

CLIMATE CHANGE

Opportunities and Challenges for Agriculture

Geoff Woods

Western Lands Commissioner
NSW Dept Natural Resources

CLIMATE CHANGE

- Increased temperatures
- Increased evaporation
- Increased climatic variability
- Change in rainfall patterns
- Drought – increase in frequency and intensity

CHALLENGES

- Pasture growth variability
- Change in pasture species
- Rainfall less effective
- Change in seasonality of rainfall
- Temperature stress on animals, crops
- Temperature affect on crop management
- Crop varieties
- Increased threat of erosion

CHALLENGES

- Sunburn
- Crop pest management
- Irrigation management
- Livestock marketing
- Drought management

OPPORTUNITIES

- Fewer frosts
- C4 perennial grasses further south
- Increased growth period in winter
- More efficient water use in irrigation

Building Flexibility and Resilience

- Risk management approach- scenario planning (drought, pasture management)
- Plant water efficient, heat & drought tolerant crops
- Change planting dates, livestock management if seasonality changes
- Use efficient irrigation systems (evapo-transpiration scheduling, application)

Building Flexibility and Resilience

- Use crop management practices that lower climatic risk
- Use integrated and region-wide pest and disease management
- Manage soil erosion (increased rainfall intensities)
- Monitor farm performance against climate trends – leads to effective adaptive management

Building Flexibility and Resilience

- Scientific / technical advances – varieties for specific environments, sunburn resistant varieties, precision agriculture
- Climate prediction models, simulation models

CONCLUSIONS

- Consequences of climate change are already impacting on agriculture, especially crop production and animal husbandry
- Climate change can be viewed as another mode of climate variability that we can to some extent manage