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Farmers' Adjustment Strategies to the Millennium Drought and the Association with Profitability

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Farmers' Adjustment Strategies to the Millennium Drought and the Association with Profitability

2016 AARES Conference Presentation

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Introduction

- Title: Farmers' Adjustment Strategies to the Millennium Drought and the Association with Profitability
- Comprises of 3 main chapters:
 1. Socio-economic impacts of the Millennium Drought on the Murray-Darling Basin
 2. Adjustment strategies commonly adopted by farmers faced with livelihood threats
 3. Outcomes of farmers' adjustments strategies on their profitability

Research questions and methods

What are the adjustment strategies undertaken by farmers to cope with livelihood threats?

Method: Literature review

Objective: To formulate meaningful conclusions by clustering strategies into groups

Did the adjustments help farmers to improve their wellbeing?

Method: Regression using 2013 Regional Wellbeing Survey data

Objective: To find out the effectiveness of the adjustment strategies undertaken by farmers and if any pattern of outcomes of adjustments on profitability exist

Input-related strategies <i>Management of variable inputs to achieve cost minimisation and return maximisation in the short- or medium-run</i> Reduced hired labour Increased own work hours on the farm Reduced use of non-labour inputs	Output-related strategies <i>Changes to scale of production or changes to output mixes</i> Changed products Found new markets Reduced farm production
Land-related strategies <i>Changes to land use</i> Purchased or leased additional land Sold or leased some of my land	Technology- and investment-related strategies <i>Physical and non-physical enhancements to boost productivity and capacity in the long-run</i> Invested in new technologies Postponed investment in farm capital
Off-farm strategies <i>Engagement in off-farm and non-farm sectors to diversify income sources</i> Increased off-farm work	Finance-related strategies <i>Involves flows of money</i> Received financial supports from government Borrowed from family or friends
Water-related strategies Bought temporary water entitlement Bought permanent water entitlement Sold permanent water entitlement Sold temporary water entitlement	Others Shared expenses with other farmers Temporarily stopped farming

Findings and conclusion

Adjustment strategies commonly adopted by farmers

- Some strategies, though popular and deemed effective, are not feasible to the most impoverished and desperate farmers
- Farmers exhibit awareness and consciousness on the need to resolve their problems. In fact, proactive attitude, collective actions and risk-sharing behaviours can be observed among the farmers
- Therefore, facilitation from government or other institutions could be crucial

Adjustment strategies adopted by farmers to deal with challenges in 2008-2013

Adjustment strategies	Dryland farmers (%)	Irrigators (%)
Input-related strategies		
Reduced hired labour	54.0	63.6
Increased own work hours on the farm	59.9	72.6
Reduced use of non-labour inputs	53.6	57.5
Output-related strategies		
Changed products	37.1	37.9
Found new markets	32.9	39.6
Reduced farm production	45.1	50.9
Land-related strategies		
Purchased or leased additional land	30.5	26.4
Sold or leased some of my land	14.6	16.0
Off-farm strategies		
Increased off-farm work	41.0	45.7

Adjustment strategies adopted by farmers to deal with challenges in 2008-2013

Adjustment strategies	Dryland farmers (%)	Irrigators (%)
Technology- and investment-related strategies		
Invested in new technologies	57.4	67.4
Postponed investment in farm capital	60.2	64.8
Finance-related strategies		
Received financial supports from government	26.5	32.2
Borrowed from family or friends	12.8	15.9
Water-related strategies		
Bought temporary water entitlement	Not Applicable	30.3
Bought permanent water entitlement	Not Applicable	11.5
Sold permanent water entitlement	Not Applicable	15.9
Sold temporary water entitlement	Not Applicable	28.3
Others		
Shared expenses with other farmers	18.2	21.3
Temporarily stopped farming	14.4	17.2

Regression results between adjustment strategies adopted by farmers and profitability

Adjustment strategies	Dryland farmers	Irrigators
Input-related strategies		
Reduced hired labour	-0.470***	-0.800***
Increased own work hours on the farm	-0.547***	-0.561***
Reduced use of non-labour inputs	-0.420***	-0.805***
Output-related strategies		
Changed products	0.147	-0.262
Found new markets	0.105	-0.117
Reduced farm production	-0.690***	-0.478***
Land-related strategies		
Purchased or leased additional land	-0.006	0.097
Sold or leased some of my land	-0.506**	-0.799***
Off-farm strategies		
Increased off-farm work	-0.246	-0.715***

*** p < 0.01, ** p < 0.05, * p < 0.1

Regression results between adjustment strategies adopted by farmers and profitability

Adjustment strategies	Dryland farmers	Irrigators
Technology- and investment-related strategies		
Invested in new technologies	0.156	0.322*
Postponed investment in farm capital	-0.222	-0.508***
Finance-related strategies		
Received financial supports from government	0.032	-0.185
Borrowed from family or friends	-0.800***	-1.059***
Water-related strategies		
Bought temporary water entitlement	Not Applicable	0.157
Bought permanent water entitlement	Not Applicable	0.175
Sold permanent water entitlement	Not Applicable	-0.187
Sold temporary water entitlement	Not Applicable	-0.489***
Others		
Shared expenses with other farmers	0.183	-0.025
Temporarily stopped farming	-0.130	-0.142