Bridging the Yield Gap





Grains Research & Development Corporation

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

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and the rest of the BYG team...



Department of Agriculture and Food



Thorough consultation



Thorough planning

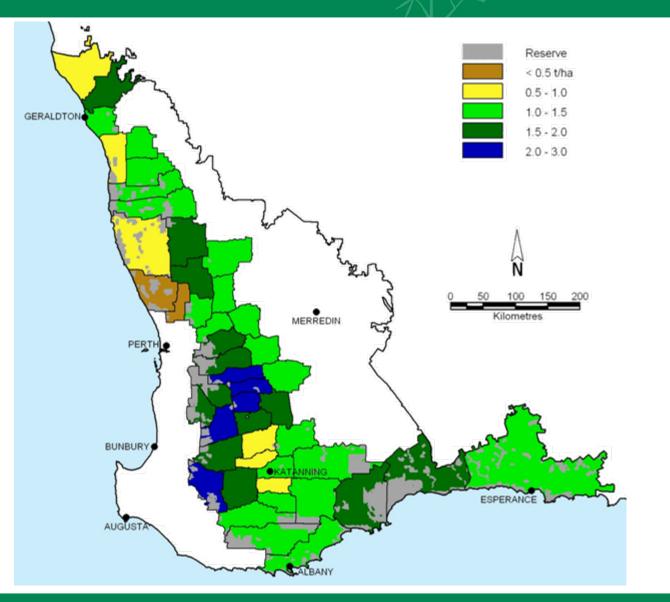
 Industry Need Build Enterprise profitability

DAFWA response

Driving productivity in higher rainfall environments

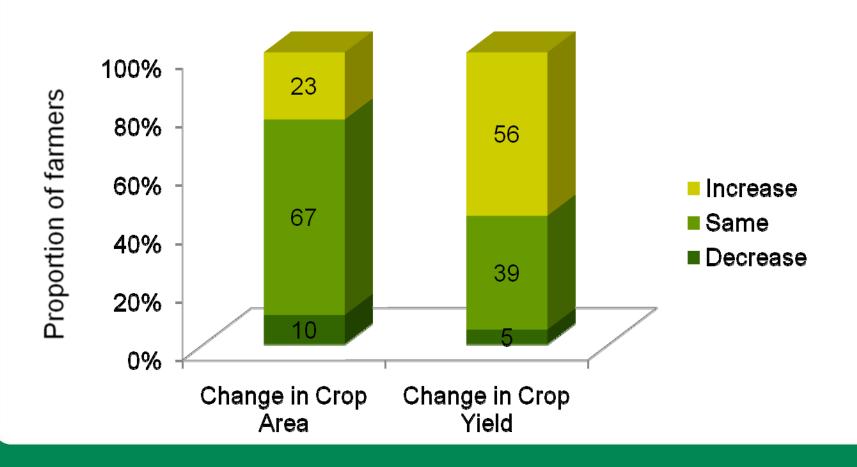


The yield gap (t/ha)



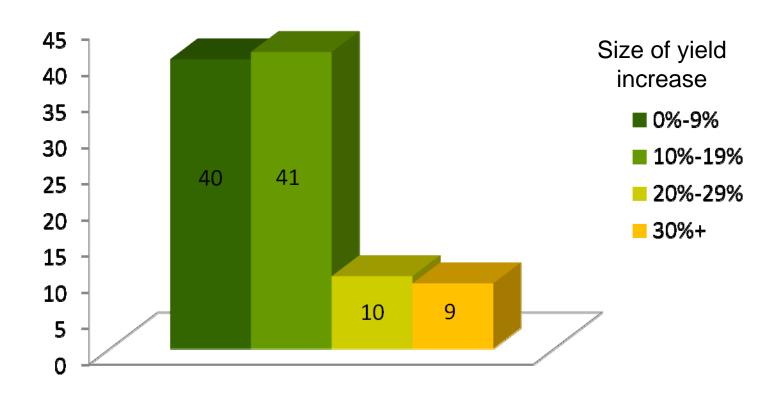
Farmer's expectations

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

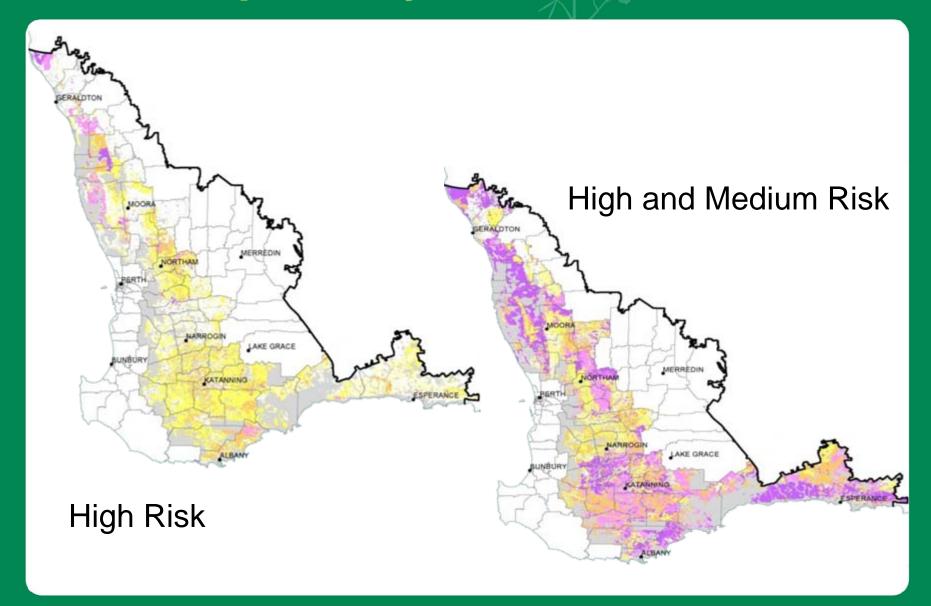
Main soil constraints in the BYG target area

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	Physical Non-wetting soils		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%

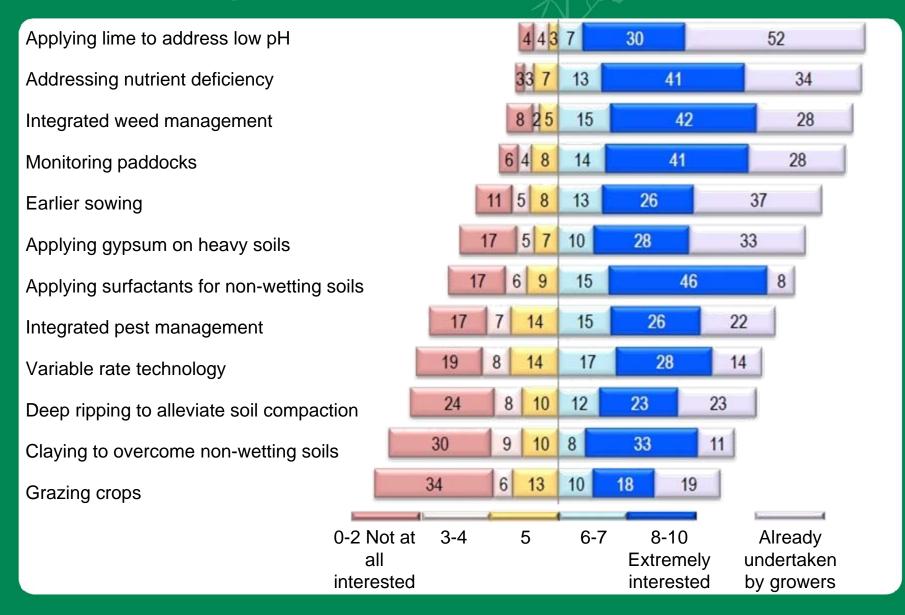
Water repellency



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%

Adopting new techniques



Summary of workshops

Knowledge

- Understanding the problem.
- Understanding the solution.

Confidence

- Confidence in diagnosis
- Confidence in skills to apply appropriate solutions.
- Confidence in the results.

Time

- Requirement to research the problem.
- Build skills to address the problem.
- Implement solutions.

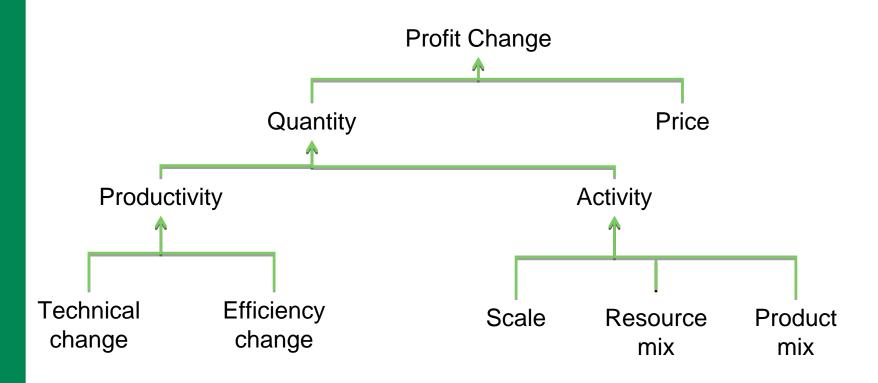
Money

- Cost of technology, inputs and solutions.
- Risk aversion.
- Financial capacity.

ADOPTION OF NEW TECHNOLOGY

Business Success

Profit Composition



Feedback



Outcomes

- 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



DAFWA Component

- ·Build partnerships and facilitate operations
- Training (CI&I and other)
- Provide mechanisms for sharing of information and knowledge (e.g. web portal)
- Supply expertise
- Monitoring and evaluation
- Reporting

Local Innovation Partnerships

- Combine expertise
- ·Identify constraints and develop a focus
- Share knowledge and information
- Develop and test techniques
- Evaluate and Innovate

Farm Businesses

- Develop a focus
- •Plan and implement take action
- Share knowledge and experience

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

FOCUS

Step 6 Learning & Creating

Q. What new questions & ideas do I/we have?

Q. What new opportunities for action & improvement do I/we have?

Step 5 Observing

Q. What happened? Why?

Q. What made a difference? Why?

Step 1 Situation Analysis

Q. What are current practices & performance? Why?

Q. What are current issues, needs, problems, opportunities & constraints? Why?

Step 2 Impact Analysis

Q. What will make a real difference to performance? Why?

Q. How do I know it will make a difference to performance?

Step 4 Taking Action

Q. What specific actions/practices am I implementing?

Q. Am I recording if the actions/practices are having impact?

Step 3 Action Planning

Q. What specific actions/practices can I implement?

Q. How will I know if the action/practice is making a difference?

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

