

Finding Meaningful Measures for a Hard-to-Measure Research Team

This case study is for educational purposes only and shouldn't be adopted as an off-the-shelf performance measurement solution. Each team's performance results and measures are unique to their own purpose and priorities. All details have been changed to preserve anonymity.

About the team

This research team works in a large, federally funded scientific research organisation. The focus of the team's research is making agriculture more environmentally sustainable, specifically in the area of greenhouse gas emissions.

This team struggled to find meaningful measures of their performance, given the lack of control they have over actual greenhouse gas emissions.



STEP 1: Get your team customer-focused

Step 1.1: What are the team's outputs?

The primary outputs of the research team include:

- Measures of the amount of greenhouse gas emissions of agriculture practices
- Recommendations for greenhouse gas emission reduction practices
- New technologies and practices for emissions reduction
- Recommendations to support adoption of emissions reduction options



Step 1.2: Who do they give these outputs to?


The research team saw three distinct groups they provide their outputs to:

<i>Output</i>	<i>Government Departments</i>	<i>Industry Bodies</i>	<i>Agriculture Businesses</i>
Measures of the amount of greenhouse gas emissions of agriculture practices	✓		
Recommendations for greenhouse gas emission reduction practices			✓
New technologies and practices for emissions reduction		✓	✓
Recommendations to support adoption of emissions reduction options	✓	✓	

Step 1.3: Create "Customer Personas"

For each of the groups above, who the research team provide their outputs to, they created a Customer Persona to connect more directly with who their customers are and to more tangibly relate their outputs to the likely outcomes sought by these customers:

<i>Customer Persona</i>	<i>Description</i>
Helen Hardbent 	Helen is a Program Director in a State Government department of agriculture. Helen is a well-published scientist, but mostly enjoys her educational roles in helping industry and business in the rural sectors to understand current issues and to learn about new practices to address those issues.
Ray Ramona 	Ray is the R&D Director of a meat and livestock industry association. He has PhD in greenhouse gas emissions, and an extensive background working in forestry and agriculture. Ray is passionate about preserving and caring for the natural landscape and enjoys working with 'people on the land'. He wants to leave a legacy of agriculture working with the land and not against it.

<i>Customer Persona</i>	<i>Description</i>
<p>Bobbie Archer</p> 	<p>Bobbie is the General Manager of a beef cattle farm. She has been a primary producer all her adult life, and is running the farm that her grandfather started and her mother and father tripled in size. The health & wellbeing of livestock is important to Bobbie. She prides herself on the quality of meat they produce. And she strives to keep prices down without cutting profit margins.</p>

There was some debate about whether Government Departments and Industry Bodies are not actually customers but rather shareholders, since they effectively invest (by way of budgets and funding) in the research organisation and expect a return on that investment.

Customers are not the only important stakeholder that can influence what is important for a team to measure and improve. Shareholders, partners, the community and employees also are important stakeholders. Expanding the scope to be “Stakeholder Personas” rather than just “Customer Personas” is certainly something to consider.

STEP 2: Narrow down the team's most important outcomes

Step 2.1: What matters most to customers?

Through local focus groups, the research team identified 9 specific attributes about the recommendations and practices they put forward to who they saw as their primary customer, the livestock businesses (the ‘Bobbie Archers’):

1. Research has right impact
2. Ease of integrating into operations
3. Cost of implementation
4. Impact on livestock wellbeing
5. Impact on operations
6. Supports local communities
7. Relevance to the business
8. Communication from research team



9. Responsiveness of research team

Step 2.2: How well is the team doing these things?

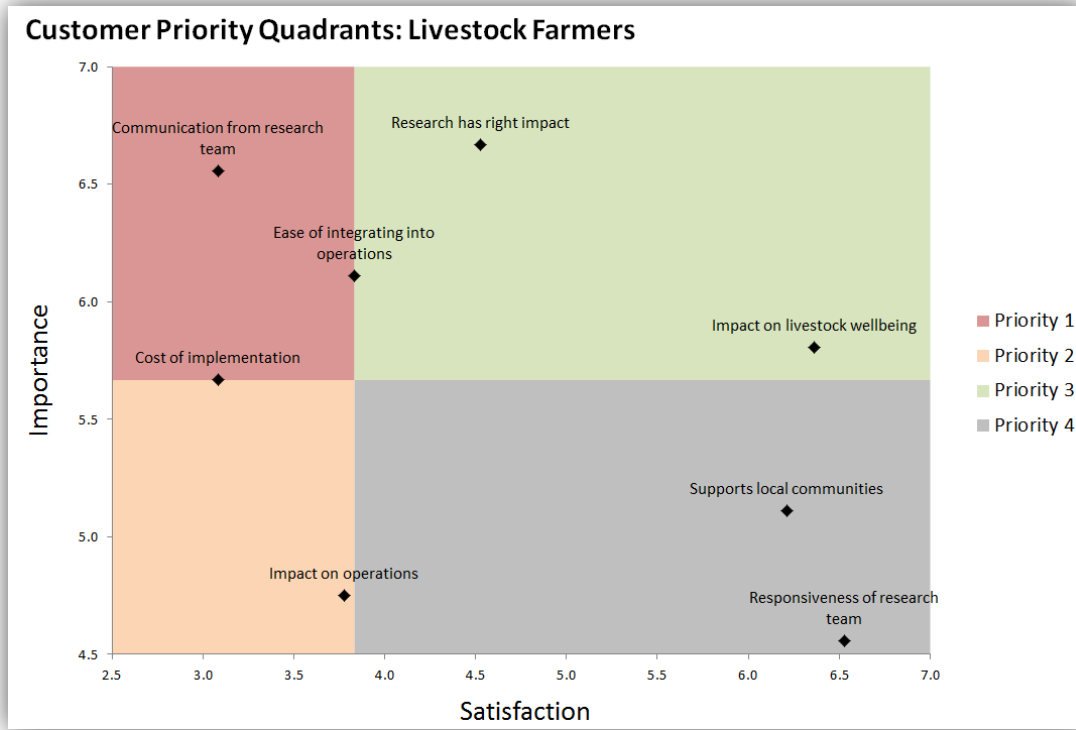
From a simple telephone survey of a random sample of General Managers of livestock farms, the research team measured the importance and satisfaction of each of the 9 attributes of service:

Key	Attribute of Service	Satisfaction	Importance
1	Research has right impact	4.53	6.67
2	Ease of integrating into operations	3.83	6.11
3	Cost of implementation	3.08	5.67
4	Impact on livestock wellbeing	6.36	5.81
5	Impact on operations	3.78	4.75
6	Supports local communities	6.21	5.11
7	Relevance to the business	2.56	4.17
8	Communication from research team	3.08	6.56
9	Responsiveness of research team	6.53	4.56

Step 2.3: What are the team's priorities?

To improve their performance in the eyes of their primary Customer Persona, Bobbie Archer the livestock farmer, the clear priorities for the research team were communication from the research team, ease of integrating into operations and cost of implementation:





STEP 3: Uncover the team's points of highest leverage

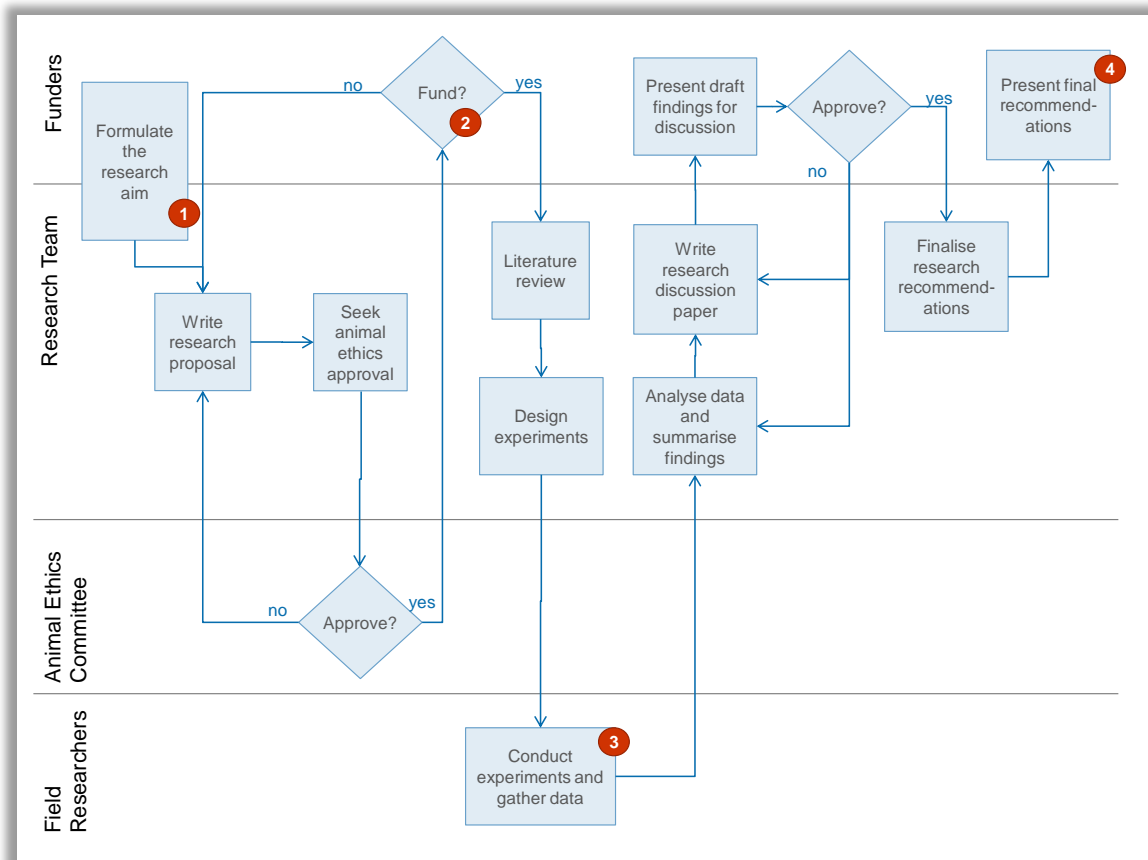
Step 3.1: Outline the team's process

The research team follows a fairly consistent process for each research assignment they undertake:

<i>Process name:</i>	Sustainable Agriculture Research
<i>Purpose:</i>	To provide credible and practical recommendations that effectively reduce greenhouse gas emissions resulting from livestock farming.
<i>Owner:</i>	Sustainable Agriculture Research Director
<i>Start point:</i>	Request from industry
<i>End point:</i>	Recommendations adopted by industry and business
<i>Macro steps:</i>	<ol style="list-style-type: none"> 1. Develop research plan 2. Source funding and approvals 3. Conduct research 4. Analyse findings and formulate recommendations 5. Present recommendations to industry and business
<i>Process outputs:</i>	<ul style="list-style-type: none"> • Measures of the amount of greenhouse gas emissions of agriculture practices • Recommendations for greenhouse gas emission reduction practices • New technologies and practices for emissions reduction • Recommendations to support adoption of emissions reduction options
<i>Stakeholders:</i>	<ul style="list-style-type: none"> • Government departments associated with agriculture • Industry bodies associated with agriculture • Livestock farmers • Research staff

Step 3.2: Draw the cross-functional process

The process flowchart in more detail:



Step 3.3: Analyse the process for disconnects

The research team identified four disconnects that could potentially limit their ability to fulfil the process purpose and meet their customer priorities:

1. Research aims are biased toward funder objectives versus social objectives
2. Funding decisions do not allow for testing practicalities and costs of end-user implementation
3. Field researchers do not engage farmers in the early stages and miss the opportunity for practical input
4. Recommendations are rejected by farmers for practicality reasons

STEP 4: Clearly map the team's most measure-worthy results

Step 4.1: Translate the process purpose into results language

The research team's process purpose is worth measuring, as an indicator of the ultimate impact of their work:

<i>Process purpose</i>	<i>Performance Results</i>
To provide credible and practical recommendations that effectively reduce greenhouse gas emissions resulting from livestock farming.	Greenhouse gas emissions resulting from livestock farming continually reduce.

Step 4.2: Translate the customer priorities into results language

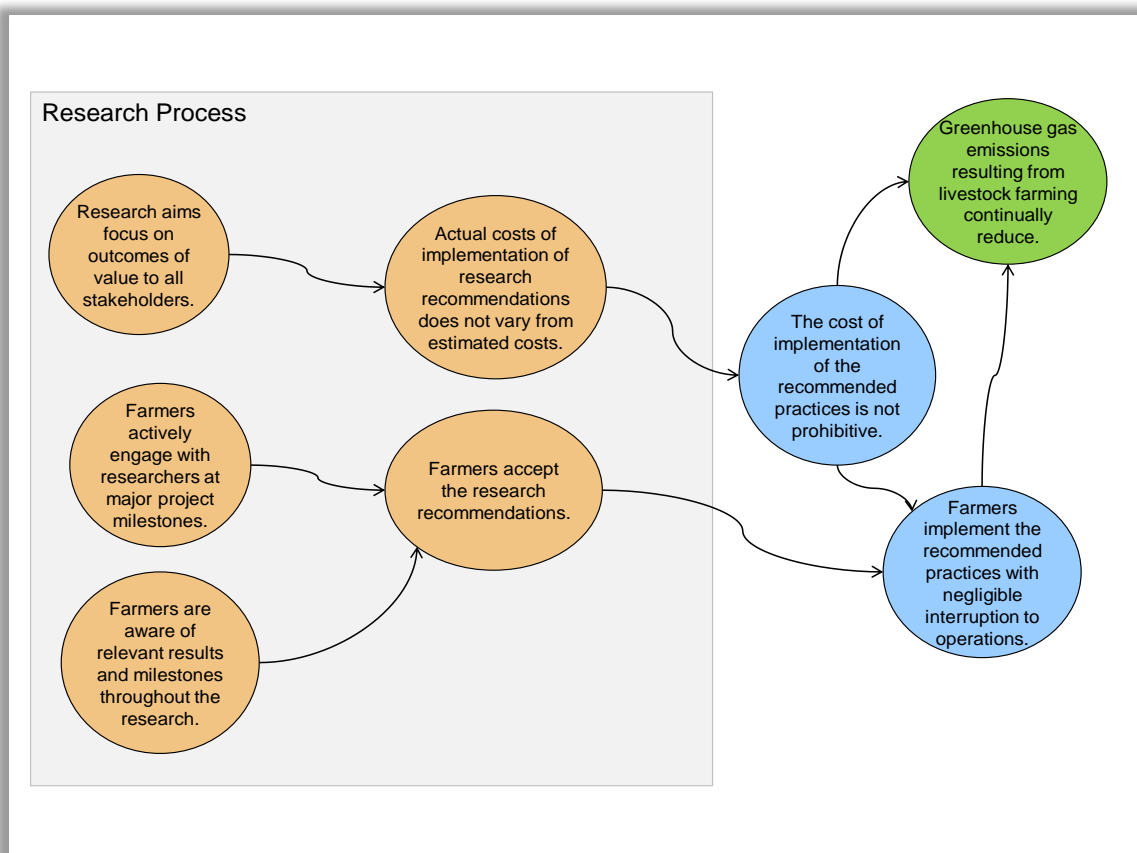
Still focusing just on the Customer Persona of Bobbie Archer (representing the livestock farmers), the customer priority attributes from the Customer Priority Quadrants translated into the following Performance Results:

<i>Customer Priority Attributes</i>	<i>Performance Results</i>
communication from the research team	Farmers are aware of relevant results and milestones throughout the research
ease of integrating into operations	Farmers implement the recommended practices with negligible interruption to operations
cost of implementation	The cost of implementation of the recommended practices is not prohibitive

Step 4.3: Translate the process disconnects into results language

<i>Process Disconnects</i>	<i>Performance Results</i>
Research aims are biased toward funder objectives versus social objectives	Research aims focus on outcomes of value to all stakeholders.
Funding decisions do not allow for testing practicalities and costs of end-user implementation	Actual costs of implementation of research recommendations does not vary from estimated costs.
Field researchers do not engage farmers in the early stages and miss the opportunity for practical input	Farmers actively engage with researchers at major project milestones.
Recommendations are rejected by farmers for practicality reasons	Farmers accept the research recommendations.

Step 4.4: Create a results map



STEP 5: Engage the team in designing their own measures

Step 5.1: Design measures for each result

The research team used the PuMP Measure Design template to find the best measures for their collection of Performance Results. PuMP is a performance measurement methodology. Read more at <http://www.staceybarr.com/pump>.

For example, the Measure Design for “Greenhouse gas emissions resulting from livestock farming continually reduce” produced 2 performance measures:

<i>begin with the end in mind</i>	Greenhouse gas emissions resulting from livestock farming continually reduce.			
<i>be sensory specific</i>	<ul style="list-style-type: none"> • The amount of methane produced from all livestock goes down overall • The amount of methane produced per animal goes down • The amount of greenhouse gases in the atmosphere goes down 			
<i>find potential measures</i>	<i>potential measures</i>	<i>strength</i>	<i>feasibility</i>	✓
	1. Tonnes of methane produced by livestock	M	M	
	2. The percentage of greenhouse gases in the atmosphere that are caused by livestock	M	M	
	3. Tonnes of methane produced by livestock	M	M	
	4. Tonnes of methane produced per animal	H	M	✓
	5. Tonnes of greenhouse gases in the atmosphere	M	H	
<i>check the bigger picture</i>	6. Tonnes of greenhouse gases avoided	H	M	✓
	<ul style="list-style-type: none"> • Methods of measuring methane produced per animal are in development. 			

<i>name the measure(s)</i>	<p>Cow Burps = Tonnes of methane produced per animal</p> <p>GHG Avoided = Tonnes of greenhouse gases that were reduced as a consequence of GHG abatement practices implemented by farmers and industry</p>
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Step 5.2: Prepare the measures for implementation

The complete set of performance measures chosen for the research team's Performance Results are:

<i>Performance Results</i>	<i>Performance Measures</i>
Greenhouse gas emissions resulting from livestock farming continually reduce.	<ul style="list-style-type: none"> • Cow Burps = Tonnes of methane produced per animal • GHG Avoided = Tonnes of greenhouse gases that were reduced as a consequence of GHG abatement practices implemented by farmers and industry
Farmers are aware of relevant results and milestones throughout the research	<ul style="list-style-type: none"> • Farmer Communication Satisfaction = Average farmer satisfaction with being kept informed by researchers.
Farmers implement the recommended practices with negligible interruption to operations	<ul style="list-style-type: none"> • Farmer Implementation Ease Satisfaction = Average farmer satisfaction with the ease of implementing research recommendations into farm operations. • Implementation Cycle Time = The average number of days from research published date to complete implementation of research recommendations on the farm.
The cost of implementation of the recommended practices is not prohibitive	<ul style="list-style-type: none"> • Farmer Cost Satisfaction = Average farmer satisfaction with the cost impact of research practices. • Cost-Prohibitive Implementation Rate = The percentage of target farms that could not meet the costs to implement research recommendations sufficiently to achieve a measurable impact.

<i>Performance Results</i>	<i>Performance Measures</i>
Research aims focus on outcomes of value to all stakeholders.	<ul style="list-style-type: none"> Stakeholder Perception of Research Value = The average value rating that research stakeholders give for their overall confidence that the research focuses on outcomes important to them.
Actual costs of implementation of research recommendations does not vary from estimated costs.	<ul style="list-style-type: none"> Accuracy of Implementation Costs = The percentage variation between implementation costs estimated during the research and implementation costs actually born by farmers.
Farmers actively engage with researchers at major project milestones.	<ul style="list-style-type: none"> Farmer Engagement = The percentage of farmers targeted by the research who actively participated in research activities. Farmer Engagement = The average number of research activities participated in, per farmer.
Farmers accept the research recommendations.	<ul style="list-style-type: none"> Farmer Recommendation Acceptance Rate = Average agreement rating of farmers that the research recommendations are appropriate.

Next steps...

The next steps for the research team were to define the data and calculation requirements for their measures, and begin reporting them and using them in regular team meetings.

About implementing performance measures...

This case study has demonstrated a process for how to identify what is worth measuring, specifically for hard-to-measure teams whose performance results or goals are not easy to define.

But **there are more steps in the performance measurement process** that follow on from selecting the performance measures, including sourcing the data, computing the measures, graphing them, reporting them and interpreting and using them to improve performance.

The PuMP Blueprint is a methodology to support this entire performance measurement process. When your team has successfully reached this point, **PuMP is a logical next step** for them. For more information:

<http://www.performancemeasureblueprint.com/>