

## **EPA RESOURCE KIT:** **BRIDGING THE GAP BETWEEN SCIENCE AND POLICY**

Relay Risk: Examining the  
Communication of Environmental Risk  
through a Case Study of Domestic  
Wastewater Treatment Systems in the  
Republic of Ireland

## **GUIDELINES FOR EFFECTIVE RISK COMMUNICATION**

To accompany  
**EPA RESEARCH**  
Report No. 167

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## ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

### The work of the EPA can be divided into three main areas:

**Regulation:** *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

**Knowledge:** *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

**Advocacy:** *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

## Our Responsibilities

### Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities (e.g. landfills, incinerators, waste transfer stations);
- large scale industrial activities (e.g. pharmaceutical, cement manufacturing, power plants);
- intensive agriculture (e.g. pigs, poultry);
- the contained use and controlled release of Genetically Modified Organisms (GMOs);
- sources of ionising radiation (e.g. x-ray and radiotherapy equipment, industrial sources);
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

### National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by co-ordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

### Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

## Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government (e.g. *periodic reporting on the State of Ireland's Environment and Indicator Reports*).

## Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

## Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

## Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment (e.g. *major development plans*).

## Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

## Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making (e.g. *My Local Environment, Radon Maps*).
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

## Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

## Management and structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiological Protection
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

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The EPA Research Programme addresses the need for research in Ireland to inform policymakers and other stakeholders on a range of questions in relation to environmental protection. These reports are intended as contributions to the necessary debate on the protection of the environment.

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## INTRODUCTION

More and more, societies are faced with a variety of risks across a range of economic, social, financial and environmental areas. Risk communication sets out to empower the public to recognise and manage risk, and is defined as:

*'an **INTERACTIVE PROCESS** of **exchange** of **information and opinion** among individuals, groups, and institutions. It involves **multiple messages** about the nature of risk and other messages, not strictly about risk, that express **concerns, opinions, or reactions** to risk messages or to legal and institutional arrangements for risk management'* (Covello, 2001).

The following guidelines for risk communication are aimed at assisting those charged with responsibility for risk communication and management to apply the principles of effective risk communication to facilitate the implementation of an engagement strategy. The guidelines for effective risk communication are based on:

1. A review and identification of good practice in risk communication:
  - a. Coordinate and Planning;
  - b. Understand your Audience;
  - c. Education and Targeted Communication;
  - d. Enforcement;
  - e. Engagement with the Media;
  - f. Monitoring and Evaluation;
  - g. Achieving Trust and Credibility.
2. Findings from *Relay Risk*, a small-scale research case study which explored householders' perceptions of the risks associated with poorly performing Domestic Waste Water Treatment Systems (DWWTS), identified elements required for effective risk communication. This study concluded that engagement should:
  - a. Inform risk perception (i.e., establish an attitudinal shift towards risk awareness);
  - b. Build regulatory and good practice compliance (i.e., encourage householders to engage in risk management practices regardless of the risk of enforcement);
  - c. Enable public trust (i.e., to create an environment whereby householders trust the information that is provided to them, trust the source of information and the objectives of risk regulation).

**OVERVIEW:** Though, in principle, all steps need to be considered, each action may not be relevant for every risk scenario. Influenced by the need to inform risk perception, build compliance, and, enable trust; these guidelines draw on a four-staged approach:

- Step 1: Coordinate and Plan
- Step 2: Develop the Engagement Strategy
- Step 3: Implement the Engagement Strategy
- Step 4 and Ongoing: Evaluate and Monitor Progress

## STEP 1: COORDINATE AND PLAN

**GUIDING PRINCIPLE:** Risk communication requires coordination and collaboration among risk management agencies with clear delineation of roles and responsibilities. It is important to identify who is responsible for risk communication. A preliminary assessment and evaluation of the contextual environment, and available resource capacity (in line with the planned scale of the engagement strategy), can help ensure an adequate fit between the resource environment and campaign objectives.

### STEP-BY-STEP APPROACH TO COORDINATION AND PLANNING

#### EVALUATE THE RISK SITUATION AND SET GOALS

1. Consider:
  - a. What is the nature of the hazard (e.g. technological or natural) and the level of risk (e.g. low, medium, high, or unknown)? Who and what is affected? Is there spatial and temporal variation?
  - b. What is known about the hazard and subsequent risk? What are the gaps? What are the uncertainties? What are the prevailing perceptions (expert/scientific and lay)?
  - c. Are there issues of public concern/outrage or issues of concern already within the target audience which may undermine risk communication? Do public expectations need to be managed?
  - d. Identify the ultimate objective of the engagement strategy – what is the purpose, and what does it hope to achieve? Set achievable and measureable objectives.

#### ESTABLISH STAKEHOLDER COLLABORATION AND COORDINATION

1. Identify key actors and stakeholders who have responsibility related to the risk topic and area of risk management.
2. Develop a high-level, collaborative approach which would seek to build consensus among relevant stakeholder bodies on the need for risk management and risk communication.
3. Ensure that the relevant stakeholder groups are in agreement on risk communication messages and any enforcement measures that may be employed in ensuring compliance with regulatory requirements. Ensure a clear delineation of responsibilities.
4. Identify partnership activities in line with the format and activities of the engagement strategy (as detailed in the subsequent steps).

#### ASSESS AVAILABLE EXPERTISE AND RESOURCES

1. Review existing policies and practices to identify good practice in risk management and risk communication.
2. Identify the existing risk communication capacity of organisations with responsibility for risk communication (i.e., the availability of resources, communication expertise, the communication network, etc.) in line with the established objectives of the engagement strategy.
3. Use recognised tools to assess capacity, as well as potential internal and external challenges and opportunities (for e.g., Strategic Planning Checklist; SWOT<sup>1</sup> analysis, PEST<sup>2</sup> analysis).

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<sup>1</sup> Strengths, Weaknesses, Opportunities and Threats

<sup>2</sup> Political, Economic, Social, Technological

## STEP 2: DEVELOP THE ENGAGEMENT STRATEGY

**GUIDING PRINCIPLE:** To improve communication outcomes, tailor risk messages to specific audience sub-groups, and be familiar with their risk concerns and preferred communication channels.

**LEARNING FROM RELAY RISK:** Social science research provided an insight into the drivers and barriers to risk management, and the communication needs and concerns of householders. Looking forward, this insight allows policy makers and risk communicators to tailor engagement approaches accordingly.

### 2.1 UNDERSTANDING YOUR AUDIENCE

#### STEP-BY-STEP APPROACH FOR UNDERSTANDING YOUR AUDIENCE

##### IDENTIFY THE AUDIENCE

1. Identify the target audience - who is affected by the risk, and how (Draw from Step 1).
2. Use existing data sources to understand the social context of the risk topic.

##### CONDUCT EXPLORATORY RESEARCH

1. Carry out exploratory research to understand how the target audience understand and respond to the risk, and risk management. Important considerations include (also see Box 1 and 2):
  - a. What is nature of the risk, and is it hidden or visible for the target audience (e.g., can it be touched, seen or smelled);
  - b. What is the perceived severity of the risk;
  - c. What is the affective importance attributed by the target audience to the risk;
  - d. Does the target audience perceive their control over the risk and its management to be voluntary or involuntary?
  - e. How does the risk, and forms of risk management, fit with the social and behavioural normative beliefs of the target audience;
  - f. What are the key knowledge and information gaps among the target audience concerning the nature of the risk, and related risk management;
  - g. What are the communication needs and preferences of the target audience?

##### DEVELOP AND TEST KEY MESSAGES

1. Messages and visual aids should communicate the nature of the risk, and the need for risk management. Important considerations are:
  - a. The emotional appeal of the risk message and whether or not risk messages should be positively or negatively framed;
  - b. The extent to which risk messages target the descriptive norms (i.e. what is regarded as normal behaviour by the target audience) and moral norms (i.e. what is regarded as the right thing to do);
2. Pilot the effectiveness of risk messages with a sub-sample of the target audience.

### **BOX 1: Useful tools for understanding your audience**

**Existing material:** For quick, cost-effective analyses of a target audience, existing data sources and reports can be utilised, for e.g., Census reports, socio-economic community profiles, and existing research.

**Interviews:** Communication strategies, frames and messages, as well as creative materials, can be piloted in an individualised setting through qualitative face-to-face or telephone interviews.

**Focus Groups:** focus groups gather qualitative information from a small group of people. Focus groups are particularly useful for generating an in-depth understanding on a topic or problem, or generating a hypothesis on a topic.

**Surveys:** Using structured questions, surveys provide a means of collecting quantifiable, standardized information from a sample population. They are particularly useful when aiming to generalize results or when aiming to identify differences between different sub-sets of a population.

### **BOX 2: Additional questions for understanding your audience**

#### **Existing Risk Practices & Socio-Cultural Context**

- What is the social context for those affected by the risk, and how immediate and severe is the risk?
- Do people have access to risk reduction information and/ or resources?
- Are their economic/ environmental concerns negating risk reduction efforts?

#### **Risk Awareness & Perception**

- What is the current state of awareness/ knowledge of the risk among the public/at-risk groups?
- What are local perceptions and experience of the causes of the risk?
- What are the barriers to behavioural changes?

#### **Preferred information sources**

- Which sources do people extract risk information from and why?
- Who are the trusted information sources and why?
- Which media sources are the most influential among the different population subgroups?
- What settings are relevant to deliver communication materials and messages?

## 2.2 PARTNER WITH CREDIBLE ORGANISATIONS

**GUIDING PRINCIPLE:** Partnering with credible communicators already trusted by the target audience is vital in ensuring the effective relay and absorption of risk communication messages. Utilising the communication capacities of multiple organisations can prove more sustainable in terms of resource use.

**LEARNING FROM RELAY RISK:** Householders trusted communication sources that were independent, objective, and engaged in objective knowledge transfer and expertise. Householders attributed unfavourable views to organisations and bodies who perceived to exercise: a profit-driven agenda; an approach that lacked transparency; or seemed to exhibit an unbalanced view. Groups whose interest it is to have good water quality status were viewed favourably as possible communication sources. A key objective of engagement should be to enable trust between householders and communicators.

### STEP-BY-STEP APPROACH FOR PARTNERING WITH CREDIBLE ORGANISATIONS

Use evidence from previous campaigns (Chapter 2 and 3), activities from Step 1, and results from exploratory research conducted in Step 2, to inform strategies for identifying and partnering with credible organisations who can play an active role in communicating risk:

1. Identify and partner with credible and trusted communicators (at the national and local level) who:
  - a. Are trusted and viewed as credible by the target audience;
  - b. Act as 'Gatekeepers' within the community, i.e. provide access to community groups;
  - c. Exhibit an absence of bias, or show an agenda that is not primarily concerned with generating profit;
  - d. Exhibit a community-oriented interest, and are in close cultural proximity to the target audience;
  - e. Are involved in knowledge transfer (for example, universities, public health agencies, and non-governmental organisations).

## STEP 3: IMPLEMENT THE ENGAGEMENT STRATEGY

### 3.1 PUBLIC ENGAGEMENT

**GUIDING PRINCIPLE:** Effective risk communication requires two-way dialogue between communicators and the target audience that facilitates dialogue and helps build trust between the target audience and communicators. Participative approaches to communication can enable risk management among the target audience, and enable trust in regulators. Public engagement provides an avenue for managing expectations, conflict resolution and consensus building.

**LEARNING FROM RELAY RISK:** Householders were exercised by what they reported as a lack of public engagement prior to the implementation of the inspection regime. Public engagement is a necessity in bringing about consensus, and generating public support and acceptance of regulatory goals.

## PROVIDE OPPORTUNITIES FOR DIALOGUE AND DISCUSSION

Engagement Method	What's Involved	Value for risk management
<b>Community Meetings</b>	<ul style="list-style-type: none"> <li>➤ Views and feedback can be expressed.</li> <li>➤ Existing community infrastructure used; formal meetings.</li> </ul>	<i>Provides a forum for the target audience to air their views and concerns.</i>
<b>Community and National Events, e.g. Irish National Ploughing Championships</b>	<ul style="list-style-type: none"> <li>➤ Provide an opportunity to partner with credible organisations and events.</li> <li>➤ Provides venue for information sharing and raising awareness.</li> <li>➤ Can encompass a range of activities with varying levels of engagement.</li> </ul>	<p><i>Allows for a wider range of activities, creating a sense of community engagement.</i></p> <p><i>Helps build public support and positive trust relations.</i></p> <p><i>Inexpensive communication method with potential for wide-ranging and inclusive reach.</i></p>
<b>Web Based Consultation</b>	<ul style="list-style-type: none"> <li>➤ Platform for expression of views through interactive website, social media platforms, discussion boards, list-servs, email exchanges and other internet-based forums.</li> </ul>	<p><i>Useful platform for information sharing with the target audience and other potential stakeholders. Potential for a wide audience reach.</i></p> <p><i>Social media platforms provide inexpensive opportunity for two-way dialogue.</i></p>
<b>Community Reference Groups</b>	<ul style="list-style-type: none"> <li>➤ Invite community representatives to attend meetings, present community views and provide input.</li> <li>➤ Good for long-term engagement and relationship building.</li> <li>➤ Good for sharing local expertise/ knowledge.</li> </ul>	<i>Can generate new ideas, foster intra-group support, good practice and individual ownership of a wider community issue.</i>
<b>Focus Groups</b>	<ul style="list-style-type: none"> <li>➤ Defined method to explore individual's views and knowledge.</li> <li>➤ Consist of discussion among small group of ≤10 people, facilitated by moderator.</li> </ul>	<p><i>Can inform understanding of specific concerns of stakeholders, and can be useful for understanding the target audience while monitoring and evaluating impact of a campaign.</i></p> <p><i>Provide a useful forum for understanding how risks are defined and contested.</i></p>

## **INFORM RISK PERCEPTION**

**GUIDING PRINCIPLE:** Risks with potential to harm individuals personally, or produce identifiable victims are considered more dangerous than abstract risks or risks that produce statistical victims. Risk mitigation information should describe: the severity of the risk; implications for the target audience; and, demonstrate the efficacy of the audience to implement risk management behaviour.

**LEARNING FROM RELAY RISK:** Householders wanted to know the family health implications and, to a lesser extent, the environmental implications of not managing their DWWTS. They wanted information that is objective, and based on scientific evidence. Householders sought to be empowered with information on what they can do to manage the risk. Positive gain messages are favoured. Recommended key messages arising from *Relay Risk* include:

- *Regular maintenance of your septic tank system helps protect you, and your family's health.*
- *More and more people are now maintaining their septic tank system - by doing so; you too can help protect drinking water in your community.*
- *Everyone has a role to play in protecting drinking water sources. Do your bit by regularly maintaining your septic tank system.*

## **STEP-BY-STEP APPROACH FOR INFORMATION PROVISION**

### **USE APPROPRIATE TOOLS THAT CAN HELP MODIFY ATTITUDES AND BEHAVIOUR.**

- a. Nudging mechanisms can be used to help change attitudes and behaviours. These can include the use of message framing and messages targeting moral and behavioural norms.
- b. Use real-life case studies and visual techniques to explain the risk, its implications, and ways of risk management.

### **INFORMATION SHOULD:**

- a. Empower the target audience by informing on ways they can manage the risk while demonstrating the efficacy of risk management behaviour.
- b. Be frequent in provision, as well as inclusive, balanced, scientific and impartial.
- c. Communicate the severity of the risk; the personal and local-level implications of the risk and failure to manage risk.
- d. Enable a critical awareness of the risk among the target audience.
- e. Complement the personal priorities, beliefs and social and cultural norms of the target audience.
- f. Acknowledge areas of uncertainty.

### **INFORM ON REGULATION, ENFORCEMENT AND PROGRESS**

- a. Provide information on risk regulation, including enforcement measures, and its justification.
- b. Report frequently on the progress and outcome of campaign initiatives including enforcement measures.
- c. Regularly inform on the progress of enforcement measures, and make this information visible and well-publicised.

## MEDIA CHANNELS

**GUIDING PRINCIPLE:** Utilisation of a range of media fora is required to ensure communication reach.

**LEARNING FROM RELAY RISK:** Householders prefer frequent information that has a broad reach, and is communicated via a local context. It is recommended to prioritise the use of locally-based media channels to communicate community and individual risk implications. The use of multiple communication channels was identified as necessary in reaching different population groups.

### STEP-BY-STEP APPROACH TO USING MEDIA CHANNELS

#### DETERMINE THE APPROPRIATE MEDIA CHANNELS TO USE

1. Consider how various sections of the target audience engage with different media fora.
2. Segment the target audience according to their media channel preferences. For example, older sections of the target audience may engage more frequently with traditional forms of communications, such as newspapers and local radio; whereas, the use of social media platforms may be more appropriate for younger audience members.
3. Understand the strengths and weaknesses of different media fora (see below).
4. Identify opportunities for maximum communication reach.
5. Communicate the national implications of the risk topic through national communication fora.
6. Communicate the regional and local implications of the risk topic through local communication fora.

#### UTILISE TIME AND PLACE OPPORTUNITIES

1. Identify and utilise points of intervention for communication over time (e.g. seasonal), place, and audience (i.e. increased use of media channels at points (time and place) of higher risk likelihood, targeting specific audience groups).

### MEDIA CHANNELS AND BENEFITS FOR RISK COMMUNICATION

Media channels	Benefits
<b>Press releases</b>	Suitable for urgent announcements, particularly issues of high risk concern that are likely to generate media interest.
<b>Websites (including blogs)</b>	Ability to reach a wide audience, allowing free access to the public. Ability to regularly edit, and add information if required. Ability to control information content.
<b>Printed publications (e.g. newsletters)</b>	Ability to reach a targeted audience, and those with limited internet access. Suitable for information that does not require urgent communication or changes over time.
<b>Digital publications</b>	Ability to reach a target audience, and useful for information that is time-sensitive.
<b>Public consultations, meetings and workshops</b>	Ability to engage (face-to-face) with the target audience members, partners and stakeholders; an ability to engage in listening, debate and decision-making. Allows for dialogue and an understanding of the needs of the target audience. Can be used to test and refine communication messages.
<b>Social media platforms</b>	An inexpensive method of communication and information provision, reaching a large scale audience. Information can be disseminated easily and quickly, allowing for short, simple messages. Facilitates on-line dialogue and discussion, and if managed, can help manage expectations.

## **MEDIA ENGAGEMENT**

**GUIDING PRINCIPLE:** The media is an important ally in the dissemination of information. Ensuring constructive and regular communication with the media, and the provision of clear, concise, non-technical risk messages can improve the quality of risk message absorption.

**LEARNING FROM RELAY RISK:** Stakeholders emphasised the important role of the media in risk communication. It is necessary to maintain positive relations with the media.

### **PRINCIPLES FOR MEDIA ENGAGEMENT**

<b>Media management</b>	Media strategies should be adaptable to respond to different risk contexts and possible crisis events in risk management. Characteristics of different media sources should be considered in any engagement strategy.
<b>Media coordination</b>	It is advisable to have media messages coordinated at the highest levels between risk management institutions, with a single entity responsible for drafting risk messages and scheduling their dissemination to the public.
<b>Media partners</b>	The media should be viewed as an ally in providing risk information. As the media will be the main source through which the public access risk information, they should be consulted early in the decision making process. This can create a more facilitative environment.
<b>Regional and local news</b>	The close relationships between local journalists and their communities should be utilised to ensure the free flow of verified risk information.
<b>Media infrastructure</b>	Risk communicators should ensure they have an adequate media communications infrastructure in terms of human resources, financial budgets and media structure. Determining clear linkages between a central press office and regional/ local press offices may be beneficial.
<b>Media expertise</b>	Ensure staff members (e.g. technical scientific staff) have had sufficient media briefing and/ or media training so as to avoid confused message provision. Messages should always be short, clear and repeated often.

### **STEP-BY-STEP APPROACH TO ENGAGING WITH THE MEDIA**

#### **FOSTER GOOD MEDIA RELATIONS**

1. Be accessible to journalists, and provide clear, accessible, timely information.
2. Minimise the possibility of misinformation, monitor contact between communicators and media.

#### **IDENTIFY KEY INFLUENCERS IN MEDIA FORA**

1. Liaise regularly with the appropriate journalists (e.g. environmental, political etc.) according to the risk topic, provide background technical information and educate on risk issues when necessary.
2. Monitor communications across media fora, including the quality of messages, their absorption, and accuracy.
  - a. Respond quickly to media enquiries;
  - b. Communicate uncertainty if required;
  - c. Establish a media engagement officer and media engagement policy to oversee media content and accuracy, and ensure an effective media response in the event of a risk crisis.

## STEP 4 AND ONGOING: EVALUATE AND MONITOR PROGRESS

**GUIDING PRINCIPLE:** Evaluation is required to assess the effectiveness of an engagement strategy. Monitoring may take place at different stages of a campaign, (e.g. before, during implementation and after the communication strategy has ended). Baseline data is required to chart change. Good metrics should be consistent with the objectives of the engagement strategy.

**LEARNING FROM RELAY RISK:** The following monitoring metrics are useful:

- Ongoing review of DWWTS registration data and quantitative data drawn from DWWTS inspector reports, including number of failed inspections, reasons for failure, etc.;
- Monitoring of website hits and emails from householders seeking and obtaining information on registration and maintenance of DWWTS;
- Monitoring of media outputs with mention of DWWTS maintenance including the number of radio adverts, newspaper adverts and articles, and any features on national television;
- Monitoring of campaign outputs, such as leaflets, manuals etc., and review of coverage in at-risk areas and take-up from key access points in the community;
- A review of budget spending and milestones achieved in line with the campaign objectives and requirements.

**Evaluation can take a formative or summative approach.**

**FORMATIVE EVALUATION** continually gathers feedback on campaign effectiveness, with the aim of assessing progress, and identifying obstacles to achieving risk communication goals. Methods include survey and focus groups, that address the following questions:

1. Is the campaign being implemented as planned, within budget, and in line with programme objectives?
2. Do all stakeholders, including the target audience understand the campaign information? What are the misconceptions, if any?
3. Is the campaign being implemented on schedule? What aspects of the campaign do not seem to be working as well as intended? Are there any negative outcomes surfacing?
4. What are the impacts on behaviour, risk perception and awareness as a result of the communication campaign and related risk messages?
5. Have there been changes in common understandings of the risk among the at-risk group and wider public as a result of risk messages and communication interventions?
6. What kinds of participation levels are occurring in organised events, information sessions and public consultation meetings?
7. Are communication activities being adapted based on the information needs of the public?

**SUMMATIVE EVALUATION** is used to evaluate programme effectiveness and fit. Evaluation takes place once a campaign has been fully implemented, and can involve:

1. End of campaign focus groups, interviews and surveys; and a review of monitoring metrics.

## AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Gníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaoil a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaoil a chosaint ó éifeachtaí díobhálacha na radaíochta agus an truaillithe.

## Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

**Rialú:** Déanaimid córais éifeachtacha rialaithe agus comhlionta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun díriú orthu siúd nach gcleonn leis na córais sin.

**Eolas:** Soláthraimid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírthe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.

**Tacaíocht:** Bimid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaoil atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaoil inbhuanaithe.

## Ár bhFreagrachtaí

### Ceadúnú

Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaoil:

- saoráidí dramhaíola (*m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola*);
- gníomhaíochtaí tionsclaíocha ar scála mór (*m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiún chumhachta*);
- an diantalmhaíocht (*m.sh. muca, éanlaith*);
- úsáid shrianta agus scaoileadh rialaithe Orgánach Géimhódhnaíthe (OGM);
- foinsí radaíochta ianúcháin (*m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha*);
- áiseanna móra stórála peitрил;
- scardadh dramhuisce;
- gníomhaíochtaí dumpála ar farraige.

### Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus le gníomhaireachtaí eile chun dul i ngleic le coireanna comhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, trí dhíríú ar chiontóirí, agus trí mhaoirsiú a dhéanamh ar leasúchán.
- Cur i bhfeidhm rialachán ar nós na Rialachán um Dhramhthrealamh Leictreach agus Leictreonach (DTLL), um Shrian ar Shubstaintí Guaiseacha agus na Rialachán um rialú ar shubstaintí a idíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaoil.

### Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uisce idirchriosacha agus cósta na hÉireann, agus screamhuisceí; leibhéal uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

## Monatóireacht, Anailís agus Tuairisciú ar an gComhshaoil

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus na n-údarás áitiúil (*m.sh. tuairisciú tréimhsiúil ar staid Chomhshaoil na hÉireann agus Tuarascálacha ar Tháscairí*).

### Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gáis cheaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

### Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

### Measúnacht Straitéiseach Timpeallachta

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaoil in Éirinn (*m.sh. mórfhleananna forbartha*).

### Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, measúnacht a dhéanamh ar nochtadh mhuintir na hÉireann don radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

### Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Faisnéis thráthúil ar an gcomhshaoil ar a bhfuil fáil éasca a chur ar fáil chun rannpháirtíocht an phobail a spreagadh sa chinnteoireacht i ndáil leis an gcomhshaoil (*m.sh. Timpeall an Tí, léarscáileanna radóin*).
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhail ghuaiseach a chosc agus a bhainistiú.

### Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht comhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

## Bainistíocht agus struchtúr na Gníomhaireachta um Chaomhnú Comhshaoil

Tá an ghníomhaíocht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inmharthanacht Comhshaoil
- An Oifig Forfheidhmithe i leith cúrsaí Comhshaoil
- An Oifig um Fianaise is Measúnú
- An Oifig um Cosaint Raideolaíoch
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair inní agus le comhairle a chur ar an mBord.

# Communicating Risk: Guidelines for Effective Risk Communication to accompany EPA Research Report No.167



Prepared for the Environmental Protection Agency  
by University College Dublin

The report examines the elements required for the preparation, implementation, and monitoring of an engagement strategy aimed at communicating risk-based environmental regulation of domestic wastewater treatment systems to owners of such systems. The report is aimed at regulators, national and local authorities, and policy makers, particularly those involved in environmental risk communication, management and assessment.

## Identifying Pressures

There are approximately 500,000 septic tanks in operation in Ireland. Septic tanks not operated and maintained adequately can pose economic, environmental and social risks. The fundamental objective of this project was to explore and identify how to effectively communicate environmental risk, by focusing on the case study of domestic wastewater treatment systems (DWWTS) in the Republic of Ireland. Risk communication aims to address the divergence in how risk is perceived between expert and lay positions, and when carried out effectively, it empowers individuals to recognise and manage risk. By identifying what influences householder behaviour regarding their DWWTS, it is possible to formulate a communication approach that aims to improve compliance with environmental regulation, thus protecting human health and the environment.

## Informing Policy

Results show that the capacity for householders to, first, recognise and be alerted to the risks of a poorly operating DWWTS, and second, to manage these risks, is undermined and limited by a range of factors, which include inter alia : householder beliefs as to what constitutes a functioning DWWTS, and their approach to maintenance (i.e. problem-oriented aimed at removing an inconvenience); and a reliance on sensory perception to detect a problem (i.e. a reliance on environmental cues such as ponding, and odour, to suggest a malfunctioning system);

When implementing risk-based environmental policy, the findings suggest that the provision of sufficient and targeted information could facilitate an attitudinal shift towards risk awareness and understanding and risk management across the stakeholder groups. For it to be effective, risk communication requires policy makers to build regulatory and best-practice compliance by encouraging the adoption of risk-management behaviour, while simultaneously increasing public trust towards the objectives of environmental policy.

## Developing Solutions

The findings from this research suggest that understanding the public's perception of risk is central to the successful implementation of risk-based environmental regulation. One output is a set of guidelines on how to effectively communicate risk that relates to DWWTS. The guidelines are transferable to other areas of risk-based regulation, to facilitate effective communication of risk-based environmental regulation in Ireland, particularly in policy contexts that require public involvement to achieve regulatory objectives.



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