



Goal Attainment Scaling:

an evaluation tool to assess changes in farmers' decision making

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Presentation Outline

Use of Goal Attainment Scale in the Farm Irrigation Assessment project

- Goal Attainment scale
- Farm Irrigation Assessment project
- GAS used to assess changes in decision making

Measuring the impact using the tool

- Impact of the project
- Reliability of the technique

Learnings

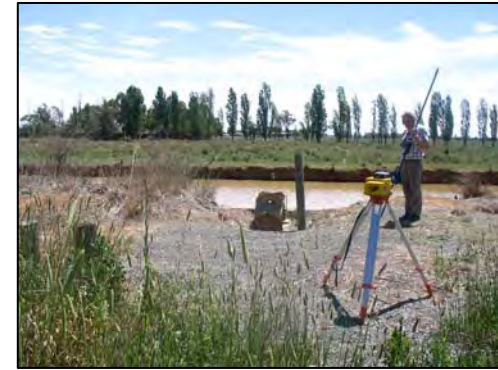
Conclusion

What is involved in a Farm Irrigation Assessment?

1. **Communication** of modernisation principles and link these to the landowners' goals and inspirations



2. **Assessment** of the farm irrigation infrastructure so that landowners can make sound decisions



3. **Provide recommendations** on meter selection and possible rationalisation opportunities and ensure that changes to the delivery system, leads to increased water use efficiency on farm



Our Involvement in the Farm Irrigation Assessment

- Farm Irrigation Assessment in *Central Goulburn channel 4 and East Goulburn Main channel 7 & 8*
- Commenced in October 2008 and completed in September 2009
- Reported on 486 outlets on 284 properties



What are we trying to do in a Farm Irrigation Assessment?

Five steps of logical decision making:

- 1: Landowners recognising irrigation modernisation **issues** and understanding what they want to achieve through irrigation modernisation.
- 2: Landowners **exploring facts** relevant to their own business context
- 3: Landowners **considering options** available to them, given the context
- 4: Landowners being able to **evaluate** the design, management and costs for making change.
- 5: Landowners **making decisions** on overall farm development.

Goal Attainment Scale

Goal Attainment Scales are generally developed to focus on the goals that are targeted for change by a specific program.

It involves;

- setting a broad goal,
- implementing a program,
- determining how well each nominated sub-goal area has been achieved at various times during the life of the program and finally,
- using this information to determine any changes that are required in future activities

Goal Attainment Scale Guide

	Goal 1	Goal 2	Goal 2
Most			
More than			
Expected Level of Outcomes			
Less than			
Least			

Original level – X

Follow up level - √

Goal Attainment Scale Guide

	Consultation	Goal 2	Goal 3
Most	People involved from across the region and committed to the process, acting on the recommendations and lobby gov. dept.		
More than	People involved in consultation on a regional basis identify issues and make recommendations √		
Expected Level of Outcomes	Consult with whole region to identify issues X		
Less than	Only some people are involved in process		
Least	People refuse to be in consultation		

Original level – X

Follow up level - √

Goal Attainment Scale Guide

	Self-concept	Goal 2	Goal 3
Most	List 9 or more good accomplishment when asked		
More than			
Expected Level of Outcomes	Can list 4-6 good accomplishment when asked		
Less than			
Least	Can list only 1 good accomplishment when asked		

Goal Attainment Scale Guide preparation

- Vagueness – scale should be specific enough so that two independent follow up scores can agree which level best describes the program
- Multiple dimensions in one scale – scales should contain only on criterion variables
- Share understanding while preparing the scales
- Time allocation of preparing the scales

Goal Attainment Scale Guide

	1. Understand and define issues <i>Aim: Landowner understand the principles of modernisation and how it fits with their farm context</i>		2. Gather facts <i>Aim: Landowner understands the farm context both externally and internally</i>	3. Consider Options <i>Aim: Landowner has considered options available given the individual farm context</i>	4. Rate Options <i>Aim: Landowner evaluates the design, management and costs of options</i>	5. Make decision <i>Aim: Landowner makes decisions on farm development</i>
	Understanding NVIRP principles <i>Aim: Landowner understands NVIRP principles</i>	Understanding goals and aspirations <i>Aim: Landowners have a vision of what they want to achieve</i>				
Most						
More than						
Expected level of outcomes	Landowner is aware of modernisation principles of water savings and new meters. <input type="checkbox"/>	Landowner is able to understand the potential benefits and risks from modernisation to fit into their farm enterprise. <input type="checkbox"/>	Landowner uses a farm planning tool to understand their current and future farm development <input type="checkbox"/>	Landowner has some understanding of option(s) but requires third party inputs for their farm context. <input type="checkbox"/>	Landowner has some understanding of risks, benefits and costs of options but requires third party inputs. <input type="checkbox"/>	Landowner has not enough information to make a decision. <input type="checkbox"/>
Less than						
Least						

Use of Goal Attainment Scale

Sample

From among 284 properties,

- 20 from Central Goulburn and
- 20 from East Goulburn Main were randomly selected



Two visits

- *Initial visit* – where in the 5 steps decision making process
- *Follow up visit* – where in the 5 steps decision making process



Recording

Staff's perception of where landowners are in 5 steps decision making process



Findings

A. Impact of the Farm Irrigation Assessment Program

- A positive shift in landowners' level of expectations during the follow-up visits for 4 out of 5 goals of the decision making process
- t-test demonstrated that the mean scores 'during' and 'after' the Farm Irrigation Assessments
- Positive impact of the extension program on the decision making process of landowners

Findings

cont...

B. Reliability of the Goal Attainment Scale Technique

- In each case, 2 staff members independently scored where they thought the landowner was in the decision making process
- The scores calculated from 2 assessors were found to be similar with the correlation coefficient ranging from 0.87 to 0.89
- Strong positive relationship between scores generated by 2 assessors

Learnings

Share understanding

- Development of the scale – critical to measurement
- Communication within a team

Rigour in the process

Better communication with landowners

GAS ratings are time-efficient and user friendly

Conclusion

- The Farm Irrigation Assessment program has been an important area of work to help landowners make informed decisions on irrigation modernisation.
- The use of the Goal Attainment Scale technique has provided a process to monitor the progress of landowners' decision making.
- The initial stage of analysis enabled identification of the stage landowners were at in terms of the 'expected' level of outcomes in the 5-step decision making process.
- The follow-up visits of these landowners provided evidence of the extension program impact on the *decision making process* of landowners.
- We have demonstrated a positive shift in the level of expectations during the follow up visits for four out of five goals of the decision making process.
- Goal Attainment scores indicated a positive shift in the overall scores in both Central Goulburn and Shepparton Irrigation Areas when compared between 'pre' and 'post' Farm Irrigation Assessments.

Conclusion

- These Goal Attainment scores between the two periods were statistically significant indicating Farm Irrigation Assessments helped landowners to make informed decisions on meter selection and rationalisation of irrigation infrastructure.
- The reliability of the Goal Attainment Scale tool itself was examined and found to be robust which provided confidence in this technique given that it was developed in a rigorous manner.
- The successful use of the Goal Attainment Scale in this study should not be used as a panacea for other projects or programs.
- The preparation of the Goal Attainment Scale Guide is time consuming and any compromise in the guide construction and unreliability in follow-up interviewer scoring can limit the reliability of this technique.
- Even though this technique is reliably robust, it is recommended that other techniques be used in conjunction to ensure reliable results.