

Development of a Bushfire Management Business Model

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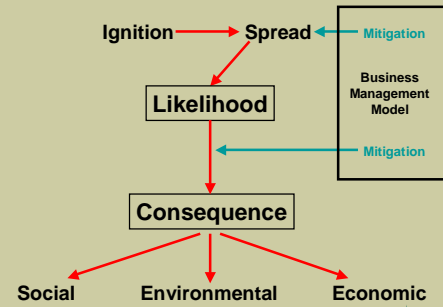


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Risk Management



Method

- Questionnaire
- 17 experienced and senior fire managers (expert managers)
- Qld, NSW, Vic, Tas, SA, WA
 - Land Managers,
 - Emergency Response,
 - Plantation Managers,
 - Remote Area

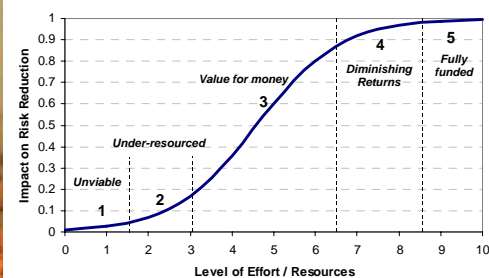


Method - Questionnaire

- Description of organisation objectives
 - assuming bushfire risk reduction
- Status of Resources vs Effectiveness
 - “S” response curve
- Prevention, Preparedness, Response, Recovery, Fire Regime
 - Dependent elements (“require”)
 - Independent elements (“substitute”)




“S” Response Curve




- Prevention (11%)
 - Legislation (0.4%)
 - Enforcement (0.5%)
 - Community Education (law & safety) (3.3%)
 - Planning (fire & land use) (6.5%)



- **Preparedness (49%)**
 - **Detection (3.3%)**
 - Public, tower, air, satellite, patrols
 - **Hazard Management (11.3%)**
 - FRB, slashing, pruning
 - **Infrastructure Management (12.4%)**
 - Roads, towers, depots, airstrips, comms.
 - **Resource Preparedness (21.7%)**
 - Crews, training, aircraft, dozers, tankers



- **Response (26%)**
 - Multi-fire prioritization
 - Response time
 - Suppression time
 - Resource combination allocation



- **Recovery (5%)**
 - Control-line rehabilitation (1.4%)
 - Ecosystem rehabilitation (0.4%)
 - Community recovery (0.3%)
 - Firefighter recovery (1.5%)
 - Debriefs / analysis (0.6%)
 - Fire investigations (0.6%)




- **Fire Regime Management (10%)**
 - Landscape scale
 - Local, species specific





Budget Allocation

- **Prevention (11%)**
- **Preparedness (49%)**
- **Response (26%)**
- **Recovery (5%)**
- **Fire Regime Management (10%)**




Strategy	Mean	Primarily Land Mgt.	Priority Emergency Response	Urban Interface	Significant Native Forest	Significant Plantations	Significant Remote Areas	Significant Emergency Response	Significant Volunteers
Prevention	10.8	10.3	11.7	11.3	12.3	7.4	8.8	10.3	10.7
Preparedness	48.7	44.4	56.7	49.8	47.9	62.4	37.7	52.5	56.4
Response	26.1	28.4	22.0	29.6	28.8	24.0	26.8	28.3	22.4
Recovery	4.8	3.9	6.3	4.9	5.2	3.8	4.8	5.0	6.1
Fire Regime Mgt.	9.6	13.0	3.3	4.3	5.6	2.2	21.8	3.9	4.3





- Differences between LM and ER
 - Land use planning ↓ ↓
 - Fire stations/depots ↓ ↓
 - Incident Control Centres ↓ ↓
 - Aircraft infrastructure ↓ ↓
 - Fire bombers ↓ ↓
 - Fire investigation ↓ ↓
 - Fire towers ↑ ↑
 - Aerial detection ↑ ↑
 - Fireline rehab ↑ ↑
 - Ecosystem rehab ↑ ↑

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Shift to optimal levels

< 1% shift in budget	1 to 2% shift in budget
Satellites	Vehicle patrol detection
Aircraft infrastructure	Community recovery
Remote Area attack crew	Fire investigations
Water points/plugs	Incident Control Centres
Reconnaissance aircraft	Enforcement
Post incident analysis/debriefs	Aerial reconnaissance
Legislation control	Equipment maintenance
Ecosystem rehabilitation	Fire fighter recovery
Dozers – small/large	Fire tower detection
Public / Other Agency detection	Tower maintenance


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Sympysial and Substitutional Changes

Infrastructure elements to be increased by a notional 10%

	Road and track network		Water points		Fire Stations / depots		Fire towers		ICCs		Comm's		Aircraft infrastructure	
	R	R/N	R	R/N	R	R/N	R	R/N	R	R/N	R	R/N	R	R/N
Road and track network	6	-12	18	6	6	6	6	0	0	0	0	0	0	0
Water points	6	-6	0	0	12	-6	6	0	0	0	0	0	0	0
Fire Stations/depots	6	-6	0	0	0	0	0	6	0	-6	0	0	12	-6
Fire Towers	0	0	0	0	0	0	0	0	0	0	0	0	0	-18
ICCs	0	0	0	0	18	-12	0	6	0	0	6	-6	12	0
Communications	0	6	0	0	18	0	6	0	53	0	0	0	0	24
Aircraft Infrastructure	0	-6	0	0	0	-6	0	-12	0	0	0	0	0	0
Detection	0	0	6	0	6	0	12	-18	0	0	0	0	12	-18
Hazard management	29	-24	6	-12	6	0	-6	0	0	0	0	-6	0	-6
Resource preparedness	12	-12	18	-12	35	-6	6	0	24	0	24	6	35	0
Prevention	0	0	0	0	12	0	6	0	6	0	0	12	12	0
Response	18	-53	18	-18	24	-6	12	6	24	-6	6	-24	6	-12
Recovery	12	-18	0	-12	6	-12	0	0	12	-18	0	0	0	-6
Fire Regime Management	18	-6	0	0	0	0	0	0	6	0	0	6	0	0
Total	100	-129	85	-47	141	-41	47	-12	124	-29	35	-12	112	-65

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Conclusions

- Budget allocations indicate implied importance and relative cost.
- Linkages between mitigation elements need further analysis.
- Fire management business is context sensitive.
- Significant opportunity to improve efficiency of fire management business

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