

Bridging the Yield Gap



What's constraining Grain Yield and what can we do about it?

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Glen McDonald
and the rest of the BYG team...



Department of **Agriculture** and Food



Thorough consultation

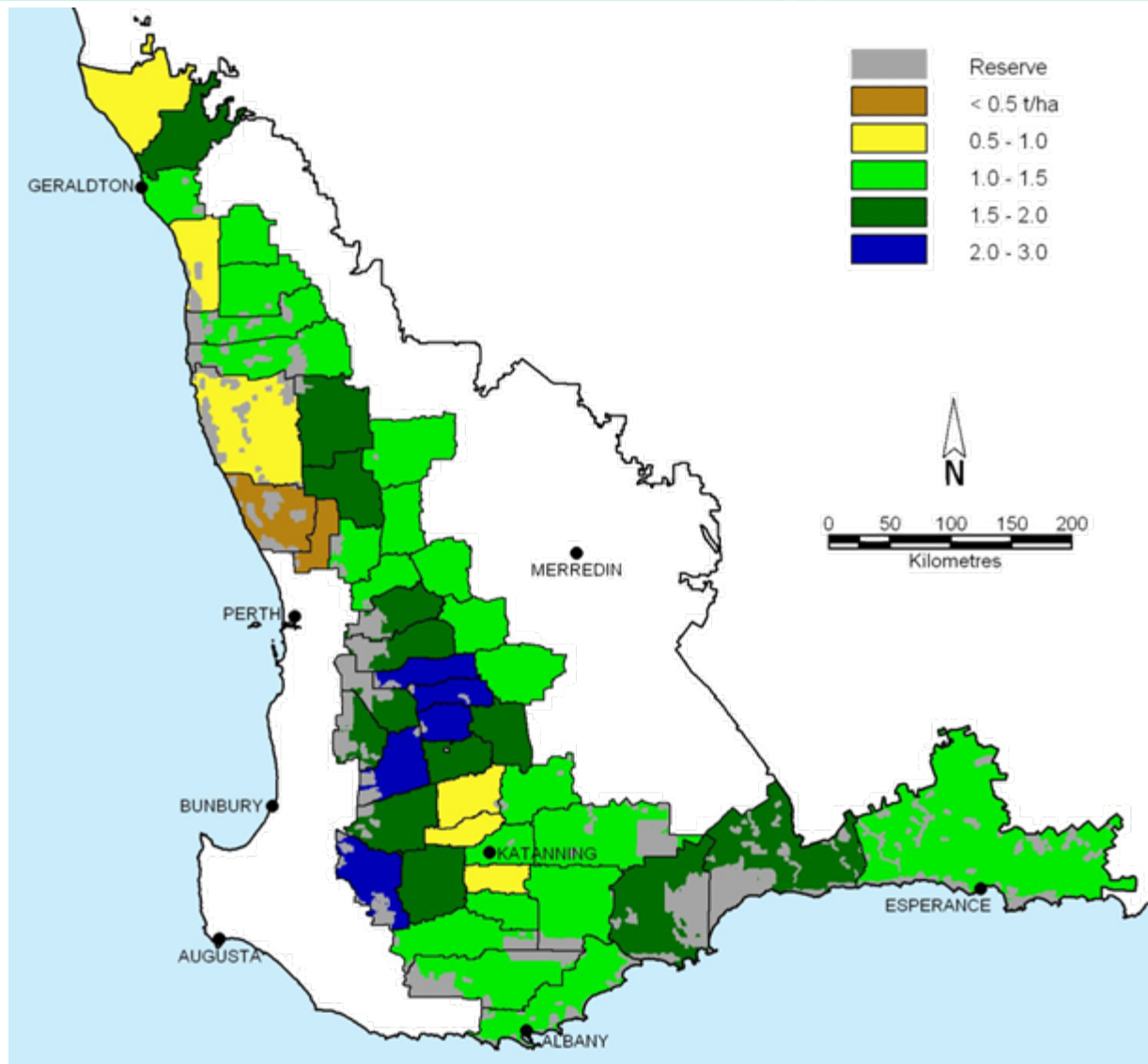


Thorough planning

- Industry Need
Build Enterprise
profitability
- DAFWA response
Driving productivity in
higher rainfall
environments

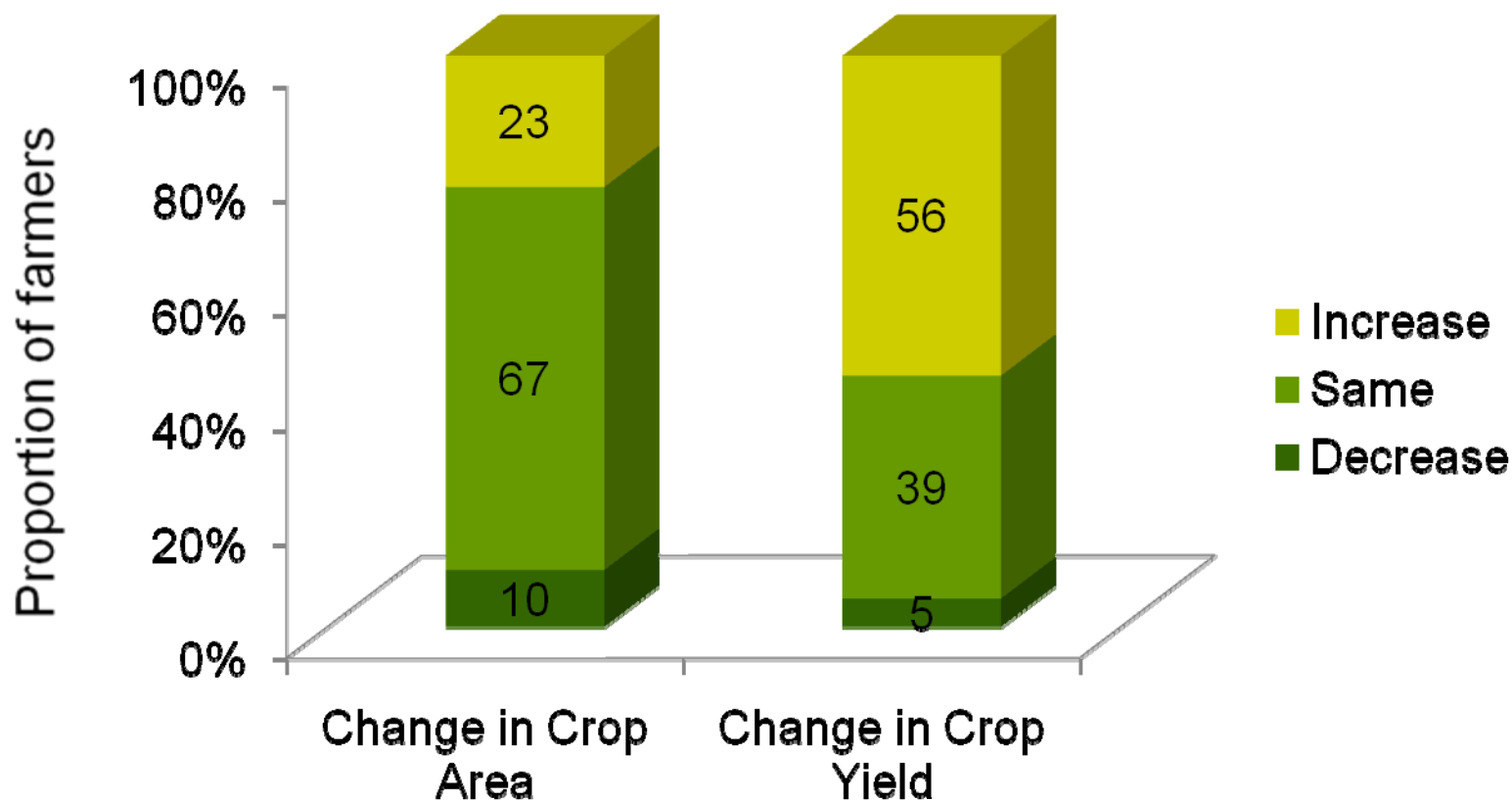


The yield gap (t/ha)



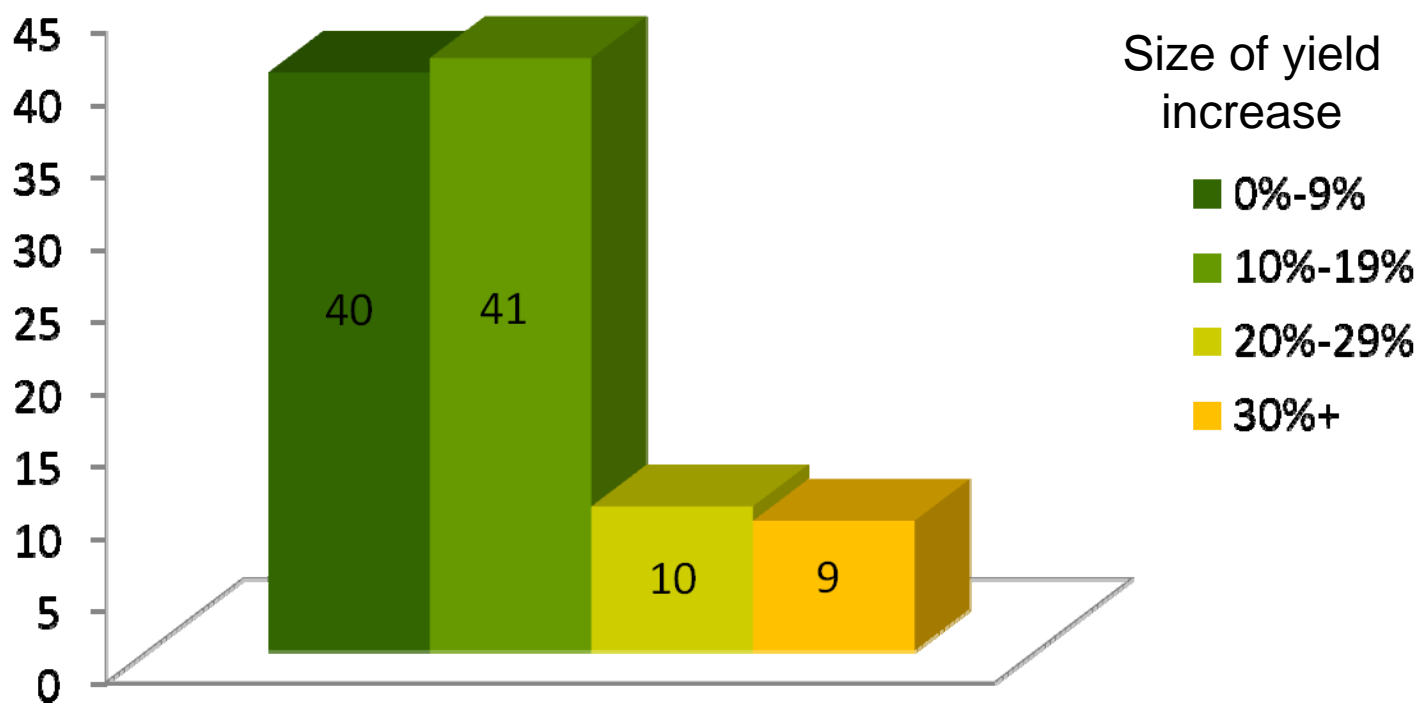
Farmer's expectations

Expected changes in cropped area and yields in the next 5 years.



Farmer's expectations

Proportion of growers expecting a yield increase per mm rainfall in the next 5 years



Soil-landscape modelling

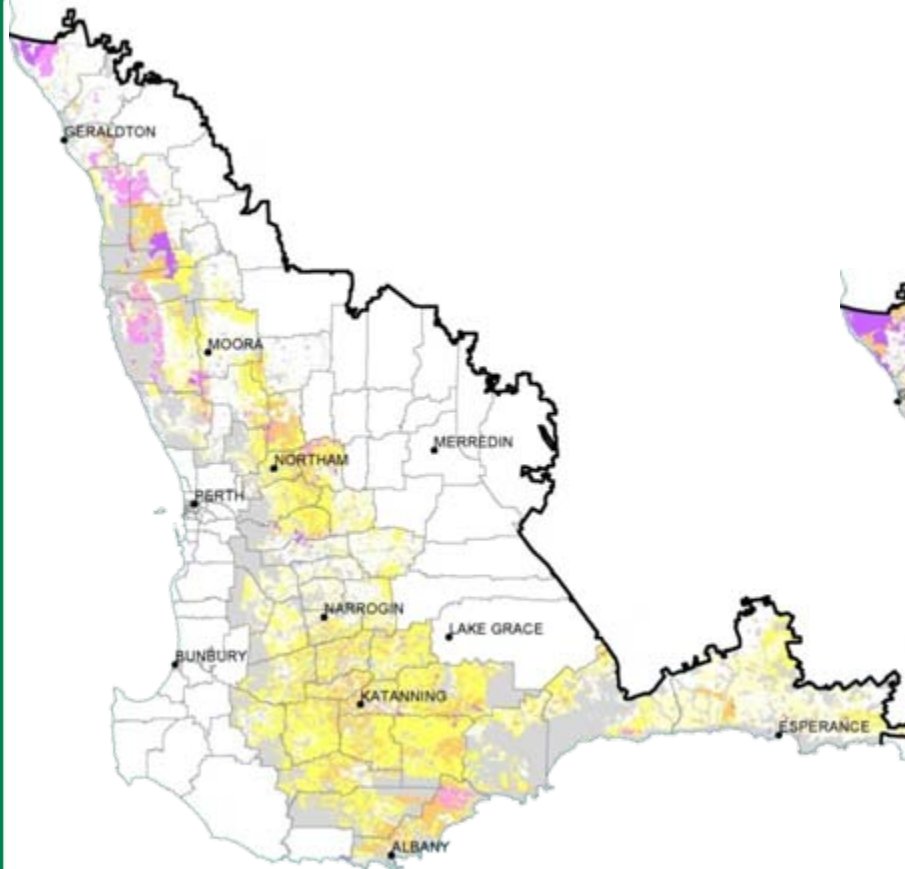
Main soil constraints in the BYG target area

Constraint	M ha
Soil acidity	3.2
Soil acidity in topsoil	2.3
Subsurface compaction	2.1
Wind erosion	1.4
pH in subsoil (high and low)	1.2
Water logging	0.8
Salinity	0.6
Water repellence	0.6
Permeability	0.5
Water erosion	0.5
Surface soil structure decline	0.4
Soil workability	0.2
Rooting depth	0.1

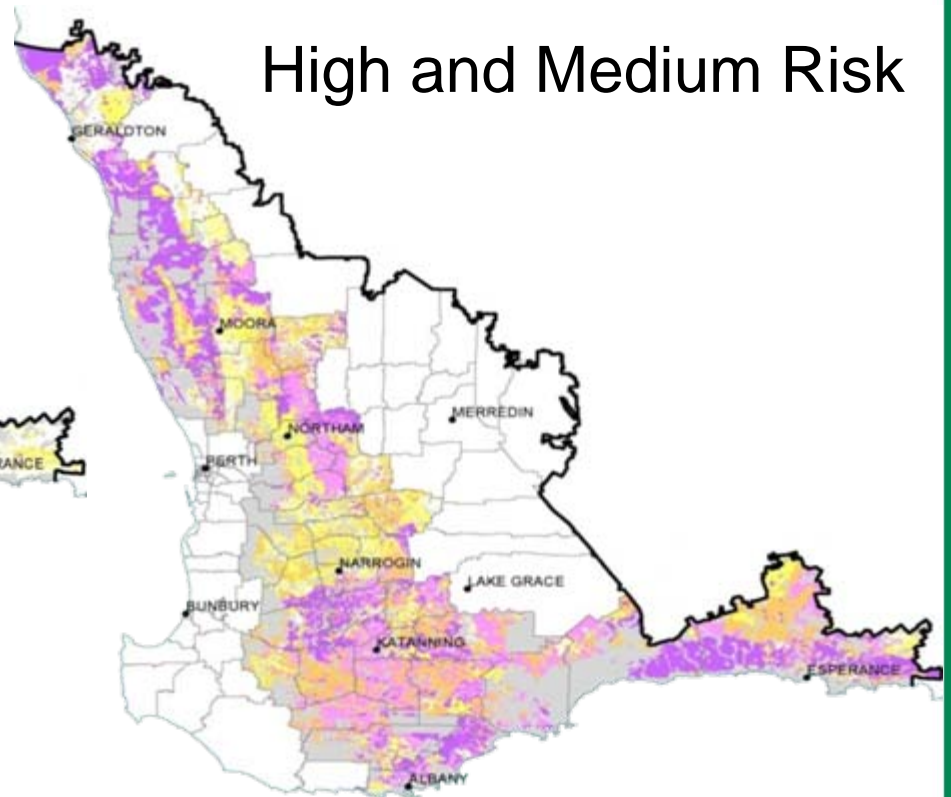
BYG consultation workshops

Category	Constraint to increased yield	No. of work-shops	Max. % in top 3
Physical	Non-wetting soils	16	27%
	Soil water holding capacity	9	17%
	Soil acidity	10	23%
Biological	Better use of inputs	12	31%
	Weed management	17	25%
	Varieties	7	29%
	Diseases	7	11%
Operational	Knowledge of soil constraints	8	22%
	Frost management	9	24%
	Weather and climate forecasts	6	28%
Economic	Integration: crops & livestock	7	22%
	Risk aversion	6	20%

Water repellency



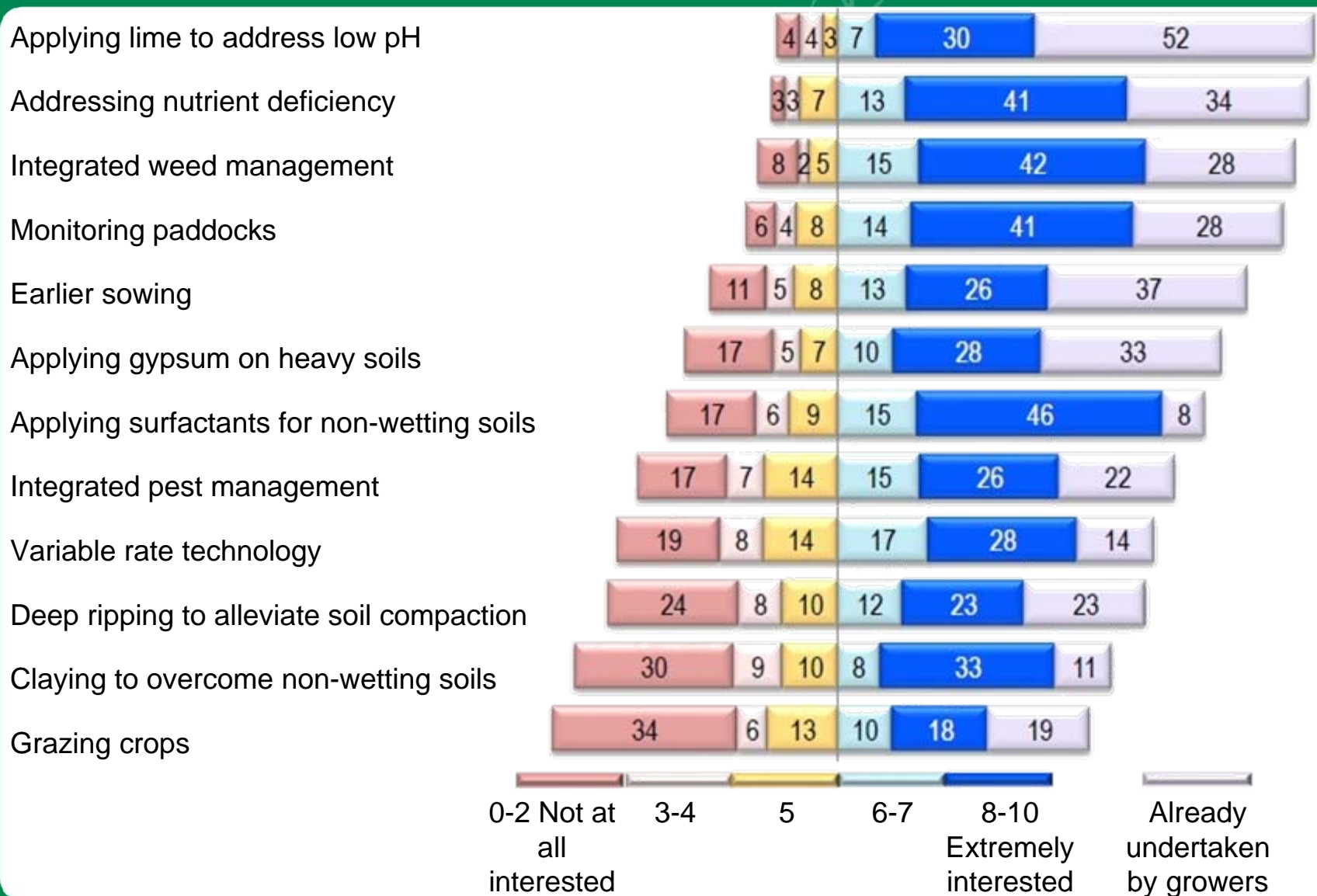
High Risk



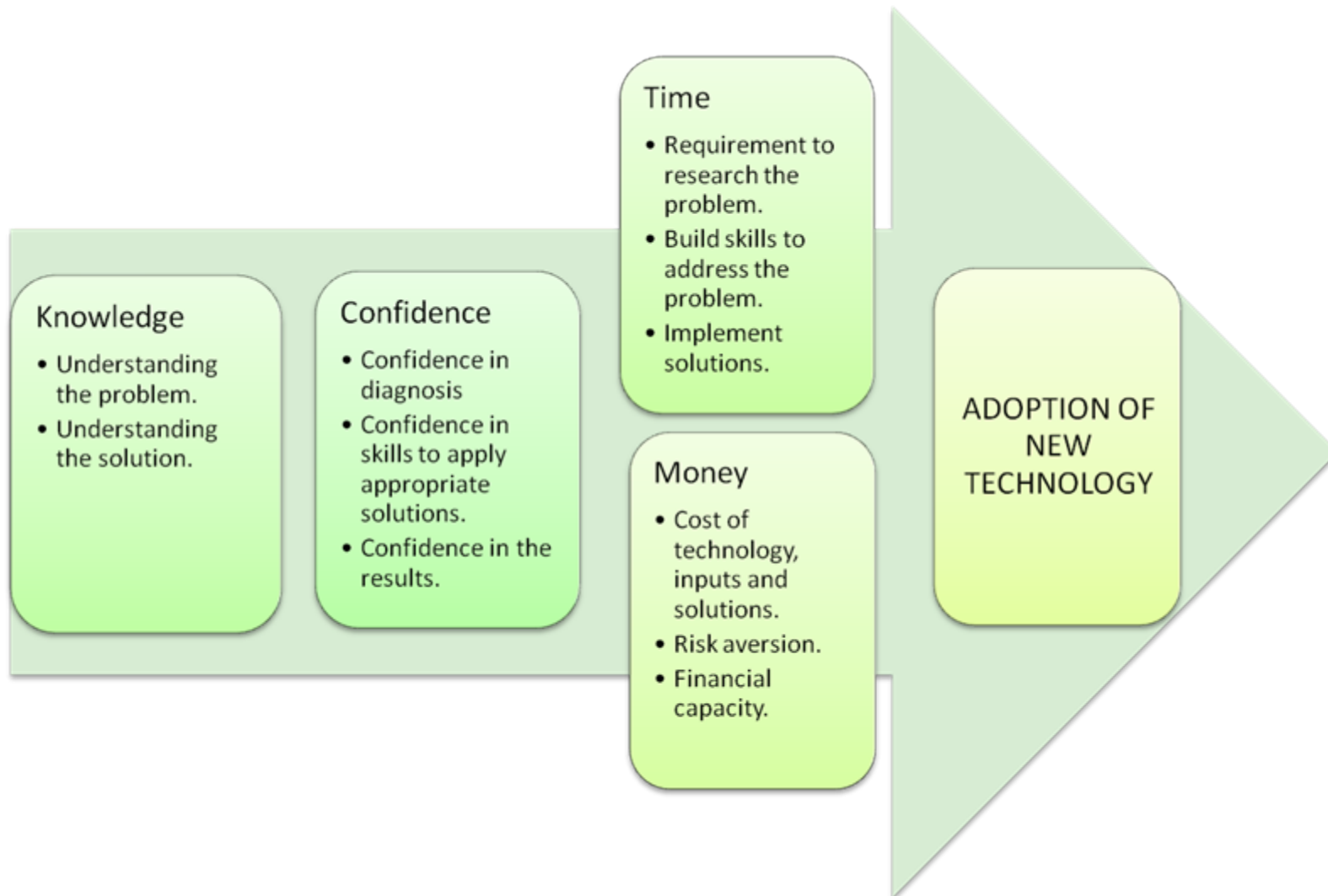
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Adopting new techniques

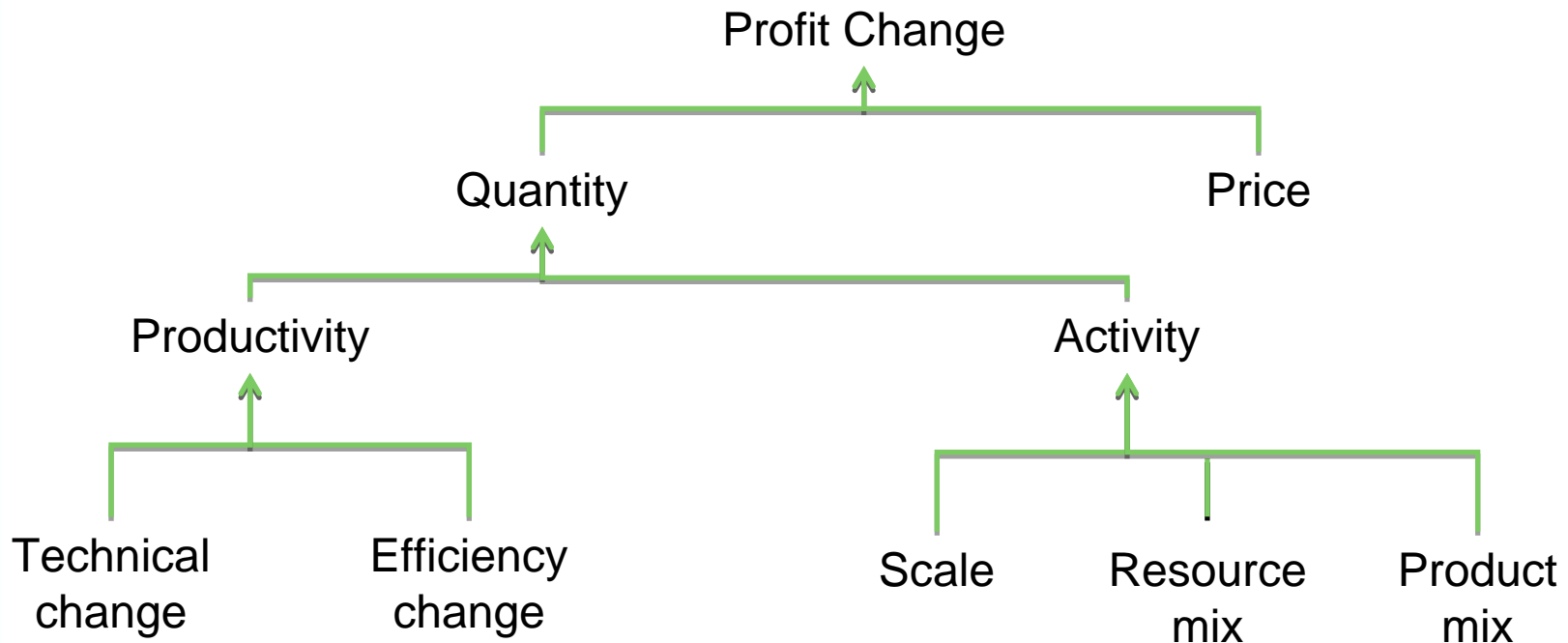


Summary of workshops



Business Success

Profit Composition



Feedback

“In two years we doubled productivity on the focus paddock we were working on. Now two thirds of our farm is being managed differently as a result of what we have learnt in the group.”

*Phil Chalmer,
BPP Esperance.*

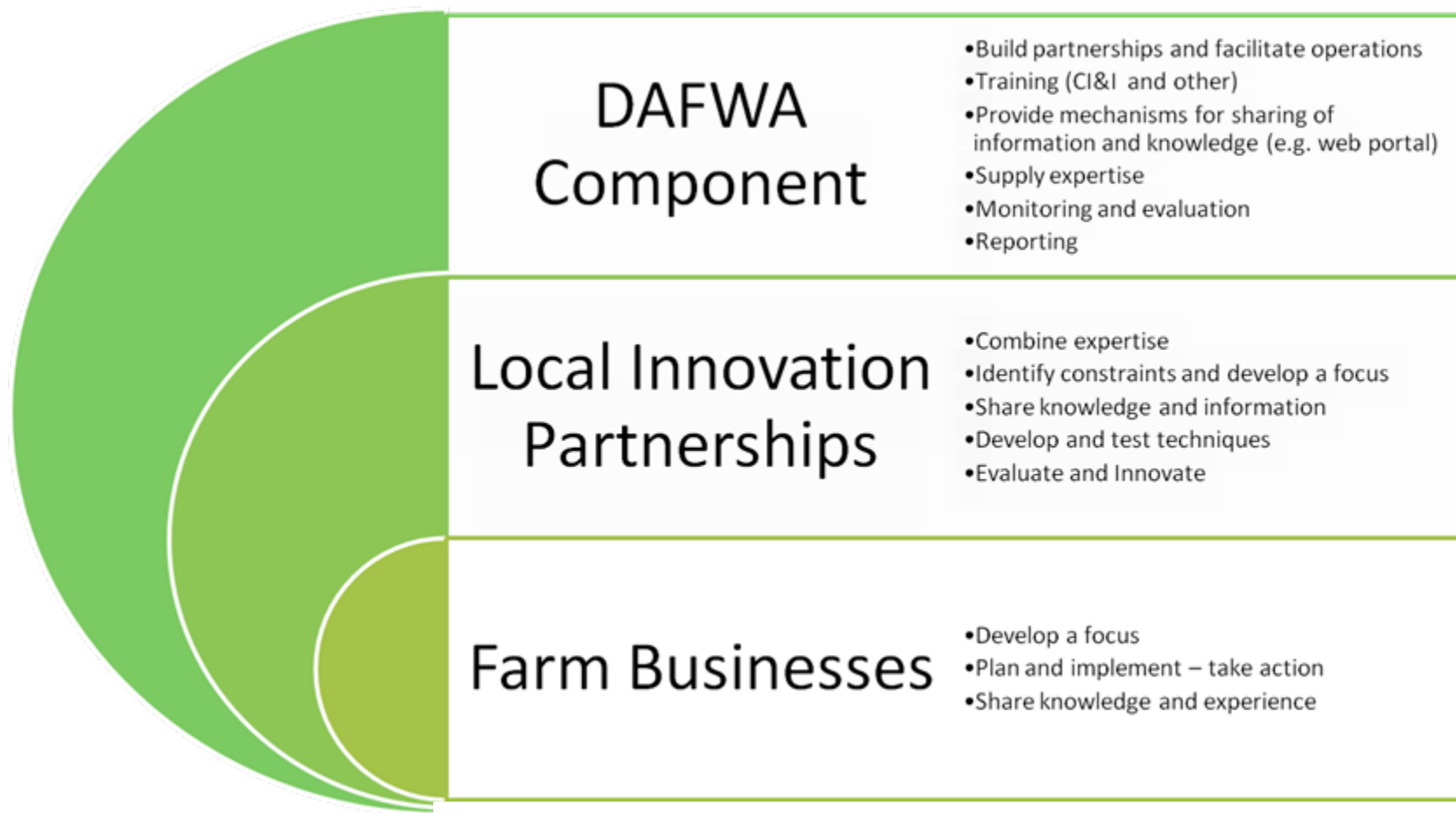


Outcomes



1. Growers will have a greater capacity to make profitable improvements to the productivity of their farm business through involvement in Local Innovation Partnerships.
2. DAFWA's involvement in Local Innovation Partnerships will ensure its investments in the Grains Industry are well aligned with the needs of its clients.
3. Growers, consultants, agribusiness and financiers will be better able to access, share and understand information about the constraints to grain productivity in WA and the options to profitably ameliorate them.

Levels of operation



Definitions



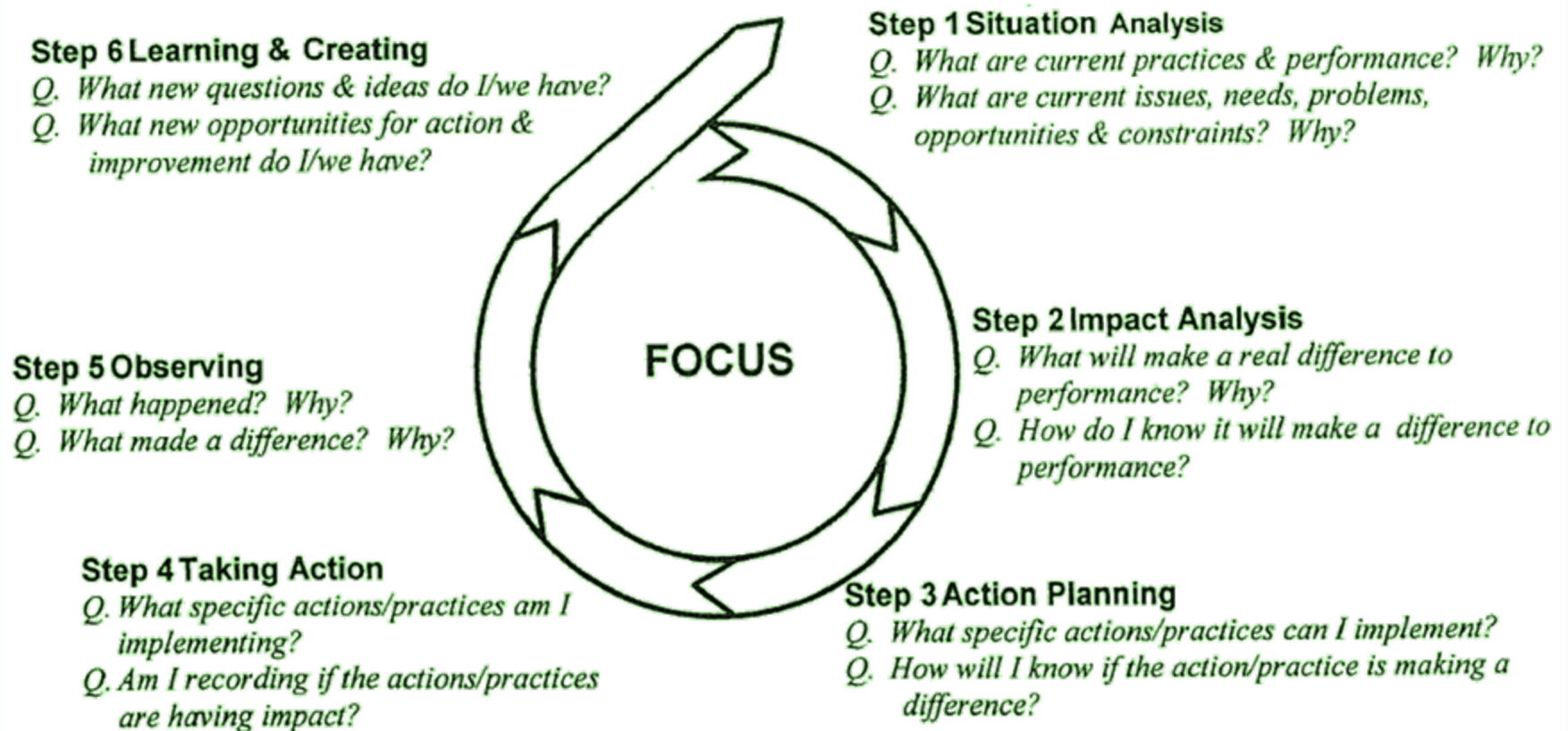
Partnership	An interdependent relationship between people for a specific purpose involving clear rights, roles and responsibilities.
Focus	Clear and shared understanding of the desired purpose or outcome to be dealt with and the boundaries around it.
Continuous Improvement	A process to enable individuals in teams to regularly and frequently focus their thinking and action to achieve impact on their performance through improving their practices, processes, systems, products and/or services.
Continuous Improvement and Innovation	... and develop new practices, processes, systems, products and/or services to make a real difference to their performance.

Innovation partnerships in practice

- DAFWA to identify interested groups and individuals liaising with farmers, consultants, agribusiness and others – general MOU.
- DAFWA facilitate discussions to for establish of Local Innovation Partnership.
- Formation of a partnership governed by a specific MOU.
- Undertake analysis, planning, actions and monitoring based on CI&I. DAFWA to access to resources required.
- DAFWA facilitate monitoring, internal and external communication and reporting.



Continuous improvement



Communication

- Development of a website based on Content Managements System.
- Well supported by the Information Technology Industry with a broad range of functionality.
- Will be developed in stages based on users' needs.
- www.agric.wa.gov.au/BYG



Summary



- A range of factors limit grain yields - both technical and business related.
- These factors fit into broad themes but which of them drive business success?
- Local Innovation partnerships provide an avenue to develop a focus on factors that will make a real difference to business success and support to put plans into actions
- BYG will support Local Innovation Partnerships and help communication of knowledge to the broader grains industry.

Thanks



Thanks to...

- All the participants of Workshops and Survey
- Industry, Consultants, Agribusiness and Researchers that we have spoken to
- BYG Advisory Board
- the DAFWA BYG Team