

On track to an improved Future – Dryland Cropping

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REVIEW OF CURRENT STATUS

- Slight decline in world economic growth with Australia's economic growth to remain robust for 2005/06 (ABARE Outlook 2005)
- Stable interest rates for next 12 months (ABARE Outlook 2005)
- ABARE assumes the Australian dollar will fall to US 72c (ABARE Outlook 2005)
- Farm exports forecast to increase by 3% (ABARE Outlook 2005)
- Grain prices expected to slightly increase, as world production levels fall (ABARE Outlook 2005)
- Fuel prices are expected to rise
- Widespread drought effects
- Isolation of crop improvement groups throughout Australia
- Land prices increase – more rapidly where land is more amenable and accessible to urban
- New technology being developed before we understand it, leading to more snake oil merchants
- Various dryland cropping systems – conventional, biological, CTF, zero-till, biodynamic, organic, low input, high input, composting, raised beds etc...

DRIVERS FOR CHANGE

- Lifestyle
- Declining terms of agricultural trade / cost-price squeeze
- Meeting demands of consumer/exporters
- Traceability
- Environmental Management Systems (EMS)
- Availability of technology
- Climatic uncertainty
- Unsustainable systems

WITHIN Paddock LEVEL

- Continual addressing the limiting factor
- Get the basics right – sound agronomy
- Fine tuning - assessing, trialing, and reassessing (strip trials)
- Satellite imagery to measure management systems and spatial variability
- Managing water – layout, raised beds, knife points & press wheels, grassed waterways
- Chemical resistance – rotating chemicals and crops, inter row operations, shielded sprayers, weed detectors, enhance natural predators, hay production, burning windrows
- Soil structure – CTF, minimum tillage, soil cover, organic matter, balanced soil chemistry, primer plants
- Increasing organic matter - stubble retention, composting, green/brown manure
- Crop rotations – new varieties (N-fixing cereals), short season legumes
- Improving soil biology – CTF, mechanical weeding, more organic matter, microbial applications
- Effective soil sampling – EM38 surveys, testing physical, nutritional, chemical and biological status
- Addressing the sub soil – slotting organic matter, is it too difficult?
- Variable rate – understanding soil potential, yield potential map, maintenance/replacement rates
- Micro-sensors – measure soil water, weather stations, predict disease risk
- Biotechnology – plant genetics (GMO's), value added products (specialist crops)

WHOLE FARM LEVEL

- Mix of enterprise – livestock vs cropping
- Land use suitability – what areas should be cropped?
- Mapping – grain yield and quality, soil parameters
- Satellite imagery – assess management system, improve farm layout and paddock design.
- Remote sensing for in-crop applications
- Precision Agriculture – should start with CTF then evolve to address other limiting factors
- 2cm Autosteer provides key to many advantages – CTF, inter row sowing spraying and mechanical weeding, no over-lap or under-lap, focus on operation, makes life easy, stubble management, less weed establishment, avoid root diseases etc
- Environment – shelter belts (trees), weed management, healthy waterways
- Farm efficiencies – assess points, laneways, paddock shapes
- Managing spatial data (electronic data management system with GIS capabilities) – paddock history, satellite and aerial imagery, yield maps, soil maps, variable rate maps
- Environmental Management System – price premiums, recording all operations, manage off-paddock impacts
- Nutrient management – slow release fertiliser, accurate feeding of crops, precision placement
- Risk identification and management
- Seek advice from consultants – succession planning, business structure, agronomy, new technology, data management, EMS
- Marketing and business management – seek advice, network ideas, identify opportunities

REGIONAL LEVEL

- Farmer support groups – CTF Young Farmer groups
- Localised concept farms to test and demonstrate best management practices
- Satellite imagery – cheaper by the dozen
- Shared base stations – ‘GPSnet’
- Improved infrastructure - grain handling and storage
- Marketing local products – determining own markets
- Healthy catchments – water flows, erosion, salinity
- Develop regional plant breeding centres
- Leasing/share farming an option for young players
- Need to skill our labour force – apprenticeships, trainees, diplomas

NATIONAL LEVEL

- Capture new markets (domestic and international)
- Improved transparency between research and extension
- Greater sharing of information between crop development programs
- National CTF Young Farmer Association
- Telephone conferences for growers – international experts
- Improved communication between Australian farmers
- Implementing a single vision for Australian Grains Industry
- Education of youth – mentor programs, travel
- Standardised approach to the development of technology – electronic communication for machinery, GPS solutions, wheel centres
- Embrace and support innovative ideas, thinking and adoption
- Agribusiness lending linked to sustainable farming systems such as zero till/CTF

CONCLUSIONS

- Get the basics right and demonstrate this on concept farms spread throughout Australian cropping regions.
- Improve soil structure, balance soil chemistry and develop soil biota
- Grow the farm business with decisions based on sound economics. Identify cost of production, determine return on capital, consider opportunity cost

- Innovative farmers should be supported and encouraged to explore ideas. Begin by developing a national CTF Young Farmer Association.
- Domestic communication networks within Australian Agriculture need to be improved at all levels.

ACKNOWLEDGMENTS

Australian Bureau of Agricultural and Resource Economics (ABARE)
<http://www.abc.net.au/rural/outlook2005/stories.html>

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