

Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR

**Best Practice GUIDE for Development and Modification of
Programme Communication Material**

Rachel Hay, Lynne Eagle and Jacqueline Chan



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Best Practice GUIDE for Development and Modification of Program Communication Material

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Project 3.1.3: Harnessing the science of social marketing and behaviour change
for improved water quality in the Great Barrier Reef: an action research project

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ACRONYMS

DAF	Department of Agriculture and Fisheries
DEHP	Department of Environment and Heritage Protection
DOEE	Department Environment and Energy
GBR	Great Barrier Reef
GBRMPA	Great Barrier Reef Marine Park Authority
NESP	National Environmental Science Program
NQDT	NQ Dry Tropics
NRM	Natural Resource Management
OECD	Organisation for Economic Cooperation and Development
SRA	Sugar Research Australia
TWQ	Tropical Water Quality

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1.0 EXECUTIVE SUMMARY

This document is intended to provide guidelines for the development and modification of communication material in the agricultural-environmental sector and includes examples from material supplied by stakeholders (insider's view) to NESP Tropical Water Quality Hub Project 3.1.3 Harnessing the science of social marketing and behaviour change for improved water quality in the GBR: A Readability Desktop Review. NESP Project 3.1.3 is an extension of NESP Tropical Water Quality Hub Project 2.1.3 Harnessing the science of social marketing and behaviour change for improved water quality in the GBR: A documentary analysis of Reef Trust Tender (Burdekin) and Reef Programme (Hay & Eagle, 2016) which assessed readability of marketing material surrounding water quality from an outsider's view.

The Great Barrier Reef (GBR) Water Science Taskforce indicated that *“poor communication and engagement”* represents one of the barriers to effective program delivery, highlighting a need to further strengthen the understanding of the impact that communication and visuals have in the agricultural-environmental context.

Project 3.1.3 Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Readability Desktop Review, draws on learnings from Project 2.1.3 and from other past research to conduct a readability, message tone and visual imagery analysis of communications material from a selection of program documents supplied by Australian and Queensland Governments and other program managers as well as extension service providers with the aim of increasing uptake of water quality improvement programs in the Great Barrier Reef Basin.

The findings confirmed results found in the Project 2.1.3 (Hay & Eagle, 2016). The material supplied for analysis by stakeholders for both projects was found to be written in too complex language. Further, the message tone used in some material may be a barrier to communication and visual imagery may have unintended effects on communication.

Improved communication within marketing material for water quality programs will help to achieve consistency in approach and message clarity, amongst the gamut of communication materials produced for projects that support the Reef 2050 Plan and wider Reef communication materials. Improving the way projects communicate and get buy-in from land managers can help to ensure greater project uptake, associated positive results and lasting behaviour change.

2.0 INTRODUCTION

The NESP Tropical Water Quality Hub Project 2.1.3 (and Project 3.1.3), seeks to encourage best practice land management uptake amongst land managers who have not previously done so by taking a social marketing approach to influencing behaviour change.

The complexity of factors that affect land management practices means that no single policy instrument is likely to be universally effective (Greiner, 2014; Rolfe & Gregg, 2015).

Encouraging best practice land management uptake amongst land managers who have not done so previously requires the encouragement of participation in projects based on an understanding of the multiple pressures and influences on farmer behaviour (Blackstock, Ingram, Burton, Brown, & Slee, 2010; Feola, Lerner, Jain, Montefrio, & Nicholas, 2015) and the specific factors that will lead to potential engagement (Rolfe & Gregg, 2015).

A social marketing approach captures deep and actionable insights into the factors that enable or inhibit sustained behaviour change, including social acceptance, perceived social norms, forms of social capital and social identity (Colvin et al., 2015; Compton & Beeton, 2012; Crane & Ruebottom, 2011; Fisher, 2013).

Coupled with tools for readability and communication this best practice guide will help the writer to develop effective social marketing based interventions.

IMPORTANT: Some example texts included in this guide are taken out of context to demonstrate the discussion surrounding the communication, this does not mean that they have scored badly on readability (measured via the SMOG resource) or are not good examples of readability when considered in the context of the complete document that they were extracted from.

3.0 PURPOSE OF THE BEST PRACTICE GUIDE

The Best Practice Guide for Development and Modification of Communication Material was developed as a resource resulting from feedback received on the readability study performed as part of Project 2.1.3 Harnessing the science of social marketing and behaviour change for improved water quality in the GBR: A documentary analysis of Reef Trust Tender (Burdekin) and Reef Programme (Hay & Eagle, 2016).

The readability analysis in Project 2.1.3 identified that:

1. Material is written in too complex language;
2. Message tone may be a barrier; and
3. Visual imagery may have unintended effects.

These findings have implications across wider programs. Therefore, Project 2.1.3 recommended that further research be completed to produce guidelines, templates and readability assessment tools and message framing guidelines to support the fine tuning of existing materials and the rollout of future communication material. As such, the project reported in this document fulfils the recommendations of Project 2.1.3.

The Best Practice Guide for Development and Modification of Communication Material is intended as a guide to the design of information material, particularly printed material such as brochures and posters, but also for web pages. The guide uses de-identified examples from material supplied by stakeholders for readability evaluation to illustrate concepts discussed in relevant sections. This Guide is supported by a Readability Communication Planning Checklist (Hay & Eagle, 2018), which is supplied as Appendix 1.

It is not intended to provide an exhaustive range of checks, but rather as a guide to improving the readability of published materials.

4.0 COMMUNICATION

The most useful definition of functional literacy provided by the Organisation for Economic Cooperation and Development (OECD) (Nutbeam, 2008) is based on determining whether a person is able to understand and employ printed information in daily life, at home, at work and in the community. The multiple literacy definitions used in a range of studies make cross-study comparisons difficult. In spite of this, there is agreement that some 20% of the population of most developed countries have severe literacy problems and a further 20% have limited literacy (Adkins & Ozanne, 2005; Office for National Statistics, 2000).

Good communication involves two-way communication. *“Human communication is the action of people talking, listening, seeing, feeling and reacting to each other, their experiences and their environment”* (Sigband & Bell, 1994). *“Communication does not exist in a vacuum. It is not something you do in the absence of other information... It is a process that oils the gears that turns the machinery of business”* (Penrose, Rasberry & Myers, 1993). Supporting communication using good processes increases readability allowing users to efficiently read and take in the information contained in the text.

Shannon and Weaver's (1949) Mathematical Theory of Communication shows that for communication to occur, there must be a sender, a receiver and a channel (print, digital, static or web) for the message to travel through (Figure 1). Messages must be encoded by the source, pass through a channel and then be decoded in the way the message was intended by the receiver.

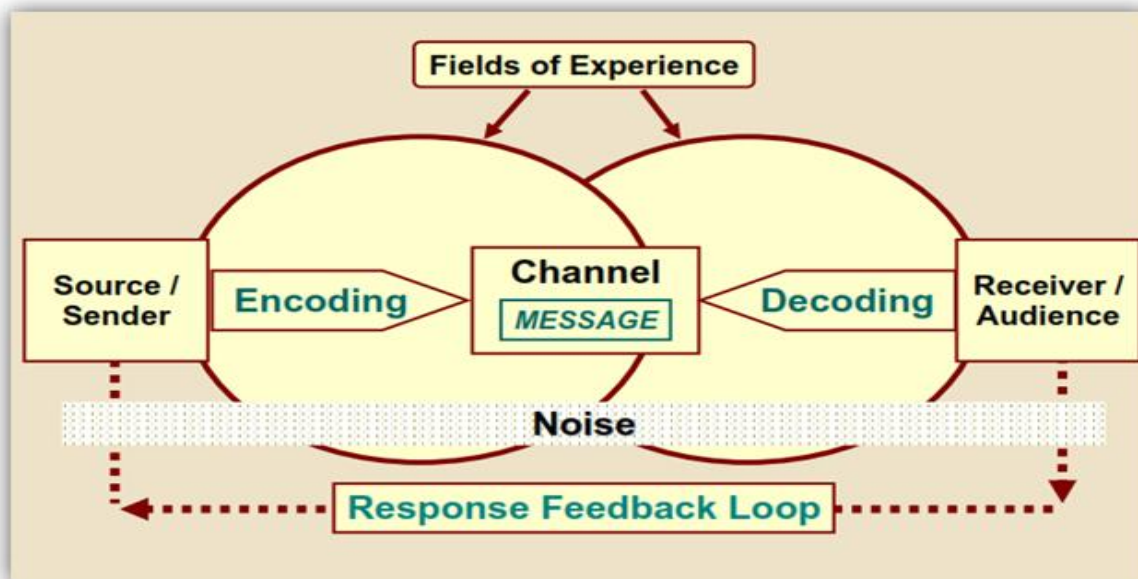


Figure 1: The Communication Model (Shannon and Weaver, 1949) Image Source: Google Images

The message may be interrupted by noise surrounding the message, which may include complex noise from the receiver's field of experience, expert opinion, distrust or lack of respect of the sender, fear, family and other reference groups or less complex noise such as advertising, media, badly expressed messages, information overload and disinterest or a lack of awareness of the relevance of the message (Tymson, Lazar, & Lazar, 2006).

Finally, once the message is received, there is a response feedback loop that tells the source that their message was understood. Response to the communication comes via the feedback loop and a successful exchange may be confirmed by a change in behaviour or a raised awareness of the topic of the message.

Because we (the message sender) want the message receiver to do something as a result of our communication, it is important that we have a good understanding of the receivers needs. The following sections provide guidelines to understanding the receiver and maximising readability of both print and online documents.

5.0 CURRENT WRITING GUIDELINES FOR GOVERNMENT

While there are many guidelines available to the Australian and Queensland government, the most publicly available guide, the “Guide to help Australian Government teams design simple, clear and fast content” (referred to as “the guide” from this point forward) (Australian Government, 2018) cites the “*modern government tone as being direct, calm and understated*”. It should be noted that different communication circumstances call for different message tones, and a one size fits all approach will not create successful communication with land holders. While the guide is aimed at writing for web based content, the language used within the site is directed at both written work and online content.

The guide states that “the tone of a conversation should be polite, and use language that is positive, sensitive and respectful”, “the writer should be aware of their audience and be conscious of what the user needs to do”. It also states that the communication should “TELL the user what they need to know”. “Telling” users what they need to know implies that the receiver of a message does not know anything about the message being sent. When discussing issues such as water quality, it is likely that the audience has experience with the topic. Messages that “tell” them (land managers) what to do may be decoded as patronising or dictatorial, (see Section 6.3.5). If a dictatorial message tone is required (telling), it should be coupled with collaboration (Section 6.3.5) and a positive message frame (Section 6.3.3), to ensure effective and positive communication.

The Australian Government guide’s “readability” guidelines (<https://guides.service.gov.au/content-guide/writing-style/#readability>) start with a good overview of readability stating that “content with good readability levels helps users know what to do” and that “plain English helps specialists and technical audiences too”. However, the readability guidelines contradict the suggested reading levels associated with the SMOG index (schooling year/grade 7-9, age 12-15), which has been described as “the gold standard readability measure” (Fitzsimmons, Michael, Hulley, & Scott, 2010, p. 294) (see Section 6.3.1). The guide states that writers should “aim for schooling year/grade 3 or 4 (age 9) reading level”, as can be seen in the quote below.

*“It’s good to aim for **age 9** reading level. Someone who is age 9 would be in Australian Year 3 or Year 4.”*

The guide then contradicts itself referring to the “Web Content Accessibility Guidelines¹” (WCAG, 2008) criteria. WCAG criteria 3.1.5 (Level AAA) recommends writing to a lower secondary education level equivalent to year/grade 7-8 (age 12-14). The guide closes the readability requirements statement by reiterating that the writer should achieve a year/grade 3 or 4 (age 9) reading level, see excerpt reproduced below.

¹ “Web Content Accessibility Guidelines (WCAG) 2.0 covers a wide range of recommendations for making Web content more accessible. Following these guidelines will make content accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity and combinations of these. Following these guidelines will also often make your Web content more usable to users in general.” The Guide is managed by the Australian Government Digital Transformation Agency (DTA), Canberra Australia.

“WCAG criteria 3.1.5 (Level AAA) recommends you write to lower secondary education level. This is Year 7 to Year 8 in Australia, or between 12 to 14 years old.”

“Even if you aren’t able to achieve an age 9 reading level, the more readable you can make content the better it is for everyone.”

Caution is required, as writing at age 9 reading level (schooling year/grade 3-4) may be interpreted by audiences with an average reading level as patronising (see Section 6.3.5), which in turn may alienate the target audience. It is strongly recommended that content (online and offline) be written towards readers of schooling year/grade 7-9 (aged between 12 and 15) as recommended by McLaughlin’s (1969) ‘gold standard’ SMOG index which is supported by a substantial body of literature validating both the SMOG itself and the recommended target reading level. The SMOG index is discussed in detail in Section 7.1.

6.0 COMMUNICATION DESIGN PROCESS

This guide refers to excerpts reproduced from the NESP 2.1.3 Project and for best outcomes, the guide should be used in conjunction with the NESP Project 2.1.3 Interim Report 1 (Eagle, Hay, & Farr, 2016) and the NESP Project 3.1.3 Readability Communication Planning Checklist (Hay & Eagle, 2018), as found in Appendix 1.

The design process starts with the commission of the project including the budget (for this report, it is assumed that this step is completed prior to project design, and as such not discussed here). Next the design process collects information about the audience, and it considers how the project information will be organised, analysed and interpreted. During this process, the objectives of the intervention are explored as are the social marketing benchmarks. This is followed by decisions about presentation and distribution of the communication material (online, in print or both). The final step includes evaluating the intervention based on the objectives and making adjustments toward the next intervention. The next section helps you to set your objectives.

6.1 Set your objectives

Objectives are a specific result that a person or system aims to achieve within a time frame and with available resources. At this point the objectives do not need to be precise and measurable. They need only to respond to the call for action i.e., what is the overall strategic outcome required. Use the following objectives drawn from the National Social Marketing Centre Planning Guide and Toolkit (2016) and the New Australian and New Zealand Public Relations Manual (Tymson et al., 2006) as a guide before you start to prepare your material.

- Who** Who is affected or involved. Include different segments, i.e. who is the audience for this communication, who will read/view it? Is there more than one?
- What** What is the problem? What is your strategy? What do you want to achieve? (Keeping this in scope of what is realistic and feasible)
- When** What time frame will your intervention use? Is it ongoing or timed for a particular event for example a funding release, wet season, fertiliser application?
- Where** Where will the communication be used? Will it be paper or web based? How will your audience access it? How will you approach each audience (face-to-face, online, in groups, individually)?
- Why** Why are you doing this? Why should anyone care about what you have to say? Is your reason compelling, does it engage interest (talking to, not at the audience)? Can you provide quotes from trusted sources to gain interest (see Section 1.3.2 Implications of Source Credibility and Trust in Eagle et al., 2016)?

6.2 Social Marketing Benchmarks (refer to Section 2.5 Eagle et al. (2016))

Social Marketing is a systematic and planned process that is used to influence behaviour in a sustainable and cost-effective way. It helps you to decide who to work with, what behaviour to influence and how to go about it. The rationale for, and expected outcomes of behaviour change, must be made explicit: a general attitude about an issue has been proven in numerous studies to *not* lead to specific behaviours (Ham, 2009). This underpins the need to focus on the identification of factors influencing specific land management practices.

Consider the following social marketing benchmarks, which are a synthesis of two sets of widely used benchmarks developed by the UK National Social Marketing Centre (NSMC Benchmarks, 2006) and by Doug McKenzie Mohr (Community Based Social Marketing Benchmarks) (McKenzie-Mohr, 2000). Apply them to your target market and the problem you are trying to solve.

Benchmark 1: Identify the behaviour your intervention addresses

- Identify the specific behaviour that your intervention targets for change i.e. fertiliser rates, erosion control

Benchmark 2: Focus on the audience to understand the drivers of current behaviour and to identify barriers and benefits to behaviour change

- Identify the benefits that the intervention/outcome will make to the behaviour change
- Identify the barriers to the behaviour change (internal and external)
- Use a range of research from different sources to gain stakeholder understanding.
- Involve the target audience rather than treating them as research subjects

Benchmark 3: Use theory to understand your target audience (reproduced from Section 2.6 in Eagle et al., 2016)

Theory can be used to identify the complex combination of factors that underlie specific behaviours and which need to be considered in planning an intervention. These theories can guide both the development and implementation of an intervention through identification of the key beliefs on which to focus. Theory-driven approaches have been found to lead to more persuasive messages across the range of socio-economic groups (Schneider, 2006) and there is substantial evidence that, when theories are used to inform the development of interventions in practice, the interventions have proven more success than interventions based on “practical experience” alone (Fishbein, Hall-Jamieson, Zimmer, Haeften, & Nabi, 2002; Fishbein, von Haeften, & Appleyard, 2001).

The latest iteration of the Theory of Planned Behaviour (TPB) (Fishbein & Ajzen, 2011) is recommended, see a full discussion of theories in Section 2.3.1 in Farr, Eagle, and Hay (2017) for rationale. The TPB helps guide the identification of relevant attitudes and beliefs that may underpin behaviours; for different segments of the target, behaviour may be more strongly influenced by social norms in one segment compared to another.

The TPB model asks you to consider the following information (this section is expanded in the associated Readability Communication Planning Checklist (Hay & Eagle, 2018) :

- **Background factors** – individual, social, informational (see Figure 2)
- **Beliefs:**
 - **Behavioural** - that an object has an attribute. Consider the behaviour that you are trying to change. For example adding twice the amount of fertiliser creates twice the amount of output.
 - **Normative** - beliefs about the extent to which other people who are important to them think they should or should not perform particular behaviours
 - **Control** - the perceived presence of factors that may facilitate or impede performance of a behaviour. If an individual feels that he/she can perform a behaviour and can overcome the barriers that can impede the performance, then they will be more likely to try it (Kreijns et al., 2013).
- **Current attitude towards the behaviour** – how strongly he or she believes that the action will lead to a specific outcome (either favourable or unfavourable).
- **Perceived subjective norms** - the perceived social pressure to perform or not to perform the behaviour.
- **Perceived behavioural control** - the perception of the ease or difficulty of the particular behaviour.
- **Behaviour intention** – the person's perceived likelihood or subjective probability that he or she will engage in a given behaviour based on their own assessment of the perceived benefits versus costs (not necessarily just financial costs, but also social or personal costs – see also Benchmark 5).
- **Actual control** – consider environmental factors (e.g. drought, rainfall, cyclones, floods), actual knowledge, capital, opportunities, constraints. Do they have the resources, skills and ability – what effect will these have on the behavioural intention / actual behaviour.

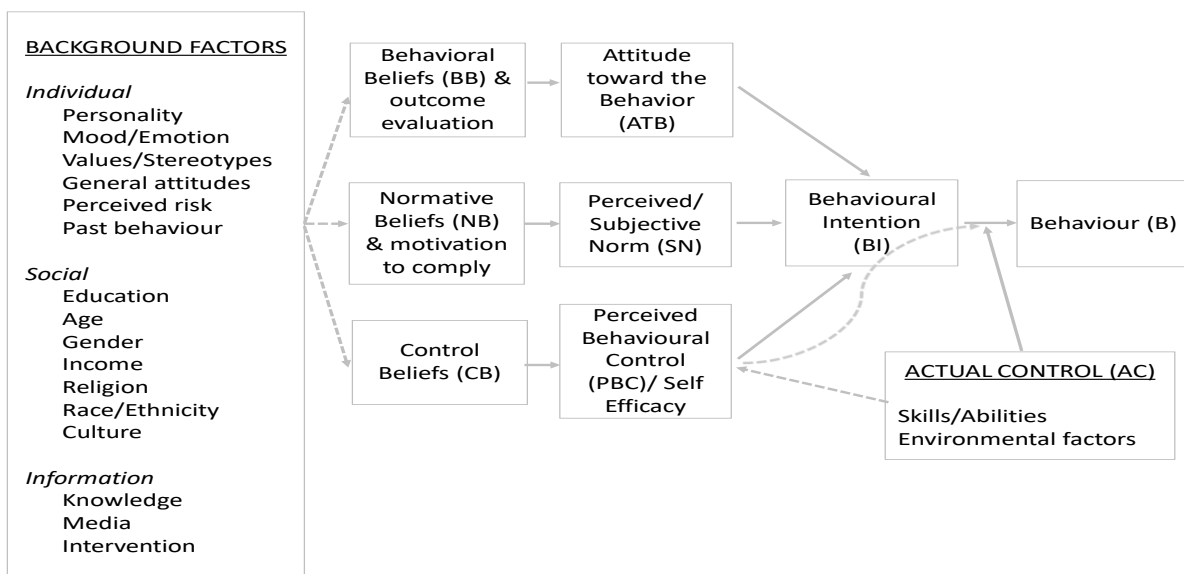


Figure 2: Integrative Model of Behavioural Prediction and Change (adapted from Fishbein & Ajzen, 2011)

Benchmark 4: Identify actionable insights – pieces of understanding that will lead to intervention development

- Use Benchmark 2 to generate insights including willingness to change behaviours and individual versus community factors that influence behaviours, positively or negatively
- Identify emotional (fear, anxiety, reluctance to undertake a behaviour that others are not adopting) and physical barriers (lack of equipment or resources)
- Use insight to develop an attractive exchange. For example what can I ask my target audience to do to implement the behaviour change? What are the perceived benefits for them?
- Develop a strategy and pre-test the intervention. The results can be used as a baseline, or a control group. Randomly select participants for the pre-test and gain input from those participants regarding the planned intervention.

Benchmark 5: Exchange – considers benefits and costs of adopting and maintaining the behaviour. Maximises benefits/minimises costs to create an attractive offer

- Clear and comprehensive analysis of perceived/actual costs vs perceived/actual benefits
- Consider target audience's values, offers incentives and rewards based on insights (Benchmark 2 and 4)
- Replaces the benefits the target market derives from the problem behaviour (Benchmark 6)
- What are the social propositions?
- What is the cost of involvement? This may not be financial, i.e. there may be social or personal costs.
- Accessibility
- Social communication

Benchmark 6: Competition – identify strategies that address the battle for attention, including the impact of commercial counter-marketing, social encouragement and/or discouragement to change behaviours

- Develop ways of overcoming apathy and disinclination to change
- Seeks to understand what competes for the audience's time, attention and inclination to behave in a particular way.
- Addresses direct and external factors that compete for the audience's time and attention
- Forms alliances with or learns from the competing factors to develop the methods mix

Benchmark 7: Segmentation – identification of population segments, including decision makers and influencers and their key characteristics

- Develop segmentation strategies
- Determine what interventions are most likely to be successful in encouraging adoption of specific sustainable behaviours

Benchmark 8: Methods mix – uses a mix of methods to bring about behaviour change

- Should include co-creation with a range of stakeholders
- Considers the social and economic benefits of behaviour change and the management of relationships by organisations and their clients

- May include a range of materials depending on what works for whom (print, web, face-to-face, focus groups, meetings, training etc.).

6.3 Readability Tools

Readability is important to how a user processes information as the content of a document or online page. If the content is too difficult to understand, then it is likely the user will discard the information before finishing reading. “Readability is the quality of being legible or decipherable” (Oxford Dictionary, 2017). Readability is important to communicating, especially to those with limited reading ability. As stated earlier, approximately 20% of the population of most developed countries have severe literacy problems and a further 20% have limited literacy (Adkins & Ozanne, 2005; Office for National Statistics, 2000). In addition a high percentage of 15-74 year old Australian people fail to meet the minimum level of functional literacy (Eagle et al., 2016, p. 65). Appropriate levels of readability (approximately year 7 to year 9 school level) allow users to efficiently read and understand the information that is in text form. Section 6.3 provides tools to test and manage readability including the SMOG index, norms, message framing, message appeals, language and tone, design principles and the use of visuals.

6.3.1 Readability: Simple Measure of Gobbledygook (SMOG)

Background to SMOG reproduced from Hay & Eagle, 2016, Section 3.1: To investigate the supplied documents and links, we analysed for readability using the Simple Measure of Gobbledygook (SMOG) readability index. The SMOG index has been described as “the gold standard readability measure” (Fitzsimmons et al., 2010, p. 294), see Section 7.0 Methodology for SMOG index calculations. The originator (McLaughlin, 1969) of the SMOG formula teamed up with JAVA programming expert Alain Trottier to provide an (undated) internet-based version of the calculator at Trottier’s Words Count Website (<http://wordscount.info/index.html>). There are other programs that claim to provide readability statistics such as <https://wordcounttools.com/> and <https://readable.io/>, but neither have been tested for reliability (as confirmed by the authors in direct communication with the suppliers). In previous research, Eagle et al., have compared the manually calculated results of the SMOG formula with those derived from the Trottier’s version and found no difference between them (Eagle & Dahl, 2016; Kemp & Eagle, 2008).

The SMOG index was selected because it has been repeatedly validated, and because of its proven accuracy, correlation with other readability formulae and subsequent widespread use in the academic literature, primarily in the health field (Mumford, 1997; Wallace & Lemon, 2004). More recently, it has also been used in environmental contexts such as renewable energy reports (Biddinika et al., 2016), drinking water reports (Roy et al., 2015) and online crisis communication (Temnikova, Vieweg, & Castillo, 2015).

Intervention managers should use the tools contained in this check list to produce their communication material and then apply the SMOG calculator. If the score is above year/grade 7-9, then the wording and structure used should be addressed and the calculator applied again.

It is important to remember that three and four syllable words such as government, management, facilitate, contamination and resistance, among others including scientific words, are hard to avoid and therefore will present a document with a high SMOG score. In such cases, using other design principles supplied in this check list may help to overcome a high SMOG score. In all cases, three and four syllable words should be used with caution or if possible not at all.

The SMOG calculation measures only the likely reading level required for comprehension of the material and no other aspects such as readability and suitability, which could be assessed using other tools such as the Readability Assessment Instrument (RAIN) (Adkins, Elkins, & Singh, 2001) or the Suitability Assessment of Materials measurement (SAM) (Doak, Doak, & Root, 1985).

If the SMOG reading level is beyond year 7-9 then in addition to other design principles included in this report, start by reworking the text to reduce three syllable or technical words, long sentences, and text that uses passive voice. If complex or technical words must be used, then follow them with a short descriptive sentence to assist the readers' understanding, for example *"phytotoxicity (a toxic effect by a compound on plant growth)"*.

The following worked example shows text from a brochure from 2016, with a SMOG grade of 16.25, which requires a reading level beyond secondary school (see Table 4, p. 33). Around 30% of the brochure was made up of very long sentences and 33% of the document was made up of long sentences, which is hard for the average reader to comprehend.

The sentences also use passive voice and adverbs, which changed the context of the sentence resulting in poor readability. An example of the text as written in the brochure and of how it may be improved is below. The SMOG score for each paragraph is given to demonstrate the change in reading level.

From

"Grower groups will look at practices such as banding and spot spraying of residual herbicides, use of PSII herbicide alternatives and best practice use of cane grub control products. Growers involved will also (adverb) be invited (passive voice) to put forward (adverb) their own ideas on how chemical run-off from cane farms can be reduced (passive voice) and weed management can be optimised (passive voice)." (SMOG Score 16.7)

To

"Grower groups will look at practices such as banding and spot spraying of residual herbicides, use of PSII herbicide alternatives and best practice use of cane grub control products. Growers involved are invited (passive voice) to share (active voice) their own ideas on how to reduce (active voice) chemical run-off from cane farms and to optimise (active voice) weed management." (SMOG Score 14.6)

The changes to this one paragraph reduced the SMOG score year level to 14.6, the remainder of the brochure may be changed to reduce the SMOG score further. The re-written option is still a long sentence (23 words), however, it is now written in an active voice increasing readability. It is recommended that sentences are reduced to less than 20 words

per sentence where possible and that an active voice be used in communications to assist users with limited reading skills.

The target audience of the documents in all cases was farmers, who in the target area were older (median age 52 years) than the median age of the Australian population (37 years). In the wet tropics, 27.5% of cane growers completed year 10 and 6.9% completed a university degree. In the dry tropics 34.2% of cane growers completed year 10 and 21% completed a university degree, and 20.7% of graziers completed year 10 and 35.8% of graziers completed a university degree (Farr, Eagle, & Hay, 2016).

All documents presented were above the average reading level of year 7-9. While approximately one third of the readers in the target area are educated beyond year 10, if reading skills are not used regularly, then the adult reading level will fall by 3 – 5 grades below the level expected at the completion of formal education (Kemp & Eagle, 2008; Shea et al., 2004). Therefore, attention needs to be paid to the whole target audience's knowledge, experience and most importantly their reading levels. Care must be taken to respect their values, customs, beliefs and prior knowledge when providing information (see Hay and Eagle (2016), *Harnessing the science of social marketing and behaviour change for improved water quality in the GBR: A documentary analysis of Reef Trust Tender (Burdekin) and Reef Programme.*).

6.3.2 Norms

Background reproduced from Hay & Eagle, 2016, Section 3.2.1: Norms revolve around standards of proper or acceptable behaviour. While some researchers treat norms as a single concept (Barnes et al., 2013, p. 449), others distinguish between injunctive norms (portrayal of what people ought to do) and descriptive norms (what people actually do) (Cialdini, 2007).

Identifying norms that might be followed by the audience of your campaign may help you to choose which voice your communication will use:

Using injunctive norms i.e., behaviours that are perceived as being approved by others, may help to promote acceptable behaviours, for example in a brochure about planting damaged sugar cane (see Figure 3), text and images are used to show what the damage looks like and the approved practice for using or not using the cane.



Above: Sticks of cane showing internal stalk damage.

Avoid using frost damaged cane for planting material

Frost will damage eyes in planting material. Therefore, avoid using cane that has been frost damaged. If the material has to be used, check for eye damage prior to use and discard any heavily damaged rows of cane. These mainly occur on outside rows.

Figure 3: Example of injunctive norms i.e. using behaviours perceived as being approved by others

Using descriptive norms i.e., the perception of how others are actually behaving, can also promote accepted behaviours. The use of descriptive norms can be boosted by using examples from trusted sources, these may be people (other farmers whose opinions are valued or trusted service providers) or research bodies (depending on the topic in question). Examples may include using images to demonstrate the success of a new process or practice, see Figure 4 below.

How does it help the farm?

From a technical viewpoint, the DHS allows growers to spray for almost twice the time without refilling in comparison with conventional practice. The low volume glyphosate tank which sprays about 50% of the area allows the sprayer to operate for twice as long without refilling. This is a particular advantage in the wet tropics as it allows more application time under optimal conditions.

"I reduce my spraying time by about 30%, the amount of residual herbicides by 50% and control difficult weeds" Adrian says.



The spray bar showing centre air induction nozzle for glyphosate

Figure 4: Example of descriptive norms i.e. the perception of how others are behaving

Reproduced from Hay & Eagle, 2016, Section 3.2.1: It has been recognized for more than two decades that, when there is a perceived conflict between actual or perceived norms and attempts to change behaviours in a way that would conflict with those norms, message

effectiveness will be hampered (Cialdini & Goldstein, 2004). Cialdini (2004) also cautions against depicting behaviour that is problematic and thus targeted for change as being widespread as this may result in the perception of behaviour change being seen as contrary to prevailing social norms or that changing one's own behaviour will be futile. An example of this is the American 'Crying Indian' anti-littering campaign in which an indigenous American is shown paddling down an increasingly polluted river. While the campaign received numerous awards and was hailed as powerful (Searles, 2010), subsequent research revealed that it reinforced descriptive norms, i.e. the perception that it was normal to litter rather than the injunctive norm that people should not litter (Maio et al., 2007).

Both injunctive and descriptive norms can be used to promote avoiding a bad behaviour or a poor practice. However, care must be taken to ensure that the practice is not perceived as being an accepted practice, otherwise the wrong message may be communicated (see Figure 5) below, which could be perceived as image a) *"it's ok to use lots of fertiliser"* or image b) as a *"drop off point for recycling bulk fertiliser bags"*.



Figure 5: Image of fertiliser bulk bags ready for recycling (Burdekin Region)

6.3.3 Message Framing

Reproduced from Hay & Eagle, 2016, Section 3.2.2: Message framing derives from prospect theory (Gerend & Cullen, 2008; Rothman & Salovey, 1997; Tversky and Kahneman, 1974). Prospect theory itself developed from extensive research into responses to people's perceptions of the prospect of positive (gain) or negative (loss) outcomes resulting from a range of specific behaviours. This research confirmed that people tend to be loss averse, being prepared to take risks to avoid losses but avoiding risk if there is potential gain from an action (Van de Velde, Verbeke, Popp, & Van Huylenbroeck, 2010).

In terms of framing, a message can either emphasise the advantages of doing a certain action (e.g., in relation to health, losing weight as a result of regular exercise) or it can emphasise the negative consequences of not taking a certain action (again an example from the health sector e.g. having a higher likelihood of cardiovascular disease as a result of not taking regular exercise). In the agricultural-environmental sector, the gains in terms of

positive outcomes of best land management practices would be emphasised versus the potential losses in terms of negative outcomes from not taking action. In the example text below the negative outcomes are implied while a positive frame is used to convey the message.

“As the climate changes and extreme weather events are projected to occur more frequently; protection and re-instatement where possible of coastal ecosystems is becoming more important to ensure maintenance of services to humans, the environment, carbon storage and ultimately water quality to the Great Barrier Reef”

Both approaches have been used successfully in various campaigns. However, research that has explored the effects of either positive or negative message framing has led to conflicting results (Homer & Yoon, 1992; Maheswaran & Meyers-Levy, 1990). It is now usually recognised that no one single framing approach is applicable across all intervention types (Block & Keller, 1995; Alexander J. Rothman & Salovey, 1997).

Positive framing

Positively framed messages appear to be stronger for preventative behaviour and health affirming messages (i.e. no risk in undertaking the behaviour), such as stopping smoking before the onset of ill-health related to smoking. However, reviews of previously published studies suggest that this may not apply in all situations (van Assema, Martens, Ruiter, & Brug, 2001). For example positively framed messages may not be effective if the recipient is unsure about behavioural norms (the manner of behaving or conducting one's self under normal circumstances) (Blanton, Köblitz, & McCaul, 2008; Stuart & Blanton, 2003) or if it conflicts with existing knowledge, attitudes and beliefs (Cox & Cox, 2001). For example, if reduced fertiliser application rates are not considered a behavioural norm, then a positively framed message about the subject may be confusing. The recipient may question, if the solution to the problem is simple, then why is it not applied all the time by others in the industry. The example text below shows a positively framed message about Best Management Practice (BMP), but if the audience has a negative belief or behavioural norm associated with industry, government or the best management practice criteria - v's their own criteria - the message may not be effective.

"The Smartcane Best Management Practice (BMP) Program is an industry led, government-supported best practice system for cane growing across Queensland, aiming to support business productivity, profitability and stewardship"

Additional factors that may impact on potential intervention effectiveness include whether new behaviour is being promoted or whether ceasing current behaviour is targeted (Snyder et al., 2004). Additionally, it has been argued that positive framing fosters a greater self-efficacy (one's belief in one's ability to succeed in specific situations or accomplish a task), which in turn is a major factor in compliance behaviour (Jayanti & Burns, 1998) and therefore long-term behaviour change. The following paragraph gives an example of the impact of the potential intervention aimed at long term behaviour change by targeting current behaviour, promoting new behaviour and by fostering self-efficacy.

*"It is acknowledged that current BMP alone is not enough to meet water quality targets (**current behaviour targeted**) so the Government is supporting farmers to trial new innovations that may help the industry meet these targets (**new behaviour promoted**). Sugarcane growers are already proven to be creative problem solvers and this program is designed to support the flourishing of new ideas that are of benefit to farmers as well as the environment (**aimed at increasing self-efficacy**)"*

The level of personal involvement in a message topic also affects the type of framing that is more effective. Evidence suggests (Donovan & Jalleh, 1999) that in low involvement conditions positive messages are more effective, whereas the reverse is true for high-involvement conditions. Again, this may support why positive framing appears to have been effective in the past, for example (Table 1):

Table 1: Examples of positively framed messages and their effectiveness

Effective	Not-Effective
Sunscreen <i>"Using sunscreen decreases your risk for skin cancer and prematurely aged skin"</i>	<i>"Not using sunscreen increases your risk for skin cancer and prematurely aged skin" (Detweiler, Bedell, Salovey, Pronin, & Rothman, 1999)</i>
Water Conservation <i>"By conserving water through installing low-flow irrigation heads, you will decrease the cost of your water bills in the future"</i>	<i>"By wasting water through installing high power irrigation heads, you will increase the cost of your water bill in the future" (Owens, Warner, Rumble, Lamm, & Cantrell, 2015)</i>
Agri-environment <i>"Farmers who manage runoff are reducing pollutants into the Great Barrier Reef protecting our reef for its future"</i>	<i>"Farmers who do not manage runoff are harming the Great Barrier Reef, risking harm to corals, sea life and water quality"</i>

Negative framing

Negative message framing may be more effective where there is uncertainty about the outcome of the behaviour, but there is awareness of the danger of not identifying a problem early. A good example in the health sector is screening programmes that prevent a more serious outcome e.g. mammograms (where if you don't have a mammogram you might get cancer, but if you have one it can be detected early) or cholesterol checks (if you get your cholesterol levels checked, it might prevent you from having a heart attack if your cholesterol levels are high). The following paragraph gives an example of a negatively framed message in the sugar cane industry:

*"If a successful applicant does not meet the industry standard within any of the three required modules (**uncertainty**), they may work with a Smartcane BMP Facilitator to develop an action plan to assist them in meeting that standard (**awareness**)"*

However, there is also evidence of significant barriers to these types of messages among adolescents and young adults (Miller, Lane, Deatrick, Young & Potts, 2007), reactance effects, where direct, potential or perceived threats to personal freedom cause resistance (see Eagle et al., 2016, p. 22 for more discussion on the reactance effect). There appears also to be cultural (Orth, Koenig, & Firbasova, 2007), context and situation variations.

Additionally, personality types may also have an influence: the potential 'pain' of not undertaking a recommended behaviour may be a stronger motivator for those who are focussed on safety and security, whereas the potential 'pleasures' from adhering to recommended behaviours may be more motivating for those seeking personal growth (Cesario, Corker, & Jelinek, 2013). Confounding factors include the degree of risk involved in changing behaviours (Chang & Wu, 2015). Communicating uncertainty of outcomes requires consideration, as people are reluctant to change behaviours if uncertainty is high, and if potential outcomes are seen as threatening, denial may be triggered, resulting in a refusal to make any meaningful behaviour changes (Morton, Bretschneider, Coley, & Kershaw, 2011). The following paragraph identifies perceived or potential threats and perceived risk in changing behaviour, which may lead to a resistance to change.

*“The GBR Water Science Taskforce (the Taskforce) is currently considering mechanisms such as regulations (**may be perceived as a direct or potential threat**), market-based trading, incentives and on-ground support to find the best approach to meet our water quality targets (**perceived risk**). While we await the Taskforce recommendations, we are urging all cane farmers in the Wet Tropics, Burdekin and Mackay-Whitsunday regions to adopt regulated standards and improve reef water quality outcomes” (**potential or perceived threats; perceived risk**)*

6.3.4 Message Appeals (including fear appeals)

Message appeals are the connection between the emotion or the cognition and the consumer's response to the message (Sheth, 2011). Appeals can be rational or emotional and can include fear appeals.

*“We recognise and applaud the many sugarcane producers who are managing their farms sustainably, and who have adopted best management practices. We also know that others could do better” (**emotional appeal**)*

Fear appeals should be used with caution as, while early studies suggest that fear appeals have the potential to influence attitude change and subsequent behaviour, there are numerous examples of interventions based on fear appeals not achieving their objectives (Donovan, Jalleh, Fielder & Ouschan, 2009). Most studies that claim fear appeals to be effective have been laboratory-based, often with methodological shortcomings, and have measured only short-term effects.

Strong fear appeals are more likely to be regarded as unethical **if the target populations do not believe they can readily undertake the recommended behaviour** or that **the behaviour will not be effective in minimising the perceived threat** (Snipes, LaTour & Bliss, 1999) such as ultimately improving the water quality of the Great Barrier Reef. The following paragraph is demonstrative of this type of fear appeal and should be used with caution.

*“The science about the state of the Great Barrier Reef is clear. The Queensland Government is focusing its attention on increasing the uptake of key farming practices that directly reduce the likelihood of nutrients and pesticide runoff (**may be disbelief that this can happen**). Additional officers are on the ground in reef regulated catchments to encourage faster uptake of regulated standards (**may disbelief that they can readily adopt the changes**) through awareness, extension and targeted compliance activities (**may fear intervention**). We are focusing on catchments and critical sub-catchments where science is showing us there is a problem (**may believe this to be ineffective; respond with complacency**)”*

Fear appeals appear to be effective and appropriate only in situations where the solution to a fairly critical problem is relatively easy and effective solutions are available (Buller, Borland, & Burgon, 1998). An additional factor appears to be a lessening of the effectiveness of fear appeals over time. The ongoing usage of fear appeals can in fact lead to **complacency** as people start to no longer respond with fear, but rather with indifference to the messages, if not 'switching off' entirely (Brennan & Binney, 2010). In addition, threats of stronger government legislation and regulation may be interpreted as a form of fear-based messaging; the use of law generally is thought of as "*coercive and punishing*" (Rothschild, 1999, p. 25). An example text from the agricultural-environment below gives an example of fear based messaging. While the text has a positive sentiment and a professional tone, the use of government regulation to coerce the farmers into adopting a voluntary Smartcane BMP may be perceived as a threat by farmers.

*"You are encouraged to adopt best management practices, through the voluntary Smartcane BMP. In 2010 reef protection requirements were brought in under the Environmental Protection Act 1994 and the Chemical Usage (Agricultural and Veterinary) Control Act 1988 and associated regulations (**coercive/punishing**). The regulations require all cane farmers..." SMOG Score 16.5*

One solution may be to separate the government requirement from the farmers requirements.

"Farmers are encouraged to adopt best management practices to meet new reef protection requirements. The 2010 regulations are guided by the Environmental Protection Act 1994 and the Chemical Usage Control Act 1988. Best management practice requires farmers to...." SMOG Score 13.6

To find necessary and appropriate behaviour change solutions to water quality challenges, it is important to develop ways of communicating the need for effective 'buy in'. **It is important to frame the overarching problem in a way that will not alienate target groups** and that **will provide evidence of the need for action on the part of landholders** that focuses on landholders beliefs about the consequences of performing the behaviour (Greiner, 2016; Hurlbert, 2014; Maio et al., 2007). The below paragraph gives a good example of not alienating target groups.

*"**Cane farmers** from across North Queensland are working hard to put in place irrigation and nutrient management practices that reduce nitrogen runoff – and **urban communities** are also making an effort to minimise their water quality impacts. Here's an update on some of the work councils do to help keep our waterways clean."*

In summary, message framing can be used to emphasise advantages of a certain action and/or negative consequences of not doing a certain action identified for behaviour change. Either positive or both negative and positive message framing should be used to align with the message to frame messages for successful communication. While positively framed messages appear to be stronger, they may not be effective if they go against the norms of the target audience. Acceptance (decoding) of the message will be dependent on the level of personal involvement that the landholder has with the message topic, therefore messages should closely follow outcomes from Section 6.1 and 6.2 to align with audience norms. Fear appeals may be viewed as unethical and should be used with caution. Using a fear appeal will depend on the degree of risk involved in changing behaviours. Ultimately, communicating effective 'buy in' solutions is most important to developing effective communication.

6.3.5 Message Tone and Language

Background reproduced from Hay & Eagle, 2016, Section 3.3: Readability and message framing have been identified in past research as impacting significantly on the way that messages are processed (if at all) and whether the messages are ultimately influential in encouraging the behaviours desired, whereas message tone effects have received less attention (Clark, 2014). The tone of a message affects the way messages are processed and how influential they are or are not. Messages can work with or against prevailing norms and they can be subject to resistance or defiance. It is important to ensure that communications work with rather than against prevailing social norms. If threats to autonomy and identity are perceived, resistance and even defiant behaviour may occur (Mols et al., 2015), particularly when there are some land manager groups who are unwilling or unable to accept that they are contributing directly or indirectly to water quality problems.

Tone is essential to any communication, it impacts how the reader interprets the message and it is a reflection of the message being sent. Tone can be measured as being dictatorial (controlling or overbearing), collaborative (to co-operate, work together willingly), patronising (superior attitude towards others) or adversarial (opposing sides).

The following text gives examples of message tones used in supplied documents (from) and how they can be changed for better impact (to).

Dictatorial (controlling or overbearing):

From:

"Our team's actions will be guided by the reef protection requirements under the Environmental Protection Act 1994 and the Chemical Usage (Agricultural and Veterinary) Control Act 1988 and associated regulations"

To:

"Our team will be guided by the Environmental Protection Act 1994 and the Chemical Usage Control Act 1988 to assist landholders with reef protection requirements"

Collaborative (to co-operate, work together willingly):

From:

“By working one-on-one with growers to develop their nutrient management plans, our Extension Officers are making it easier for growers to adopt the SIX EASY STEPS guidelines across their farms and realise improved yields and profits”

To:

“Growers and extension officers will work together to develop nutrient management plans to improve yields and profits, as they move towards adopting the Six Easy Steps guidelines”

Patronising (superior attitude towards others):

From:

“A rainfall simulator is a tool that simulates a rainfall event, with a pre-determined ‘rainfall’ intensity over a given time. Simulators are often used to measure losses of sediment, nutrients and pesticides and the amount of rainfall runoff under different conditions”

To:

“The rainfall simulator produces a pre-determined rainfall intensity over time to measure losses of sediment, nutrients and pesticide runoff under different conditions”

Note: Over explaining the procedure may imply that the sender thinks they have more knowledge than the receiver

Adversarial (opposing sides):

There were no examples of adversarial tone used in the supplied documents. However, opposing sides are often used in media associated with the health of the Great Barrier Reef which can negatively and/or positively affect the audience’s acceptance of intended messages. See for example an excerpt from an article published in the Townsville Bulletin on June 15 2016 “Farmers tired of reef claims”

“ONE of the North’s largest sugarcane producers says he is tired of farmers being painted the villains in the reef damage debate.

Geoff Cox, who with brother David produces about 500,000 tonnes of cane in the Burdekin, said activist groups had hijacked the debate with exaggerated claims about the state of the reef and the impact of farm run-off....”

It is recommended that a collaborative tone be used when communicating with landholders. However, ultimately the tone will depend on the message within the communication. If a dictatorial tone is required (telling), it should be coupled with collaboration and a positive message frame, to ensure effective and positive communication occurs.

Language: Use active voice

Text written in an active voice helps to bring the reader into the moment, it creates a stronger connection to the action and it makes it easier for reader for whom English is a second language or who read at an average reading level. Writing in an active voice is direct, simpler and shorter in structure and uses subject (the person or thing that is doing the action), verb (the action or thing that is being done) and an object (the person, place or thing that is receiving the action) (Fowler & Aaron, 2016). The example text below, demonstrates how to change text from passive voice to active voice.

“Growers involved will also be invited (passive voice) to put forward their own ideas on how chemical run-off from cane farms can be reduced (passive voice) and weed management can be optimised (passive voice).”

“Growers involved are invited (passive voice) to share (active voice) their own ideas on how to reduce (active voice) chemical run-off from cane farms and to optimise (active voice) weed management.”

6.3.6 Format

The message format can be written scientifically using technical evidence to support its claims i.e., the Scientific/technical format gives reference to studies that have shown a particular positive outcome (e.g. X strategy achieved a 10% higher yield). The testimonial format uses endorsement from landholders, usually featuring a specific landholder who is quoted as saying that they used a recommended practice and achieved positive outcomes (e.g. higher yields, reduction in fertilizer or pesticide applications).

Table 2 below contains the key used in the analysis of the message framing, norms, tone and format of supplied documents, which may be used by the sender to rate communications messages prior to distribution.

Table 2: The key used in the analysis of message framing (including appeals), norms, tone and message format

Key:	Framing:	Po Positive, N Negative / R Rational E Emotional G Guilt F fear
	Norms:	D Descriptive: perceptions of how other people are actually behaving, whether or not these are approved of; I Injunctive: behaviors perceived as being approved of by others
	Tone:	DT Dictatorial, C Collaborative, Pa Patronising, A Adversarial
	Format:	S Scientific / technical evidence T Testimonial / endorsement from landholders

Name of Stakeholder	Framing	Norms	Tone	format
Name and date of document, web link	P	D/I	C	T
Name and date of document, web link				

6.4 Design Principles

There are no firm rules regarding design. Pettersson (2010, p. 169) suggests that all information materials must be legible and readable. They should be worth reading by members of the intended audience and the communication should not be viewed as complete until the receiver has understood the message. The sender must decide on the communication channel (audio, text or visuals) and then decide on the text, sound and imagery to be used. Next the sender must select the target audience, collect relevant information (See Section 6.2) and include feedback from previous communication. Then the sender must consider basic design principles. The following defines a list of elements to assist with legibility for print based communications.

6.4.1 Target Audience

See Section 6.2. In addition, use the preferred language appropriate to audience, appropriate for age and gender, respect for values, customs, beliefs and prior knowledge.

6.4.2 Content

Provide up to date information and focus on the most necessary information. Include a maximum of three important points in any one communication. Use examples to illustrate ideas and concepts. Include a call to action in the communication. Consider the audiences culture and circumstances.

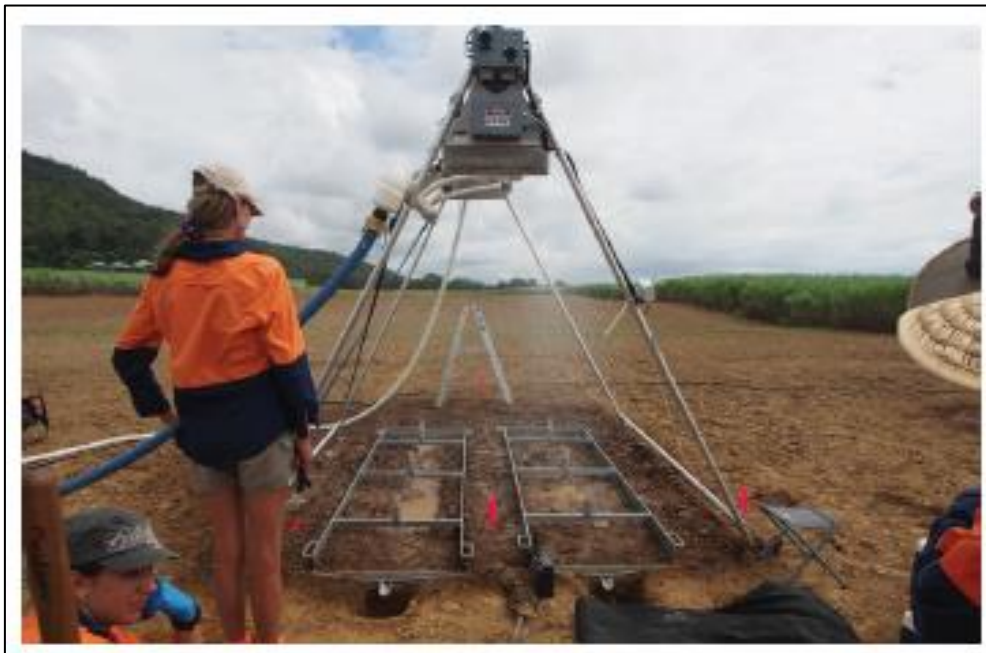


Figure 6: Image showing the concept of the Rainfall Simulator taken from an information sheet explaining the system

6.4.3 Organisation

Readers typically read in an F-shaped pattern. Firstly, in a horizontal movement, then down and across again and then they follow down the page (Pernice, 2017). Reading in an F-pattern means that focus is concentrated on the left hand side of a page. To assist the reader to take in all of the information provided in the communication prioritise and format the readers to what you want them to see. The following guidelines from Pernice (2017) have been adapted to help organise the text for readers.

- Include the most important points in the first two paragraphs on the page.
- Use headings and subheadings. Ensure they look more important, and are more visible, than normal text so users may distinguish them quickly.
- Start headings and subheadings with the words carrying most information: if users see only the first 2 words, they should still get the gist of the following section.
- Visually group small amounts of related content — for instance, by surrounding them with a border or using a different background.
- Bold important words and phrases.
- Use bullets and numbers to call out items in a list or process.
- Cut unnecessary content, such as welcomes to the communication, reduce introductions to one sentence where possible.

6.4.4 Credibility

The credibility of the author or organisation is important to the belief of the topic of communication. Source credibility is dependent upon expertise (the extent to which a speaker is perceived to be capable of making correct assertions) and trustworthiness (the degree to which an audience perceives the assertions made by a communicator to be ones that the speaker considers valid) (Hovland, Janis, & Kelley, 1953). The extent of opinion change is influenced by learning and acceptance of the audience, therefore will be less trustworthy if the credibility of the author/spokesperson does not meet the audience's expectation (e.g., I know what he/she is saying but I don't believe it) (Hovland & Weiss, 1951, p. 647). Highly credible sources are more persuasive than others provided the message being sent is perceived as trustworthy by the audience. However, being an expert in the message topic does not automatically equate to trustworthiness (Pornpitakpan, 2004). Trustworthiness may emanate from an action (variable) outside of the topic being discussed and hence reflect on credibility (Pornpitakpan, 2004). Trustworthiness of the sources is best described in terms of the situation. When investigated against a set of variables (see Table 3) the results show that when using the variable of evidence, the persuasiveness of the message is increased if the source of the message has low to high credibility. By contrast, persuasiveness will depend on the source's self-interest when the variable of supporting arguments is used. When threat or refutation are used the credibility of the source will affect the weight the receivers give to the positive or negative information in the message. The results indicate that highly credible sources need not be used in every situation and that the level of source credibility used in a message will depend on the timing and type of message being distributed.

Table 3: Effect of Source Credibility on Message Persuasiveness (adapted from Pornpitakpan, 2004. The Persuasiveness of Source Credibility: A Critical Review of Five Decades' Evidence)

Variable	Effect on Persuasiveness	Source Credibility	Context
Evidence	Increases	Low-high	Evidence seems to increase the persuasiveness of a low- but not a high-credibility source
Supporting Arguments	Increases	Low	Independent effects on persuasion, while presenting a message incongruous with the source's self-interests
Message discrepancy high but note extreme	Highly increases	High	Highly credible source is more influential than is a low credibility source when message discrepancy is high but not too extreme
Message discrepancy low	Minimal increase	Low	Fewer source credibility effects when discrepancy is low
Threats and refutation	Increases/decreases	Highly credible	Source credibility affects the weight receivers give to the positive and negative information in the message
<i>Note: Message variables include timing, evidence, supporting arguments, argument quality, message congruity with the source's self-interests, message discrepancy, extremity of the claims, threat level, message style, language intensity, quantitateness of the message, and inclusion of refutation</i>			

A receiver's response to credibility will be determined by their behaviour. If the "receivers behaviour is salient, a low-credibility source tends to be more influential than a high-credibility source" (Pornpitakpan, 2004).

6.4.5 Design

Text

Use a clear, direct, simple and transparent typography – use a single sans serif font style (like Arial or Helvetica) sized between 10 and 12 points. While serif fonts are usually used in print and sans serif used online, sans serif fonts have been found to increase readability for users with average reading ability. Avoid using multiple fonts as too many fonts can cause confusion and reduce readability. Use contrasting colours i.e. black text on a white or yellow background (white on cream/yellow is the most readable background for people with dyslexia and for reading from a distance). AVOID the use of CAPITAL LETTERS, it makes words difficult to read and it looks as though you are shouting. Use bullet points to define lists.

Layout

Use a simple and clear layout, with left aligned text. The ragged edges make it easier for the eye to follow the lines when reading. Use bold text and white space to highlight information. Use captions for illustrations.

White space comes in handy

In this example, the headline is framed in white space and is much more effective. There is no need to fill all the space just for the sake of it.

White space is sorely needed

But in this example, the headline is cramped because the designer is trying to fill all the space. This makes it harder to read.

Image Source 1: <http://www.plainenglish.co.uk/files/designguide.pdf>

Harmony

Create harmony within groups of communications. Develop a standard template for graphic design for each communication situation.

Attention

Use words relevant to the topic that will gain the attention of the receiver. Use colour coding to draw attention to elements of the communication. Including white space in your communication can improve legibility, comprehension and increase attention (Boag, 2011). Short clearly separated chunks of text helps readers to follow the information, it helps them to know when to stop and to not give up reading. White space is can be any colour but defines the space between the elements of your design. The image below uses a good combination of relevant words, colour contrast and white space (dark grey) to emphasise the design.



Image Source 2: A good example of word and colour use from a supplied case study

The correct colour contrast can improve readability. The colour wheel below gives examples of colours that are complimentary to each other. Avoid using fluorescent colours in charts and graphs. Eight percent of males and 0.5% of females people are colour blind and cannot see green and red (National Eye Institute, 2015). However, there are also other forms of colour blindness for example blue/yellow and complete colour blindness. It is hard for many readers to see combinations of green/brown, blue/purple, light green/yellow, blue/grey, and green/grey (National Eye Institute, 2015). To ensure that information is accessible to all readers' authors should use different shades of the same colour (monochrome colours).

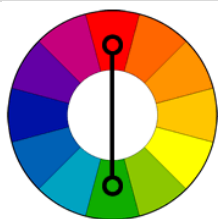
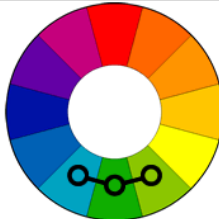
		
Colours that are opposite each other on the colour wheel are considered to be complementary colours (example: red and green)	Analogous colour schemes use colours that are next to each other on the colour wheel. They usually match well and create serene and comfortable designs.	A triadic colour scheme uses colours that are evenly spaced around the colour wheel.

Image Source 3: http://www.tigercolor.com/color-lab/color-theory/color-theory-intro.htm#color_harmonies

The WCAG 2.0 level AA requires a contrast ratio of at least 4.5:1 for normal text. Level AAA requires a contrast ratio of at least 7:1 for normal text. There are several free online colour contrast checkers, the contrast example below is from WebAIM (web accessibility in mind). Simply click on the foreground colour and select the colour you would like to use, then do the same for the background. Check the score is above the AA level of 4.5:1 for normal text.

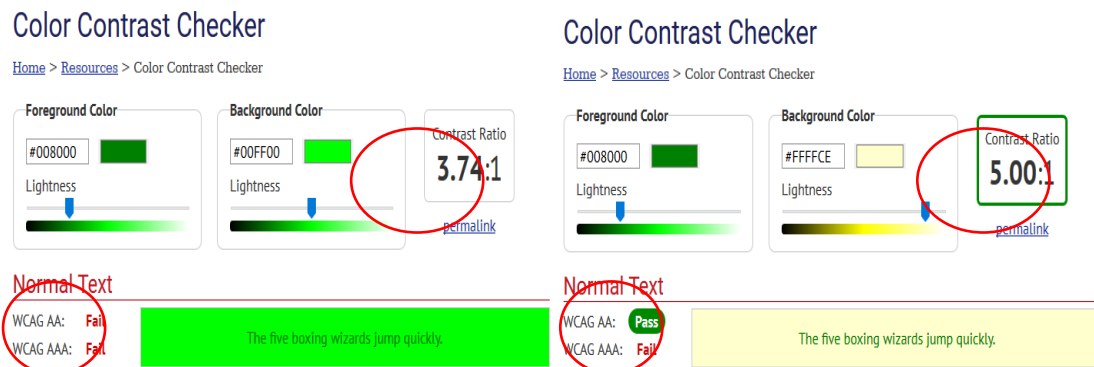


Image Source 4: <https://webaim.org/resources/contrastchecker/>

Avoid using reverse types (white text on a dark background) they might look creative, but they are less easy to read than dark type on light backgrounds and can be compromised when being reproduced. For example, thin and serif texts can break up, small spaces can fill in and a busy background or weak colour can make it hard to read, see below for more on colour selection.

6.4.6 Visual Imagery

Critical to communication is the role of the comprehension of messages including the inclusion of appropriate visual elements. Pettersson (2010) cites that a user's *"memory for pictures is superior to memory for words"* and that *"visuals can strengthen language fluency by enhancing memory and recall, as well as providing a visual schema in which information can be organized and studied"* (p. 180). If a communication is poorly designed then it will have less chance of being understood, less attention will be paid to its content resulting in less uptake of its product or topic. Balance and proximity (J6 Design, 2015) of images help to build connections between verbal and visual representation and synthesize complex information when text and illustrations are actively held in memory at the same time (Pettersson, 2010; Thomsen, 2015). Balance provides stability and structure to the design, whereas proximity creates relationships between the included elements. The use of visual aids should be considered for three reasons.

- They may help in gaining attention and interest in a message, in order for time and effort to be allocated to the remainder of the material (Lazard & Atkinson, 2014).
- The use of appropriate visuals can help those who struggle to understand text-based information (Dowse, 2004) or abstract concepts (Altinay, 2015).
- They can *"amplify the verbal portion of a persuasive message"* (Seo, Dillard, & Shen, 2013, p. 565), or make specific elements within a specific communication stand out (Altinay, 2015).

There is evidence that images can communicate more effectively than words alone (Lazard & Atkinson, 2014).

The following image (Figure 7) is an example from a case study that was used to discuss innovation in SugarCane. The communication surrounded the successful use of variable rates of applications of nitrogen in different zones using satellite yield data. When assessed against the criteria for norms and message framing, the case study was rated as positively framed (using active voice, talking about innovation and success), based on descriptive norms (using examples from a landholder) using a scientific format (rates of fertiliser application, spatial discussion), and it was identified as being perceived as possibly dictatorial. This was not due to a substantial amount of wording that held a dictatorial tone, but rather implied by the body language of the people depicted in the main image used in the case study (see below). While the image is associated with applying fertilizer it may not be taken in that context. In isolation the image would have been intended to demonstrate communication between subjects. However, when taken in the context of the case study, it appears that there was disagreement between the two subjects in the photograph and hence the dictatorial rating. While the other images used in the communication were appropriate to the topic and in good proximity to the associated text, this image seemed out of place. We do not, of course have access to the rationale for its selection. There were two other images depicting the landholder in the case study, which may have been less distracting in terms of communication.



Figure 7: Image used in a case study on variable fertiliser application rates using satellite data

The “Guide to help Australian Government teams design simple, clear and fast content” (referred to as “the guide” from this point forward) (Australian Government, 2018) states that the sender needs to “choose relevant and clear images”, “use words rather than images” and to “only use images that usefully add to the text content”. In addition, the guide states to “make sure the images are not culturally insensitive to any audience” and to “make sure there is sufficient contrast between any text and the background in images”.

While Lazard and Atkinson (2014) highlight that “images can communicate more effectively than words”, we reiterate the importance of choosing relevant visuals to convey the related message and we add caution that just as images can add relevancy to the topic they can also be misinterpreted when receivers have sufficient experience and time to generate their own mental images as they read the text (Pettersson, 2010). As such we recommend that imagery be used minimally (maximum 3 images), that the images chosen provide meaningful content and that they are presented in close proximity to the text that explains them.

Reproduced from Hay & Eagle, 2016, Section 3.3.5 In the context of environmental impacts (including the impact of climate change), the use of iconic images that are not personally relevant and focused on local impacts or which are based on model simulations is discouraged (Thomsen, 2015). Conversely, the use of local images in climate change communication has been shown to be effective in gaining acceptance of the need for local action, and consideration of alternative courses of action (Scannell & Gifford, 2013). A caveat is that the visuals should be pre-tested to ensure that the message intended to be conveyed is that actually received rather than having the potential for miscommunication (Dowse, 2004). Visually demonstrating the link between environmental pollution causes and impact is noted as being challenging (Hansen & Machin, 2013). However, visuals can be a powerful tool for demonstrating that positive actions are possible and achievable (Altinay, 2015).

Graphs, Charts, Statistics

Use graphs charts and statistics sparingly. Ensure that when they are used, that they are meaningful and easy to read. Use graphs rather than figures when reporting statistics. A guide for how to report statistical information is available from Queensland Treasury here <http://www.qgso.qld.gov.au/about-statistics/presentation/presenting-stat-info-graphs.pdf>

7.0 METHODOLOGY

The project assessed marketing material provided by the Sugar Research Australia (SRA), Reef Catchments (Mackay, Whitsunday, Isaac) Limited, the Department of Environment and Heritage Protection (DEHP), the Department of Agriculture and Fisheries (DAF), NQ Dry Tropics (NQDT), and Terrain Natural Resource Management groups. The findings were then used to create this “best practice guide”.

The documents were analysed for readability using the SMOG index calculator (See Section 7.1) and by measuring norms, message framing, appeal, tone and language and format (See Section 6.3). In addition, the documents were measured against basic design principles (See Section 6.4)

While SRA, Reef Catchments, and DEHP provided static documents to be assessed during the course of the project, Terrain and NQDT supplied live documents, during project to be assessed throughout the project, allowing them real time analysis of marketing material before it was made available to their publics (all audiences who consumes the material). Some examples of email exchanges between stakeholders and the analysis team are contained in Appendix 2.

Each of the departments has received an individual report containing the results of the analysis of their material. The results showed that all of the material provided was above the recommended reading level of year 9. Individual feedback was provided with examples of how the reading level may have been improved. In addition comments were made on the design principles used. The feedback and comments were then de-identified to be used in this guide as examples for the wider audience.

7.1 SMOG Index (McLaughlin, 1969)

The method used for the Manual calculation of SMOG levels is well documented in the literature (see, for example, Aldridge, 2004). The manual calculation is performed by taking three groups of 10 consecutive sentences at the beginning, middle, and end of a document, giving a total of 30 sentences. Following this, all words with three or more syllables within these selected sentences are counted and the square root of the total is then calculated and rounded to the nearest integer. Finally, the number 3 is added to the integer to obtain the grade level of the document. Table 4 shows the how the scores convert to grade levels. Text that has 30 sentences or less are converted using the conversion rate listed below (McGraw, n.d.).

Table 4: SMOG Conversion Tables (Kemp & Eagle, 2008; McGraw, n.d.)

30 or more sentences			Conversion for less than 30 Sentences			
Word Count	Approximate Grade Level +/- 1.5 grades		Number of Sentences	Conversion # multiplier	Number of Sentences	Conversion # multiplier
0-2	4	Nursery, Junior/ Primary School	29	1.03	14	2.14
3-6	5		28	1.07	13	2.3
7-12	6		27	1.1	12	2.5
13-20	7		26	1.15	11	2.7
21-30	8		25	1.2	10	3.0
31-42	9		24	1.25		
43-56	10		23	1.3		
57-72	11	Secondary School	22	1.36		
73-90	12		21	1.43		
91-110	13		20	1.5		
111-132	14		19	1.58		
133-156	15	Further Education	18	1.67		
157-182	16		17	1.76		
183-210	17	Higher Education College/University	16	1.87		
211-240	18+		15	2.0		

7.2 Norms and Message Framing

Table 5 below contains the key used in the analysis of the message framing, norms, tone and format of supplied documents. The supplied material was read and assessed separately by two different coders. The results were checked for inter-coder reliability (Lombard, Snyder-Duch, & Bracken, 2002), where the independent coders swapped materials and re-evaluated the characteristics to ensure they reached the same conclusion.

Table 5: The key used in the analysis of message framing (including appeals), norms, tone and message format

Key: Framing: Po Positive, N Negative / R Rational E Emotional G Guilt F fear Norms: D Descriptive: perceptions of how other people are actually behaving, whether or not these are approved of; I Injunctive: behaviors perceived as being approved of by others Tone: DT Dictatorial, C Collaborative, Pa Patronising, A Adversarial Format: S Scientific / technical evidence T Testimonial / endorsement from landholders				
Name of Stakeholder	Framing	Norms	Tone	format
Name and date of document, web link	P	D/I	C	T
Name and date of document, web link				

8.0 RECOMMENDATIONS AND CONCLUSION

The readability analyses of material supplied to Project 3.1.3 confirmed findings from Project 2.1.3 (Hay & Eagle, 2016). The documentary analysis confirmed that material supplied was written in too complex language, the message tone may be a barrier to communication and visual imagery may have unintended effects on communication.

As stated earlier, good communication takes leadership and involves two-way (at least) communication. Two-way communication allows for a message to be sent from a sender to a receiver and is complete when the receiver acknowledges that they have understood the message correctly. Therefore at least a two-way communication strategy is recommended to convey best practice land management messages.

It is recommended that senders of communication materials use these guidelines to assist in the development and modification of communication material. The best practice guide calls on communication design processes to set objectives, to set social marketing benchmarks, and to write for and to measure readability and it provides a set of design principles to guide written communications.

Social Marketing is a systematic and planned process that is used to influence behaviour in a sustainable and cost effective way. It assists with decision about who to work with, what behaviour to influence and how to go about it. Taking a social marketing approach to influencing behaviour change will assist in communicating within the complexity of factors that affect land management practices. It is recommended that a social marketing approach be taken to produce communication materials that focus on specific factors that influence land management practices.

It is recommended that material be written at no more than grade / year 9 school level to enable the majority of the general population to understand it (Carbone & Zoellner, 2012). This recommendation is based on the findings of multiple studies validating readability analysis techniques and does not match the advice found in The Guide which states that writers should “aim for grade 3 or 4 reading level (age 9)” (<https://guides.service.gov.au/content-guide/writing-style/#readability>). It is further recommended that “The Guide” be updated to reflect the appropriate reading level of year 9 to reduce confusion amongst government and other writers.

It is recommended to identify and work with and around prevailing social norms. If threats to autonomy and identity are perceived, resistance and even defiant behaviour may occur (Mols, Haslam, Jetten, & Steffens, 2015), particularly when there are some land manager groups who are unwilling or unable to accept that they are contributing directly or indirectly to water quality problems.

It is recommended that messages frame and tone should closely follow outcomes from Section 3.1 and 3.2 to align with prevailing audience norms. Different communication circumstances call for different message framing and tone, and a one size fits all approach will not create successful communication with land holders. The effects of message framing highlights the importance of ensuring that the most effective framing strategies are used, acknowledging that different frames and messages may be warranted for different segments.

It is recommended that the following principles of design be followed:

- Ensure that the content provided is the most up to date and necessary information
- The document is organised in a way that encourages all of the information be consumed
- That the credibility of the spokesperson be closely aligned with the message that is being distributed
- That text, layout and colour are used to meet the WCAG 2.0 level of contrast to a AA or AAA standard
- Visual imagery used must usefully add to the content
- When including graphs and charts the Queensland Treasury guidelines will be used <http://www.qgso.qld.gov.au/about-statistics/presentation/presenting-stat-info-graphs.pdf>

To find necessary and appropriate behaviour change solutions to water quality challenges, it is important to develop ways of communicating the need for effective 'buy in'. Improving the way projects communicate and get buy in from producers will ensure greater project uptake, associated results and lasting behaviour change.

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APPENDIX 1: READABILITY COMMUNICATION PLANNING CHECKLIST

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

1. START BY SUMMARISING YOUR COMMUNICATION

Summarise your problem and intervention, give it some context using the following table (this can be as formal or informal as you need, you can come back and fill in the gaps later):

2. OBJECTIVES

1.1. Set your objectives? (Hay, Eagle, & Chan, 2018, p. 4)

Who _____ ☐

Audience 1 _____

Audience 2 _____

Audience 3 _____

What _____ ☐

When _____ ☐

Where _____ ☐

Why _____ ☐

3. SOCIAL MARKETING BENCHMARKS

3.1. Check your social marketing benchmarks (Hay et al., 2018, pp. 8-11)

Benchmark 1: identify the behaviour your intervention addresses

Both the Benchmarks and the CBSM Steps acknowledge the centrality of focussing on specific behaviours. There is a need to identify the specific behaviours that should be targeted for change. There is an implicit assumption that a general attitude about an issue such as the need to improve water quality will lead to behaviour change among those who may be able to take individual or collective action. This is incorrect (Ham, 2009; Ham & Sandberg, 2012). Behaviour change will not occur *“unless a specific behaviour is explicitly targeted and communication is designed to address attitudes relevant to that behaviour”* (Stern & Powell, 2013, p. 35). A gap between reported attitudes towards environmental issues and actual behaviours is well documented in the literature (Ockwell, Whitmarsh, & O'Neill, 2009). See also Benchmark 3.

□

Problem Definition and Context
1. What is the specific problem or issue you are trying to address?
2. What resources (financial and personnel) are available for this programme?

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

3. How significant is the problem or issue? What sectors of the population does the problem affect the most? What data is available? What are the trends? How does the incidence of the problem vary on an international, national, regional or local basis?

4. What are the consequences / costs of not addressing the problem?

5. What initiatives and programmes have been used in the past? How successful were they? What problems were encountered with them?

6. What 'upstream' factors (environmental, social, economic, political or policy factors) might hinder your programme? What can be done to resolve them?

7. Which other sectors or agencies might be involved in implementing this programme? Are they supportive? If any barriers exist, how might these be overcome?

8. How does this fit in with other programmes in this area (national, regional, local). Are messages consistent; do the programmes complement or compete with each other? If the latter, what can be done?

9. Will the managers of these other programmes support or oppose your intervention? What can be done to gain their support or to at least minimise their opposition?

10. Are there any third-party organisations that might be able to assist with the delivery of the programme? What are the advantages and disadvantages of their involvement?

11. How will you achieve effective coordination and control of the various sector and third party organisations?

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

Benchmark 2: Focus on the audience to understand the drivers of current behaviour and to identify barriers and benefits to behaviour change

Identify barriers and benefits? (pg.8) Also links to Benchmark 4 (pg. 10)

Barriers & Benefits
1. Are there case studies or examples of best practice that may give you ideas on how similar problems have been addressed elsewhere? Caution: do not assume that interventions that have been successful in one area can automatically be transferred to another
2. What research exists regarding the target groups already? What research is needed to guide the development of the programme?
3. Does your organisation have the skills and ability to conduct any necessary research? If not, what action is required?
4. What types of research will be undertaken?
5. How will you identify and recruit participants for any research that is needed? What ethical issues may arise in this work?

Barriers (p.8) _____ ☐

Benefits (p.8) _____ ☐

Factors to consider
1. What barriers do they perceive will prevent them from undertaking the behaviours
a. How might these barriers be overcome?
2. What benefits do they perceive will prevent them from undertaking the behaviours
a. How might these barriers be overcome?

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

Benchmark 3: Use theory to understand your target audience

We now use the Theory of Planned Behaviour to illustrate how theory can be applied

Identify factors from the Theory of Planned Behaviour

1. If theories have been used in past interventions:

a. What theories have been used in the past, and with what success?

b. What can be learned from other interventions targeting similar population segments?

2. If theories have not been used in the past to help design interventions

a. How strongly do members of each segment believe that they are susceptible to the problem, or engaging in behaviour that may lead to future problems?

b. How severe do members of each segment believe the consequences of the problem are?

c. How strongly do members of each segment believe that adopting your recommended behaviour will lower the risk of the problem?

Background Factors

☐

Individual (pg. 9) _____

Social (pg. 9) _____

Informational (pg. 9) _____

Beliefs

☐

Behavioural (pg. 9) _____

Normative (pg. 9) _____

Control (pg. 9) _____

Current attitude toward behaviour (pg. 9) _____

☐

Perceived subjective norms (pg. 9) _____

☐

Perceived behavioural control (pg. 9) _____

☐

Behaviour intention (pg. 9) _____

☐

Actual control (pg. 9) _____

☐

1. How strongly do members of each segment believe they can perform the desired behaviour and continue to perform it over time (i.e. self-efficacy)? See also Benchmark 7

2. What normative beliefs exist in each segment regarding performing the desired behaviour? How strong are these beliefs? How compatible is the intended behaviour with each segment's self-image?

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

Benchmark 4: Identify actionable insights

Willingness to change (pg. 10) _____ ☐

What will be exchanged (pg. 10) _____ ☐

What is the strategy? (pg. 10) _____ ☐

Benchmark 5: Exchange

Perceived/actual cost (cost may not be just financial) (pg. 8) _____ ☐

Target Audience Values (pg. 10) _____ ☐

Incentives/rewards (pg. 10) _____ ☐

Does the exchange replace the benefits the target market derives from the problem behaviour Yes ☐ No ☐

If not, what is the exchange strategy? (pg. 10) _____

1. What level of risk (financial, social, and emotional) does each segment believe exists in adopting the desired behaviour? What can be done to reduce their perceived risk levels?

2. Clarify the exchange process: What do you want each segment to believe they will need to give / invest / give up in return for what specific benefits?

Benchmark 6: Identify any competition to the behaviour

Ways to overcome apathy/disinclination (pg. 10) _____ ☐

Identify competition for audience's attention (pg. 10) _____ ☐

1. What does each segment see as competition to your programme?

2. What can you offer to persuade them to accept your programme over competing options?

3. What advantages does each segment see in adopting the desired behaviour vs competing behaviour?

4. What disadvantages does each segment see in adopting the desired behaviour vs competing behaviour?

Communication Planning Checklist

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Benchmark 7: Segmentation

Identify segments (pg. 10) _____

Who are the decision makers/influencers? (pg. 10) _____

Key Characteristics _____

Initial Scoping Re Target Insights
1. Who are the intended primary target segments for this programme (these may not be the same as those most affected)? Who are secondary target segments?

Refining Target Insights and Developing Segmentation
1. Can the target group be segmented on the basis of demographics (geographic, education, income, age, gender, social class etc.?) Describe each segment according to the factors that make them different from each other.
2. Can the target group be segmented on the basis of psychographics (different knowledge, attitudes, beliefs etc) or behaviours? Describe each segment according to the factors that make them different from each other.

3. How does the problem prevalence or vulnerability to the problem (highest incidence, potential severity of the problem) vary across segments?

4. Have the segments had past experience with attempting this type of behaviour? What can be learned regarding success / failure?

5. Where do you plan the target groups will gain information, support etc? Note: this may be different to where they may perform the desired behaviours. What external factors might make it easier to adopt / maintain behaviours (skills, demonstrations, endorsement, support etc)?

6. How might resources be spread across the different segments? Are there any ethical implications (for example, not targeting hard to reach groups)?

Communication Planning Checklist

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7. For each segment, what are their preferred information sources? What level of trust do they have in information from these sources?

8. Are some segments more difficult to reach / communicate with than others? What are the implications of this?

9. What role models, credible spokespeople or opinion leaders might be available? How could they be involved?

10. What external organisations need to be made aware of this programme? What do you want / need from them? If you cannot gain their support, what impact will this have on your programme?

11. What people within your own organisation need to be involved in this programme?
What do you want / need from them? How will you communicate with them? If you cannot gain their support, what impact will this have on the programme?

12. Can you plan (using Gantt charts or similar) what involvement and inputs are needed, by when and who will have the responsibility of organising, coordinating, checking etc?

Notes: _____

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

Benchmark 8: Methods mix

Co-creation stakeholders (pg. 8) _____

How will you distribute your behaviour change strategy? (pg. 8) _____

Reaching and Communicating With Segments

1. What exactly do you want to communicate? How will the message differ across the various segments?

2. What channels are available by which you can communicate to the various segments and other stakeholders? Which should be selected and why?

3. How will you schedule activity across the various channels (amount of exposure / timing)? Can you convert this into a Gantt chart? Who will have responsibility for ensuring material is produced? What are the consequences of delays to any part of the schedule?

4. What is the image you want to project? What tone should be used (serious, dramatic, humorous etc)? Should positive or negative message framing be used? Should the message be presented in rational or emotional terms? Note: use fear appeals with caution

5. How can you make the message credible for each of the segments?

6. How will you pre-test the material you intend to use? Who will you pre-test with (experts / gatekeepers/ other stakeholders / target groups)

7. Have you checked for readability of printed material? Have you checked for any relevant media regulations regarding the acceptability of any advertising material? (see Section 4)

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

4. READABILITY TOOLS

4.1. Readability (Hay et al., 2018, p. 11 & 31)

Copy and paste text (10 consecutive sentences from beginning middle and end of the text to the SMOG calculator at <http://wordcount.info/index.html>

Is the grade/year at level 7-9? _____ Yes ☐ No ☐

If no, use the guide in Hay & Eagle (2018) to rework the text to reduce the complexity of the writing.

4.2. Norms (Hay et al., 2018, pp. 13-15)

Which perceived norm will you use?

Injunctive Norm (behaviours perceived to be approved by others) (pg. 9) _____ Yes ☐ No ☐

Descriptive Norm (perception of how others are actually behaving) (pg. 10) _____ Yes ☐ No ☐

Describe the context of the norm you are using: _____

Can it be perceived as the opposite of your intention? (pg. 10) _____ Yes ☐ No ☐

If yes, re-write the context here _____

Do you have appropriate imagery to support your objective (see Section 5.4.6 in Hay & Eagle (2018)) _____ Yes ☐ No ☐

4.3. Message Framing (Hay et al., 2018, pp. 15-18 & 32)

Does your target audience believe they can undertake the behaviour? _____

Positive framing? (pg. 12) _____ Yes ☐ No ☐

Negative framing? (pg. 13) _____ Yes ☐ No ☐

4.4. Message Appeal (Hay et al., 2018, pp. 19-21)

Emotional appeal? (pg. 14) _____ Yes ☐ No ☐

Fear appeal? (pg. 14-16) _____ Yes ☐ No ☐

Justify your use of fear appeal, is it necessary? _____

Does your message frame include many target groups or just one? _____ Many ☐ One ☐

If only one target group, what is your justification? (pg.16) _____

4.5. Message Tone and Language (Hay et al., 2018, pp. 21-23)

Is your message?

Dictatorial (controlling or overbearing)? _____ Yes ☐ No ☐

If yes, re-write it here _____

Collaborative (to co-operate, work together willingly)? _____ Yes ☐ No ☐

If yes, great, don't change anything! _____

If no, re-write it here _____

Patronising (superior attitude towards others)? _____ Yes ☐ No ☐

If yes, re-write it here _____

Adversarial (opposing sides)? _____ Yes ☐ No ☐

If yes, is it written with a positive message frame? _____

4.6. Message Format (Hay et al., 2018, p. 23)

Does your message use testimonials? _____ Yes ☐ No ☐

Does your message use scientific/technical evidence? _____ Yes ☐ No ☐

If yes, is it supported by appropriate explanatory information? _____ Yes ☐ No ☐

Communication Planning Checklist

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5. DESIGN PRINCIPLES

5.1. Target Audience (Hay et al., 2018, p. 24)

Is the appropriate language used? _____ Yes ☐ No ☐

Is the language appropriate for the audience (year 7-9 level?) _____ Yes ☐ No ☐

Have you met the requirements for Benchmark 2? _____ Yes ☐ No ☐

5.2 Content (Hay et al., 2018, p. 24)

Is the information accurate and up-to-date? _____ Yes ☐ No ☐

Does it focus on the key, most necessary information? (And avoid extraneous information?)

_____ Yes ☐ No ☐

Have any important points been left out? _____ Yes ☐ No ☐

If yes, what are they? _____

Where possible, are concrete examples given to illustrate general ideas? _____ Yes ☐ No ☐

Does the content take the audience's culture and circumstances into account? Yes ☐ No ☐

Does the material call on the reader to take some specific, appropriate action? Yes ☐ No ☐

5.3 Organisation (Hay et al., 2018, p. 25)

Is there a clear core message, supported by a few (3-4) main points? _____ Yes ☐ No ☐

Is the information presented in easy-to-understand "chunks" or sections? _____ Yes ☐ No ☐

Are the main points presented in a logical order that will make sense to the audience? Yes ☐
No ☐

Are headers used to direct the reader to the main points? _____ Yes ☐ No ☐

Is there a summary of key points? _____ Yes ☐ No ☐

5.4 Credibility (Hay et al., 2018, p. 25)

Does the material's author/producer have credibility with the target audience? Yes ☐ No ☐

Does the spokesperson or other source shown in the material have credibility with the target audience? _____ Yes ☐ No ☐

5.5 Design (Hay et al., 2018, p. 26)

Do design elements (like headers, bullets, and boxes) help draw attention to the main points? Does the material have an accessible, open look with plenty of white space? Yes ☐
No ☐

Is the font (typeface) clear and clean, and large enough (10 points or larger)? Yes ☐ No ☐

Are confusing graphs, charts, and statistics avoided? _____ Yes ☐ No ☐

Is there good contrast between background and foreground? _____ Yes ☐ No ☐

Is the material visually attractive? _____ Yes ☐ No ☐

5.6 Visual Imagery (Hay et al., 2018, pp. 29-30)

Do visuals support the text and are they placed close to the text they relate to? Yes ☐ No ☐

Do visuals show the correct way to do something? _____ Yes ☐ No ☐

Do the visuals add usefully to the text? _____ Yes ☐ No ☐

Communication Planning Checklist

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6. OTHER CONSIDERATIONS

6.1 Public relations and publicity

1. Do you intend briefing the media? If so, what is their likely attitude towards the issue? Is your story really newsworthy?
--

2. Who will deal with media contacts? How will you try to ensure that editorial is consistent with the message you are trying to coordinate?
--

3. How will you monitor media coverage?

6.2 Contingency Planning and Crisis Management

1. What contingency and crisis management plans need to be considered for dealing with adverse publicity via the media? Who will have direct contact with the media?
--

2. What contingency and crisis management plans need to be considered for the programme in its entirety? How will you handle cost overruns, delays to the production of material or failure to deliver any part of your programme?
--

6.3 Evaluation and Control

1. If parts of, or the entire programme do not appear to be working as intended, what can you do to rectify things?
2. How will you evaluate the programme as it is implemented (when, how often)?
3. What measures will be used to assess effectiveness and efficiency of individual parts of the programme and of the programme as a whole?
4. How will this information be used to aid future planning?

6.4 Ethical Issues Review (if you answer yes to any of these points, consider the implications for your intervention)

Is it legal?
Is it contrary to society's generally accepted moral obligations?
Is it contrary to moral obligations or codes of ethics that are specific to your particular organisation?
Will it infringe on the rights of the organisation's stakeholder?
Does the intervention give assistance where it is needed?
Is the autonomy of the target audience recognised?
Does the intervention allow those who need help the freedom to exercise their entitlements?
Are all parties treated equally and fairly?
Will the choices made produce the greatest good for the greatest number of people?
Can you ensure that the intervention will not cause physical or psychological harm to the target group (s) or to groups that are not part of the target?
Will it leave any person or group poorer?
Will it especially reduce the wellbeing of an already underprivileged group?

Communication Planning Checklist

To be used in conjunction with Hay, R., & Eagle, L., (2018), Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice for Development and Modification of Programme Communication Material

Is there an alternative action that produces equal or better benefits, and by implications, will cause fewer negative consequences?

7. USEFUL RESOURCES

<https://www.w3.org/TR/WCAG20/>

<https://guides.service.gov.au/content-guide/>

<https://www.johnlovett.com/elements-and-principles-of-design>

8. REFERENCE

Hay, R., Eagle, L., & Chan, J. (2018). *Harnessing the science of social marketing in communication materials development and behaviour change for improved water quality in the GBR: Final Report Best Practice GUIDE for Development and Modification of Programme Communication Material*. Retrieved from <http://www.nesptropical.edu.au>:

APPENDIX 2: EXAMPLES OF EMAIL EXCHANGE IN RELATION TO READABILITY ASSESSMENT OF LIVE DOCUMENTS

Request email (example 1)

From: XXXX
Sent: Wednesday, 26 July 2017 3:53 PM
To: Hay, Rachel <rachel.hay@jcu.edu.au>
Subject: XXX Factsheet

Hi Rachel

How are you?

We've got a whole load of comms materials in the works. If you've got time could you have a quick read of this factsheet regarding XXXX Grants.

Thanks
XXXX

Response email (example 1)

From: Hay, Rachel [<mailto:rachel.hay@jcu.edu.au>]

Sent: Friday, 28 July 2017 8:14 AM

To: XXXX

Subject: RE: XXXX Factsheet

Hi XXXX,

Sorry for the delay..... [Irrelevant conversational text removed]

I put the fact sheet through a smog analysis, see results below:

WordsCount SMOG Results

Smog Grade: 14.78

Sentences: 38

Big Words (>= 3 syllables): 158

$14.78 = 3.1291 + 1.043 * \text{square root of } (((158.0) / 38.0) * 30)$

The grade is higher than year 12 (academic) in terms of readability. I have made some changes to the document (attached) to help bring the score down.

When I remove elements such as the monetary figures, dates and web links – the smog score comes down to between 10 and 11 (this may reduce a little more if we removed words like government and management – which of course is hard to do).

I think move the Key Points to the end of the document so that they are not so intimidating up front and add some appropriate imagery and it will be much more readable.

On another note – I am finalising the NESP Readability Project 3.1.3, for which XXXX is named as a project partner, and will be sending a final call to all partners later today for documents to be analysed – it would be great to get 10 or so docs from you before end of next week. I have an intern for the next two weeks only and I would like her to gain the experience of the analysis while she is with me.

Give me a call if you want to discuss, I am at home today XX XXXX XXXX or mobile XXXX XXX XXX

Rachel

Request email (example 2)

From: XXXX
Sent: Friday, 27 October 2017 11:31 AM
To: CONTACTS REMOVED FOR PRIVACY (18 Recipients)
Subject: XXXX - draft communication tools for input

Hi everyone,

I hope you have been well.

XXXX and XXXX have been implementing the project's engagement strategy including extension and communication activities over the past few months with our 14 participants at XXXX.

As part of the strategy, two communication tools have been drafted and are attached for your review. These have also been sent to a cane farmer and his wife (participants in other XXXX projects), to provide their thoughts and opinions.

These tools were developed from the results of the social study of barriers and benefits of practice change. The first is addressing the question from cane farmers 'whats happening in the urban areas about water quality?' The second is a collection of good news stories from all over the Great Barrier Reef to show participants that they are part of the 'bigger picture' and part of a large community working together to improve the quality of water flowing from the land to the sea.

As always, your input, comments and questions are greatly appreciated. Please provide them by Friday next week 3 November if possible.

Thank you.

Response email (example 2)

From: Hay, Rachel
Sent: Sunday, 29 October 2017 9:19 PM
To: CONTACTS REMOVED FOR PRIVACY (18 Recipients)
Subject: RE: XXXX - draft communication tools for input

Hi XXXX,

Well done! The information contained on both is clear.

The readability of the XXXX is at an acceptable level of 10.5. While year 7-9 is preferable, this target is hard to reach using three syllable words like partnership, environments, improvement and management, which are hard to avoid. One area that seems to get stuck when I read it is in the sugarcane runoff paragraph “About 80 per cent of the total regional load, sugarcane is the highest contributor of DIN” it just doesn’t run off the tongue for some reason. The other is the image with the litter – can the river be named??

The second factsheet, XXXX, has scored slightly lower at 9.8 (so still around grade 10 reading level). It suffers the same effects from the three syllable words that are unavoidable, but it is quite readable. On page 2nd paragraph, you could use the word ‘changed’ rather than ‘tightened’. The figures under positive results – are they how much the loads have reduced or how much is still flowing, if they represent the reduction, this needs to be made clearer for example pesticides – 28% less... in the 2nd para in ‘XXXX’ maybe try ‘The’ Lower Burdekin Landcare ‘group’ (LBLCA) is ~~in the Lower Burdekin area~~, undertaking on ground projects including water and soil testing, weed control and native tree propagation and planting (Lower Burdekin Landcare 2017). It operates a local nursery, and hold’s’ regular workshops and education sessions.

In both documents the language is mostly positive and rational using descriptive norms (examples of what people have done). There is a mix of dictatorial, collaborative and patronising language used appropriately. The imagery used are appropriate and enhance the message.

Overall both are informative and interesting...

I hope that this is the type of feedback that you were requesting – again well done!

Rachel

The recommendations were adopted and the updated version is available on the stakeholder website.

