

# COMMUNICATION PLANNING FOR SCIENTISTS AND ENGINEERS

## INTRODUCTION

While some people are "born communicators", others can be made. Scientific staff and research managers often have little communication training or experience yet need to serve as spokespeople because of their knowledge and expertise. Communication specialists can help formulate policy, coach from the wings, act as liaisons, and train other staff, but they cannot replace the important interchange between "the experts" and their stakeholders. By working together to plan communication both sides benefit and so achieve more effective research outcomes.

This workbook assumes that one key to successful communication is effective planning. Even those with extensive communication experience may improve their efforts by improved planning. The hope is to replace last minute, poorly conceived communication efforts with well thought out ones. In essence, this workbook makes explicit the thinking used by communication professionals to develop programmes.

Just like good science or good policy, good communication takes forethought and an appropriate level of resources.

*"...funding [research] efforts generously while neglecting communication is false economy. And putting communication towards the bottom of every "to do" list is a way to guarantee that there is never enough time to communicate effectively. Instead, communication must be part of [achieving research outcomes] rather than sugar-coating them."*

(Adapted from 'Attacking a problem with the facts', C. Chess, EPA Journal)

"There's not enough time" is the most common reason for skipping the planning stage. In fact, ad-hoc communication efforts often take far more time than carefully planned ones. Staff will often find themselves playing "catch-up," developing informational materials and holding meetings that might have been unnecessary if planning had occurred. Just as scientific sampling without planning can slow down an assessment due to the need to rethink and re-sample, it is ultimately more wasteful and time-consuming to develop a brochure or fact sheet without knowing your objectives and how this item will further them.

### **Meaningful planning can help to:**

- integrate communication efforts with organisational and management goals or with research and development efforts
- increase the effectiveness of communication programmes
- allocate appropriate resources to communication efforts
- increase dialogue and reduce unwarranted tension with stakeholders.

### **By working through this workbook, you can apply the nine steps to successful communication:**

1. Clarify Research Phase, Outputs and Outcomes
2. Identify Stakeholders
3. Understand Stakeholders
4. Set Objectives
5. Choose Tactics
6. Design Messages
7. Build in Evaluation
8. Manage Resources
9. Implement the Plan

## THE COMMUNICATION 'WHEEL OF FORTUNE'

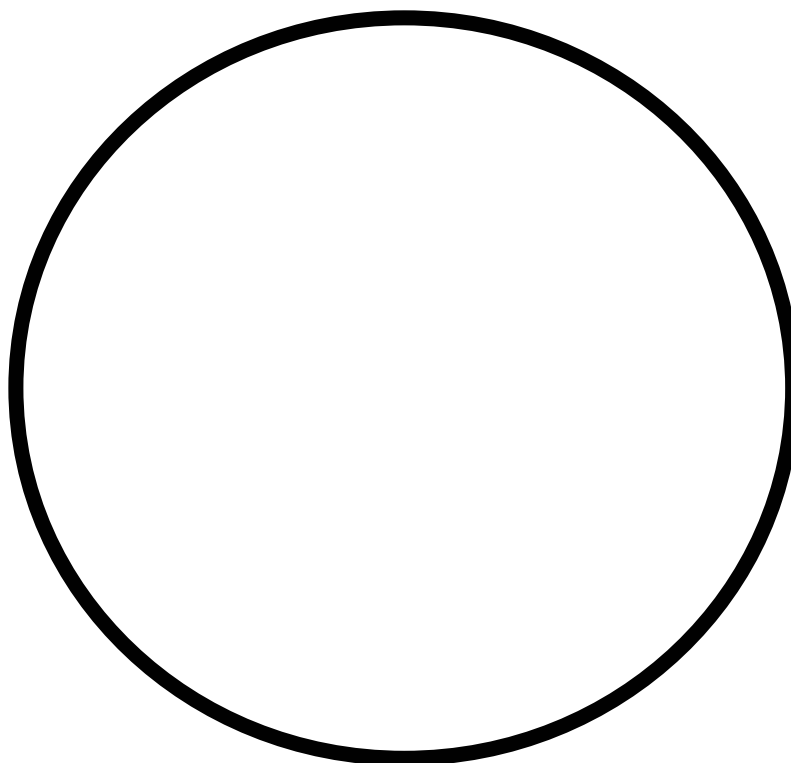
The communication 'wheel of fortune' represents the number of ways in which scientists communicate with their stakeholders. Research projects should aim for a strategy using a number of methods rather than relying on just the media. This communication package should take into account the needs of stakeholders.

### *Exercise:*

*How do you currently communicate your research? Divide the tactics below into a pie chart - the full circle represents 100% of your communication effort.*

### **Communication tactics**

1. Publishing scientific/technical papers
2. Delivering a paper at a scientific conference
3. Participation in seminars/workshops
4. Industry/public meetings
5. Informal discussions
6. Meetings with colleagues/collaborators
7. Newsletters
8. Open days
9. Electronic mail/World Wide Web
10. Displays/shows/exhibitions
11. Information sheets/brochures
12. Media – including all popular printed and broadcast media
13. Other

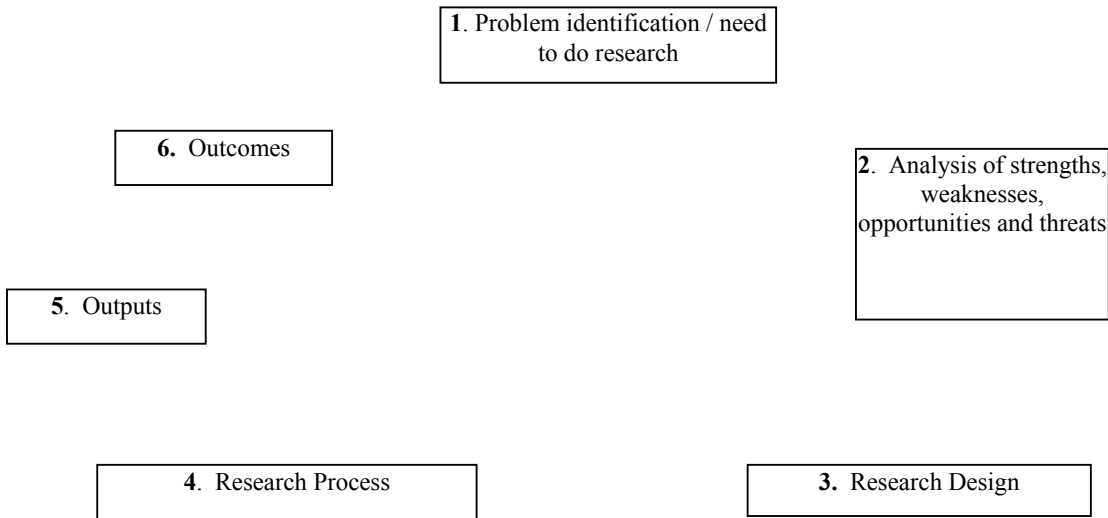


# Step 1 in the Planning of Communication

## Clarify Research Phase, Outputs and Outcomes

Successful science communication depends on planning communication as part of the research process. The following model is an idealised description of various research phases which may occur within a research project over time. Within the research cycle there will also be different outputs and outcomes (or “milestones”) at each stage, not just at the end of the project. Your research project may follow a different pattern of phases or steps.

### The Research Cycle



**At which phases in the research process is communication Important and how does communication fit into each of the stages?**

Research stage	The role of communication / appropriate communication actions
Problem identification/need	
Analysis of strengths, weaknesses, opportunities and threats	
Research design	
Research process	
Research outputs	
Research outcomes	

*Exercise:*

*Describe the phase that your research project is currently in and what the appropriate communication activities are.*

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## Research Outputs

Research outputs can be defined as direct products of the research process. For example:

- Genetic markers for carcass and meat quality traits
- Determination of the importance of B2 and B3 receptors in muscle growth
- Identification of proteins which play a role in connective tissue maturation in muscle

Some research outputs may be suitable for commercialisation. This could mean forming a partnership with a private company to develop and market the product in question. It could also mean that the product or process should be patented.

## Research Outcomes

To go further than achieving research outputs and to achieve research outcomes, communication and marketing are crucial.

Research outcomes are the results of what the project (in collaboration with stakeholders) wants to achieve from the research. For example:

- Increase productivity of northern cattle herds by ten percent through more efficient growth
- Increase consistency of meat quality by five percent through improved predictive tools
- Increase funding for research by twenty percent

The key word in framing outcomes is **relevance**.

- What is the relevance of your research to a particular Industry?
- What is the relevance of your research to an average person on the street?
- What are your research outputs and outcomes?

## Step 2 in the Planning of Communication

### Identify your Stakeholders

The success of any communication and marketing effort will hinge on early identification of target groups or individuals. Your “stakeholders” are those with a vested interest in the performance of the organisation and its research. They have the greatest *influence over the long-term role and nature* of the organisation and include staff, advisory committees, government and the public. Included in this group are customers who are the primary point of delivery for research outputs and have significant influence over the *current business* of your organisation and research projects through collaboration, cooperation and funding activities. They include industry partners, government departments, special interest groups, universities, technikons and museums, science councils and other research bodies.

Stakeholders are not just people who might want to hear what you want to say; they are also people who want to tell you things. In particular, people tend to resent decisions that are made without their input. In fact, making decisions for people will virtually guarantee their opposition.

#### Internal stakeholders

It is important to remember internal stakeholders. Communication to external stakeholders is rarely successful without an effective internal communication programme whereby people inside your project team, department or faculty are kept informed of your research progress and other activities. This can also avoid embarrassing gaps and overlaps in communication efforts.

#### Identifying stakeholders

Identifying stakeholders is largely a process of thinking through as specifically as possible who should be involved in a dialogue with the project or programme.

The following questions will help identify key groups and individuals for the project to reach. Those groups/individuals that are relevant to more than one question are particularly critical to reach. Decide which stakeholders are important for your project.

#### Questions to help Identify key stakeholders

1. Which *individuals/organisations* have previously been involved in the project's activities?

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2. Which individuals/organisations may be directly affected by project research, policy, or action?

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3. Which individuals/organisations may be angry if they are not consulted about project activities?

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4. Which individuals/organisations may have important information, ideas, or opinions which would assist the project?  

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5. Which individuals/organisations should the project involve to ensure that they have communicated with a balanced range of opinion?  

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6. Which individuals/organisations may not want to have input, but do need to know what the project is doing?  

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### List of potential stakeholders

The following list is meant to trigger your thinking rather than to be exhaustive. As you work through the list, put a "1" next to those stakeholders that are top priority for this particular project. Put a "2" next to stakeholders of lower priority. Use the lines to fill in specific names.

#### Government

- Central government departments/agencies  

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- Provincial government departments/agencies  

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- Local government/municipal authorities  

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- Local councils / regional authorities  

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- Central government committees  

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- Quasi-governmental agencies overseeing specific functions  
(e.g. water authorities, regional planning commissions, environmental commissions)  

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- Ministers/other politicians  

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- Other
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### **Community**

- Local residents/community groups
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- Environmental/agricultural
- 

- Groups for specific issues
- 

- Local residents/community groups
- 

- Associations such as Lions, Rotary, etc.
- 

- Associations of senior citizens
- 

- Other organisations or individuals who have stature in the community/influence opinion
- 

### **Private sector**

- Industry partners (e.g. commercial partners)
- 

- Primary producers
- 

- Manufacturing industries (e.g. food processing)
-

- Export agents/companies
- 

- Local businesses (including agribusiness, tourism, etc.)
- 

- Chamber of Commerce
- 

- Industrial groups
- 

- Others
- 

***Educational and academic organisations***

- Universities, technikons, museums
- 

- Schools
- 

- Other:
- 

***Research organisations/collaborators***

- Science Councils
- 

- Scientific and technological associations / societies
- 

- State Departments and other R&D organisations
-

- Funding organisations
- 

- Other R&D organisations
- 

## Prioritising Stakeholders

Reaching priority stakeholders can save your project time and resources that might otherwise be diffused. Although it may be tempting to aim to communicate with "everyone", this is nearly impossible. Communication efforts that aim too broadly are rarely effective.

You need to determine which stakeholders are most important for your project. Often the groups that are most difficult to deal with - and the ones you might be hoping to avoid - are the ones with whom you most need to communicate.

Although you may feel like avoiding groups or individuals who may be difficult to deal with, these are often the most likely to raise issues if they are not consulted early. In fact, if you would prefer not to hold a dialogue with a group because it is hostile or otherwise problematic, that group should be at the top of your list to contact. Otherwise, your effort will be even more vulnerable to criticism because you have failed to address that group's concerns.

It is particularly important to reach those that:

- might benefit from the research
- might "lose" from the research
- have relevant expertise
- will be important to secure cooperation or funding during the implementation phase.

There are several methods you can use to prioritise stakeholders:

1. **Categorise stakeholders** - Prioritise stakeholders by dividing them into three categories:
  - Those the project **MUST** communicate with
  - Those the project **SHOULD** communicate with
  - Those the project would **LIKE** to communicate with

2. **Circular method**

A similar method to the 'categories' method is to prioritise your stakeholders by dividing them into three circles:

*The inner circle*      Those most likely to be very concerned and very interested. They must be contacted and involved to the greatest extent possible. To a certain degree this circle is self-selecting. If people want to be very involved, they should be very involved

*The middle circle*      Those who have less concern or are more peripheral but are apt to be upset if not contacted. They should be contacted, invited to be involved, and kept informed. This group is also self-selecting to a certain extent.

People decide for themselves if they want to make the commitment of the middle circle to occasional input and progress reports.

*The outer circle*

Those who are less likely to be concerned. This often includes the "general public." Less effort should be directed to these groups/individuals than the other two, and the effort should be aimed at involving them in the middle circle.

### **3. The diamond ranking method**

Draw a diamond and list your stakeholders inside the diamond in order of priority. The most important individuals and organisations are at the top of the diamond, those that are less important are in the thicker middle of the diamond, and those that are less important are at the bottom V in the diamond. You may then choose to draw a line somewhere through the middle of your diamond.

### **4. The pyramid ranking exercise**

Draw a pyramid and list your stakeholders inside the pyramid. The most important are listed in the apex of the pyramid and the least important are listed at the base of the pyramid. You may then choose to draw a line across the top end of the pyramid.

## Step 3 in the Planning of Communication

### Understand your Stakeholders

Unless you have a great deal of familiarity with your key stakeholders you can create misunderstandings by assuming you know their concerns - or by assuming their concerns are the same as yours. Identifying your stakeholders concerns before you communicate with them will greatly reduce frustration and increase communication effectiveness.

Identifying perceptions, concerns and communication needs is the most time consuming component of communication planning, but it is also the most crucial in terms of developing and implementing successful communication strategies.

The key questions to answer about each stakeholders are:

*Perceptions:* What do they already know and understand about the project?  
*Concerns:* Do they have any concerns about the project?  
*Communication needs:* What information do they wish to know?  
 How do they wish to be communicated with?  
 How do they wish to interact with the project team?

#### Tactics for finding out about stakeholders

Listed below are some tactics for identifying perceptions, concerns and communication needs. Surveys or questionnaires are useful for finding out about perceptions while more qualitative methods, such as focus groups, are more useful for finding out about concerns and communication needs.

With the exception of surveys, these approaches will not yield statistically significant data. They will, however, provide a snapshot about each stakeholder. Because they may not give the full picture, the approaches below should be seen as preliminary assessments rather than final analyses. If you use two or more of these approaches, and the information seems consistent, your "snapshot" is more likely to be an accurate reflection of the full picture.

Tactic	Comment
<i>Review newspaper clippings featuring stakeholder</i>	This is a good way to get a quick overview
<i>Discuss stakeholder with colleagues have dealt with similar issues</i>	This can give you a sense of the concerns that have arisen in similar situations.
<i>Meet informally with stakeholders</i>	Informal meetings or telephone contacts These can give you a first-hand idea of both substantive concerns and the feelings about those concerns.
<i>Write to stakeholder asking them to send you a list of their questions and concerns.</i>	This can be a useful way to initiate a dialogue that involves a greater number of people.
<i>Develop a survey (to mail, telephone, or use at meetings) that asks about their questions and concerns.</i>	This more formal approach must be developed with care so that stakeholders feel they can articulate their concerns, not merely respond to yours.

*Brainstorm questions and concerns at the beginning or end of a meeting. Or ask people to write their questions on index cards that you distribute and collect.*

Often you will want to know their concerns in advance of a meeting, but this approach can be very useful for ensuring that you meet their concerns and for showing them that you are doing so. At the end of the meeting discuss any unanswered concerns and obtain consensus on how they can be followed up

*Consult advisory committees.*

In order to be useful, advisory committees must be representative of the stakeholders you will be communicating with

*Conduct an opinion poll.*

Polls are useful to obtain a little bit of information from many people. They are less useful to obtain in-depth or qualitative information about people's concerns or needs.

*Conduct a focus group*

Focus groups are informal meetings of people representative of your stakeholders. The groups, which are guided by a trained moderator, are used to elicit attitudes, ideas and feedback.

### **Questions for research projects to ask stakeholders**

Now that you have identified some tactics for finding out more about your stakeholders, the checklist below suggests questions you might raise during this process. These questions are meant to be generic ones that probe topics that are usually of concern. You will probably want to adapt and build on these questions to suit the situation with which you are dealing. In fact, some of the questions below might lead you to ask a series of more specific questions. For example, the question concerning the type of interaction stakeholders would like to have with you could raise the issue of how often they would like to have meetings and of what sort.

#### Perceptions

- · What do you already know about our project and its activities?
- · Do you know about the benefits of our activities?

#### Concerns

- · Do you have comments and suggestions that you want to put on the record?
- · What sort of response, if any, will you want us to make to these comments/suggestions?
- · Do you have any concerns about our project's activities?
- · What objections do you have about the way we operate?
- · What else can you tell me that will help us to be more responsive to your concerns?

#### Communication needs

- · What type of interaction would you like to have with our project?
- · How do you feel about your interaction with us so far?
- · What questions do you want answered?
- · What kind of information do you want to know?
- · How do you like to receive information from our project?

## **Questions from stakeholders**

It is problematic to generalise about the kinds of questions stakeholders may raise as they vary from situation to situation. Often research projects tend to have a great deal of difficulty anticipating such concerns.

In general, the types of concerns they will have fall into four categories:

1. Health and lifestyle concerns (How will this affect me/my family? How does it affect my environment?)
2. Data and information concerns (What is this stuff? Can I trust your information?)
3. Process concerns (How am I being treated?)
4. Risk management concerns (What are you going to do about this?).

The following checklist represents some common concerns you might expect to hear when you ask the questions in the previous checklist. This list is to familiarise you with the types of concerns you may face, not as a substitute for actually identifying their concerns. We cannot overemphasise that each situation is different and each stakeholder has their own set of specific concerns.

It may be helpful for you to check off the questions you anticipate. You may want to review the list again after you have contacted your stakeholders about their concerns. Finally, this checklist should be referred to when you are determining communication tactics and messages.

### 1. Health and lifestyle concerns

- What is the danger to my health and that of my family?
- Can I drink the water, eat the food, etc.?
- What can I do to find out if my health has been affected?
- What can I do to reduce the damage already done?
- What can I do to prevent further damage?
- What about my children?
- We are already at risk because of X. Will Y increase our risk?
- How will this affect our quality of life/property values, the stigma of X attached to our community, trucks on our local roads, etc.?
- How will this affect our environment's aesthetics?

### 2. Data and information concerns

- How sure are you?
- What is the worst case scenario?
- What do these numbers mean and how did you get them?
- How do we know your studies are correct?
- What about other expert opinions on this issue?
- How does the level compare to international standards?
- You say X can't happen. Why not?

### 3. Process concerns

Although researchers tend to focus on data, stakeholders may be concerned with issues like:

- How will we be involved in decision-making?
- How will you communicate with us?
- Why should we trust you?
- How and when can we reach you?
- Who else are you talking with?
- When will we hear from you?

#### 4. Risk management concerns

Concerns about how the issue or risk will be handled are often more important to people than details about the data.

- When will the problem be corrected?
- What are the other options? Why do you favour option X?
- Why are you moving so slowly to correct the problem?
- What kind of oversight will we have?
- Will the government use this information to legislate against us?
- Other:

#### Skills in understanding your stakeholders

An important skill for elicitation of concerns is **active listening**. Active listening means that you don't impose your agenda or concerns upon your stakeholders. Instead, you

- Listen to their concerns,
- Clarify any points they might be making, and then
- Report back to check if you really understood what they were trying to tell you.

### Mackay's Ten Laws of Human Communication

*From: Mackay H (1994). Why Don't People Listen?*

1. It's not what our message does to the listener, but what the listener does with our message that determines our success as communicators.
2. Listeners generally interpret messages in ways that make them feel comfortable and secure.
3. When people's attitudes are attacked head-on, they are likely to defend those attitudes and, in the process, to reinforce them.
4. People pay most attention to messages which are relevant to their own circumstances and point of view.
5. People who are insecure in a relationship are unlikely to be good listeners.
6. People are more likely to listen to us if we also listen to them.
7. People are more likely to change in response to a combination of new experience and communication, rather than in response to communication alone.
8. People are more likely to support a change which affects them if they are consulted before a change is made.
9. The message in what is said will be interpreted in the light of how, when, where, and by whom it is said.
10. Lack of self-knowledge and an unwillingness to resolve our own internal conflicts makes it harder for us to communicate with other people.

## Step 4 in the Planning of Communication

### Set Objectives

Achieving research outcomes depends in large part on specifying and achieving communication objectives for each key stakeholder. Interaction with stakeholders can be more successful (and less stressful) if specific communication objectives are set.

Communication objectives need to consider the perceptions, concerns and communication needs of stakeholders, as well as project outcomes.

**Most communication objectives can also be divided into four categories.**

1. Information Transfer- to give to another/impart/transmit information
2. Awareness raising - to make known/publicity
3. Dialogue - to have an interchange of thoughts
4. Outcome - to stimulate behavioural change

Each objective should also include performance indicators. Expressing objectives in terms of performance makes it easier to determine whether you have achieved them.

Each objective should have three or four performance indicators that indicate whether the objective has been achieved and outcomes have been met.

Performance indicators can be a quantitative (numbers, monitoring, surveys), or qualitative (description, informal feedback, discussion) assessment of success.

Communication objectives and their performance indicators are best written using the **SMARTA** formula:

- **S**pecific
- **M**easurable
- **A**chievable
- **R**esults-orientated
- **T**ime-bound
- **A**ction-implicit.

#### Example

*Stakeholder:* Meat Research Corporation

*Objective:* To promote a favourable climate for continued industry support of research

*Performance indicators:*

- 10% increase in coverage of project research by meat industry newsletters
- 90% of the media coverage portrays a positive message about the research
- 25% increase in inquiries from cattle producers about the research
- 5% increase in funding for the research project

#### **Objectives checklist**

The purpose of the following checklist is to help think through which communication objectives are most important for communicating with specific stakeholders. For each objective consider the outcome expected from achieving this objective. The checklist is most useful if no more than four top-priority objectives are identified for each stakeholder. Don't forget internal stakeholders.

#### *Information transfer objectives*

- To give them the data needed to better understand project issues, problems or management

- To inform them of what the project has done, is doing, and plans to do, and what it cannot do, and why
- To answer questions that have arisen and respond to their concerns

*Awareness raising objectives*

- To build and maintain the credibility of the research project in the minds of stakeholders
- To coordinate actions with project staff and with collaborators so communication is consistent and effective
- To maintain efficiency by avoiding unnecessary conflicts with stakeholders
- To provide advance notice and an appropriate process for stakeholder input/project response

*Dialogue objectives*

- To involve stakeholders as early as possible
- To find out the perceptions, concerns and communication needs of stakeholders
- To provide opportunities for their input, including input into key decisions
- To keep them routinely informed throughout the process
- To build a relationship that is that incorporates feelings (such as trust) as well as data
- To develop and agree on a common vision

*Outcome objectives*

- To increase practical support of the project
- To change planning/management practices
- To increase the use of new practices
- To change policies

## Step 5 in the Planning of Communication

### Choose Communication Tactics

The tactics for achieving communication objectives will depend on the communication needs of stakeholders. The most effective means of communication is face to face. However, this needs to be balanced against the cost of such tactics. There are no real rules for choosing the right tactics to achieve objectives. But the list of options which follows provides a variety of approaches. When choosing the appropriate tactics, it helps to take into account the following factors:

<b>Factor</b>	<b>Comment</b>	<b>-</b>
<i>Resources available</i>	A limited budget will limit your choices.	
<i>Lead time required to prepare the communication tactic</i>	It helps to develop a realistic timeline. For example, a leaflet will take far more time to produce than a letter. Planning an informal meeting takes less time than forming an advisory committee.	
<i>Stakeholder needs</i>	This is a key factor that is often overlooked. Although you may want to provide people with written data, they may want a meeting.	
<i>Degree of interaction needed</i>	Complexity, emotions and other factors may suggest an interactive question-and-answer approach supplemented by written materials	
<i>Degree of controversy</i>	The more controversial an issue, the more likely it will require person, to-person interaction and input from people outside the project. Controversy also suggests the need for small rather than large meetings.	
<i>Distribution</i>	It is critical that you think through how you will distribute audio-visual and written materials before you produce them. Similarly, consider your mailing list before you plan a mailing.	
<i>Amount of detail needed</i>	In general, more detail requires more written communication.	
<i>Commercial requirements</i>	Commercial agreements or intellectual property considerations may need to be taken into account when choosing appropriate strategies	

#### Communication tactics checklist

The following tactics are meant to provide some thinking prompts rather than to be comprehensive. In many cases, there will need to be more than one tactic for achieving communication objectives. For example, you may want to talk to some people in advance of an informal meeting, mail them a fact sheet, and have a handout at the meeting. It is also a good idea to re-visit your communication objectives to make sure your tactics fit in with the objectives.

#### Written or audio-visual Materials

- Leaflets
- Letters
- Postcards
- Newsletters

- Periodic updates (These are less formal and less work than newsletters.)
- Articles or announcements in other organisations' newsletters
- Displays
- Fact sheets
- Curriculum materials
- Comics
- Handouts
- Question-and-answer sheets (These are very useful when they directly address concerns)
- Posters
- Videos
- Slide shows
- Audio tapes

### ***Electronic Communication***

- Email
- Bulletin boards
- World Wide Web
- Faxes

### ***Person-to-Person Approaches***

- Presentations - at your own events or meetings or at others' events or meetings
- Informal meetings (More useful to create dialogue than public hearings or large meetings)
- Open-door days, i.e. open to the public with events, lectures, discussions, etc. organised.
- Workshops
- Advisory committees
- Networking
- Information telephone lines
- Events
- Celebrations
- Field days/tours
- Breakfast/lunch/dinner function
- Conferences
- Training courses

### ***Mass media approaches***

- Local/suburban media
- Media releases
- Letters to the editor
- Talk shows
- Call-in shows (These have potential to create a dialogue.)
- Advertisements
- Feature articles

### ***Tactics for eliciting input***

- Informal meetings
- Market analysis
- Questionnaires

- Advisory groups
- Brainstorming
- Interactive workshops
- Consensus groups
- Opinion polls and surveys
- Evaluations of project process/progress
- Dividing large meetings into small groups
- Interactive field days
- Focus groups

### **Commercialisation tactics**

- Commercialisation planning
- Selection of and liaison with stakeholders
- Intellectual property management
- Contract negotiation
- Pricing and costing

Refer again to “*The Communication Wheel of Fortune*” which represents the number of ways in which scientists communicate with their stakeholders. Try to match the appropriate tactics with each stakeholder to find the best balance and most effective suite of tactics.

## Step 6 in the Planning of Communication

### Design Messages

A message is a unit of oral or written discourse designed to achieve an outcome. Communication messages take into account both the project's needs and objectives, as well as the needs of the stakeholder in question.

#### Scientific communication and message design

Scientific communication usually implies communication about "uncertainty". Much of the information generated by research is not absolute and may change with new information. This uncertainty can make it difficult for scientists to communicate with stakeholders other than their peers or colleagues. This is especially true for communication with commercial stakeholders or decision-makers, and for communication to the general community through the media. Scientists want to give proven information to maintain their credibility, while these stakeholders often need to make decisions on the best available information.

#### ***Problems of communicating "uncertainty"***

*Complexity of technical data.* Usually scientific research related to areas such as risk assessment is complex and difficult to simplify. It often involves probabilities or management options which may be hard to interpret in terms of risk.

*Science does not progress without "disagreements".* When there is scientific uncertainty or "risk" there is usually also scientific disagreement about the level of risk or the interpretation of the data. This problem is heightened by the general perception of people that science is "always right".

*Process of peer review.* The traditional process of peer review means that scientists are generally unwilling to communicate their research without the data being accepted by accredited colleagues. This can delay the communication of important data and increase the level of concern and conflict for stakeholders.

#### ***Examples of questions asked by stakeholders***

- What are the problems associated with using a particular acaricide on my cattle?
- How likely is it that planting a windbreak on my property will improve beef production?
- If this forest is selectively cleared, how likely is it that the spotted-owl will disappear from the area?
- What are the dangers associated with consuming genetically engineered produce?
- Will this experiment cause radioactive problems for future generations?

#### ***How to communicate "uncertain" technical information***

*Find out what people want to know* What you think is important, and what others think is important may differ greatly. While it is important to communicate information you consider critical, you need to consider the concerns of affected or interested groups.

*Acknowledge uncertainties* This will help your long-term credibility as well as helping to educate people about the nature of scientific research.

*Put information into perspective*

It is important not to raise expectations beyond what can be delivered or to minimise risks. People require enough information to enable them to make their own personal decisions.

*Release information early*

Delays in releasing critical information can lead to:

- uninformed decision-making by affected groups/Individuals
- cover-up claims and subsequent loss of credibility
- the build-up of prejudiced attitudes or emotions
- reactive communication strategies.

*Take care when simplifying information*

A fine balance needs to be maintained between providing too much or too little complex information.

**LISTEN.**

It is as important to listen to stakeholders as it is to inform them.

*Interact.*

Avoiding interaction with interested and/or affected stakeholders is a recipe for trouble. They need to be involved early and consulted regularly.

## **Relevance**

The important thing to remember in designing messages is relevance. You must make your messages relevant to your stakeholders needs. If you are concerned too much about how "certain" you are about your information, then you will lose sight of the need to convey relevant information to assist in decision-making.

Scientific rigour is still very important. However, your messages should be able to convey:

- what you currently know to the best of your ability, *as well as*
- some indication of your level of confidence in this material.

The following three questions offer some guidance for developing the content of messages. It is only one approach for designing messages, but it is a good way for achieving project communication objectives while responding to stakeholder needs. Messages should be carefully designed for all communication efforts, but this is particularly important when sensitive issues are involved.

### **Three important questions**

1. List the three most important items your project would like to communicate with this stakeholder
2. List the three most important items that this stakeholder wants to learn from communication with your project
3. List the three most likely things this stakeholder will misunderstand or get wrong unless the project stresses the correct information, and explains any possible misunderstanding.

Now write down the three central messages you wish to communicate with a key stakeholder

## Exercise: Pre-testing a message

Find a video, brochure etc. that is relevant for one of your stakeholders and try pre-testing the message. Then try the same test on some of your own project material.

### 1. Main idea

What was the main idea this message was trying to get across to you?

What does this message ask you to do?

What action, if any, is the message recommending that people take?

Was there anything in the message that was confusing?

Which of these phrases best describes the message?

\* Easy to understand

\* Hard to understand

### 2. Likes/dislikes

Was there anything in particular worth remembering about the message?

What, if anything, did you particularly like about the message?

Was there anything in the message that you disliked or that bothered you? If yes, what?

### 3. Believability

Was there anything in the message that was hard to believe? If yes, what?

Which of these words or phrases best describes how you feel about the message?

\* Believable

\* Not believable

### 4. Personal relevance/Interest

What type of person was this message talking to?

Was it talking to: \* Someone like me, or \* Someone else, not me

Was it talking to: \* All people; \* All people but especially the stakeholder; \* Only the stakeholder

Which of these words or phrases best describes how you feel about the message?

\* Interesting / \* Not interesting

\* Informative / \* Not informative

Did you learn anything new about [the research] from the message? If yes, what?

## **Step 7 in the Planning of Communication Build in Evaluation**

Measurement and evaluation of communication is a constant process. It keeps communication flexible and dynamic.

Obtaining feedback on communication activities is essential to ensure that your communication effort is working. It may also save you time by helping you make mid-course corrections in your plans. However in practice, evaluation is often neglected in the press of other, more urgent tasks - especially if the evaluation has not been planned in advance.

Evaluation should be built into an overall communication plan from the onset, and needs to concentrate on determining the success of meeting objectives. Wherever possible, communication tactics also need to be pre-tested on stakeholders before implementation.

Evaluation can be time consuming and costly, However, simple cost-effective tactics can be used throughout communication activities to determine the effectiveness of communication programmes on an on-going basis.

The important thing is to make sure evaluation is not omitted from your communication planning.

### **Eight Simple Rules for Evaluation**

1. Build it into your planning at the beginning
2. Set measurable objectives
3. Set benchmarks at the beginning against which performance can be assessed
4. Break the evaluation process into steps
5. Focus on the most important steps if resources are limited
6. Choose methods of evaluation which suit your project
7. Choose methods of evaluation which are achievable and affordable
8. Recognise that communication does not happen in isolation from other factors.

### **Types of Evaluation**

There are two types of evaluation:

1. Formative evaluation which makes checks during communication development and delivery to ensure that it meets stakeholder needs and project objectives
- 2.
2. Summative evaluation of a package of communication tactics after they have been delivered to check if they helped to meet objectives and outcomes

At the very least, evaluation should be formative - that is, it must point out changes that are needed for the communication to be continuously effective and continuously improve. Once a year, or at the end of the project, may be too late for important changes to be made.

### **Evaluation Tools**

The following checklist suggests some methods for:

- Formative evaluation (such as stakeholder analysis and message pre-testing)
- Summative evaluation. (such as outcome assessment)

Both types of evaluation (such as newspaper clipping analysis which can be used throughout the whole communication management process). For each category, check one or more evaluation

tools that seem like they may be appropriate for your project.

### **Stakeholder Analysis**

What are their current perceptions, concerns and communication needs?

1. Information needs assessment (to gather questions from relevant individuals/groups before developing communication tactics so a response can be organised and presented)
2. Analysis of news clippings (to identify stakeholders and their concerns; to develop some historical knowledge to help in planning future phases of a communication effort)
3. Public opinion polling (to assess opinion or reaction; to find out what people see as important problems, what issues and events they are aware of and how they evaluate social and political institutions)
4. Qualitative methods such as general questionnaires, discussion meetings, focus groups (to collect information from people who have already been involved in your project's communication effort)

### **Message pre-testing**

*How did stakeholders react to the communication process? What did they learn?*

1. Smog readability grading formula (to evaluate the level of reading comprehension a person must have to be able to understand a piece of written material)
2. Message pre-test questionnaires (to get feedback on pilot materials)
3. Theatre testing (to get feedback on visually presented pre-test materials)
4. Focus groups (to get feedback on and generate ideas about pre-test items; to get a "feel" for the attitudes and beliefs of stakeholders)

### **Outcome assessment**

*Have stakeholders applied new knowledge or adopted new products?*

*Has this application resulted in the project achieving its objectives and outcomes?*

1. Public opinion polling (a before and after survey of attitudes to determine relative success of a communication tactic)
2. Focus groups (to get qualitative feedback on whether the communication tactic/s worked)
3. Behavioural observation (to determine whether behaviour changed as a result of a - communication activity)
4. Cost-benefit analysis (to examine the relative benefits to stakeholders from communicating about research)
5. Experimental (to isolate the effects of the communication efforts on stakeholder behaviour by setting up experimental groups)

### **Newspaper clipping analysis**

Who is the stakeholder?

Issue/s:

Other principal players involved:

Stakeholder concerns:

Key events:

Suggestions for change made by stakeholders:

Moods/attitudes of stakeholders:

## Step 8 in the Planning of Communication

### Manage your Resources

Your most important resource is **the people** you work with in your team. Most of these people will have individual communication skills and interests. It is important to make the best use of these skills and interests when agreeing upon communication roles and responsibilities within the team. Sharing the load makes it easier and builds a team spirit of activity and achievement.

Not everyone is a "natural" communicator: most of us need some professional help. Some of the team may need training in specific communication skills and knowledge. Don't forget to use your local communication professional staff to help facilitate a successful communication programme for your project. The following questionnaire will help you to identify the interests, skills and training needs of your project team. Each member of the team should fill this in separately.

#### **Communication with stakeholders:**

Are you presently involved in any communication activities related to stakeholders?  
If yes, please describe. If no, would you like to be more involved?

What skills/interests do you have that could assist in communicating with stakeholders

- have a good list of individual contacts
- like talking with other scientists/technical people
- like talking with lay people about the research
- like talking with groups about our project's research
- enjoy writing about the research in a way that anyone can understand it
- like being involved with the media
- enjoy developing and setting up displays about the research
- like to be involved in writing scientific papers
- enjoy preparing graphics and/or illustrations on computer
- like giving presentations at seminars/conferences/workshops about the research
- like using email and other means of electronic communication
- have skills in photography
- other

Any other comments you would like to make about communicating with stakeholders?

#### **Internal Communication**

Are you involved in assisting communication within the project?  
If yes, how? If no, would you like to be more involved?

Tick the activities in which you would like to be involved.

- Organising regular team meetings
- Organising regular team visits to relevant research sites
- More informal contact between team members
- Organising social events for the team
- Gathering and disseminating information of importance and interest to the project
- Writing articles about the project for use in internal CSIRO publications
- Writing articles for the internal project and/or programme newsletter
- Producing a project newsletter
- Setting up electronic networks and using email

Any other comments or concerns you would like to make known about internal communication?

### **Training**

In order to help the project team improve its communication are there any areas where you would like further training?

Please tick appropriate boxes.

- Writing applications or grants
- Computer graphics
- Media skills
- Poster design and layout
- Video production
- Presentation skills
- Writing for popular audiences
- Photography
- Technical writing
- Non-technical/business writing
- Interpersonal communication
- Communication planning & evaluation
- Team communication skills
- Electronic communication (i.e. using bulletin boards epic)
- Facilitating meetings

### **Budget**

It is important to set an appropriate budget to be able to implement your plan effectively. The amount may vary according to the stage your project is at. However, scrimping on funds for communication may also affect your overall research effort. You should work with communication professionals (such as an in-house Communication Unit) to develop a realistic budget.

## **Step 9 in the Planning of Communication Implementing the Plan**

Once you have completed the communication plan to make your project communication effective you must be able to implement the plan. To do this well you have to have been thoughtful about researching the plan in terms of time and money. However there can often be other constraints that may limit you. In this chapter a few strategies to help you successfully implement the plan are suggested.

### **Developing a time-line**

Developing a time-line helps to ensure that all your planning is put into place. The timeline is to help you decide when each step in the communication process needs to be done.

A timeline is the key to getting from a list of things you hope to accomplish to a plan for actually accomplishing them. The more thoroughly you work through the other parts of this workbook or the more ambitious the communication program, the more you will need a timeline. When a project does not use a timeline, key elements of its communication plan are likely to be implemented ineffectively or abandoned entirely.

Using a timeline forces the project to consider when it will hold that meeting with local farmers (for example), what it must do to get ready for the meeting (find a hall, send out a mailing, prepare a handout, discuss a possible agenda with representative farmers, etc.), and when it will take each of these preliminary steps. Because the project was effectively planned and scheduled, the meeting with farmers is more likely to happen and more likely to be an effective meeting.

Timelines also serve other purposes in communication planning:

- They clarify what needs to be done when and by whom, and thus make it less likely that important deadlines will go unnoticed.
- They facilitate the assignment of tasks to particular team members, so everyone's responsibilities are clear.
- They help identify over-committed periods (suggesting a need for extra staff, rescheduling, or some other solution) and slack periods (suggesting an opportunity for additional communication efforts and a possible problem if the project is to maintain momentum).
- They make it easier to see gaps in the communication plan - for example, they may identify particular stakeholders that will not be reached.
- They help the project respond to changing conditions (adding elements to the timeline in response to new concerns, moving elements forward or back in the timeline as needed).

### **Steps in building and using a simple timeline**

1. Draw a literal "timeline"- a long line (horizontal or vertical) that represents calendar time. Start with the current date. Choose an appropriate ending date - one year later, the next fiscal year, the deadline for completing the project, new regulations, etc. Divide the timeline into months.
2. Insert all relevant dates that have already been determined and cannot be changed, including those determined by external forces - the date of a scheduled conference, for example, or a set organisational deadline.
3. List the major elements in your communication plan so far - the questionnaire you want to distribute, the groups you intend to meet with, the public hearing you must have, etc. Choose an appropriate date for each and add it to the timeline.

4. For each element identified in #3, list all the steps necessary to make sure that element is successful. Think about preliminary contacts with affected stakeholders plus logistical preparations, substantive preparations, handouts and other materials, liaison with other programmes and other organisations, pre-testing and evaluation, etc. Do not forget follow-up step such as sending out the minutes of a meeting, for example, or calling key people who could not come. It will be helpful to involve other team members in brainstorming these steps so that you do not miss any important ones. Choose an appropriate date for each step and add it to the timeline.
5. Now examine the timeline for completeness, feasibility, and efficiency. (Maybe put the plan aside for a week and come back to it). Is there anything you ought to do that is not there? Is there anything there that cannot be done in the time allotted with the resources available? Are there slack periods when there is little to be done? Adjust the timeline as appropriate.
6. If several people are involved in the communication effort, copy the timeline onto a blackboard, poster paper, or some similarly visible medium, and put it where all team members can see what needs to be done. Make sure the medium you use permits changes.
7. Decide jointly with other affected team members how the timeline will be kept up to date - a procedure for adding, abandoning, and moving items in response to changing conditions. Make sure everyone understands that the timeline is a planning tool - it should be neither forgotten nor followed slavishly. For example, if it becomes clear that a particular step cannot be completed on deadline, the team members should think through the problem and adjust the timeline or the allocation of resources.

### **Overcoming communication constraints**

The best way to ensure that your communication plan will be implemented is to anticipate problems before they happen and find ways to avoid them. In general, it is far easier to plan for a problem than to confront it as an emergency that can derail your communication effort.

Below are five areas that may pose obstacles and some potential ways to overcome them. They are not meant to be all-inclusive but rather to trigger your thinking. Identify potential problems for your project, then the solutions you plan to try. Try to look deeper than the simple problem (eg. more money) to find more creative solutions to problems.

### **Resources**

#### Potential constraints

- Insufficient staff.
- Insufficient funding for printing, subcontracting, etc.

#### Potential solutions

- Plan more rather than less. (Rushed planning may result in increased implementation time.)
- Set clear objectives and priorities. (It is far easier to decide how to reduce your effort when you are very clear on where you want to go.)
- Plan development of written materials in advance, rather than at the last minute, so that key pieces of literature can serve several functions.
- Train technical staff so that some aspects of communication is integrated into their day-to-day work
- Involve leaders of your key stakeholder groups in communication efforts to their members.
- In extreme situations, consider borrowing staff from other efforts.

- Remind management: A communication effort in time saves nine. Proactive attempts to communicate are usually less labour-intensive than putting out communication fires.

### **Time**

Although some people may feel that there is insufficient time to communicate with people or to involve them in decision-making, failure to communicate may, in fact, delay your efforts further.

#### Potential constraints

- Pressure from inside or outside the project to act quickly.
- Mandated deadlines.
- Extended timelines needed for communication (i.e. stakeholder groups widely dispersed).

#### Potential solutions

- Plan communication efforts early so they can be integrated into other project timelines. (For example, it is easier to involve the public in decision-making if the involvement happens as part of rather than after the project's process.)
- Use short cuts, if necessary. (For example, speak with the leadership of organisations by telephone when there is insufficient time to meet with their constituency.)
- Develop streamlined processes. (For example, instead of redrafting materials many times, involve key people in planning the materials. Consider conducting editing meetings rather than circulating and re-circulating drafts, etc.)
- Plan for informal, smaller-scale communication efforts rather than large-scale events that need a great deal of lead time.
- Investigate desk-top publishing and other methods to speed production of materials.
- Recycle your efforts. (Keeping organised lists of contacts, files of materials, and records of past efforts can speed your work tremendously.)

### **Legal**

Legal concerns can be a constraint but can also be a convenient excuse for failing to communicate. Scientists too often use legal problems as barriers to hide behind which can cause problems than its solves.

#### Potential constraints

- Liability
- Confidentiality.
- Other:

#### Potential solutions

- Examine statutory language rather than assuming that barriers exist.
- Explain your plans and ask legal staff help to overcome any potential legal problems, rather than asking whether there are barriers. (This may result in a very different response than a question posed essentially as "We can't do this, can we?")
- Incorporate legal requirements (such as notification, public hearings, etc.) into communication planning.
- Be clear with your stakeholders from the outset about your legal constraints.

### **Management Support**

The success of a communication effort can hinge on support from those above you.

#### Potential constraints

- Failure to approve or support communication plans and materials. Or delays in approval that reduce the effectiveness of your effort.
- Failure to respond to stakeholder input.
- Stakeholder statements that contradict the communication program.
- Failure to allocate sufficient resources.
- Lip service to communication that is not accompanied by a commitment to recruit, train, and reward staff for communication skills.

#### Potential solutions

- Develop well-articulated plans.
- Document stakeholder feedback.
- Build models of success to which you can refer.
- Build alliances inside and outside the project.

#### ***Attitudes of others outside the project***

Project staff are sometimes concerned that those outside their group, determined to stir up conflict, will "sabotage" any communication effort. Or team members may feel that nothing they say will be listened to.

#### Potential constraints

- Political agendas.
- Lack of knowledge about scientific processes, issues, risk, etc.
- Demands for certainty.
- Failure to appreciate limitations of resources, science, etc.
- Hidden agendas.

#### Potential solutions

- Involve people in decision-making (especially those who are likely to be angry or affected).
- Listen to those outside your project.
- Give people background on the issues so they can understand.
- Be forthright.