

Strengthening Practice Change, Education & Extension in Reef Catchments

EXTENSION APPROACHES AND METHODS

Background Paper 1

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Focus

This paper outlines the range of extension methods and approaches that have relevance in the reef regions. The aim is to provide a background paper for the Review of Extension and Education as part of addressing " Recommendation 3: Extension and Education of the Great Barrier Reef Water Science Taskforce".

[<http://www.gbr.qld.gov.au/documents/gbrwst-finalreport-2016.pdf>]

Extension Definition

For the purpose of this issues paper, extension is defined as 'the process of encouraging and supporting voluntary change on farm to improve production, profitability, environmental and/or social outcomes'. This includes increasing awareness, understanding, skills, motivation and pathways to change.

In the context of this review, the focus is on encouraging and supporting practice change that directly or indirectly leads to improved water quality outcomes to benefit the Great Barrier Reef.

Extension is part of a suite of approaches to encourage and support change. Other approaches include: grants/incentive funding (partial payment of equipment or on-ground works); legislation and regulation; price incentives (in terms of sales of equipment and other inputs); and industry policies and guidelines. It is rarely the case that only one approach is sufficient – e.g. understanding and skills are often required to most effectively use incentives, new equipment/inputs or to respond to regulations or follow guidelines. It has also been noted that on some occasions, policy can be 'perverse' – working against rather than promoting positive change on farm.

Extension then encompasses a wide range of agencies and individuals who work with producers including those in such roles as: government extension staff; NRM body staff; local government; mill productivity services staff; Sugar Research Australia regional staff; Horticultural Industry Development Officers; company staff supporting input suppliers (equipment, fertilizer, seed, chemicals, etc.); private consultants and NGOs (Non-Government Organisations). Other organisations, including Research and Development Corporations (including Meat and Livestock

Australia and Dairy Australia), fund development and extension projects and programs in the reef regions.

Extension Approaches

Extension can be viewed on a continuum from "Top Down" (or *persuasive*) extension where the underlying approach is to gain adoption of a predetermined innovation/farm practice across a farming population to "Bottom-up" (or *facilitative*) extension where the underlying approach is to assist members of the farming community in determining what they need to better fulfil their farm and personal goals. Each of these extremes may be suited for different contexts (e.g. a new improved crop variety developed by researchers may just require good communication and promotion), however, in many cases extension works where the extremes meet – bringing together different parties who can contribute and support the most effective change.

In reviewing extension approaches to determine "What Works and Why?" as part of a suite of projects funded by the Cooperative Venture in Human Capacity Building, five 'models' (or approaches) were identified – each with their own underlying rationale and mostly complementing rather than replacing other approaches. These are discussed briefly below as well as some extra approaches that have been identified. Note the names of the approaches have been modified to better reflect the intent of the model.

Facilitated groups

Facilitated groups is a long-term strategy based on developing relationships, trust and respect for the skills and experience each person brings to the group. The extension person is usually the facilitator and it is helpful if they have some technical understanding of the farming context of the producers involved. Participation in individual groups is by invitation or application rather than open access. Although most groups meet face-to-face because of the local links, it may be that phone or web links might be used when distance is an issue. The aim of the group is to share information, raise issues being faced and opportunities that are presented and together decide how best to address these. These could be addressed by inviting in 'experts', undertaking on-farm trials, holding training workshops, accessing information or available tools and/or going on farm walks or tours. A key element is to be able to share some of the outcomes from these groups to inform/encourage other producers (not in groups) with the successes. In the cane industry, there are groups/shed meetings that work in this fashion - others tend to be more open forums with technical updates/questions and answers. Each have their place, but it is important to make the distinction.

Technology Development

Technology development is mainly about testing/adapting research and practices that are used elsewhere into a local context or developing new technological solutions in a local, on-farm context that is visible and easily accessed. It generally involves on-farm trials or demonstrations and may link to one or more of the facilitated groups. Involvement of producers, advisers with some research input increases the value of the process so that there is both ownership and rigour involved. Holding field days or farm walks on the sites allows interest and understanding to develop and confidence in the demonstrated results and their implications. This approach has been used extensively across agriculture and would be an important part in developing confidence in reduced nitrogen rates in the sugar industry and appropriate changes in other industries. Once again, the on-ground relevance of the outputs from this approach can improve the quality of messages delivered through other extension approaches.

Training and group presentations

Training events, workshops or courses are based on deliverers having confidence in a set of knowledge and skills which are applicable to the producer/consultant group that is either being targeted or who have requested the training. This includes one-off group meetings to provide information about new technologies, approaches or products which are open to whoever wishes to attend. Training can be part of a formal or informal program but in either case will be most effective if: the participants have seen the need for the training; their own related experience and knowledge is shared during the process; adult and experiential learning is used; local examples that participants can relate to are included; they have the opportunity to directly relate it to their own situation; different learning styles are catered for; there are agreed actions; and there is planned follow-up post the training. The planned follow-up will often involve one-one-on visits by farm advisers to adapt, reinforce and support the behaviour change for a farmer's context.

Information provision and access

Having ready access to practical and relevant information is often critical to the change process. Information being proactively sent out through (e-)newsletters, social media, mass media helps to maintain an awareness of issues, opportunities and solutions in a general sense. Being able to easily access more specific technical information, manuals, tools and remote expertise at the time when the producer is ready for it in their decision-making process is essential. Opportunities to allow testing ideas with the information or tools available helps with the decision-making process. Linking technologies/approaches to risk and economics adds to the value of the information. Producers engaged in other processes are often provided with or alerted to such information and tools – or they seek it through their contacts or internet searches. Case studies/videos of other producers making changes have been shown to be very useful and influential in giving producers confidence and 'tips' in adoption. Model outputs, videos and other information material have also been shown to be useful in generating discussion in producer events or groups. This works best if the information has been developed through Technology Development and/Facilitated Group processes.

One-on-one individual farm advisory

A major factor in supporting on-farm change is having a trusted adviser who can help work through the relevance, implications and practical implementation of new technologies or approaches on an individual farm. Often individuals can be quite convinced of the value of adopting a new technology or practice, however the translation to their own situation is often not clear. Such individual support is best done by someone with the necessary technical expertise and an intimate knowledge of the specific farming system – and also experience on other farms using that particular technology or approach. A coach or mentor approach has been shown to be more effective than the 'expert' making the decision for the producer. Producers need to prepare as best as they can for such discussions and spend time working through the implications with their adviser.

It has been suggested that a specific extension approach that has developed in this category is that of encouraging or assisting producers to put in a proposal for a grant and/or to assist producers in completing requirements/desirable actions such as 'completing Nutrient Management Plans' or similar tasks. A key issue is the need for the relevant extension and technical knowledge and skills to provide the most effective support here.

Best Management Practice Frameworks

Best Management Practice frameworks and alternatives (for example, Water Quality Risk Framework) provide a mechanism for a producer to consider the range of different management practices undertaken on the farm and where they are placed in terms of recognised 'best industry practice'. This can be undertaken individually or as part of a group and administered online or with assistance. This then provides the basis for seeking assistance or training to enable improvements to be made where they are most needed – and a benchmark to show progress over time. A separate paper in this series describes more about this approach in the reef regions.

E-extension

E-extension refers to 'electronic' extension – the use of technology to provide information and extension support from a distance. This could be through avenues such as: websites; online tools; wikis; Facebook; Twitter; e-newsletters; web surveys; webinars; or other forms of distance communication and sharing. In terms of 'extension' (rather than one-way information provision), the emphasis should be on enabling interaction and information sharing between those involved. Depending on how these technologies are used, they can provide a distance application of other approaches: *Information Provision and Access* – if the focus is on information supply side; *Facilitated Groups* – if the focus is on engaging people in peer interaction and discussion; *Training* – if the focus is on distance education or webinar presentations; and even *One-on-one* if the focus is on mentoring from a distance.

Co-innovation

There is a lot of interest in the co-innovation approach in the extension context. Co-innovation is about effective engagement of stakeholders to equally share their understanding of issues or opportunities, gain ownership and to jointly seek solutions using their expertise and resources to best aid the process. It is most relevant when the situation is complex, science findings are contested and there is no clear/easy way forward. Relevant stakeholders can include producers, extension/advisory staff, researchers, input providers, marketers, sellers etc. Extension's main role is in using its expertise and networks to link people and facilitate the process and ensure everyone has a voice – and to enable on-going planning and reflection as the process unfolds. Co-innovation helps to consider what mix of extension approaches might best be used together with other initiatives to address the situation – and also inform what further research may be needed. It can provide a strategic umbrella to better inform, guide and make adjustments over time.

Social Marketing

Like Co-innovation, 'Social marketing' is about better understanding and engaging people to be able to work with them towards specific behaviour changes. It is based on marketing principles around a framework of actions to most effectively use the best marketing strategies for the target group and practices. A literature review by Lester Pahl (DAF, 2016) identified a framework of 11 actions with the following benchmarking criteria:

1. Challenge statement
2. Customer orientation

3. Clear focus on behaviour
4. Informed by behavioural theory
5. Audience insight
6. Exchange
7. Competition
8. Segmentation
9. Mix of methods
10. Piloting
11. Broad-scale implementation and evaluation

There are variations on these steps and also different approaches to applying these to a particular context.