User-friendly tool for saltland scoring, and solutions

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Introduction

Amongst other outcomes, agricultural research and development funding organisations often require outputs such as extension tools and products at project completion. The challenge for proponents is producing materials in a strategic manner, that they do not 'sit on a shelf to collect dust,' but can be attributed, when used as planned, to have brought about an increased level of awareness or skills and knowledge that has led to, or is leading towards a change in management practice.

Across the Western Australian (WA) agricultural region, the early 1990s saw a decade where there was widespread uncertainty amongst first time growers about appropriate productive revegetation treatments for their saltland (Land Water Wool Final Report, 2007). The high variability of saltland in this region is well documented (Rogers et al, 2005) which was a key contributing factor to this perceived risk and resulting impediment to adoption of saltland pastures in the state (Jones, 2006).

In 2002 a significant national initiative called Sustainable Grazing on Saline Lands (SGSL) (Lennard, 2005) was launched over a five year period with a major investment towards assisting growers themselves carry out on-farm demonstrations. In WA 69 geographically spread on-farm trials were supported using a participatory research and development approach (Hardy et al, 2005) which was overseen by an independently chaired coordinating group dominated by farmer representatives – and supported by government research and extension specialists. This group set out a number of objectives including the need *to nurture the sharing of knowledge and experience across the network* of sites and all groups associated with them. The group designed a targeted communication strategy in keeping with the logic of the Bennett's Hierarchy framework (Bennett, 1976) to ensure maximum impact from the results of the on-farm trials and the investment by the funding bodies.

This paper illustrates an approach used by the WA SGSL group to the design and application of an extension tool for the classification of saltland to assist first time growers of saltland pastures and thereby ensuring a greater and longer term impact from the funding bodies' investment.

Materials and methods

The WA SGSL coordinating group used the logical framework of the Bennett's hierarchy to guide the planning and orchestrating of their communication plan. This involved a workshop process early on to ensure a shared vision and understanding for the project. Also to design targeted action learning activities aimed at knowledge and experience sharing from the trials to influence changes in attitude and management practice.

One key activity that the coordinating group invested in was 'grower and researcher' forums held each year either centrally (Perth) or regionally. These events brought together all the trial host farmers and associated group members and group support staff as well as other farmers with saline land.

These forums raised issues requiring further research work which often centered on the issue of the variability of saltland reflected by the wide range of successes and failures being experienced by the participating growers. This highlighted the need by growers for the better packaging and extension of proven knowledge to minimize continued failures in particular on plant establishment. This feedback shaped the tools required for future extension and a particular issue unanimously demanded by growers was an easy to use guide for classifying saltland so that the most appropriate pasture and fodder plants could be established using the most effective techniques (Hardy, 2005).

As a result, the concept of the Saltland Scoring and Solutions booklet was initiated. The main

purpose being a guide to assist landholders and extension officers to quickly identify with a saline site and, based on recommendations make considered decisions. The idea was conceived by the growers themselves based on their experiences using the long accepted WA crop and pasture variety guides. In a similar manner to these they sought recommendations on plants for saltland to be initially defined according to rainfall. This was felt a practical step as rainfall has been long recognized as a key defining factor for saltland in the WA agricultural area. As a result the information eventually compiled has been divided into three rainfall zones with a separate pocket sized booklet for each, (less than 400mm; 400 – 600mm; and greater than 600mm).

The booklets are designed to be used as an accurate, concise easy to use, vehicle glove-box and chartstyle paddock reference. As a guide they make use of a simple technique for 'scoring' saltland and then matching the best bet treatments and preferred species. To enable this scoring the guides recommend using indicator species. An excellent complimentary product, also produced through the SGSL initiative, is SaltDeck which is also a glove-box designed product comprised of a set of photographic cards along with key information on 50 of the most common plants growing on salt affected land.

The treatments in the scoring guide booklets also have an indication of costs and real life local case studies with the contact details of the growers involved and where to go for further information. All the information in the guides is derived from the SGSL trials conducted in the WA agricultural region.

This and other tools were produced for specific target groups of growers, for instance *Have A Yarn* case studies were produced to inspire and interest new people (raise awareness) to think about the potential uses for their saltland; the saltland calculator was produced to assist people assess the return on an investment on their sites; and the saltland classification guide (Saltland Scoring and Solutions) was produced to better assist people wanting to get started on their first site. All these products made full use of the information drawn from the SGSL participating growers and their own trials sites. During their preparation, drafts of the three booklets were reviewed by the growers which ensured further improvements, relevance of the information and grower ownership.

These products (and several others in the series) have also been web-optimised so that they can be quickly sourced via the internet into the future.

Results and discussion

The three Saltland Scoring and Solutions booklets were initially distributed following publication 6 months ago to over four hundred growers throughout the WA SGSL grower network as well as to other interested farmers including members of the WA Saltland Pastures Association Inc. In addition copies were distributed to research and extension people that have been involved in the SGSL project as well as used as handout material at several key agricultural events. As yet there has been no formal evaluation of them via the existing grower network however it is assumed that this group of growers will be satisfied as its design evolved through their direct involvement and feedback. Also many of these growers are already 'off the mark' having experienced a saltland paddock trial of their own (Heath et al, 2006).

However to date extension staff have directly provided positive feedback on the Saltland Scoring and Solutions booklets and they have used them in two key ways:

- In learning about saltland for their own use through training courses and discussions with more experienced extension staff
- In providing direct 1:1 advice to growers firstly over the phone and then in the paddock in their local area
- Included in a specific information package given to all growers in the northern agricultural region that are involved in the regional saltland advice service and incentive program (part of a major NRM investment). The extension staff in this region find the EM data for classifying saltland particularly useful as it reinforces their work on aiming for successful plant selection and establishment

It was felt that the best way to 'launch' the booklets was to provide a 'hands-on' experience to regionally based field staff such as Natural Resource Management Officers (NRMOs). Following a pilot course it is clear that these booklets provide a simple and practical framework for support agencies to develop hands-on training courses for new or inexperienced extension people interested in improving their knowledge about saltland. When used in a well planned manner they provide invaluable foundational material for a day's 'in-service' training and with appropriate speakers and other materials as well as field visits become the basis of an excellent training package.

NRMOs that participated in this induction process report that they are finding the booklets an excellent planning tool in the field (at times initially over the phone) providing a focus for discussion with the farmer during a visit and also with other experienced farmers (including those listed in the booklets) and other extension people as well when working with contractors and consultants.

The summer and autumn months are generally when much of the demand for saltland site preplanning takes place as a result it is expected that the booklets will gain popularity and use during this forthcoming period and a more formal evaluation is then envisaged.

Conclusions

Participatory research and development projects involved in natural resource management that also adopt a logical framework such as used by the Bennett's Hierarchy provide a proven model for a positive impact on attitudinal and practice change. The recipe of growers (end-users) and researchers and extension specialists sharing knowledge and experiences as well as developing a targeted approach to communication have a good chance of creating long term practice change. This is especially effective when working with on-farm natural resource management issues such as saltland.

Several formal evaluations as part of the WA SGSL project, offer evidence that these documented products have had a positive impact on the trial host farmers themselves (Heath et al, 2006), as well as other farmers and group members (Hardy, 2006). It is clear that farmers value information that is under-pinned by farmer experience and supported by scientific research.

Key messages from this activity include:

- Participatory Research and Development and the use of program logic make an ideal recipe for designing relevant client driven extension products;
- The SGSL example presented in this paper illustrates how extension products that are conceived with adequate client input and ownership will be used as designed and not remain on the 'shelf', and will have a far greater potential for continued use into the future;
- Tools that contain local case studies that are backed up by science have greater acceptance and credibility amongst growers;
- In addition, this participatory process has enhanced this part of the culture of extension in the Department of Agriculture and Food Western Australia and partners.

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