club and Southampton Water Sailing Association

Private Sector
National Farmers Union / Country Landowners Association
Commoners Defence Association
Exxon Chemical
Southern Water
Associated British Ports

The stakeholder group were tasked with reviewing the issues addressed in the Consultation Draft by using a multi-criteria analysis. The process involved a systematic

evaluation and weighting of the issues against the criteria listed below which encompass environmental, economic and social costs, benefits and risks. The criteria are laid out in the table below along with the values underlying them:

Code	Criterion	Underlying Value Judgement
A	To what extent is resolution of this issue a legal requirement?	Legal obligations must be met.
C	To what extent would tackling this issue benefit non-human species and habitats?	Biodiversity should be protected and the Environment Agency must contribute to the UK Biodiversity Action Plan in line with Government policy.
F	To what extent would tackling this issue maintain the unique status/international importance of the New Forest?	The Environment Agency's actions should not affect the 'New Forestness' of the area.
D	To what extent is the problem identified likely to get worse?	Issues which are likely to get worse should be tackled sooner rather than later: in particular high priority should be given to issues where delay would lead to irreversible decline.
B	To what extent would tackling this issue require the Environment Agency to work in partnership with other Agencies?	The Environment Agency should work in partnership with other organisations within a cross-organisation strategic approach.
G	To what extent would tackling the issue benefit public health?	Public health should be safeguarded; danger to human life is unacceptable.
K	To what extent is the issue well understood scientifically?	Priority should be given to tackling issues which are well understood.
H	To what extent would tackling this issue benefit the quality of life for residents in the LEAP area?	Improving amenity, reducing risk and redressing nuisance should be given high priority.
E	To what extent would tackling this issue benefit the local community?	Maintaining/creating employment should be given high priority.
M	To what extent are actions relating to this issue likely to be affected by potential future legislation?	Future legislation will have to be complied with.

The final list of issues that was produced from the multi-criteria analysis and its elements were ranked in order of priority as determined by the stakeholder group. The purpose of the Consultation Report was to highlight problems in the area and gain opinions from a wide range of people who live and work in the area.

In order to finalise the LEAP the stakeholder groups were asked the following questions:

- Have all major environmental issues been identified?
- Do you consider that the issues have been prioritised correctly?
- Have all the options and solutions to the issues been identified?
- Which issues do you support or oppose?
- In what way can you or your organisation work in partnership with the Agency to improve our local environment?

This approach could serve as a model for planning in the Agency.

Local Agenda 21 activities over the last five years in the UK have been analysed by the Local Government Management Board. A growing number of local authorities are using Local Agenda 21 as a vehicle for trying out new community participation techniques and rethinking their relationship with local people.

Important steps have been taken to raise awareness and get the message about sustainable development across to local communities. Fact sheets about quality of life in an area, magazines for children, educational materials for schools and youth groups, videos, and the use of local authority mailings, are all examples. Projects where local communities are involved in local Agenda 21 have included round table discussions, seminars, community workshops, "globe groups" (neighbourhood groups) and "visioning" to identify crucial issues in local areas and issues of importance to people relating to the quality of life and the environment.

Reports from local authorities indicate that sometimes there has been difficulty in engaging individual members of the public as opposed to environmental and pressure groups; and local businesses have also proved difficult to involve. However, communities are supportive of sustainable development messages and there has been an increasing sophistication of debates about the environment, which have become relevant to a wider range of people.

While many activities in local planning and development processes have sought over the years to involve the public, most involvement has been ad hoc and

fragmentary, occasional rather than regular. In the past it has been guided more by choice of methods than awareness of overall approach. Public involvement has been narrowly conceived and often regarded as optional; as a technical input to a process controlled by professionals and/or developers.

Such views are still evident within some authorities where participation is constrained to legal requirements, for example relating to consultation on development plans and upon planning applications. Elsewhere there has been evidence of activities beyond legal requirements, as developing best practice in plan making and in environmental assessment relating to proposed development has been seen to bring benefits in the decision-making process. For example, there has been increased use of a "scoping" phase in environmental assessment to provide opportunities for different stakeholders to indicate their concerns and what should be included in the assessment. Consensus building case studies in local waste strategy development are discussed in Section 5. Environmental assessment, and specifically the consideration of impacts on the socio-economic environment as required by the regulations, is focusing debate on not only the role of the public in the assessment process itself but also identifying the broader dimensions of the environment which are important to the public, not merely those relating to the environmental media.

3.3 Expectations

Local Agenda 21 activities are raising public awareness of consensus building which could result in expectations of similar activities by the Environment Agency. The generally increasing public expectation, willingness and ability to be involved more directly in influencing decision making, is evident in other developed economies as well as the UK.

Sustainable development focuses on involvement. However, it is important to see this as part of a general trend towards rethinking traditional democratic processes as much as a requirement of achieving the principles of sustainable development. Agenda 21 may focus on consensus building, but the components of how consensus is achieved in decision making include information provision and opportunities for consultation and involvement. There are new models for consensus building activities, but all forms of communication can contribute. The extent to which any elements are used, the stakeholders who should be included in the process, and the objectives of communication will all vary in different contexts. No single method or approach is relevant to all decisions.

The Agency can contribute to sustainable development through any one of its responsibilities, for example: producing Local Environment Agency Plans (LEAPs), issuing Integrated Pollution Control (IPC) authorisations, waste management licences, responding to consultation on planning applications, or implementing flood defence policies. The forms of communication relevant to each may be different, but there is strong evidence that expectations of the Agency's approach are changing. It is important for the Agency to consider stakeholder concerns and interests and to choose appropriate communication methods, while keeping a clear view of its objectives.

4. Understanding Stakeholder Concerns

4.1 Introduction

An understanding of stakeholder concerns, particularly those of the public, is essential to the development and use of effective communication techniques. Over at least 20 years a relatively large international literature has considered public responses to environmental issues. The focus has been upon opposition to industrial activities and particularly the siting of new facilities. Public opposition to siting is usually referred to as the Not-in-My-Back-Yard syndrome (NIMBY). However, NIMBY-based responses have been identified and studied in relation to speculative, proposed, operating and closed facilities. Surveys of both public and business attitudes to the environment have become more common over the last decade. Public attitudes identify significant concerns about chemical, oil, sewage, radioactive waste and toxic waste pollution. International issues such as destruction of tropical forests and ozone layer depletion tend to be of greater concern than local environmental quality issues. The management of household waste, recycling and energy conservation attract less concern and lower levels of background interest.

It is the studies of opposition to specific facilities and proposals which have been useful in revealing the diversity of levels of interest, values, and concerns that is hidden behind the catch all terms – "the public" and "public perception".

4.2 Definition of NIMBY

First used in the 1970s, the NIMBY (Not In My Back Yard) acronym has become a modern catchphrase which describes *opposition to change*, in particular change related to development in a neighbourhood or community. It has been used internationally and often

adapted (for example Build Absolutely Nothing Anywhere Near Anyone – BANANA) by different parties depending upon their view of the basis of the NIMBY response. The term has often been used negatively. Indeed, those promoting or supporting development often describe NIMBY responses as "irrational" and "ill-informed". Some facing such perceived responses favour ignoring public opposition.

Conflict and dispute within siting processes as a result of NIMBY attitudes have been evident worldwide and in relation to a large number of different types of "locally unacceptable land uses" (LULUs). these include prisons, rehabilitation and treatment centres, reservoirs, airports, motorways, power stations, radioactive waste disposal sites, wind turbine farms, chemical plant, out-of-town retail developments, mineral extraction, and waste treatment and disposal facilities.

The term NIMBY is often used to describe a response which indicates an unwillingness to have a facility in a specific neighbourhood, assuming a preference that it be located in someone else's backyard. However, studies of opposition to LULUs reveal that opposition can take at least five forms:

i) a positive attitude to the actual proposed technology or process, but a reluctance to have it in the person's own neighbourhood;
ii) rejection of a proposal because the person is fundamentally opposed to the technology;
iii) rejection of a proposal because the person believes that there are better ways of managing a problem;
iv) a neutral attitude to a type of facility which turns to opposition as the discussion proceeds or as adverse experience of a facility is gained;
v) resistance created by the fact that the proposal itself is flawed although the technology is accepted and even siting in the area might normally be tolerated.

Such different views can exist at the same time within, as well as between, single communities and groups. The different information requirements of individuals are influenced by these divergent views. The required responses to such different views also need to be considered carefully.

NIMBY responses to either proposed or existing facilities are not guaranteed. Some proposals have met with relatively little opposition, and some existing sites appear to co-exist happily with their neighbours. Opposition, or lack of it, can never be predicted and there is therefore a need to understand the basis of concerns with a view to minimising conflict and promoting consensus.

4.3 The basis of public concerns

Opposition to industrial and related activities reflects a complex mix of psychological, cultural, and socio-economic factors which underlie responses to issues in general. Superimposed on to these are concerns which relate to any industrial activity, such as factors relating to fairness that one community is exposed to the activity on behalf of other communities, and the influence of proximity to the facility with the increased likelihood that an individual will experience the associated disadvantages.

Understanding the basis of the responses is derived from

- the psychological and cultural literature
- studies which have looked at responses to perceived risky activities
- studies which have looked at facility siting.

4.3.1 *The psychological basis*

The late 1960s and early 1970s saw a rise in interest in the apparent divergence between "expert" and "lay" perceptions of risk, in particular with the emerging widespread public reactions in North America and Western Europe against the nuclear and chemical industries. Many experts were genuinely puzzled by the active public opposition to technologies that scientists thought were safe, assumed that the public were perceiving things differently to them, and therefore considered that public views had to be changed.

Initial attempts to understand the apparent expert-lay divergence were driven by the desire to identify what was an 'acceptable' level of risk. Early studies concluded that people were three times more willing to accept risks that were voluntary (for example smoking) than those that were imposed involuntarily (for example nuclear power). Further studies built upon the notion of the difference between voluntary and involuntary risk and attempted to identify other factors that influenced public perceptions. In surveys people were asked to judge the frequency of death for events for which statistics were readily available. It was found that people's rankings were broadly in line with these statistical estimates. However, the concept of "risk" was found to mean more to individuals than measurable fatalities or injuries.

Table 4.1 Factors important in perception and evaluation of risk

Factor	Conditions leading to increased concern	Conditions leading to decreased concern
Catastrophic potential	Potential for numbers of deaths and injuries in a population	Deaths and injuries, random and occurring individually
Familiarity	Unfamiliar	Familiar
Understanding	Mechanisms or processes by which risks might arise not well understood	Mechanisms and processes understood
Uncertainty	Nature and likelihood of harm scientifically uncertain	Risks known to science
Personal Control	No control available to the individual	Individual has control
Voluntariness of exposure	Involuntary	Voluntary
Effects on children	Children particularly at risk	Children not specifically at risk
Effects on future generations	Risk to future generations – risks delayed	No risk to future generations – but may be immediate effects
Dread	Effects dreaded such as cancer	Effects not dreaded
Trust in institutions	Lack of trust in responsible institutions	Responsible institutions trusted
Media attention	Much local media attention	Little media attention
Accident history	Major and minor incidents have occurred in the past	No incidents have occurred
Equity	Inequitable distribution of risks and benefits	Equitable distribution of risks and benefits
Benefits	Benefits unclear	Clear benefits to the individual
Reversibility	Effects irreversible	Effects reversible
Cause	Caused by human actions	Caused by nature or "acts of god"

Table 4.1 presents a summary of the qualitative characteristics of risks. The sixteen factors presented in the table indicate that perceived risk is far more than a physical attribute. Many non-risk attributes and value-laden considerations underlie public perceptions of technologies and activities. The following key factors are evident:

- the amount of personal familiarity and control;
- the degree of irreversibility and potential for large-scale effects;
- perceived fairness in the distribution of risks and benefits; and
- the extent to which risk managers can be trusted.

These are legitimate and rational considerations. Attempts to communicate only about the physical risks will not deal with these underlying concerns. Furthermore, this concentration upon public perceptions should not be at the expense of an understanding of "expert" perceptions. All stakeholders come to a decision with their own values, biases and views.

Studies of conflicts between communities and proponents of industrial facilities have identified a large number of the general factors in Table 4.1. For example, waste facility siting has been subject to concerns about:

i) the health effects of emissions;
ii) potential accidents;
iii) potential adverse impact on quality of life and local amenity;
iv) the management of waste in general and the need for treatment and disposal facilities; and
v) the extent to which companies and regulators can be trusted to manage facilities.

4.3.1 *Social and cultural influences*

Socio-economic explanations of group differences in the appraisal of risks suggest that women see more threat to the environment than men; that people with a higher educational background are more concerned about the environment, and that experts are more willing to accept risks than lay people.

Sociological and anthropological studies have assisted in a general understanding that as individuals are not isolated but exist in social groups, a person's view of any issue is coloured by information and views received from family, friends and colleagues. Stakeholders in any issue or conflict not only have their own interests but also shared interests.

It has been suggested that four "world views" are responsible for systematic variations in the perceptions of risk: hierarchist, individualist, fatalist and egalitarian. In simple terms these can be explained as follows:

- the *hierarchist* (or *bureaucrat*) fears threats to social order and believes that technological and environmental risks can be managed;
- the *individualist* (or *entrepreneur*) sees risk as an opportunity except where it may threaten his or her freedom of choice and action;
- the *fatalist* sees life as a lottery while sometimes willing to take risks, he or she will oppose any risk which is felt to be imposed; and
- the *egalitarian* fears risks to the environment, the collective good and future generations and will only accept those risks that are unavoidable for the common good.

These rather stereotyped categories can be criticised as being unrealistic, not least as any examination of conflicts tends to reveal a more complex mixture of arguments being expressed by individuals. For example, an individual may value entrepreneurial power and achievement in their business life, but in their home life may adopt a more egalitarian stance, seeking to protect family and tradition. However, the importance of the theory lies in the fact that it reminds us that while there is a diversity of views, stereotypes like those suggested above can be used to predict responses.

Divergent views have been seen to be a significant barrier to achieving consensus and an important contributor to delays in decision making. In siting conflicts, for example, different stakeholders stress different views:

- *developers* emphasise technical, economic and socio-political aspects;
- *pressure groups* stress the technical, economic and environmental health perspectives;
- *local residents* concentrate upon individual perspectives such as fear; and
- *decision-makers* focus on socio-political issues.

Polarisation of opinions is also apparent when industry and authorities employ models of technology as predictable and controllable, while other stakeholders stress the non-controllability of technology and the need for decisions based on consideration of the worst-case scenarios.

4.3.3 *Inequity*

Table 4.1 identified inequity as an important factor in influencing attitudes to risks. The NIMBY phenomenon arises when one community has to bear the "externalities" or disadvantages of a facility for the good of society as a whole. The "host" community perceives that it will bear "costs" such as potential risks to the environment and health, noise and congestion from vehicle movements, a lowering of property values, lessening of community or self-image and stigmatisation of the area.

The potential for adverse impact on property values has been a significant discussion area. However, studies of impacts on property values have not been conclusive. Understanding of the multiple influences upon property prices suggests that industrial facilities are not dominant influences.

4.3.4 *Spatial effects – the issue of proximity*

NIMBY implies that opposition to facilities is not just a concern about the likelihood of a perceived threat but also its proximity. There is a distance-decay function for land-use externalities. Proximity is a factor determining attitudes to both existing and proposed facilities with people's "comfort zones" varying by type of facility and its perceived externality field.

A study of residents near to three solid waste facilities in southern Ontario, Canada, confirmed substantial differences in facility awareness and in levels of concern between those living close to the sites (higher levels of awareness and concern) and those further away. Distance has been seen to link with home ownership and length of residency: longer residence times and owner-occupation enhance opposition. In the Ontario study the facility in an industrial area with fewer local residents attracted less concern and awareness. However, experience indicates that choice of an industrial location for a proposed facility does not guarantee no public opposition (for example: the UK Seal Sands proposal for a hazardous waste incinerator).

4.3.5 *Need*

Concerns over the fairness of one community having to bear the disadvantages of a facility, and views about the value of different technologies, have been seen to underlie concerns that decision-making systems do not involve the public early enough in discussions of needs and alternatives. In UK siting decisions, developers often face fundamental questioning of the need for a facility, an issue which should have been dealt with through the development plan system. Local authorities have begun to identify practical solutions to the problem (discussed later), and in North America and some European

countries there has been attention paid to means by which the public can be involved in strategy formation.

4.3.6 *Trust*

Issues of trust, responsibility and blame are closely linked to attitudes to risks and underpin NIMBY responses

The literature has defined trust in many different ways, but typically the definition includes elements of:

- a general expectation that someone is reliable, honest and competent
- the existence of a significant degree of confidence in a relationship
- a level of openness and willingness to listen as well as to contribute to debate
- a certain standard of behaviour with respect to others – the person or institution can be trusted to act in the public interest.

Trust can be considered to relate to two different but overlapping factors: (i) the individual providing information, and (ii) the institution or organisation. It has been suggested that a lack of trust in institutions is symptomatic of a more general loss of faith in institutional arrangements and an unwillingness by the public to delegate responsibility for decisions to institutions and organisations which have failed them in the past.

A number of surveys have focused on determining levels of trust in institutions. A UK survey on who is trusted on environmental issues found that less than half of the public trusted scientists working in industry or government, but 80 per cent said that they trusted scientists working for environmental groups. A regular US survey addressing who is trusted to communicate on environmental issues and risks identifies three groups, from the most trusted (the top third) to the least trusted (the bottom third)

- *top third* – physicians and other health or safety professionals, academics, especially from locally respected universities, local citizens who are perceived to be neutral and well informed, non-profit voluntary organisations and non-management employees;
- *middle third* – the media and environmental groups; and
- *bottom third* – industry officials, government officials and environmental consultants from profit-making firms.

The latter observations and literature reinforce the strong link between public perceptions and communication. Consensus building approaches potentially play a part both in dealing with fundamental concerns about equity and need and in improving levels of trust.

5. Communication Methods

5.1 Introduction

Discussion and understanding of communication has developed through a number of stages:

- *late 1970s to early 1980s* – focus on how experts should communicate about risks and hence convince people that certain risks are acceptable
- *mid to late 1980s* – focus on the good-neighbour approach
- *late 1980s onwards* – focus on consensus building.

Although components of each of these stages are still relevant today, the move to involve people in decisions (not simply consult them) about sustainable development recognises the basis of public concerns, particularly equity, fairness and trust.

Alternative solutions have been discussed, most notably the idea of compensating people for the siting of unwanted facilities in their community. However, research and experience suggest that these offer only a partial solution, if any, and most discussion is now focusing on means by which the decision processes themselves can be improved.

5.2 Communication Issues

5.2.1 *The ladder of communication*

The analogy of a ladder has been used to describe the different types of participation in land-use planning decisions. On the bottom step of the ladder is manipulative public relations. Moving up the ladder are the steps of information provision, consultation and involvement. The top steps denote increasing empowerment of the public in decision making, leading to partnership formation and public control.

Communication as a process of information provision and education is relevant to particular situations such as where communities need to be informed of appropriate actions to take in an emergency. Information provision to provide knowledge does underpin involvement. For example, raising levels of public participation in recycling activity requires provision of information about the value of recycling and the methods, not just the provision of facilities. In UK decision making the top steps of the ladder may possess no immediate relevance, but the middle steps of consultation and involvement are becoming more important.

5.2.2 ***Communication and the expert***

Communication is usually defined in terms of exchanges of information and views. The simplest, traditional definition stresses a top-down or one-way exchange from expert or developer or decision-maker to the lay person. Such a definition equates with the lower steps of the communication ladder, that is as information provision. Solutions to the disparity between the views of the industry and the public are often considered to be a problem of education -- of getting the right message across. The history of risk communication indicates that at first much effort was spent attempting to provide clear advice as to effective ways to get the right message across to the public about science and risks. Table 5.1 summarises a guide to effective communication developed for the US Environmental Protection Agency, providing simple rules for effective communication. The guide recognises that the content of any message must be sensitive to the receiver's frame of reference.

Understanding has also developed that who is communicating is as important as what they are communicating about, and a central question is why some individuals and organisation are trusted as sources of information and others are not. Public distrust of government and industry is grounded in the belief that they are:

Table 5.1 The Seven Rules of Risk Communication

Risk Communication	Considerations and Guidelines
1 Accept and involve the public as a legitimate partner	• Demonstrate respect for the public • Involve the community early • Involve stakeholders • Emphasise sincerity of effort
2 Plan carefully and evaluate effort	• Begin with clear objectives • Evaluate risk information • Know own strengths and weaknesses • Classify and segment audience • Recruit and train good communicator • Pretest effort • Evaluate efforts and learn from mistakes
3 Listen to people's concerns	• Listen carefully and attentively • Take time to find out what people are thinking • Use techniques such as interviews/surveys • Identify with the audience • Recognise people's emotions and hidden agendas.
4 Be honest, frank and open	• State credentials • If you don't know, say so • Get back with answers • Admit mistakes • Disclose risk information • Speculate with great caution • Discuss data uncertainties, strengths and/or weaknesses • Identify worst-case estimates
5 Co-ordinate and collaborate with other credible sources	• Develop good working relationships • Co-ordinate with other organisations - • Use credible and authoritative intermediaries • Use the best qualified authority
6 Meet the needs of the media	• Be open and accessible to reporters • Respect deadlines • Provide risk information tailored to media needs • Prepare and provide background material • Establish long-term media relationships
7 Speak clearly and with compassion	• Use simple non-technical language • Use vivid, concrete images that communicate on a personal level • Acknowledge and respond to emotions that people express • Acknowledge the public view as important in evaluating risk • Discuss actions that are under way or can be taken • Tell people what you cannot do • Promise ***only*** what you can do.

- insensitive to public concerns and fears;
- unwilling to acknowledge problems;
- unwilling to share information; and
- unwilling to allow meaningful public participation and negligent in fulfilling their environmental responsibilities.

A UK survey of interest groups relative to communicators of waste management information reveals a level of distrust in institutions, based partly on a view that information is being withheld and presented only to suit particular policies. The same survey identified a low level of trust in one of the predecessor bodies of the Agency, based on a view that it was too closely aligned to the industry it was regulating.

Guides to communication like Table 5.1 may be viewed as not much more than a public relations manual, but their relatively simple messages are important and do need reiterating. Improving the credibility of individual communicators will require an improvement in communication skills and greater empathy with the concerns of other stakeholders.

The credibility of the individual communicator arises from perceived:

- empathy and caring
- competence
- honesty
- dedication

5.2.3 *Risk comparisons*

A particular focus of the risk communication literature has been the use of risk comparisons: a device for placing in perspective a wide range of risky activities. Thus, a risk estimate of a 1×10^{-6} increased lifetime risk of cancer might be compared with the risk of being killed by lightning. There are benefits, but also significant difficulties associated with this method of communication. One important consideration deriving from the psychological basis of risk perceptions is that, as individuals distinguish between hazards along a range of qualitative dimensions, many risk comparisons fail to recognise these, not least in comparing voluntary and involuntary risks.

The use of risk comparisons by themselves will not persuade people of the acceptability of a risk. Their limitations must be recognised and the choice of comparative data targeted to the specific audience, taking into account their needs, concerns and levels of knowledge. Comparisons of the same risk at two different times, with a standard, and with different estimates of the same risk, are more acceptable than comparisons of alternative solutions to the same problem. Comparisons of unrelated risks are not acceptable.

5.2.4 *Communication and the media*

The mass media are often portrayed as the source of NIMBY attitudes, the solution to which is education of the media by the industry. Such a view suggests a misunderstanding of the role and influence of the media in society. It also suggests a single medium with a single influence; differences between national and local television, newspapers and radio are rarely considered.

Among the many channels of communication, the mass media have the potential to inform the greatest number of people. Surveys show that individuals regard the mass media as important sources of information. However, there is less understanding of the impact the media have on public views.

The media are most interested in stories that contain drama, conflict, expert disagreement and uncertainties. In this respect they reflect the interests and concerns of society. News media are an integral part of a community and tend to reflect the concerns of that community serving as reinforcers of established authority, powerful interests and mainstream values.

Media coverage can contain oversimplifications, distortions, and inaccuracies. These stem from the characteristics of the media and constraints under which they work: for example, tight deadlines and a shortage of space or time in which to present the complexities and uncertainties surrounding issues. The media achieve objectivity from balancing opposing views. They are source dependent and under the pressure of deadlines they rely on sources that are accessible and willing to speak out.

Therefore, just as individuals vary greatly in their needs for specific types of information and the way that information is presented to them, so do the media. Effective communication with the media depends in part on understanding their constraints and needs.

5.2.5 *Communication as dialogue*

Communication may be discussed as a two-way process or dialogue: "...an interactive process of exchange of information and opinion among individuals, groups and institutions." Dialogue, or rational discourse, requires that the values and views of different stakeholders should be heard and incorporated into a decision, and that

consensus should be reached. Table 5.2 summarises a set of rules which need to be followed to resolve conflict and optimise the potential for consensus.

Table 5.2 Rules for a dialogue

Rule setting	Reaching a consensus on the procedures that participating stakeholders want to adopt
Evidence	Basing factual claims on the 'state of the art' of scientific knowledge and other legitimate knowledge. Where there is scientific disagreement all relevant views should be represented
Reasoning	Interpreting factual evidence in accordance with the laws of logic and reasoning
Disclosure of values	Disclosing the values and preferences of each party, thus avoiding hidden agendas
Fairness	Attempting to find a fair solution whenever conflicting values occur

Linked to the optimisation of dialogue is the provision of a mediative or dispute-resolving mechanism for seeking common ground between interested parties. Adoption of environmental mediation and conflict resolution approaches in decision-making have until recently been less common in Europe than in the US and Canada. The potential for effective adoption of such approaches presents a challenge not only to traditional public participation requirements and democratic processes, but also to the skills and general understanding of the techniques of public involvement among authorities and industry.

5.3 Communication Methods

Table 5.3 presents some (but not all) of the practical communication methods. The table shows the methods' relative advantages and disadvantages. It groups the methods under three broad modes: information provision, community consultation and consensus building. These match the ladder of public involvement.

Every method has some disadvantages. There is not a single method which is applicable to any specific situation. Stakeholders must identify a mix which will optimise the number of people reached and provide for genuine participation and influence by key opinion formers and others with definable interests. Techniques focused on information provision should underpin all communication activities, but will rarely (except perhaps in the provision of emergency information) be sufficient in themselves.

One method not listed is the interactive computer system. Such systems exist in the public domain but have not as yet been thoroughly evaluated as a means of public involvement. A combination of information support systems (such as on the WorldWideWeb) and interactive knowledge-based systems have the potential to play a significant role in communication and consensus building. They allow people to access information relevant to their specific concerns. Younger people will probably prefer this method of communication, but others may take an adverse view of such technology, particularly if it is used in isolation.

Table 5.3 Some practical communication methods by mode

Method	Advantages	Disadvantages	Effectiveness
Mode 1	**Information provision**		
Leaflets	• can target a specific audience, for example local neighbours • relatively cheap to produce and disseminate	• may appear to be reaching a widespread audience but can be treated as junk mail • no direct response mechanism for questions or concerns	• generally effective in improving the public availability of information, but ineffective in arousing public involvement • difficult to evaluate • often most effective in provision of specific information about actions and operations at a site
Advertising	• relatively cheap	• limited scope to convey messages	• can be effective for introducing an issue, but indirect effects difficult to evaluate. • primarily a public relations technique

Method	Advantages	Disadvantages	Effectiveness
Mode 1	**Information provision**		
Local newspapers	• readily available • relatively cheap • readers see editorial matter as an independent source of information	• limited audience • no direct response to questions • there may be problems with editorial control	• reasonably effective if a simple message needs communicating but limited for complex issues • ineffective in arousing public involvement
National press	• wider audience	• more expensive	• ineffective as a site-specific communication technique, but can be used for informing general public about company and authority performance
Television and radio	• can convey powerful images • high familiarity of the medium • potential to reach a very large audience	• expensive to organise, produce and transmit a programme • one-off coverage of issues • potential lack of control • requires careful planning	• messages conveyed this way can have a pronounced effect on public attitudes. However, the promoter will probably not have sufficient control to warrant the risk of appearing on documentary or news programmes
Video	• can convey powerful images (such as computer aided design views) to illustrate the nature and scale of a proposed facility • can be innovative and eye-catching • can be used at viewer's convenience • complete editorial control	• relatively expensive • access to a limited audience (those attending exhibitions) • unlikely to be regarded as independent: information may be dismissed as too biased to be of value	• very effective in site specific, local situations, particularly if used in conjunction with an exhibition (see below) • the producer of the video is important. Videos compiled by local authorities can be useful as a means of disseminating information about, for example, technologies
Exhibitions	• if staffed, provides one to one contact • flexible in content and design • can provide information at various levels to suit the audience • can provide useful feedback about concerns	• generally limited attendance so low coverage of potential audience • attracts only a small sub-set of a wider population	• good for a specific population such as residents around a proposed site • particularly effective if staffed
Telephone helplines	• relatively easy access for those interested or concerned • if staffed then feedback is possible	• if pre-recorded then limited flexibility or chance to obtain feedback	• little evidence exists about how effective these are in providing information. Prerecorded lines are more useful to convey simple information such as the timing of events. Staffed lines can tackle more complex issues and respond to concerns. They are useful in promoting a feeling that a company is accessible.
Newsletters	• allow on-going contact and may help promote trust • flexible, so can be designed to meet the changing needs of the audience • feedback possible	• may not be perceived as independent, therefore possible lack of information credibility	• as with leaflets, only a relatively small proportion of a population will bother to read a newsletter. However, those who do may respond and remain in touch. • can be useful to support liaison groups
Mode 2	**Consultation**		
Surveys	• can obtain specific and detailed information	• can be expensive, especially if a representative sample is required.	• surveys at a national/regional level can provide useful information about general attitudes towards waste issues (such as recycling) • at a local level surveys can identify the existing level of knowledge and concerns. Information can then be targeted more effectively

Method	Advantages	Disadvantages	Effectiveness
Mode 2	**Consultation**		
Public meetings	• attendance can generate respect • if run well (by an independent and respected person) public meetings can be a useful way of meeting more members of the community	• difficult to control • possible mob effect • poor as a method of information provision and developing dialogue	• public meetings show that officials are willing to be exposed to questioning (which can help to generate respect), but they do little else • public meetings rarely meet the objectives of any participant
Small group meetings	• good for listening and responding to concerns • can promote trust and respect between individuals and groups	• time consuming and expensive if representative sample is required	• can be very effective for covering difficult issues or the detailed, complex aspects of a problem • effective in promoting two way dialogue and trust
Mode 3	**Consensus Building**		
Community advisory groups	• access to key stakeholders and community leaders • allow exploration of key issues and concerns • expose the real complexity of waste management issues • can promote trust • highlight the process of decision making as well as the outcome	• need careful planning and independent control • participants require a clear remit from the outset • time consuming • require significant commitment from participants • relatively expensive	• community advisory groups can be organised in different ways. However, if given sufficient time they can be good at emphasising the difficult decisions that must be made • most effective if adopted at the outset of a strategic waste management exercise rather than when many decisions have already been made
Workshops – full or half day	• relatively easy to organise • can be targeted at specific stakeholder groups • can examine specific issues in detail from a variety of alternative perspectives • allow some feedback	• one-off events are limited in subject coverage • unlikely to reach a wide audience	• a series of workshops is most effective: allows people to get to know each other and develop common understandings • nevertheless a one-off event can be effective if it focuses on a specific issue of concern, for example health effects
Visioning	• develops common view of future needs • promotes trust and sense of purpose	• lack of control over outcome • needs to be used in the very early stages of the decision-making process	• visioning can be used to establish a common perspective on the future which can serve as a goal for subsequent consultation. • most effective when it includes all stakeholders

5.4 Models for Consensus Building

A number of models of public involvement are currently in use in different countries, for example:

- citizens' advisory committees, panels, or forums
- planning cells
- citizens' or planning juries
- round tables

Such models are being used in urban redevelopment and planning, resource planning (for example energy planning), the siting of strategic facilities (such as nuclear power plant), in waste management planning and siting, and in development of national, regional and local sustainability programmes. Although reference to the types of models in different countries is not always on the same basis, their common feature is the focus on members of the public and other stakeholders as participants, usually (but not always) randomly selected to be representative of the interests in their communities but not necessarily representing their community. Their role is to provide advice, opinions and recommendations to decision-makers as a result of an informed process of discussion. The objective is to achieve a consensus view among the participants.

Citizen advisory committees (CACs) or panels have been one of the most enduring and ubiquitous forms of public involvement in the US. Over some 30 years they have been used by federal and state governments in relation to the development of legislation and regulatory standards, siting decisions and clean-up of contaminated sites. The US Chemical Manufacturer's Association (CMA)

has adopted panels as a means of renewing community trust in their industry and recommends that companies establish community panels at local plants as part of the Responsible Care Program. The CMA itself has established a national advisory body which includes representatives from the public interest and environmental communities. These panels are akin to the local liaison groups formed around sites in the UK, although the latter are often run on a more informal basis.

The CAC process is considered to have a number of benefits:

- education of the authority or proponent with regard to public concerns;
- education of the public with regard to proposed actions;
- provision of a forum for public involvement in decision making;
- provision of a communications link into the community;
- improvement in public support for decisions; and
- allowing authorities and industry to deal with one small, albeit representative, group rather than the entire community.

Criticisms of the process relate to:

- whether members are genuinely representative of the public in general,
- the provision of formal mechanisms to make the committee accountable to the public;
- the extent to which CACs become elitist or lose touch with their communities; and
- the extent to which the views of the committees are genuinely taken into account.

Citizens' or planning juries have been examined by the Local Government Management Board in Britain. Juries, unlike committees, do not promote critical enquiry into factual issues and no systematic method is retained to ensure that participants reach the best possible understanding about the material presented to them. The information provided to them is determined by the proponent or local authority, unlike a committee or forum where the participants can determine who they would like to speak to and what information they wish to have presented. Like a legal jury, a citizens' jury is presented with information, views and opinions about a number of options (for example energy generation options) by a number of preselected experts. The participants are free to ask questions of the "witnesses" so that they can collect the knowledge which they feel they need in order to make a recommendation.

Round table approaches to sustainability have been pioneered in Canada. Round tables involve representatives of different stakeholders and usually operate at a high level: in Canada they report directly to the Prime Minister and are supported by a secretariat. They are similar in operational style to community advisory committees.

International experience of the practical implementation of these different dialogue-based involvement models in decision making shows that success or failure is dependent upon

- Time limits – providing for an adequate amount of time for discussion before a decision is required;
- Flexibility – not precluding discussion by taking the decision before discourse is commenced;
- Equal opportunity – ensuring that all the parties taking part have equal access to information and are in an equal position to participate;
- Consensus-based discussion – a willingness from all those taking part to learn and, if necessary, amend or adapt proposals and opinions;
- Inclusiveness – all interests (including minority) in the issue having an opportunity to be involved/represented;
- Respect for Diverse Interests – recognition and acceptance of the diverse values, interests and knowledge of those involved;
- Self design – those taking part design the process and agree the objectives; and
- Implementation – commitment to implementation and effective monitoring are essential parts of any agreement.

An important, indeed key, feature of many dialogue-based consensus building activities is the use of a third party or independent party to act as facilitator and mediator. This person or group must understand the issues to be discussed but have no direct stake in the issue. This helps to ensure that different interests and concerns are equally represented and have an equal opportunity to contribute.

5.5 Consensus Building Case Studies

The following six brief case studies illustrate the use of new approaches. The first three relate to strategic waste planning activities but using different models, the fourth relates to siting, the fifth to a river basin management programme, and the sixth to a local Agenda 21 initiative.

Case study 1 – Integrated Municipal Waste Management Planning in New York City

Context	Development of a 10 year strategic plan to provide for integrated waste management and for siting of required facilities in New York, in accordance with the 1988 New York Solid Waste Management Act. A 50 per cent minimisation and recycling target was set by the Act.
Mechanism of public involvement	Formation of a City-wide Recycling Advisory Board (CRAB) composed of local members of the public appointed by the local boroughs from their own Solid Waste Management Boards, representatives of the City Council and the Mayor.
Impact	Led to many changes in the development of the integrated waste management plan. More importance attached to measures higher up the waste hierarchy than had been proposed in the original plan. Achieved a greater emphasis on recycling education than recycling enforcement The New York Department of Sanitation tended to act unilaterally, particularly when dealing with the business community.
Outcome	In 1992 the final Solid Waste Management Plan was adopted. Public involvement through the CRAB continues to promote information and education about the plan.
Problems	Timescales were too short for some of the technical working groups set up within CRAB to feel that they had been able to address all of the issues. Some felt there was inequality in information quantity and quality being distributed among different working groups.

Case study 2 – Citizens' Jury: Hertfordshire County Waste Strategy Development

Context	One of a series of experiments with citizens' juries sponsored by the Local Government Management Board. Hertfordshire was in the process of producing the draft Waste Local Plan and this project fitted a local political priority to strengthen partnership and participation.
Mechanism of public involvement	Citizens' jury formed with 16 members chosen randomly from the County population using the electoral register stratified by age, gender, social class, ethnicity and geographical location. The process was run and facilitated by the local University. Structure of the process: introductory briefing meeting; jury run over four days in July 1996; site visits to a number of example waste facilities on day one. Two days of presentations by expert witnesses chosen by the facilitators. Evidence was presented on the full range of waste management issues. The jury questioned each witness. On final day jury met in small groups and then agreed to a single statement and recommendations.
Outcome	Recommendations were taken seriously by County Officers and elected members despite some initial scepticism as to the value of the jury or the possibility of it getting to grips with the complex issues of waste management. The recommendations supported the waste hierarchy as an essential framework for dealing with the waste problem and the need for an integrated waste management strategy.

Case study 3 – Community Advisory Committee: Hampshire County Waste Strategy Development

Context	Failure of the application to build a new energy-from-waste incinerator at Portsmouth and recognition by County that they needed a public consensus on the waste management strategy.
Mechanism of public involvement	Formation of three community advisory forums (CAFs). Members for the forums were a mix of different community interests – environmental, conservation, business, health, parish councils, voluntary organisations – but not asked specifically to represent the views of these interests. Each CAF chaired by an independent person. Regular meetings once a month over six months were held and site visits and a one-day seminar were arranged. The County also instigated a more traditional public information programme using exhibitions, public meetings, press briefings, newsletters, etc.
Outcome	Overall the first phase of the community programme: • provided for consensus among some interested stakeholders that an integrated strategy was needed; • raised the profile of waste management; • improved the credibility of officers responsible for waste disposal; • improved the authority's understanding of public concerns; and • forced the County to slow down the normal local authority decision-making treadmill to allow opinions to be expressed and to revisit the requirements for effective implementation of the strategy. The CAFs' consensus view on the waste management strategy provided the basis for the tendering of the waste disposal contract for the County.
Problems	Although the consultation process has been successful in obtaining the involvement of a wide range of the community, the majority of residents still has no idea that a waste problem exists. The task of getting people committed and involved in waste management is challenging. The CAFs experienced problems of too short a time for discussions.

Case study 4 – Landfill Siting in Switzerland

Context	Siting of one of several landfills in eastern area of canton Aargau. The facility would have a capacity of 1 million cu. metres, occupy a site of 10-20 hectares and remain in operation for 40 years. The Building Department of the canton identified 13 potential sites.
Mechanism of public involvement	Planning cells were formed in each area of the sites whose mandate was to: (i) develop criteria for comparing the different sites; (ii) evaluate the geological data; (iii) eliminate sites; and (iv) prioritise remaining sites.
Outcome	The citizens' panels consisted of representatives chosen by an oversight committee which consisted of one member of the town council from each of the thirteen areas. Random selection was not seen as legitimate in the Swiss culture. Four panels were formed, each consisting of two representatives from each potential site community. Despite initial scepticism, none of the 104 citizens dropped out of the process. Between January-June 1993 the panels met between seven and nine times before a final workshop to rate the final sites.
Problems	Each panel reached a unanimous decision. Even participants whose town was chosen by the panel agreed. The first priority site was also the same for each panel, although this was not the same as the Building Department's preferred choice. The latter had considered primarily geological issues whereas the panels included social and aesthetic criteria. Chosen site by panel was agreed by canton who moved in 1993 to the licensing stage.

Case study 5 – Fraser River Basin Round Table

Context	The need to develop a management system for the Lower Fraser Valley, British Columbia, Canada, a valuable fish and wildlife resource facing increasing pressure from urbanisation and development.
Mechanism of public involvement	A round table approach formed to appraise the current management system and to develop a cooperative community driven plan. The partnership involved representatives of the relevant ministries, academics, and local environment and conservation groups. The partnership hoped to receive funding for work to enhance wildlife projects.
Outcome	A community based partnership which designed and advanced demonstration projects including monitoring.

Case study 6 – Local Agenda 21 in Stratford-upon-Avon

Context	Development of a local Agenda 21 process which was facing difficulties in involving people in a meaningful way across a large rural area with 113 parishes.
Method of public involvement	Ten people from the District Council were trained in facilitation skills. These people worked in teams of three to four people with a care group from the communities to set up and run consensus building meetings in the villages. These meetings were village focused and aimed at bringing a diverse group of people to agree how to improve the quality of life in their village. The process of setting up local facilitator networks took longer than anticipated.
Outcome	The outcome has been practical and focused on the priorities as perceived by each village. For example, one has formed a partnership with British Waterways to carry out a full landscape audit of the village and its canal-side, not only to improve the landscape but also parking and traffic problems.

5.6 Integrating Assessment and Communication

Case study 4 identifies an important issue: how assessment methods of environmental impact or of the Best Practicable Environmental Option (BPEO), for example, can integrate communication, so that elicited values contribute to the criteria of significance and acceptability which underpin assessment processes.

Multi-criteria analysis (MCA) as a cross-functional decision-making technique provides one means of including stakeholders. Consensus building can be used to determine the form and application of the technique, making it potentially useful in certain types of public decision making. The method provides for problem structuring and the incorporation of conflicting preferences of different interests into a formal procedure. Mechanisms are provided whereby subjective value judgements are made explicit, and can be expressed in quantitative terms in the same way as, for example, air quality or traffic flow increases or water quality. Practical procedures are provided for applying and trading off the various evaluation criteria. MCA has been used increasingly in recent years in relation to large-scale natural resources management issues and also to local

siting problems. A predecessor body of the Agency (Leicestershire County Council's Waste Regulation Section) used the technique to inform the development of its waste management plan. The approach could be relevant to risk assessments where there is increasing recognition of communication as an assessment method and not just a means of communicating risk output.

6. Criteria for Effective Consensus Building

6.1 Introduction

The two primary objectives of improved communication are to:

i) promote confidence and trust in authorities including the Agency, the industry, and decision processes; and
ii) seek a consensus on the means to achieve sustainable development.

For most stakeholders the second objective is more significant. However, while this might be the outcome of communication, stakeholder objectives and criteria in relation to the process also need to be considered. As discussed in the previous section, communication equals dialogue. Statutory consultation, information provision and public relations have traditionally been considered to be communication and they may be included within the above definition. However, since there are now greater public expectations of involvement in decision-making and rising concerns about threats to the environment, there is a need to reconsider the means to promote dialogue. The traditional communication activities are not sufficient in themselves to achieve the overall objective.

Consensus implies majority support as a result of both informed debate and the opportunity for divergent views, interests and values to be heard and understood. Consensus is thus the result of an effective process which is both fair and competent.

6.2 Objectives of Communication

Stakeholders' communication objectives will vary and may sometimes be in conflict. For example, in the siting of a new industrial facility the most common communication objectives of two of the main stakeholders might be to:

Company/Proponent	Community group
• Speed the siting process • Ensure a focus on significant issues • Reduce or eliminate protest • Bring people on to their side • Ensure control over the information process • Enhance company image • Ensure a planning permission	• Stop or delay unwelcome proposals • Input detailed local knowledge to the planning process • Change or improve proposals to minimise community disadvantages and add benefits • Ensure people are listened to • Encourage a shift in the balance of power in favour of local people.

Objectives tend to be discussed in terms of immediate outcomes, and most particularly the achievement of predetermined goals, such as finalising a draft plan or gaining planning permission. However, broader objectives can also be identified. Two fundamental objectives are:

i) resolution of conflict; and
ii) gaining support for a viewpoint and action.

The process of communication and decision making should be effective in improving opportunities for dialogue, meeting the needs of different stakeholders and enhancing understanding of the issues related to sustainable development, even though the outcome objectives of all might not be met.

At a third level, it is possible to identify underlying objectives. In sustainable development these might include:

- the promotion of sustainable development policy
- the assertion of the interests of a particular group
- the enhancement of the image of the Agency

These underlying objectives usually take longer to achieve, because they require changes in contextual factors such as power, relationships and structures.

Divergent communication objectives will be present: to assume otherwise would be unrealistic. The realistic and practical assumption is that stakeholders can, and should, optimise the process of communication. Stakeholders may achieve their key outcome objectives while still promoting an appropriate consensus.

6.3 Criteria for Effective Communication

Criteria of effective communication can test outcome or process.

Outcome criteria could include:

- Achievement of consensus on a decision (for example, about a sustainable development strategy for an area);
- Value added to the decision (for example, useful changes result from the consultation);
- A fair decision (inequities are minimised as far as is possible);
- Improvement in the public availability of information; and
- Promotion of trust in the Agency, industry and authorities.

Process criteria could include:

- The representativeness of the participants (the extent to which the participants are representative of all stakeholders);
- Effectiveness of the method in meeting the objectives of the participants;
- Use of resources to their fullest value;
- Compatibility of the method with the objectives of the participants (the extent to which the communication method and the mandate for stakeholders' participation meet the objectives of different parties);
- The degree of knowledge and awareness achieved among participants; and
- Compatibility with other decision processes, particularly statutory.

Current discussions of communication focus on two criteria of effectiveness:

- Fairness
- Competence

Fairness is assessed from the viewpoint of the individual and the extent to which opportunities exist for the expression of legitimate personal interests and contribution to the development of an agreement. Fairness criteria focus upon opportunities for different stakeholders to influence the process of communication. Key fairness criteria relate to the opportunities for everyone to suggest the issues to be discussed; the means by which disagreements over the agenda and rules can be resolved; opportunities for individuals to suggest a facilitator; the identification of all individuals or groups that could be affected by the decision; and opportunities for everyone to have an equal chance to participate, to express views and to challenge information and claims.

Competence refers to the ability of the process to provide all of those taking part with the procedural tools and knowledge needed to make the best possible decision. In this context the provision of information; providing access to different (including conflicting) information sources and experts; providing opportunities for questioning, debate and learning; promotion of the consideration of anecdotal evidence and intuitive knowledge; and opportunities for people to check claims and reduce misunderstanding, are all important.

The term "process" is used deliberately to stress communication activities as fluid, responsive, iterative and composed of various components (information provision, discussion, debate, etc.). The criteria of fairness and competence support two-way communication where participants are both speakers and listeners and participation which is consensual and non-hierarchical.

6.4 Communication Skills

The studies on public trust of experts indicate that the manner in which people communicate, including the methods they adopt, is often more important than the information they present. The Agency cannot assume the availability of communication skills to meet the criteria of effectiveness; such skills take time and resources to develop.

Training of communicators is important. The most skilled technical or policy expert may not be the best communicator, and so it is essential that the effective communicators are identified and trained. Traditional media training is not sufficient to meet the communication needs discussed in this document.

The basis of the training has to be an understanding of the concerns of different stakeholders and an acceptance that public views in particular are rational and legitimate. Empathy with people expressing concerns is essential -"If I were in their shoes I would feel the same."

6.5 Evaluation

Discussion of effectiveness does not end with the listing of criteria. How will the criteria be assessed? Who will undertake the evaluation? The evaluation of communication activities has been undertaken rarely. When it has, the perspective of one stakeholder has dominated the evaluation, the objectives of others not being considered. Yet, if underlying issues and concerns remain unresolved they could resurface, unexpectedly and detrimentally.

It is essential to evaluate whether longer-term and broader criteria of effectiveness are also being satisfied. These might include:

- improvement in the public availability of information
- improvement in understanding and knowledge
- promotion of trust

Evaluation costs time and money; but if it identifies potential problems in advance and assists in the effective design of new communication activities it justifies its costs.

7. The Agency and Consensus Building

The Agency's "An Environmental Strategy for the Millennium and Beyond" puts forward a new environmental approach and states that is will develop and use methods to ".....resolve conflicts by building consensus where matters are complicated and views are varied and extreme."

To that end, this document gives an insight into communication and consensus building techniques. The Agency engages in many forms of communication internally and externally and the techniques examined in this document may assist in this. Consensus building activities within the Agency could be considered in terms of the following interrelated and interdependent functions:

- Contributing to sustainable development
- Policy formulation
- Strategic planning
- Regulation
- Monitoring, assessing, reporting and advisory work

Some of these functions have direct communication requirements; others, while having no legal requirements, must be considered in the context of the statutory guidance on sustainable development. However, other functions related to consultative and advisory roles such as with the local authorities also generate indirect, but nevertheless important, communication requirements.

However, experience indicates that people often have concerns about the use of such techniques, not least that:

i) securing public involvement takes time and costs money;
ii) people's interest is only aroused by site-specific proposals and issues;
iii) the opinions of the motivated and the articulate are, by definition, unrepresentative;
iv) public involvement in drafting plans does not forestall opposition to the actual siting, and operation of facilities; and
v) public involvement undermines representative democracy.

Such concerns would be appropriate if the techniques described were intended to displace the decision-making processes; but the style and techniques of public involvement that are discussed in this document are designed to reinforce established processes, not to replace them. It is doubtful whether the established processes on their own can prevent the re-emergence of anxiety and opposition.

Most importantly, the activities need to commence when work on a plan commences and to run during drafting. The plan needs to be open to change as a result of any input during the activities. Full consultation on the drafted plan would proceed as normal. Participants need to be able to listen to different viewpoints about environmental management requirements, and the Agency needs to provide specifically for these views to be heard. Experience from strategic planning consensus based activities is that individuals want opportunities to listen to, and challenge all views, whether for or against different environmental management solutions.

The document will assist the Agency in deciding when and how to use the techniques described. Other organisations may also be using these techniques which may present on opportunity for the Agency to work in partnership to develop plans and programmes.

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