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Climate change impact and adaptation of grazing systems in Australia and Brazil

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Abstract
Climate and atmospheric change are projected to have a negative impact on productivity and profitability of livestock industries in grasslands and rangelands across the Australia and Brazil. Moderately elevated atmospheric CO_2 is expected to increase plant production rates but in Australia it is unlikely that fertilisation effect of elevated CO_2 on plant production be able to offset the total negative effects. The impacts of climate change on livestock industry will be mostly through decline in forage production and quality, and direct heat stress on animals. These impacts are predicted to vary among regions and livestock enterprises with the greater effect in low rainfall regions. A range of adaptation options projected to be helpful to decrease negative impacts of climate change. These are mostly options to reconfigure current grassland management and breeding animals with genetic suitable for projected climate change. In drier zones or regions with greater changes in climate, there will be need for systemic or transformative adaptations which are significant change in the nature and composition of current systems. Overall, there is an obvious need for research and attention of the policy makers into the impact of climate change on livestock industries and effective actions to sustain productivity of current grazing systems.

Key words
Climate change, grazing system, ecosystem health, food security, yield gap, livestock production gap

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