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Wildfire prevention in Australia and beyond: a practitioner's perspective

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EFI & INIA International Meeting on Resilient landscapes to face catastrophic forest fires: global insights towards a new paradigm Socioeconomic perspectives and world experiences to manage and mitigate forest fire risks, Madrid - 14-15 October 2019

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Disclaimer

- My Fire Management Context
  - Discovered a fire not blacked out age three
  - Fire Management in Australia from 1981
  - South East Asia since 1999
  - East, West and Southern Africa since 2008
  - North Africa since 2016
  - Also Armenia, Canada, Chile, PNG, Sudan, USA
- Fought fires – scary did not like it
- Planned fire management –
  - complex, hurts head, liked it
- Formulated fire management policy –
  - very complex, really hurts brain, love it

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This Presentation

- Global Guidance
- The Fire Management Framework
- Some Things we Know (or Should Know)
- The Change
- The Challenge
- Integrated Fire Management - example
- Summary

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Sendai Framework 2015 - 2030

- Priority 1: Understanding disaster risk.
- Priority 2: Strengthening disaster risk governance to manage disaster risk.
- Priority 3: Investing in disaster risk reduction for resilience.
- Priority 4: Enhancing disaster preparedness for effective response and to "Build Back Better" in recovery, rehabilitation and reconstruction.

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Sendai Framework - Emphasis

- Moves in the direction of Resilience
  - Move from managing disasters to managing risks; instead of waiting to respond, manage to reduce risks
  - Widened scope
    - large-scale (flood) **and** small (chemical incident),
    - infrequent (tsunami) **and** frequent (wildfires),
    - sudden (the above) **and** slow-onset disasters (drought, pest outbreaks)
  - More people-centred, all-hazards multi-sectoral approach to Disaster Risk Reduction to manage risks
- First priority action: **Understand disaster risk**

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Fire Management Framework

- Integrated approach with emphasis on addressing underlying causes for sustainable solutions:
  - **REVIEW** - Analysis of the fire issue
  - **RISK REDUCTION** - Focusing on underlying causes
  - **READINESS** – Preparing to fight fires;
  - **RESPONSE** – Suppressing unwanted fires
  - **RECOVERY** – Human welfare, Repair, Restoration
- Critical Needs
  - Fire data and related information analysis
  - Stakeholders involved especially local communities

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Fire Management On a page

System Tools	System Process Components	
• Maps (vegetation, topography, tenure, assets, roads, ignition distribution etc) • Fire behaviour prediction tools • Spatial databases • Demographic information • Cultural & Social Context of fire • Ecological response to fire (fire histories, fire effects information, fire regimes)	**REVIEW - ANALYSIS OF THE FIRE PROBLEM** **1. Fire Likelihood** — **Ignition history** **2. Consequence of** — **Fire on** — **Assets** ⬇ — ⬇ — ⬇ Economic — Intensity — Value Social — Spread Rate — Vulnerability Environmental — Duration **3. Ecological context of fire**	System
• Fire use laws/regulations, enforcement • Planning controls • Education programs • Fire behaviour guides, ignition & control resources, planning & reporting tools. • Firebreak construction guides • Building construction codes • Ecological fire training • Fire use education	**RISK REDUCTION - PREVENTION** **1. Ignition Reduction Strategies** - Regulate fire use, educate fire users, technology improvements, development planning controls **2. Impact Mitigation Strategies** - Fuel reduction (e.g. by burning, grazing & other means) - Reduce asset vulnerability (e.g. construction standards) - Establish/maintain containment features (e.g. fuel breaks) **3. Fire Use Strategies** - Ecosystem maintenance - Fire regime restoration	Improvement
• Climate, weather monitoring & prediction • Fire Danger Rating system. • FDR public notification means. • Detection/suppression needs assessment. • Fire detection, suppression & communications resources. • Fire training systems and tools	**READINESS - PREPAREDNESS TO FIGHT FIRES** **1. Strategies** - Early Warning/Predictive systems - Community warning mechanisms - Detection and response infrastructure - Communications systems - Mobilisation & co-ordination plans - Response triggers and levels - Competent fire control staff	Monitoring
• Response mobilisation plans • Operational responsibilities & procedures. • Strategic information access tools • Decision support tools • Operational management systems	**RESPONSE - FIRE FIGHTING OPERATIONS** **1. Detection and Reporting** **2. First Response** **3. Containment and Control** **4. Mop Up and Patrol** **5. Command and Control**	& Review
• Damage assessment tools • Recovery assistance plans	**RECOVERY POST FIRE** **1. Community Welfare assistance** **2. Economic loss reduction (e.g. salvage logging and replanting, infrastructure repair)** **3. Environmental repair**	

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Font Size of CURRENT Focus

- REVIEW
- RISK REDUCTION
- READINESS
- RESPONSE
- RECOVERY

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Font Size of PREFERRED Focus

–REVIEW

–RISK REDUCTION

–READINESS

–RESPONSE

–RECOVERY

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Things we Know (or Should Know)

- Fires start, move across the landscape and impact
- There is **no likelihood of zero ignitions**
  - There will always be poor practices, unpredictable events, accidents, ignorance and some stupidity
  - 90% of fires are human caused - **CRITICAL**
- 5% of fires = 95% area burned , damage and loss
- Firefighting has limits
  - Flames >3.5 metres in length, moving at 3000 m/hr in forest 6000 m/hr in grassland cannot be put out. Nature, fuels or weather puts them out not us
  - Fires in Portugal 2017 exceeded this fire intensity by two to six times. An impossible firefighting task.

Therefore

- Wildfires **will** impact forests and landscapes, urban areas, private and public lands
- Emphasise reducing wildfire risk and impacts
  - **Its Physics Einstein** - more fuel and fuel continuity means more intense fires, moving more quickly, more difficult to suppress and more damaging socio-economically and environmentally
- We must invest in discussing, designing and applying Integrated Fire Management
  - Balance risk reduction through managing socio-economic and environmental benefits by talking to people about their ideas, risks, options and outcomes

The Change

- In Europe fires of the past are not the way fires appear now and not how fires will be in future
  - Portugal, Greece, Italy, Spain, France – some history and systems and experience
  - Ireland – fire management forester appointed
  - England had a peat wildfire near Manchester
  - Sweden had 56 fires burning in forests on a single day, has not happened in recorded or living memory
  - The context is changing with urbanization, changing climate, pests and diseases and declining rural populations

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The Challenge

- Understand the fires we have so we know why they happen, who starts them, where they burn and the damage and loss they cause and keep reviewing to adapt as the fires change
- Do this so that communities, societies and countries work in an informed way to balance
  - flaming fiction with fire facts,
  - wildfire mania with fire management, and
  - dramatic destruction with deliberate action
- The reality –
  - We understand very few fires and where we do have an insight we need to revisit it, review and analyse.

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The Key to Unlock the Fire Puzzle

- People and communities are key and critical!
- What are the THREE most common causes of fires worldwide?
  1. Men
  2. Women
  3. Children
- By far and away it is Men – Where to focus?
- If you want to know what's happening and If you want to know why its happening
  - TALK TO THE WOMEN
- If you want an alternative view
  - TALK TO THE CHILDREN

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Fire Spectrum - Prescribed Fires

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Fire Spectrum - Wildfires

Photo J Molloy NPWS

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Integrated Fire Management – in Practice

West Arnhem Land Fire Abatement Project

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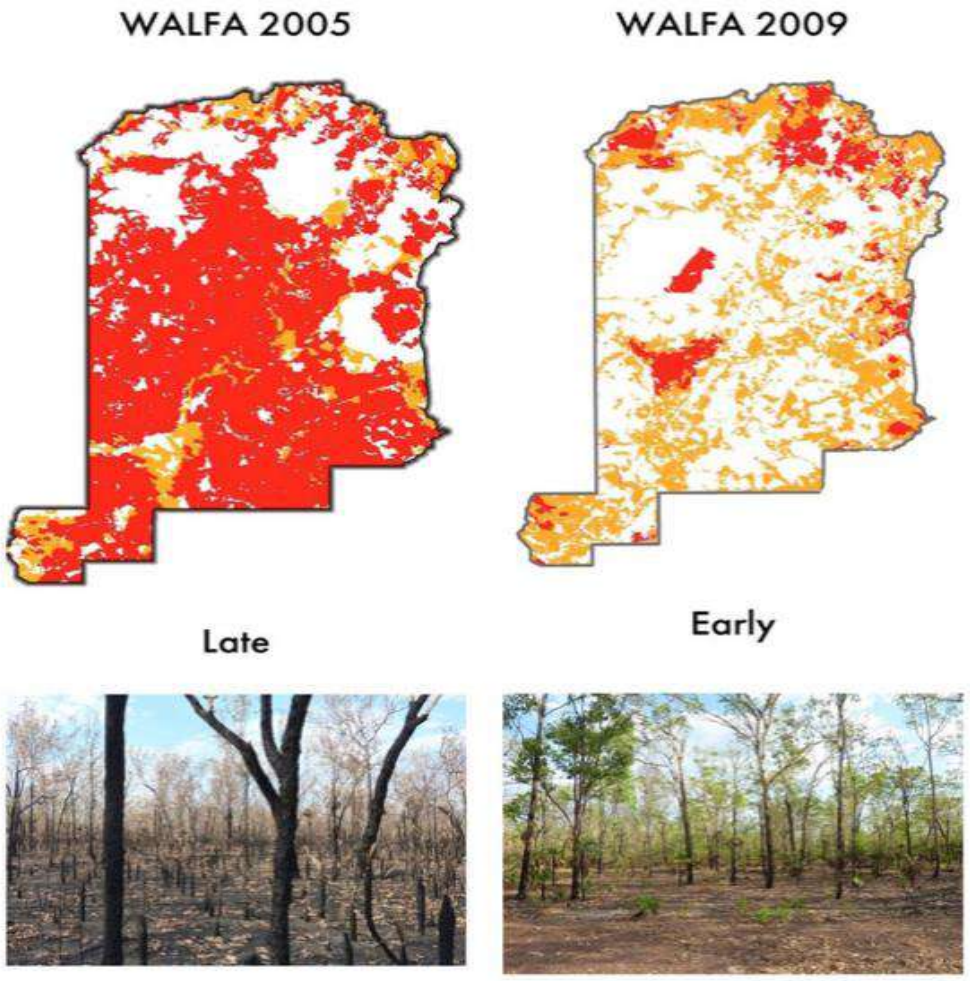
Australian Example

- Northern Australia - wet season/dry season climate, savanna, brush and grasslands.
- Indigenous Fire Management history interrupted
- Burning changed to large fires very late dry season
- Traditional burning was fires throughout the year
- Social, anthropological, ecological and historical research
- Legal changes and public perception
- Opportunity to work with indigenous land owners to re-introduce traditional burning



WALFA Project Arnhem Land 2005 – 2009

Integrated?

- Indigenous led/owned projects
- Communities - Opportunity to stay on country, Education, Traditional Knowledge, Mob and Tribe
- Biodiversity – sustained by a mix of fires, frequency, types and season
- Economic – Employment, Reinvestment of funds, Tourism,
- Climate (Emissions reductions) - 30%-50% (additional in sequestration).
  - Monitoring, Reporting, Verification (MRV)
  - National Emissions Reductions Fund

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Has been replicated - Projects across the north of Australia – 25 Indigenous owned or involved

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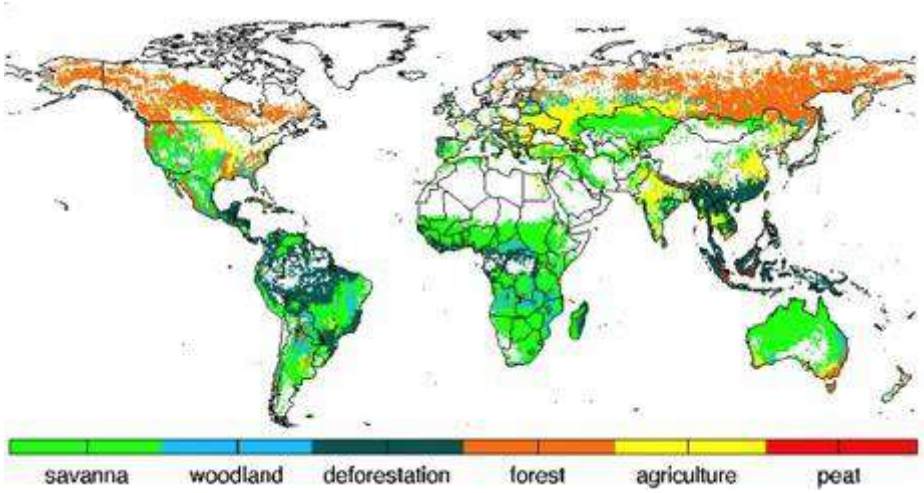
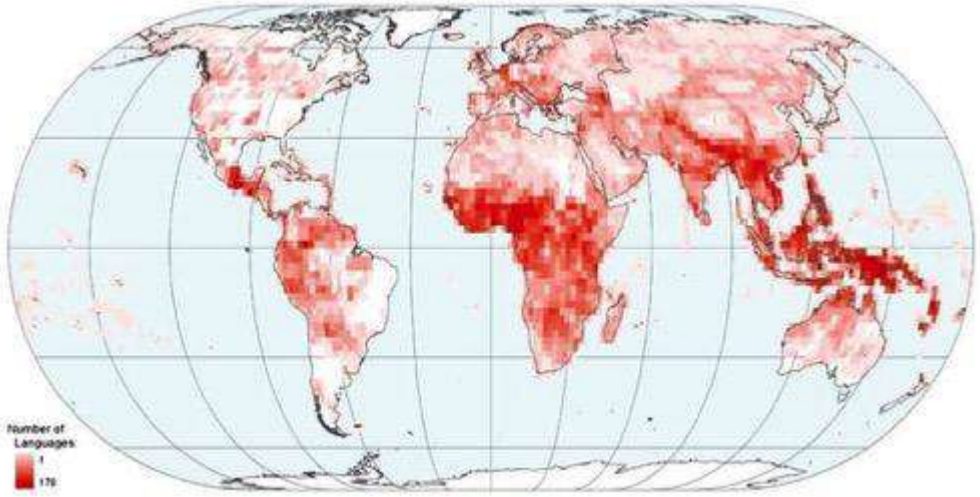
Could be applicable elsewhere?





- Savannas make up 1/6 of the global land surface
- 65% of biomass burning comes from savannas
- Significant proportion of these savanna landscapes are under traditional communal land tenure

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Could be applicable elsewhere?

Some Caveats

- WALFA Characteristics
  - Very Large Area with few people, little infrastructure – low risk
  - Legal clarity and political and social energy
  - Investor – Conoco Phillips
- However
  - Approach used for IFM potentially applicable across savannas and tropical dry forests
  - Traditional Fire Knowledge in other ecosystems
  - People focus could re-invigorate TFK in Europe?

Summary

- A key for fire management is
  - Engaging decision-makers, other actors and stakeholders to appreciate that really, really good fire management is low profile, undramatic, routine and cyclical (boring).
  - BUT costs lot less, reduces damage and loss, more manageable, can be planned and organized, uses engagement at local level and builds community
- PLEASE
  - Work to Understand your fires!
  - Know the people!

Thank you for listening

Any questions?

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