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THREE TO FIVE YEARS ON - THE FARM BUSINESS RESILENCE CASE STUDY OF STRATEGIC PLANNING TO ADDRESS WICKED PROBLEMS IN FARM MANAGEMENT.

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Abstract

The Farm Business Resilience Program's delivery of elements of the Farm Planning training program (Part of the Pilot of Drought Reform Measures in Western Australia) has improved short to medium term physical, financial, social and environmental outcomes for farm businesses. The delivery of an experiential "learning journey", using multidisciplinary facilitation teams to build 'business owned' strategic management plans led to improved strategic decision-making and business performance. Reported here is a range of indicators, which were unavailable at IFMA 21 - where attitude changes and plans to adapt and or transform farming practices were reported. Subsequent analysis indicates improved economic performance and improved 'resilience'. The shift in performance is in areas potentially most affected by climate change – the low and medium rainfall areas of Western Australia. Compared to other modes of farm management training, our approach using a facilitated learning journey better enabled farm businesses to build capacity and be more innovative beyond the short term. Answers to why the program succeeded where others have not may lie in new understandings from positive psychology and neurobiology. There are clear implications for Government policy.

Keywords: Farm management, facilitation, strategic planning; resilience; the hope cicuit

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1. Introduction

The immediate and short-term impacts of interventions to mitigate the challenges of 'farming at the edge' (McGregor, 2003) in the south-west of Western Australia (WA) were reported at IFMA21 (Noonan, 2017). The interventions were part of the Pilot of Drought Reform Measures in Western Australia (Council of Australian Governments, 2010) (hereafter called the pilot), comprising a suite of measures introduced in July 2010 by the State Government of WA and the Commonwealth of Australia (Australian government), through the then Department of Agriculture, Forestry and Fisheries. The intent was to help build farm and rural community resilience, prepare farmers and communities for future challenges, such as more turbulent weather events and climate change impacts.

In 2009 WA farmers were recovering from the millennium drought, in which the majority were not eligible for government assistance due to farm size and investment. Both the State and National Government sought ways to build self-coping strategies into farming business.

The pilot included seven inter-dependent measures, 'farm planning' (FP), 'building farm businesses' (BFB), 'stronger rural communities', 'farm social support', 'farm family support', 'farm exit support' and 'beyond farming'. Presented in Figure 1 are the interfaces between the various elements of the pilot and to the National Drought Policy and Exceptional Circumstances (EC) measures, instruments of the Council of Australian Governments (COAG), first instituted in 1992.

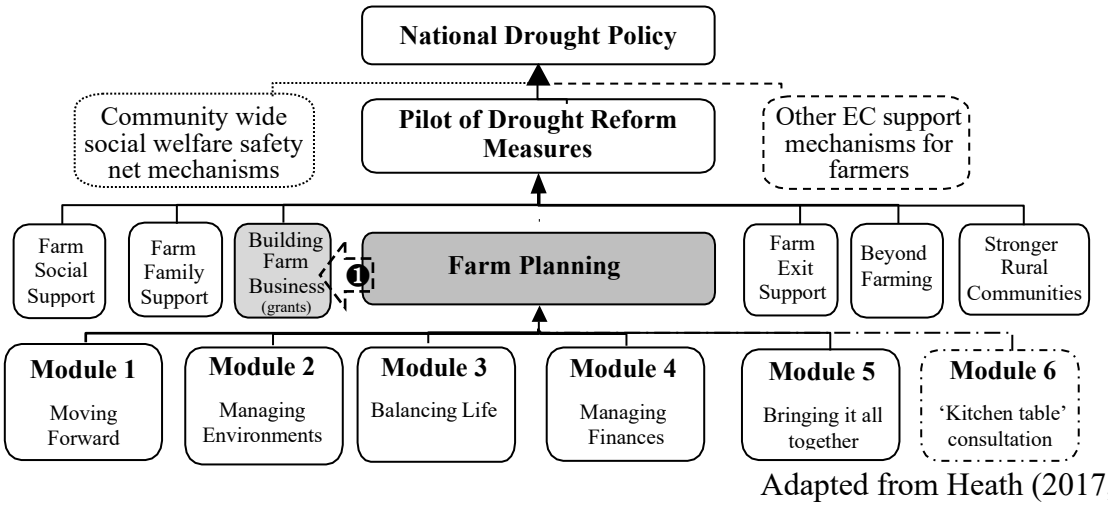

Figure 1: FBR and FP elements relationship the COAG Drought Policy

The underpinning premise is if farming businesses undertake more formal planning to consider business, environmental and social needs that they can control, and those they cannot, they are in a better position to adjust, manage and potentially transform. For they 'own' their future and can better guide its destiny. In context, FP used a ten-year horizon to consider changes in seasons, markets and political/economic environments.

The pilot measures aimed to enhance the skills of farmers throughout WA in relation to business management, natural resource management, personal planning and development of strategic planning, with participants writing comprehensive written strategic plans to document the future of their farm business (Keogh et al., 2011). Another aspect of the pilot related to upskilling farm businesses to improve viability during exceptional EC. EC is the term used by Australian governments to describe catastrophic or similar events impinging on the ability of farm business to operate in a 'normal' manner, or beyond 'normal' risk management. Governments may provide financial support for activities deemed to better prepare businesses for EC, improve on-farm resilience and reduce environmental impact.

Curtin University's Farm Business Resilience (FBR) program pre-dated the pilot, having successfully delivered a range of training programs to industry similar in nature to those proposed in the pilot. The existence of Curtin's FBR program enabled adaption of existing and exploration of new materials in a pre-pilot phase prior to the announcement of the pilot. The terms FBR, Farm Planning (FP) and the pilot are used interchangeably in many instances.

The FP program consisted of five modular workshops with an optional sixth; these used a facilitated learning approach (Noonan et al., 2012, Noonan, 2017) to enable farm businesses to plan strategically and were titled 'moving forward', 'managing environments', 'balancing life', 'managing finances' and 'bringing it all together'. After attending the first five workshops, there was an option for a facilitator to visit the farm for a 'kitchen table consultation' or for participants to go to a central location for assistance in finalizing strategic plans. On completion of the FP process, eligible businesses could apply for the Building Farm Business BFB grants (❶ in Figure 1).

Under the auspices of Curtin's FBR Program, from February 2010 FP was pre-piloted until the federal and state governments announced the pilot in April 2010. The first round of the pilot (R1) operated from June/July 2010 to April 2011 (R1), with follow up rounds from September 2010 to December 2011 (R2) and March 2012 to May 2013 (R3). Curtin

University managed the delivery of R1 (423 businesses), and R2 (296 businesses) with over 1200 participants at 50 locations. The Department of Agriculture and Food Western Australia (DAFWA), part of the West Australian Department of Primary Industry and Regional Development (DIPRD) since 2018, managed the delivery of R3 (324 businesses).

The leadership group of Curtin's FBR program, and the pilot content compilation and delivery teams for R1 and R2 of the pilot, including key DAFWA staff, collectively had extensive experience in delivering a range of training activities for farmers in the preceding two decades. DAFWA rebadged FP as *Plan Profit Prosper* during R3.

Methods, evaluations and key initial findings and short-term outcomes of phases R1 and R2 were reported at IFMA 21 (Noonan, 2017).

The findings of three separate studies of two of the pilot measures (FP and BFB) undertaken between 2012 and 2015 are reported here in abridged form. The results for two of the studies have only recently become available.

2. Methods

The initial basis for monitoring and evaluation processes for the FP drew on a number of factors, these were also considered in the evaluation of other pilot measures and are described in detail elsewhere (Keogh et al., 2011, Noonan, 2017, Noonan et al., 2012, Storer, 2012).

To evaluate the interim and short-term outcomes of the delivery of FP a team of Curtin researchers, DAFWA evaluation specialists and independent evaluation consultants, formed a group known as the Resilience Evaluation Research Strategy Team (RERST). RERST formed to provide an 'arms-length' evaluation of the FP program.

Considered here are three studies, either directly under the control of the RERST team, or following on from its undertakings.

The first study comprised two parts – one qualitative, the other quantitative, enabling a mixed mode analysis (Link, 2008). Final year Curtin University agribusiness students, under the supervision of the RERST team, collected voluntary responses from participants in the first two rounds of FP and randomly selected non-participants. The study concluded in mid 2012. It is discussed here as Study 1.

The qualitative part of Study 1 included 63 participants from R1 and R2. The quantitative study includes 185 survey respondents, including 68 participants from R1 (16% of the 423)

and 17 from R2, a further 89 non-participating entities were surveyed. The samples were broadly representative of pilot production areas, business types and size.

The second study (Study 2) examines parts of the work of Rebecca Heath (Heath, 2017). One part analyzed responses to compulsory questionnaires by all participating FP businesses at the entry and exit of the program over all three rounds of FP (R1, 2 and 3) - in excess of 1000 businesses. The work drew on previous reporting (Department of Agriculture and Food Western Australia, 2012, Department of Agriculture and Food Western Australia, 2011) enabled by the RERST team, many of the R1 and R2 findings were reported at IFMA 21 (Noonan, 2017). Heath (2017) also examined the enduring impacts of the FP program by assessing activities and outcomes of businesses who participated in all rounds (R1, 2 and 3) and who successfully applied for and utilized the associated BFB grants. It concluded in the third quarter of 2014. Study 2, again the under the direction of members of the RERST team, utilized data collected for Study 1, with additional data from telephone interviews of 88 non-participants and other reporting (Department of Agriculture and Food Western Australia, 2014: cited in Heath 2017).

The final study (Study 3) (Connell, 2014: cited in Heath 2017) involved identification of pilot participants who participate in a major benchmarking program involving WA broadacre farmers (PBs), comparing them with benchmarked farms in the same region, who were not in the pilot (NPB), with further comparison against statewide average (SA) performance indicators for the period 2007 to 2013. The analysis concluded in quarter four of 2014.

Each of the these studies broadly followed the practices the RERST team associated with the first two rounds of the pilot, or members of the RERST team in their substantive roles in the Rural Business Development Unit of DAFWA.

Except for substantial departures in the methodology described by Noonan (2017), no further discussion of the methodology is included.

3. Results

Presented are key results and findings from the studies. Space does not permit fuller exposition of all results.

It is important to note that for the 2010 growing season, rainfall across the majority of South –West WA was decile 3 or lower (less than 30% of the expected). Rainfall was slightly lower than average in the following two years.

Study 1

The qualitative part of this study included 63 participants from R1 and R2. The quantitative study includes 185 survey respondents, including 68 participants from R1 (16% of the 423) and 17 from R2, a further 89 non-participating entities were surveyed. The samples were broadly representative of pilot production areas, business types and size. However, the quantitative sample had younger and 'better' educated respondents to the R1 entry and exit surveys conducted by DAFWA.

Table 1 shows responses to descriptive questions for the two groups: pilot participants and nonparticipants. Participants were more likely to be female and to have a written plan for the next 5-10 years for production and finances. Participants showed greater effort in making changes to manage natural resources (NRM) and work life balance. Participants' higher response to making changes to protect natural resources is notable. Collectively these results, and others including factor analysis on future prospects and resilience (Storer, 2012), indicate initial achievement of FPs core objectives.

Table 1: Study 1 - Key Differences between Participants and Non-Participant**s**

Significant Descriptive Questions	**Mean Participants**	**Mean Non-Participants**
Have you heard about the Drought Pilot?	100%	74%
Have you heard about the FP planning workshops?	96%	41%
Have you heard about the BFB Grants program?	94%	33%
Do you have a 5-10 year plan for production?	72%	40%
Do you have a 5-10 year plan for finances?	73%	45%
Do you have a 5-10 year plan for NRM?	69%	18%
Do you have a 5-10 year plan for work life balance?	61%	15%
Gender Male	59%	87%
You intend to make changes to protect or minimize the impact on the natural resources (scale 1 strongly disagree to 7 strongly agree)	5.6	4.9

Adapted from Storer (2012, 78)

Qualitative questions identified small numbers of participants who indicated a preference for reducing the number of days for delivery of the modules and total time commitment, and felt action-learning exercises were questionable. A greater number of participants had contrary views, indicating a preference for more action learning and time in total, valuing the time between modules to reflect and internalize the learning, and specifically valuing the one-on-one opportunity in module six. Comments that were more positive came from locations

where delivery teams had stronger competency in facilitation and understanding of production, financial management and work life balance.

Study 2

The outcomes of Study 2 are largely reflective of those in Study 1, with Heath (2017) providing similar findings to Noonan (2017), in that the FP had "successfully addressed some of the barriers to planning — in particular, the program enabled the shift from ideas to written plans; and provided participants with the time to develop strategic plans (Heath, 2017, 135)." There was a 200% increase in participants with a strategic plans and for those with plans, 89% of participants, 69 % had initiated at least using the plans (Heath, 2017).

The Department of Agriculture and Food Western Australia (2014: cited in Heath 2017) found many positive outcomes consistent with those reported at IFMA21 (Noonan, 2017).

Based on the Department of Agriculture and Food Western Australia (2014: cited in Heath 2017) data, Heath (2017) found businesses completing FP and qualifying for the BFB grants self-reported having had:

1. clearer business vision and goals;
2. improved business management;
3. adopted a more overall self-reliant approach;
4. adopted a more self-reliant approach towards and changed management of business risks ; and
5. improved risk management capacity.

Participants self-reported increased:

1. use of financial and general business management training compared to participants of previous training schemes;
2. measurement and comparison of performance as well as revisiting their strategic plan;
3. awareness of goals; and
4. collection and review of advice from independent advisors and consultants.

Adapted from Heath (2017)

The study identified significantly improved "attitudes toward risk management — specifically, risk management as an approach to navigate through the changes caused by seasonal variability and climate change. Furthermore, these 'risk management attitudes' were significantly more positive in program participants than in non-participants, indicating a real effect of the program (Heath, 2017, 127)" .

In examining Study 1 and Study 2 it is evident there is a markedly greater percentage of program participants with strategic plans than non-participants; and the program participant strategic plans were much more comprehensive (i.e. holistic) than those of non-participants.

The strategic planning process employed through FP was central to enabling an enduring effect on participants in terms of attitudes toward managing climate change and seasonal variability the risks (Heath, 2017), which is consitent with the findings of Noonan (2017), however there was an interesting decline in belief in 'climate change is happening' (Heath, 2017).

A 'negative but positive effect' found by Heath (2017) was participants had a significantly poorer view of the 'future of farming'. The prospect here is that FP participants had become better informed and had greater awareness around climate 'unknown knowns' (Gray, 2009) as they moved towards a broader appreciation of 'wicked problem' influences as they became 'Known Knowns' (Watson, 2013).

Study 3

There is strong evidence of FPs success in this study's comparison of the three groups: PB (pilot farms in the benchmark program), BNP (benchmark farms not in the pilot) and SA (statewide average) of enhanced capacity and improved business performance for pilot participants (PBs). A comparison of performance measures between program participants and non-participants (Connell, 2014: cited in Heath 2017) indicated participation in Farm Planning led to increased productivity and profitability, with an inferred improvement in Statement of Position or Balance Sheet or Equity. These results require further investigation and analysis, however, they are encouraging.

Compared to previous programs (for example see (Howden et al., 2010, Murray-Prior, 2014, Balm, 2002, Patterson, 2008, Price Waterhouse Coopers, 2006)), collectively the three studies provide strong evidence of the merit of the processes underpinning the FP program and the stimulus provided by the BFB grants.

4. Discussion

The three studies presented here reinforce findings presented at IFMA21 (Noonan, 2017). There are important new findings of the significant impact of FP over longer term planning horizons as evidenced in those who had participated in R1 and R2 compared to non-participants (Table 1).

Noteworthy from Study 1 are responses by a small number of participants in R2 whose broader experience was less satisfying than other participants in R2. In a number of these instances, the delivery was in groups where facilitators did not receive pre-service training from the FBR team, or where further 'experimentation' with the delivery was trialed, and or where compression of delivery into shorter or irregular timeframes occurred. Demonstrably, having time for participants to digest the content of each module and internalize it, at least a week apart, over five or six weeks, with the aid of facilitators whose competencies have been more rigorously assessed, and calibrated against the training package, with the collected team competencies, contributed to successful adult learning outcomes. Anecdote from R3 supports these indications.

Study 2s metrics, some recorded for over four years after completion of the FP training, indicates some attributable evidence for improved productivity; economic performance; work-life balance; and continuation of the strategic approach to management engendered through the life of the BFB program to September 2014 for R1-3 participants.

Study 3 found strategic planning and access to BFB grants improved productivity and profitability (Connell, 2014: Cited in Heath 2017). Productivity growth in the pilot participants was stronger relative to the statewide average; observations by many of the facilitators who worked on FP, who have continuing contact with participants, indicates many participants continue to be on an upward productivity and financial trajectory. Others involved in formulating and evaluating Farm Planning have similar observations (Bodman, 2019).

Facilitated strategic planning processes used in FP provided, in many instances, provides a pathway for participants to expand communication and social networks, enabling increased capacity to work across communities and perhaps mitigating information overload (Heylighen, 2012, Heylighen and Vidal, 2008). Across all three studies, it is apparent that FP also resulted in greater financial literacy and promoted better work-life balance.

The importance of incentives to participate in the strategic planning elements were identified early in the evaluation processes - see Noonan (2017). The initial importance was in bringing the participants 'into the room', that is, to begin strategically planning. Data now available indicates offers of grant funding, coupled with travel allowances and childcare is very influential in enabling participation. BFB grants enabled a range of strategic activities, which in turn resulted in improved performance at a technical level, resulting in enhanced financial

outcomes, profitability and equity. Intuitively resulting in enhanced stewardship of resources and an increased flow of taxes to government.

In overarching terms, Heath (2017) found that participants in the program compared to non-participants had more holistic business planning processes. The development of strategic plans incorporated a range of adult learning methods, customized to the specific needs of the participants. Importantly, on average, at least two members of the family farm business participated in developing the strategic plan. Such a level of involvement, deepened in roundtable conversations between modules and at the optional kitchen table module, enabled direct participants in the learning process to share their experiences.

The resilience of the participating farm businesses has arguably improved. Strengthening the adaptive capacity of a farm via the facilitated learning journey and the activities identified in strategic plans developed by the farmers, resulted in a 'safe environment', thereby enabling "learning through experimenting and monitoring its outcomes, ensuring a flexible farm organization" (Darnhofer et al., 2010, 545).

There should now be opportunities for farmers who have not yet accessed these types of measures to access them, and reinforcement of the learnings (Medina, 2008) for those who have. Recent personal observations and reflection (Bodman, 2019) on the work reported at IMFA 21, and reflection on the work of Heath (2017), indicate a need to reinforce the FP 'journey' learnings at timely intervals, perhaps annually.

Improved resilience, on face value, appears to align with similar but unrelated programs of 'positive education and training' in schools and universities (Seligman, 2018) and training personnel involved in armed conflict (Reivich et al., 2011, Keller and Katsikopoulos, 2016). The apparent reduced stress may enable restoration of 'Brain Fuels' (Symons and Jumeaux, 2012) and wellbeing (Hogan et al., 2008). Perhaps there are insights to be gleaned from, and connections made to, emerging understanding of neurobiology (Maier and Seligman, 2016) and learnt positive behaviours (Daut et al., 2019) and of 'reaction (instantaneous, heuristic, irrational) versus response (considered, timely, rational) in risky decision making (MacAlister, 2016).

Many pilot participants are now independently reworking their strategic plans. With comments similar to 'and now it is a better plan!' Surely, a testament to the successful imparting of strategic planning processes.

Three to five years on, personnel observations of many farm businesses who participated in Farm Planning (by many involved in creating and delivering the program (Bodman, 2019)) are that they:

- are prospering, and doing better than other like farm enterprises;
- manage and own their destiny;
- can manage through the increasing volatility of weather events and life's challenges; and
- are less reliant on Government assistance.

Furthermore, some farmers used the process to realign their businesses and identified pathways forward. However, with more robust plans, skills and better understanding of the 'known knowns' and previous 'unknowns' some choose to 'sell up' after 'one more role of the dice'. Where many farming families within a given community participated, there is a sense of vibrancy in those communities with more community events, new community infrastructure and for some communities' increased stability in population.

Policy implications

Reliance on interest rate, fodder and transport subsidies and similar support mechanisms, including consultant prepared strategic plans, which may reinforce 'helplessness' (Seligman, 2018), have historically not provided substantive, nor sustained benefit to target businesses (Howden et al., 2010, Murray-Prior, 2014, Balm, 2002, Patterson, 2008, Price Waterhouse Coopers, 2006). While it is appropriate to provide safety nets and 'exit' mechanisms for businesses in irretrievable circumstances, overreliance on positioning of "ambulances at the bottom of a cliff" (Seligman, 2018, 280) and support packages that don't internalize learnings are unlikely to bring about positive change. Findings presented here reinforce the potential impacts of climate change and related factors on decision making and thereby business resilience. Government and related institutions (Nelson et al., 2010, Howden et al., 2010), identify a range of impacts, such as the impact of drought on mental health (Berry et al., 2011, Drought Policy Review Expert Social Panel, 2008, Horton et al., 2010) and stress (Gunn et al., 2012). The propect here, in part, is of the facilated leaning journey mitigating the undesirable impacts of drought and other 'wicked problems' (King, 2012a, King, 2012b) on the decision making and resilience of farm managers and buinesses.

Facilitated adult learning to self-create strategic business planning has enhanced farm businesses capacity. Therefore delivering better bottom line outcomes for the prosperity of the farm business, the well-being of the farming family and the farmed and natural resources including the environment and therefore the wider society.

Positive behavioral and practice change initiated in the training provided in R1 to R3 of the FP deepened in those businesses who accessed grants under the BFB program; therein lies an important message for the policy agenda in the future. The ability to access and utilize grants is a major incentive for participants to enter such programs, to strategically plan, adapt and innovate, and perhaps transform. More importantly those who received or leveraged the BFB grant via their co-contribution invested in a more resilient future for their business, in all likelihood reducing subsequent calls for support from government and EC measures.

Given the overarching objective for the pilot to assist farmers in taking responsibility for risk management and internalizing the real prospects of climate variability, the grants resulted in desirable decision-making and practice change. It would be unwise for future policy making to discard or discount these behavioral and practice outcomes.

The identified need for continuing longitudinal analysis (Noonan et al., 2012, Noonan, 2017) is supported by others with intimate knowledge of the outcomes of the program (Bodman, 2019). Further investigation should explore not only the longer term productivity impacts of the BFB grants and other direct benefits, but should also consider exploring collateral or 'horizontal' and unanticipated impacts.

Prima facie, the allocation of government funds and resources to enable strategic business planning, through experiential learning journeys and better-targeted financial support in EC, rather than interest rate subsidies, more effectively uses the 'public purse'.

Indeed, it is possible to adapt while 'farming at the edge' (McGregor, 2003) (McGregor et al., 2003), and a 'little nudge' from government, coupled with honest brokering (Pielke, 2007), as exemplified by Farm Planning, can provide a better future for farm businesses and government policy.

" If farmers own and see their future they will manage the knowns and have strategies to work with those things they cannot control to achieve their goals (Bodman, 2019)."

5. Conclusion

Taking a facilitated learning journey approach to strategic planning enabled more farmers to more effectively address complex messy challenges such as increasing turbulence in climate and weather, market variability, and time critical production decision making. Now clearly identified are improved financial performance markers and other indicators of management capacity beyond the immediate short term for those who completed FP training founded on the FBR processes and utilized BFB grants to build enduring business resilience.

There are notable and important policy implications. Building adaptive management capacity, in farm managers, leading to transformative capacity, is an important tool for agribusiness and farm management. The use of strategic management tools can better prepare farm businesses' for 'future shocks', inherently reducing the need for support from Government.

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