How resilient is the social licence of energy cropping?

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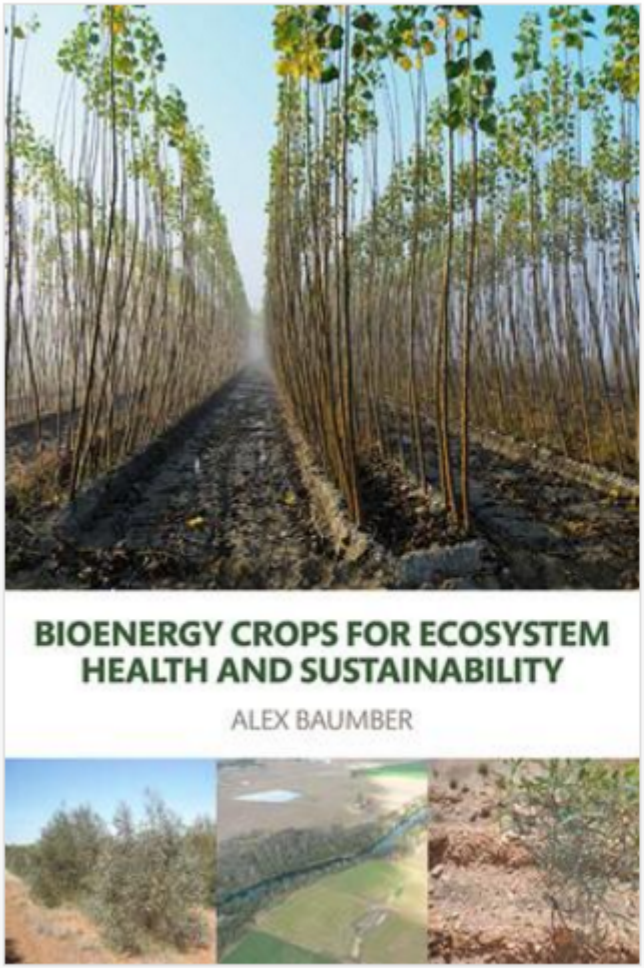


Bioenergy Crops for Ecosystem Health and Sustainability

By **Alex Baumber**

206 pages | 40 B/W Illus.

https://www.routledge.com/Bioenergy-Crops-for-Ecosystem-Health-and-Sustainability/Baumber/p/book/9781138838833

"Overall, this is a valuable addition to the literature on bioenergy crops; it recognises problems, deals in the reality of ecological protection, and reflects the ever present interplay between politics, economics and environment. … its approach makes it relevant to a wide audience in environmental science/ management“

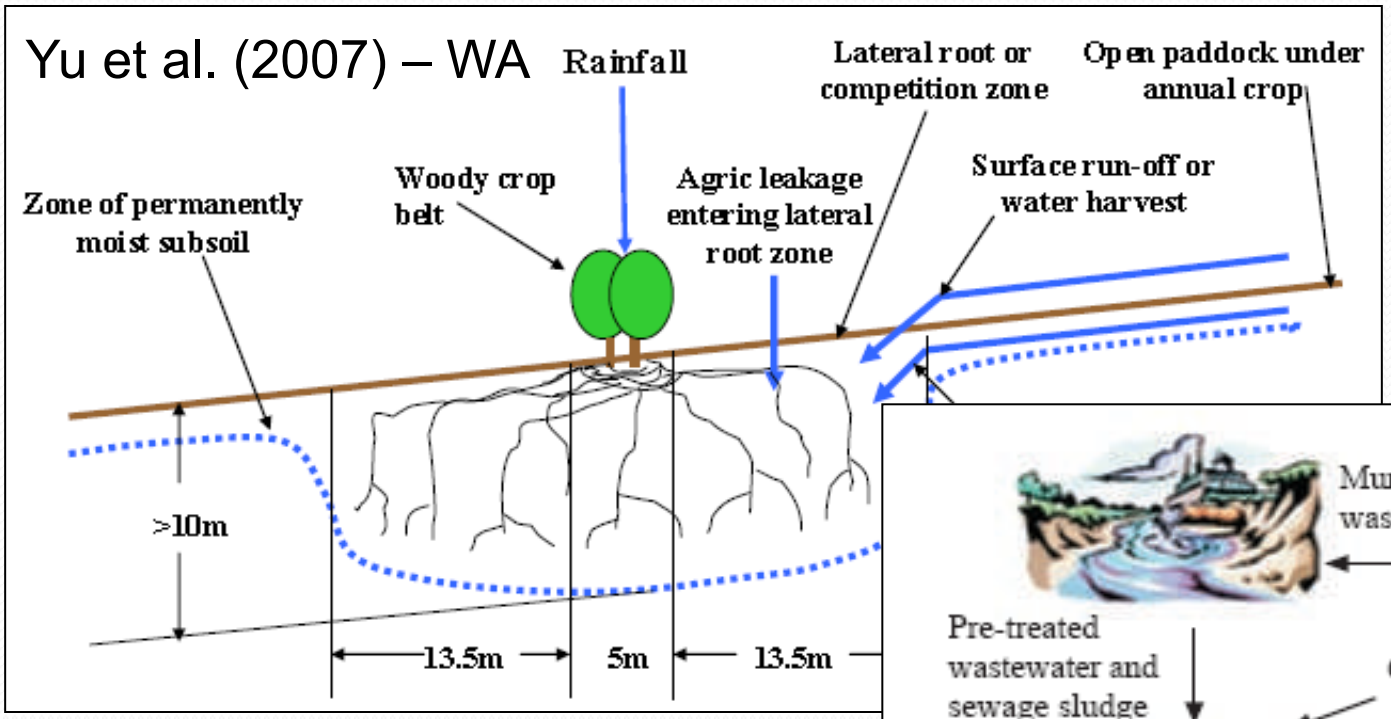
Antoinette Mannion, in *Bulletin of the British Ecological Society* (Oct 2016)

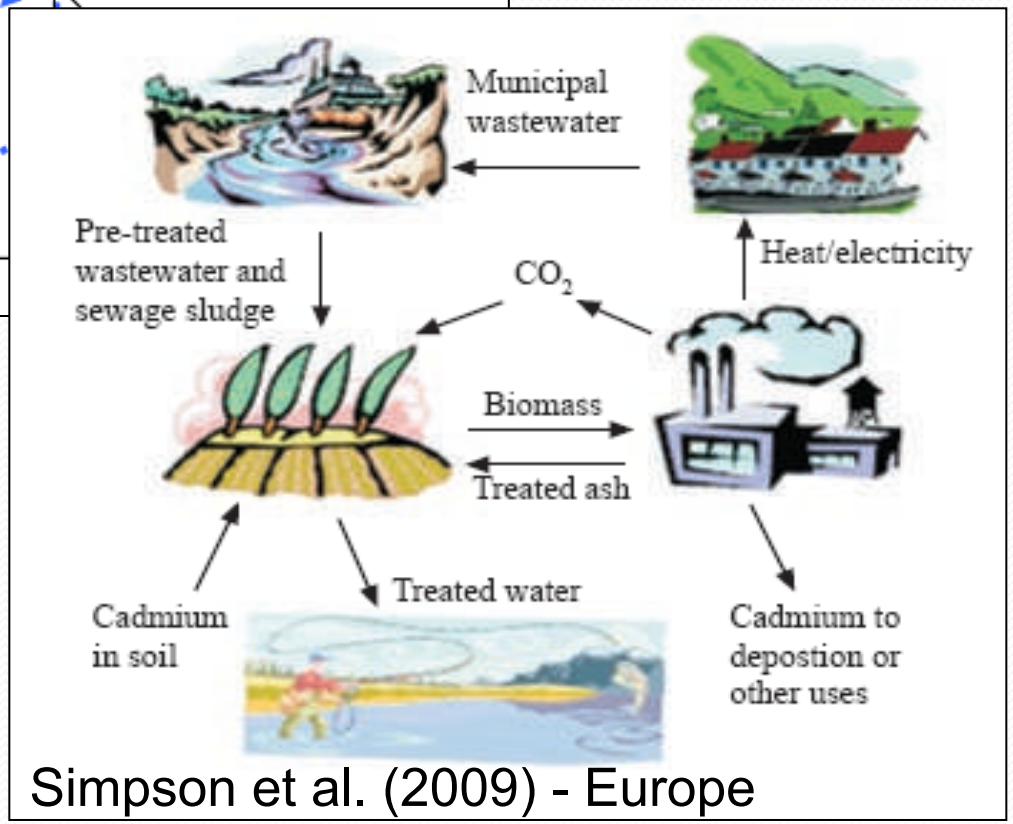
Woody Energy Crops

http://www.crops4energy.co.uk/
short-rotation-coppice-src/

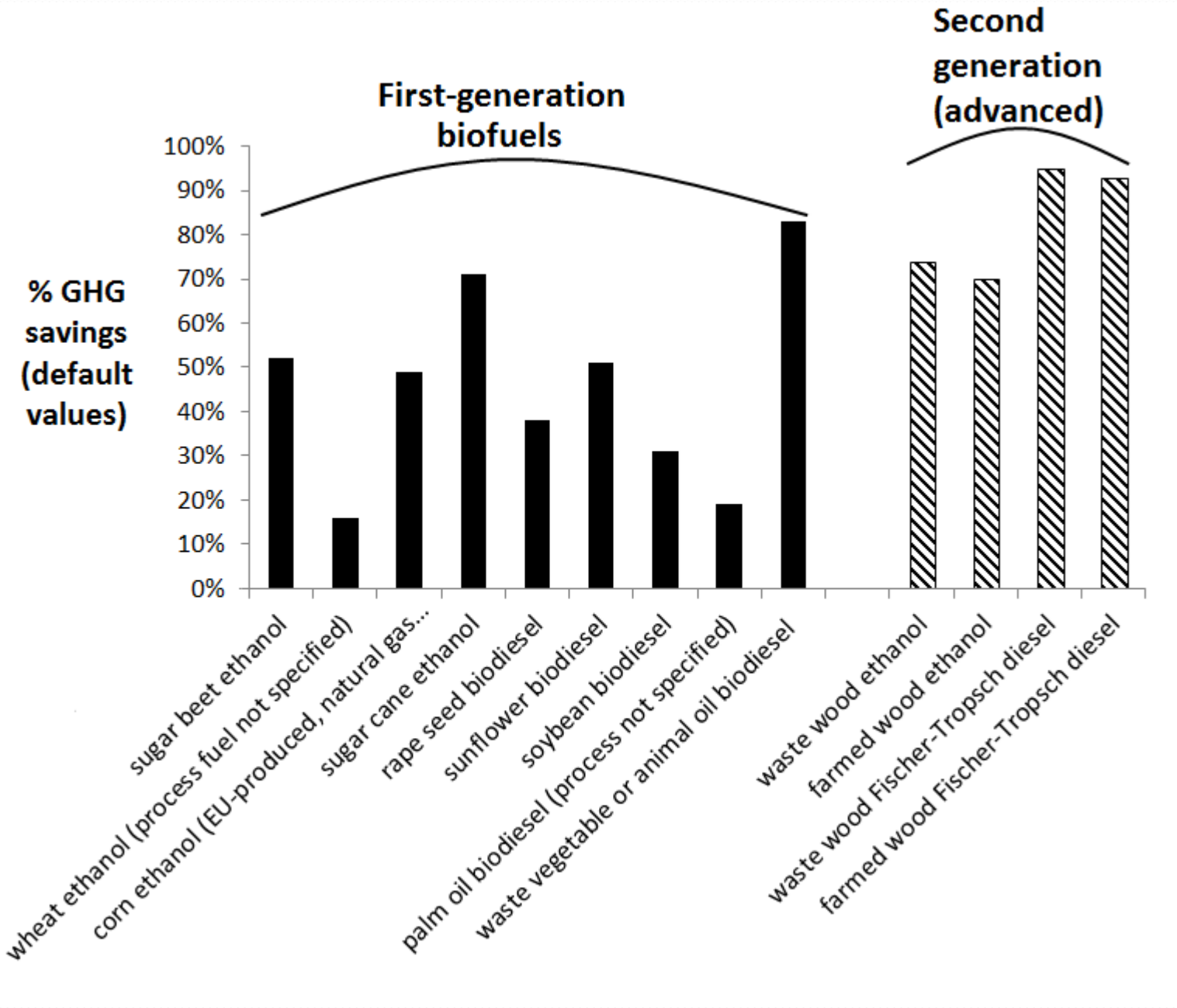
http://www.oilmallee.org.au

Yu et al. (2007) – WA





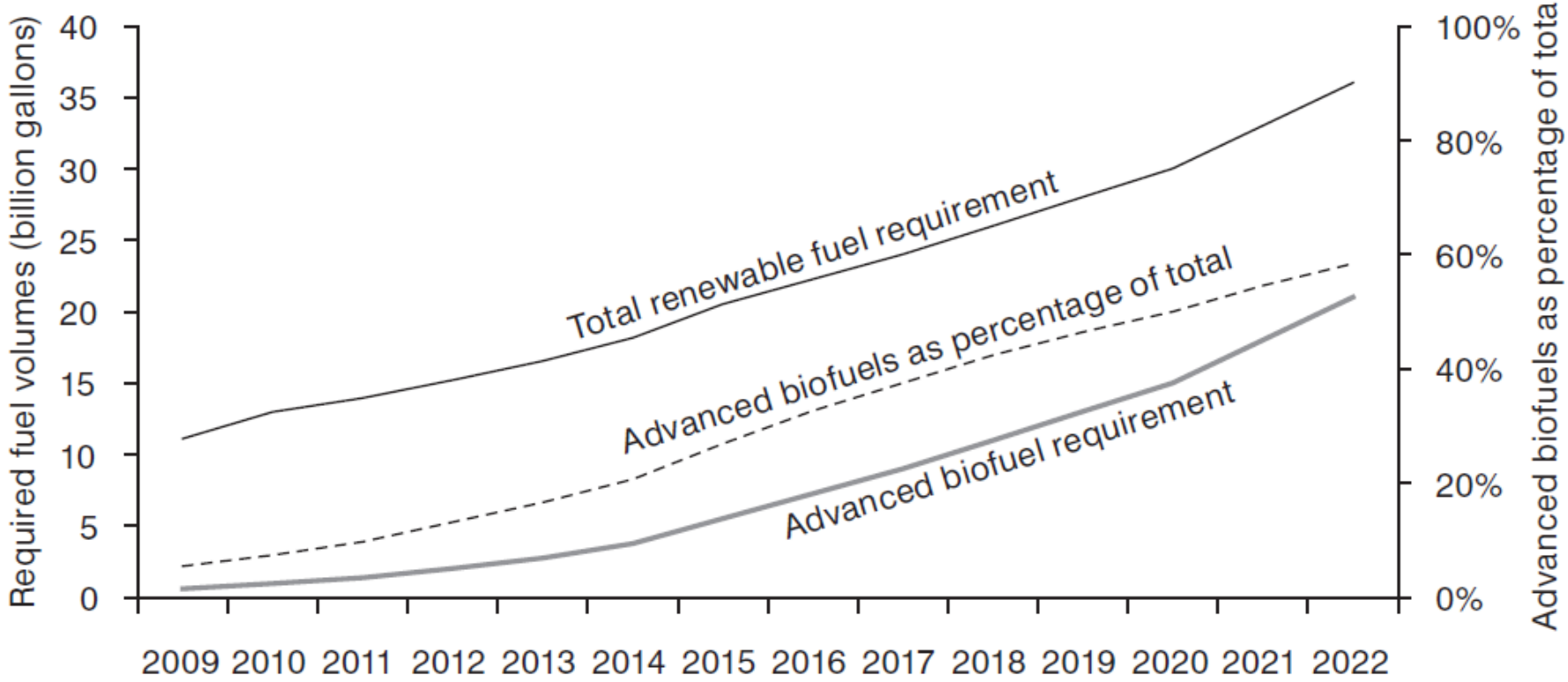
Simpson et al. (2009) - Europe



GHG savings from second-generation biofuels based on EU data

Promotion of woody energy crops

- EU encourages woody energy crops for second-generation biofuels (along with wastes) by:
  - Allowing such fuels to be "double-counted" against national biofuel targets
  - Capping biofuels from food crops
  - Allowing GHG "bonus" for energy cropping that restores degraded land
- US promotes biofuels from woody crops and wastes indirectly through increasing requirements for "advanced" biofuels with high GHG savings



Increase in advanced biofuel requirement in the US 2009–22

Source: Environmental Protection Agency (2010)

Questions

- Where will woody energy crops be grown?
- What will they replace (other crops? forestry plantations? “idle” land?)
- What impacts will they have?
- Will crops that restore/protect land be preferred over those with negative impacts?
- Will they accepted by local communities?

Social Licence to Operate (SLO)

Malcolm Turnbull on banks:
"They operate with a very substantial social licence and they owe it to the Australian people and their customers to explain fully and comprehensively why they have not passed on the full rate cut and they must do so"

McHugh report on greyhound racing:
"the Parliament of New South Wales should consider whether the industry has lost its social licence and should no longer be permitted to operate in NSW"

Social Licence to Operate (SLO)

- Came to prominence as a concept in the mining industry in the late 1990s
- Attributed to Canadian mining executive Jim Cooney
- Since applied to a wide range of activities including wind farms, cotton farming, forest management and the creation of protected areas
- Could it also have value in planning around a potential increase in woody energy cropping?

Definitions

- CSIRO: “ongoing acceptance or approval from the local community and other stakeholders involved in an industry, project or operation” (McHugh 2016)
- “Intangible” and “unwritten”
- Ian Thomson (Canadian SLO expert): Social licence is “a very powerful metaphor, but is open to misuse”

  Should be based on “very specific relationships between those who are immediately affected or impacted by a particular activity”

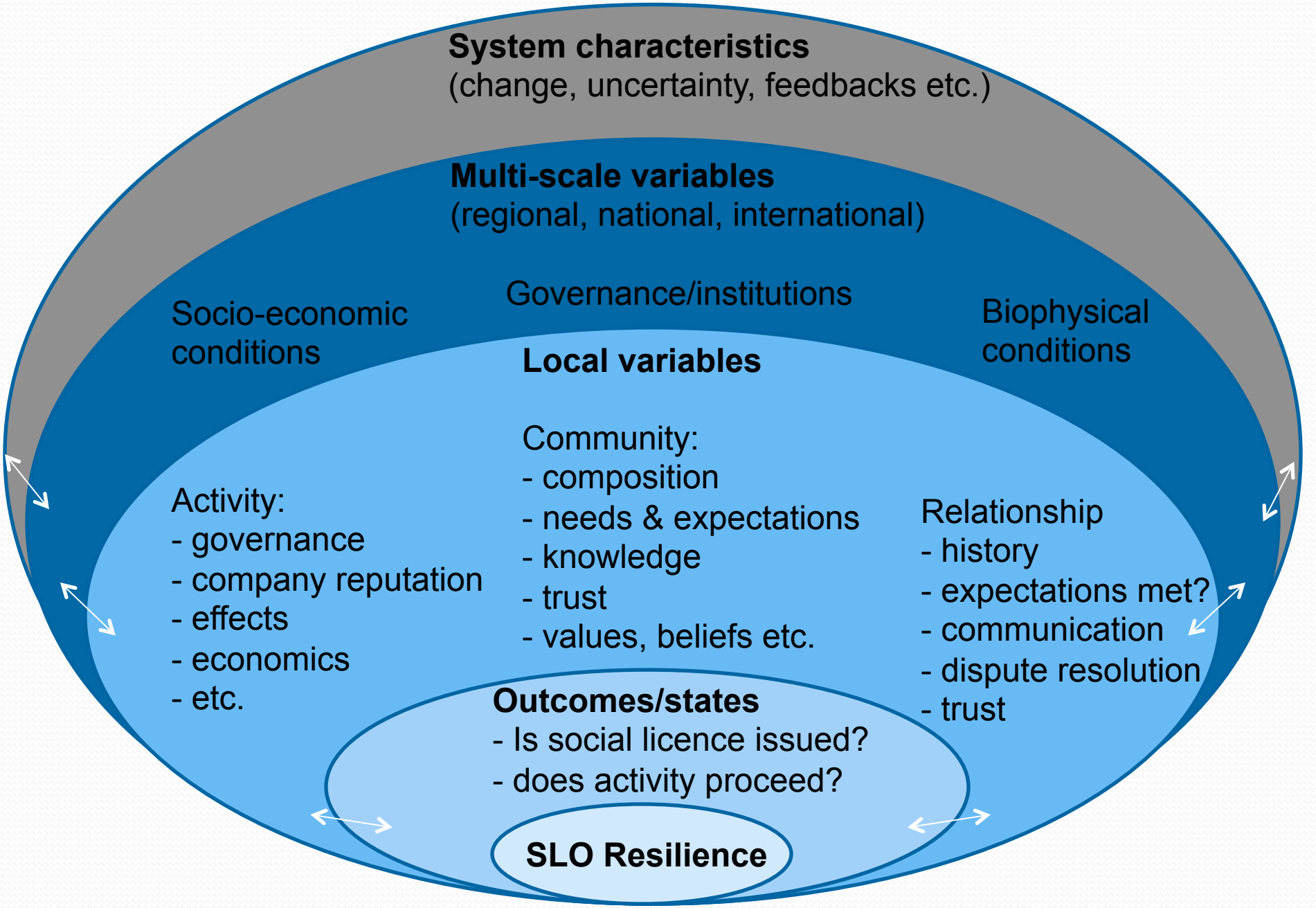
www.farmonline.com.au

	Regulatory licence	Social licence	Community acceptance
How do you measure it?	Either you have it or you don't	Two primary states (you either have it or you don't), but: • High uncertainty • How resilient is it?	• Matter of degree (linear) • Specific sub-groups may be relevant
Process by which it's issued	• Regulated decision-making processes • Focus on initial decision (but also processes to renew/ revoke)	• Maintenance of social licence just as important as obtaining it initially • Loss of social licence may lead to loss of reg. licence	• No clear process or decision point
Which stake-holders are most critical	• Regulatory agency • Legislators • Community consultation processes in regulations	• Local community • Influenced by broader trends at regional, national and international scales	• Everyone? • Specific groups? • Opinion-makers?

A systems-based approach

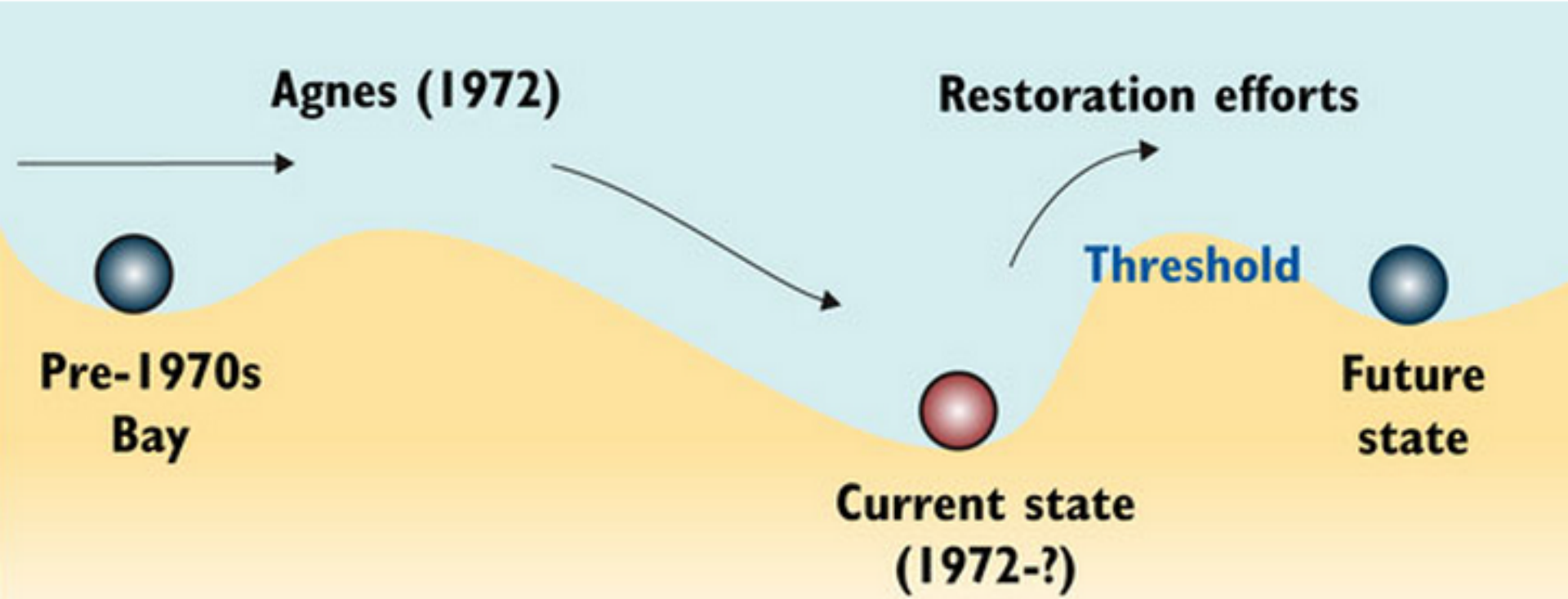
- The concept of a social licence to operate lends itself to the use of systems thinking, which has a focus on:
  - Complexity and uncertainty
  - Integrated social and ecological systems
  - Thresholds and feedbacks (non-linear change)
  - Fast and slow variables
  - Adaptive capacity
  - Resilience
- Prno and Slocombe (2014) developed a social licence framework for use in the mining sector that is based on systems thinking, drawing on work by Dana Meadows, Buzz Holling, Fikret Berkes etc.

Systems-based framework adapted from Prno and Slocombe (2014)



Resilience, thresholds & states

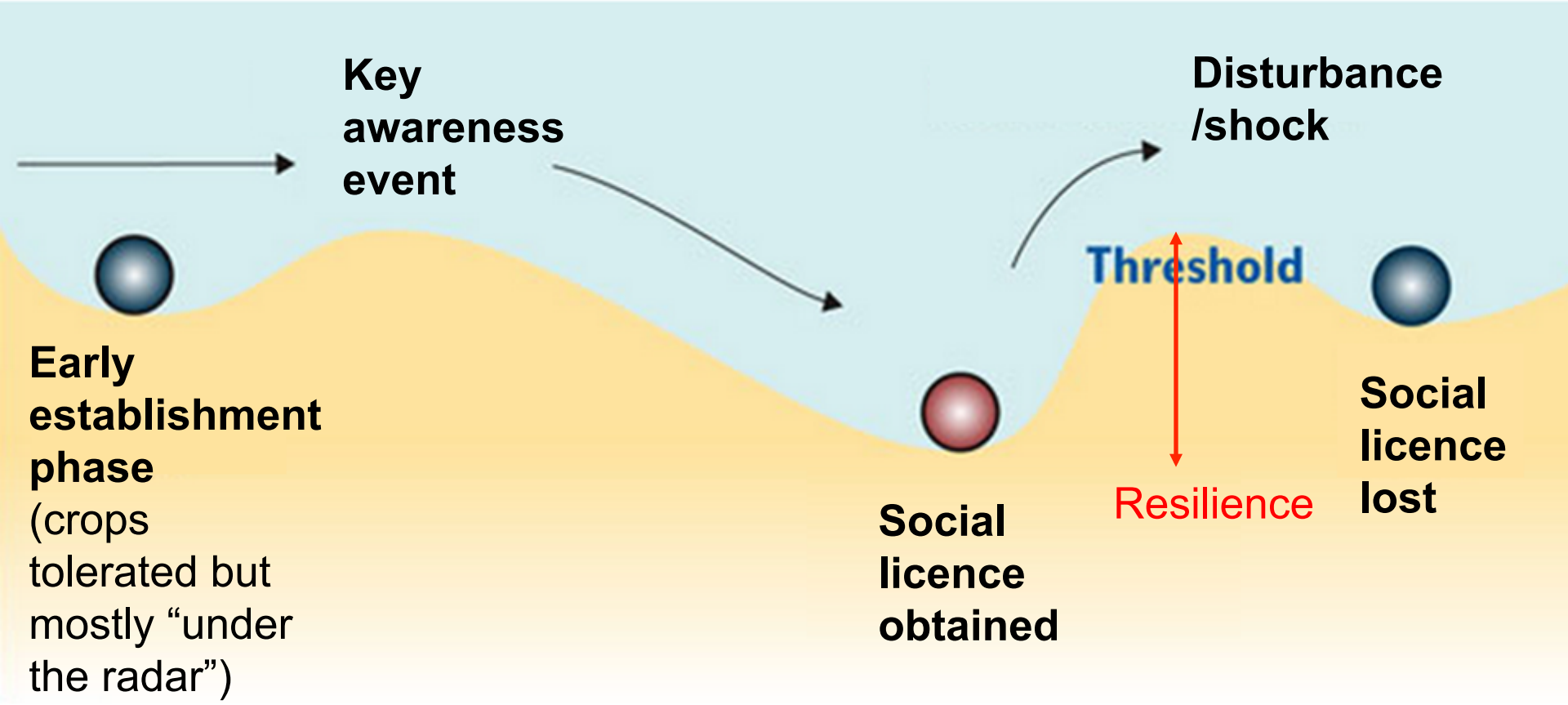
- E.g. water quality in Chesapeake Bay, US



http://www.mdsg.umd.edu/topics/ecosystems-restoration/resilience-and-recovery

Resilience, thresholds & states

- Social licence of woody energy crops



Research questions

- What are the critical local variables that determine whether a social licence is obtained?
- What kinds of disturbances could an energy cropping system encounter?
- What factors determine the resilience of your social licence when disturbances occur?
- What can we learn from experiences in other sectors and from first-generation bioenergy crops?

Mining and social licence

Red Dog Mine, Alaska (Prno & Slocombe 2014)

- Key variables include local involvement, meeting needs & expectations and commitment to environmental protection
- Threats include lack of trust in government, outside opposition to mining & some groups missing out on benefits
- Resilience of social licence is enhanced by:
  - wealth generation
  - maintenance of livelihoods and culture
  - clear property rights
  - healthy ecosystem

Mining and social licence

CSIRO Australian mining study (Moffat & Zhang 2013)

- Similar focus on local engagement
- Building trust is crucial
- Quality of contact is more important than quantity

Threats:

- Impacts on social infrastructure such as hospitals, child care services and housing availability
- Perceived lack of procedural fairness in dealing with mining company personnel can erode trust

Other sectors

Wind farms (Hall et al. 2013)

- Four crucial themes of:
  - Trust
  - Distributional justice (how benefits & costs are shared)
  - Procedural justice (local determination & input)
  - Attachment to place

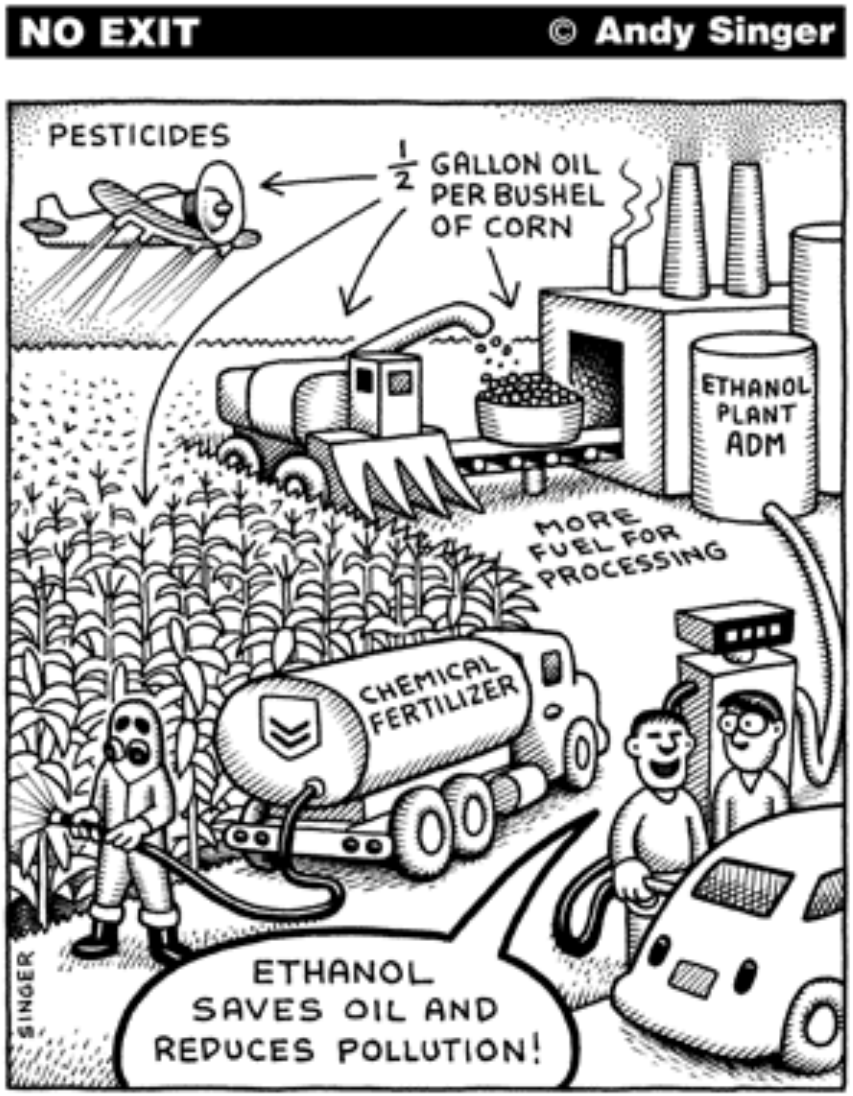
Forestry (Dare et al. 2014)

- Actually multiple licences across various levels of society
- Threats: lack of trust, limited stakeholder representation and evolving social expectations

Changing expectations

- NZ in early '8os: NGOs campaigned against native forest harvest and promoted pine plantations
- But… once forests protected, more scrutiny was placed on plantations - expectations of mixed-species design, longer rotation lengths and better integration into landscapes
- Similar story in WA – The Greens even talked up the quality of woodchips from plantations and the employment benefits they would provide.
- But… more concerns were raised once forests became protected and it became apparent many plantations were large-scale monocultures not integrated farm forestry

Experiences with energy crops



First-generation energy crops

Corn ethanol

- Local support vs global concerns
- Subsidies and resilience

Palm Oil

- Community impacts, land rights & environmental protections
- Who is the "affected community"?

Jatropha

- Risk of high expectations

Brazilian biodiesel and "social fuel"

- Role of government in providing incentives for social benefits

Forestry residues for bioenergy

Forestry bioenergy, Tasmania & Bavaria (Rothe et al. 2015)

- Social licence in Bavaria strong due to tradition of firewood use and community-scale plants. Weak in Tasmania due to broader concerns around native forest harvesting.

Alabama biorefineries - forest biomass (Bailey et al. 2011)

- Community ownership for local benefit, not oil majors

Forest bioenergy in Sweden (Edwards & Lacey 2014)

- Whole stump removal is accepted for climate change reasons, but unexpected impacts and changing attitudes are risks

Woody energy crops

Switching to woody crops in Sweden (Ostwald et al. 2013)

- Drivers: environmental benefits, hunting, aesthetics
- Barriers: Knowledge, economic risk, food v fuel, aesthetics

Short-rotation tree-crops in UK (Dockerty et al. 2012)

- Broad acceptance based on photo imagery, but some concerns about amenity, heavy vehicle traffic and food vs fuel

Acceptance of bioenergy in India (Eswarlal et al. 2014)

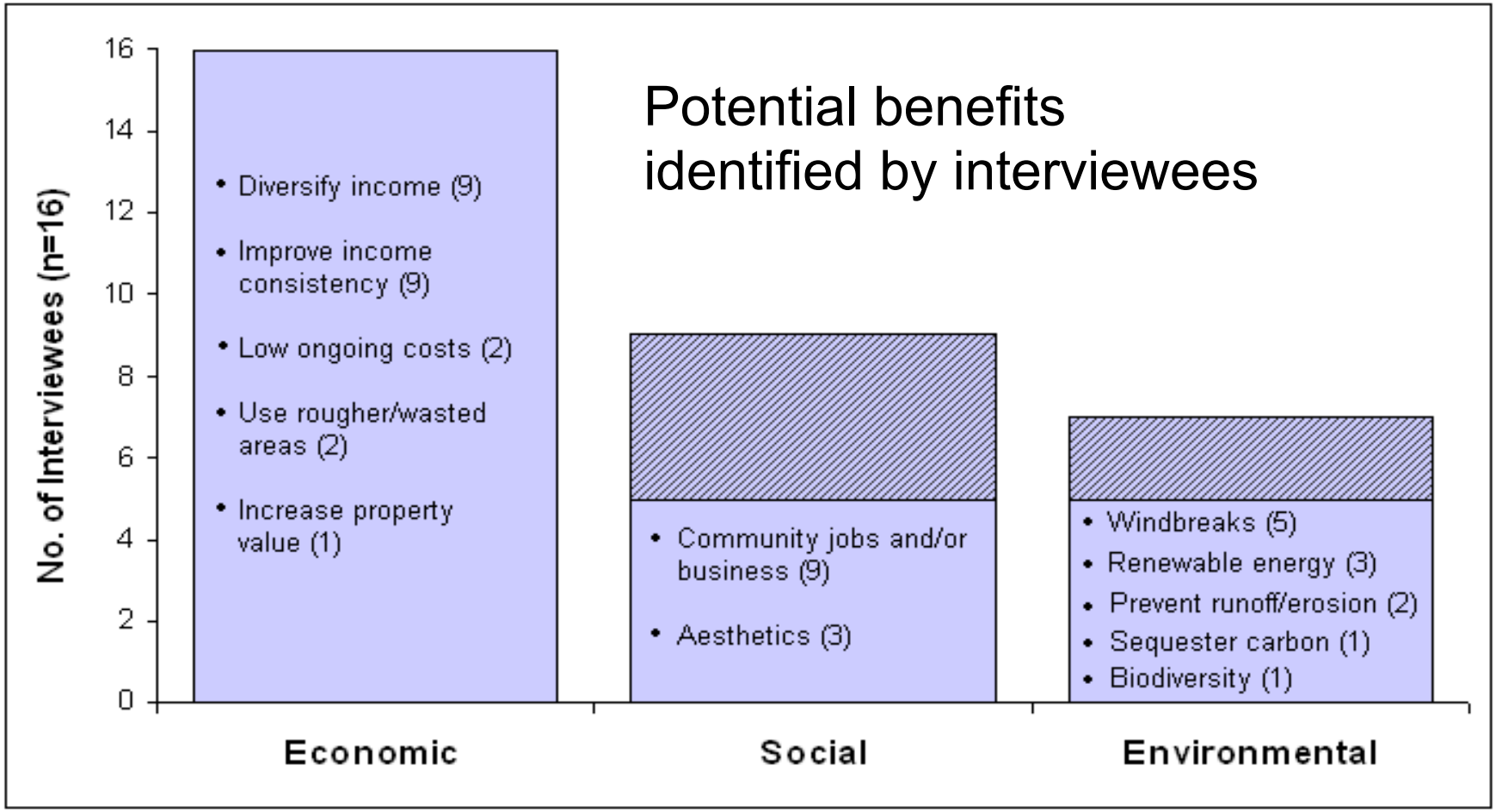
- Some concerns raised about biomass crop impacts, but more concerns about bioenergy plants (air pollution, traffic etc.)

Social licence of WA mallee (Weldegiorgis & Franks 2014)

- Community acceptance of small-scale unharvested plantings, but concerns about harvesting, facilities and economic risk

Mallee cropping in NSW Central West (Baumber et al. 2011)

- Motivated by economics and local jobs, but concerns about viability. Harvest for energy preferred to carbon plantings.



On carbon plantings:

“you lose control of your land for 99 years”

“It’s inhibitive, it devalues the land.”

“…has no appeal to me because it’s a one-off payment and you get a negative for the sale of country”

“Carbon trading is very political and airy-fairy and you can’t see any result. Too susceptible to political change. Let’s say you lock up a contract for 100 years - governments change and ideas change and it’s too long a timeframe for what’s actually happening on the ground”

A preliminary list…

Key variables for obtaining a social licence	Potential disturbances and threats	Factors enhancing the resilience of a social licence
• Trust • Community involvement • Procedural fairness • Distribution of benefits and costs • Alignment with values • Multiple licences	• Breakdown in trust • Failure to meet expectations • Interference with attachment to place/ amenity • Changing expectations within communities • Economic failure • Outside influences and controversies	• Trust • Long-term relationships • Maintenance of livelihoods and cultural traditions • Adaptability and flexibility • Ecosystem health and resilience

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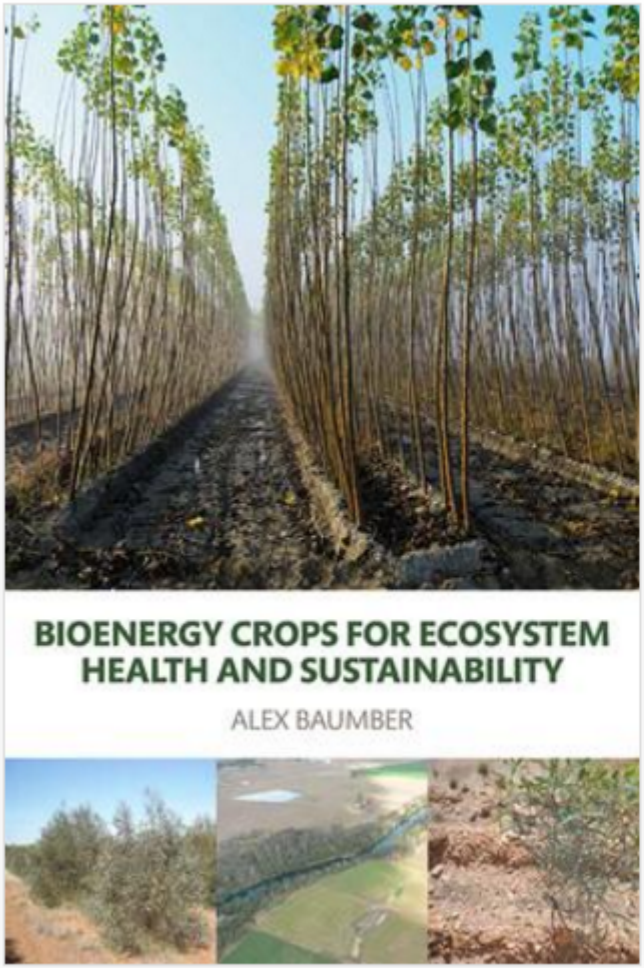

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