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VU Amsterdam, Netherlands

*CORRESPONDENCE
Anja Bless
✉ anja.bless@uts.edu.au

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Learning from the success of tobacco control: how to leverage ideas, interests, and institutions to reduce red meat consumption

Anja Bless[1,2]*

[1]University of Technology Sydney, Institute for Sustainable Futures, Sydney, NSW, Australia, [2]Department of Government and International Relations, University of Sydney, Sydney, NSW, Australia

Over-consumption of red meat has significant impacts on public health and the environment. To achieve a planetary health diet, consumption of red meat must be reduced across the developed world. However, policy action on this issue has been lacking and there is insufficient research exploring how to overcome barriers to reducing red meat consumption. Using the 'three I's' policy change framework based around ideas, interests, and institutions and their influence on policy outcomes, this article will consider how the passage and success of Australia's tobacco control regime could provide lessons for achieving reductions in Australian red meat consumption. Drawing on stakeholder analysis through semi-structured interviews, this analysis demonstrates the explanatory power of the 'three I's' framework and highlights the essential roles of awareness-raising, cohesive policy networks, and a gradual increase in interventionism for achieving transformative changes in consumption behaviour. It also demonstrates the scale of barriers for policies aimed at reducing red meat over-consumption, and the potential policy windows that are opening due to a shift in meat consumption patterns.

KEYWORDS

planetary health diet, red meat consumption, food politics, food and nutrition policy, Australia

1 Introduction

The over-consumption of red meat above recommended levels is causing widespread health impacts including non-communicable diseases such as cancer and heart disease. At the same time, production of red meat[1] to feed the ever-increasing global appetite for steak is driving significant environmental impacts in terms of climate change, biodiversity loss, land degradation, and water use, as well as animal welfare impacts (Sievert et al., 2022). As such, there has been a call for a shift to a "planetary health diet" (EAT-Lancet Commission, 2020) which acknowledges

1 While the definition of 'red meat' can also include pork products, the environmental impacts of pork versus beef or sheep production are substantially different. As this analysis explores both the health and environmental impacts of red meat over-consumption, 'red meat' will from this point forward refer to meat from ruminant animals unless otherwise specified.

the co-benefits of reducing red meat consumption for both human and environmental health (Mehta-Bhatt and Ficarelli, 2015, p. 517).

While the need to address the over-consumption of red meat has been recognised and widely called for, there remains a lack of policy action. Likewise, research into the socio-political barriers for policies aimed at tackling red meat over-consumption remains scant (Intergovernmental Panel on Climate Change, 2015; Stoll-Kleemann and Schmidt, 2017; Sievert et al., 2021).

In terms of possible approaches for reducing the impacts of red meat consumption, there has been a focus on technological interventions on the supply side including methane-inhibiting feed additives for livestock and breeding and herd management mechanisms to address greenhouse gas emissions (Henry and Eckard, 2009; McGregor and Houston, 2018). On the consumption side, alternative proteins including plant-based meat and lab-grown meat have also been posited as pathways to reduce the environmental (and potentially health) impacts of red meat consumption (Sexton et al., 2019). There have also been suggestions for enhancing consumer awareness of the impacts of red meat to drive the shift toward healthier, more environmentally friendly products (Dagevos and Voordouw, 2013). Finally, it has also been posited that the use of a Pigouvian tax mechanism, such as a carbon price, may be the best option to substantially reduce red meat consumption (Bonnet et al., 2020; Perino and Schwickert, 2023).

However, what the existing literature lacks is sufficient analysis of the potential barriers to these policy interventions at the state-level, and opportunities for overcoming them. What is needed is an understanding of how other policies aimed at reducing the consumption of a popular product succeeded and an assessment of the views of stakeholders regarding these barriers and opportunities for red meat consumption.

One of the most successful anti-consumption policy interventions has been Australia's tobacco control regime (Studlar, 2005). It has long been held as an exemplar of effective health policy intervention, and numerous scholars have drawn the link between tobacco control (particularly its Pigouvian tax mechanisms) and potential learnings for addressing red meat over-consumption (Briggs et al., 2013; Bogueva et al., 2017).

This study has therefore been designed to consider how lessons from Australia's tobacco control regime could be applied to address red meat over-consumption. Australia was chosen as the case study due to being home to the world's most successful tobacco control regime (Studlar, 2005). Only 11.2 per cent of Australians smoke, compared to an average of 16.2 per cent in OECD countries (Australian Institute of Health and Welfare, 2023). Australia is also the third highest consumer of red meat in the world (Food and Agriculture Organisation, 2018), with Australians on average consuming 1.78 kg over the Australian Dietary Guidelines' recommended limit of meat each week. Colorectal cancer is the second most common cancer diagnosed in Australia, a large proportion of which is attributable to red and processed meat consumption (National Cancer Control Indicators, 2017). Grazing land encompasses 54.19 per cent of Australia's land mass (Australian Bureau of Agricultural and Resource Economics and Sciences, 2021), contributing to land clearing and degradation, and ruminant livestock produce at least 14 per cent of Australia's annual greenhouse gas emissions (Department of Industry, Science, Energy and Resources, 2018). As such, Australia presents an intriguing nexus of red meat over-consumption, red meat production, and has demonstrated success in policy interventions for consumption behaviours.

In this study, the three I's framework, which considers the influence of ideas, interests, and institutions on policy change (Poteete, 2003), is applied to explore the barriers that faced tobacco control in Australia, and how these were overcome. These lessons are then considered for the case of red meat over-consumption.

The three I's framework proves a useful explanatory tool for the barriers and drivers of policy change in the case of tobacco, and the potential learning opportunities for red meat. As posited by the theories of discursive and sociological institutionalism (Hope and Raudla, 2012), ideas prove to be the most significant barrier, but also the greatest opportunity to leverage change for both tobacco and red meat. Awareness raising is demonstrated to be essential for shifting discursive and normative barriers, and coordinated lobbying efforts are needed to combat the influence of vested interests. Policy precedent is also demonstrated as a valuable institutional tool for achieving sustained policy change. These lessons from Australia's tobacco control regime and how they apply to the case of red meat over-consumption provide much needed guidance on how barriers to policy action in regard to the planetary health diet can be overcome, both within and beyond the Australian context. Finally, a proposed policy matrix for reducing the impacts of red meat consumption inspired by Australia's tobacco control regime is presented as a potential path forward.

2 Materials and methods

Understanding policy change can be approached from a variety of lenses. One which is being increasingly employed is the three I's framework (Poteete, 2003). This approach draws from the theoretical contributions of public policy scholars such as John Kingdon (Béland, 2016) who acknowledge the interconnected role of material interests, institutional factors, and discourse in policymaking (Campbell, 1998). 'Ideas' within this framework are considered as shared beliefs, values, and norms (Pojani and Stead, 2014), and how discourse is mobilised in reflection of them. Policy can both mirror and be influenced by ideas, as they play an important role in the conceptualisation of policy and its legitimacy in the eyes of the public (Béland, 2016). 'Interests' represent a more traditional understanding of power mechanisms in policymaking, essentially those who have a stake (typically financial) in the policy and can influence the success of the policy overall (Campbell, 1998). While 'institutions' can include political institutions, legislative frameworks, policy networks, and policy precedent, playing a role in the establishment and enactment of policy (Lavis et al., 2002).

The three I's framework is grounded in the progression of policy studies through rational choice, to historical, sociological, and finally discursive institutionalism (Hope and Raudla, 2012) to explore how these three elements interact in policy stasis and change. However, the relative influence of each of these three factors in policy change remains in dispute (Kern, 2011). For instance, discursive institutionalists argue that ideas determine interests and shape institutions rather than being a separate phenomenon (Hope and Raudla, 2012). The application of the three I's framework in this study will contribute to this debate.

The analysis in this paper compares how ideas, interests, and institutions influenced the development of tobacco control policy in

Australia and how these lessons may (or may not) apply to the case of red meat over-consumption. For the case of tobacco, I draw on existing literature describing the development of tobacco control in Australia, supported by semi-structured interviews with three experts and advocates of tobacco control in Australia (see Supplementary material). For the case study of red meat consumption, the results from semi-structured interviews with 17 stakeholders in Australian red meat policy (see Supplementary material) are then considered in light of these lessons from the case of tobacco control.

Stakeholder analyses such as this are useful for testing the feasibility of policy instruments and determining the barriers and opportunities for action (Varvasovsky and Brugha, 2000). In this study, the stakeholders were selected through purposive sampling (Hibberts et al., 2012), determined based on their expertise in the areas of environmental, agricultural, and health policy in Australia, or their participation in the red meat industry. In total, 66 potential participants were contacted via email, of which 17 agreed to participate. Participants were interviewed face to face or over the phone between July and August 2018. The participant groups include red meat farmers, red meat industry representatives, and national and state level politicians. These stakeholder groups were selected due to their direct influence on red meat production, mirroring the approach of the only other stakeholder analysis on red meat consumption in the literature by Lerner et al. (2013). Nutrition and sustainability experts were also included for interview to provide additional context on the food policy arena surrounding red meat production and consumption in Australia (see Supplementary material). Their responses were thematically coded (Saldaña, 2021) using NVivo 12 against the three I's and corroborated with available literature on red meat in Australia.

3 Results

This results section will begin with a brief account of the path to success for tobacco control in Australia, considering the role of ideas, interests, and institutions. The learnings from this analysis will then be considered against the case of red meat consumption, drawing from the results of the stakeholder interviews.

3.1 Tobacco control and the role of ideas, interests, and institutions

Australia's gold-standard tobacco control regime emerged by overcoming beliefs and norms around smoking and challenging vested interests to achieve policy change. Through the strategic use of institutional factors, and the ideational shift against smoking that occurred in Australia, the tobacco control regime was able to succeed in substantially reducing tobacco consumption.

3.1.1 Ideas

Tobacco smoking was prevalent in Australia from the start of colonisation (Cancer Council Victoria, 2017). At their peak, smoking rates among men in Australia were at 72 per cent in 1945, and 33 per cent among women in 1976 (Winstanley and Woodward, 1995). Smoking could be seen at any hour of the day on streets, televisions, in bars and restaurants, and the home (Ballard, 2004).

The ideational shift against smoking began through increased public awareness of the health impacts of tobacco. This was triggered by the publication of landmark reports from the 1960s onwards by respected medical institutions and subsequent media attention and awareness raising campaigns by public health organisations (Chapman and Wakefield, 2001). The public became more aware of the impacts smoking has on health and as a result smoking rates among men declined from 58 per cent to 45 per cent in the space of 7 years (Winstanley and Woodward, 1995):

> *'[…] since then there's been a virtual explosion of the evidence on just how many diseases and how many cancers are caused by smoking. There's no doubt. It's probably one of the most solid facts in medical science that smoking is not good for you, so that's enabled campaigners to be very straight in the advocacy for measures to reduce smoking' (Tobacco-2).*

The success of these awareness raising efforts also challenged tobacco's cultural link with masculinity. Smoking was seen as an inherently masculine habit (Winstanley and Woodward, 1995), and tobacco giant, Marlboro, even created a sensual female brand mascot just to attract the Australian male audience. Smoking was associated with a strong, confident, 'outdoorsy' male image. However, the association between strength and virility and smoking was challenged as sporting stars joined with anti-tobacco campaigns to highlight the health impacts of smoking (Walker, 1984).

By the 1970s, general acceptance that smoking was bad for health was widespread (Chapman and Wakefield, 2001). Legislation including health warnings regarding smoking was introduced in 1969 and enacted in 1973. Tobacco advertising was banned across radio and television, and a national campaign against smoking was launched (Winstanley and Woodward, 1995).

However, momentum slowed as libertarian support for the right for individuals to choose to smoke prevailed. But this changed when new evidence came to light in the early 1980s regarding the impact of second-hand smoke (Ballard, 2004):

> *'Before that, it was: "Well, my smoking is dangerous to my health, but if I want to damage my health that's my business," whereas after that it was: "Well my smoking is also dangerous to your health," and so people have a right, according to the John Stuart Mill Principle of Liberty, to say: "Well you cannot. You can do what you like, but you cannot harm me."' (Tobacco-3).*

Prioritising the public good over the rights of the individual was the second key ideational shift for the Australian tobacco regime. The view that smoking was unhealthy was widespread, but this new evidence also made smoking anti-social, as it impacted the health of those around you (Chapman, 2007). This also represented a shift in the public's view on government intervention in individual lifestyle choices in the name of public health. Even today, after nearly three decades of one of the most comprehensive tobacco regimes, Australians are still in favour of even further intervention (Australian Institute of Health and Welfare, 2017).

3.1.2 Interests

One of the greatest barriers to tobacco control, even after the evidence came to light on tobacco's health impacts, was the tobacco

industry: '[…] incredibly well-funded to push in the other direction. And it's been fought all along the way. So the resistance has been enormous.'(Tobacco-1). Its lobbying efforts were relentless and powerful, involving some of the largest corporations in the world (McDaniel et al., 2008). The Australian tobacco market was US$21.72 billion (after inflation) at its peak (Cancer Council Victoria, 2018), so there was a lot to lose.

Following the ban on direct tobacco advertising in Australian media in 1976, the Tobacco Industry of Australia (TIA) was formed. A comprehensive force of publicists, media experts and lobbyists. The TIA held close ties with tobacco farmers, unions, the Media Council of Australia, and sporting groups. Sporting associations often lobbied on behalf of tobacco, due to threats that sponsorship would be pulled if any further legislation was passed minimising tobacco advertising. Similar fears of advertising revenue loss also led to lobbying for tobacco from Australian media moguls such as Kerry Packer and Rupert Murdoch (Ballard, 2004).

One of the main tactics used by tobacco interests was to discredit the scientific basis for anti-tobacco policies (Walker, 1984). The industry fuelled controversy around the impacts of tobacco on health, and funded scientists whose studies minimised the risks. In response to mandatory health warnings on cigarette packaging, the TIA argued that no further action was needed, as smokers had all the information to make an informed choice (Chapman, 2007). Tobacco industry efforts have continued even despite the success of Australia's anti-tobacco regime (as of 2019, only 11.6 percent of Australians smoked, down from 25 per cent in 1995) (Australian Institute of Health and Welfare, 2021). In 2012, when Australia became the first nation to introduce plain packaging on tobacco products, the tobacco industry challenged the decision in the Australian judicial system, bilaterally through investor-state arbitration, and multilaterally at the World Trade Organisation (Curran and Eckhart, 2017).

Political interests have also been a barrier for tobacco policy change. Governments supported Australian tobacco production for most of the 20th century (Freeman, 2016). In the 1980s, tobacco leaf production was the most heavily subsidised economic sector in Australia (Studlar, 2005). Tobacco farms were located largely in safe Country Party (now National Party) electorates, although some lay in important swing seats which helped perpetuate government support (Griggs, 2002):

> *'There were barriers that we had to overcome in terms of politics. Where, in the tobacco, there were several federal electorates, and state electorates for that matter, particularly in Queensland and Victoria, where tobacco is grown. In fact, that guaranteed a Country Party block, a small block that influenced parliament.' (Tobacco-1).*

Only in the wave of economic rationalism and neoliberalism from the late 1970s into the 1980s, and due to the significant costs of tobacco consumption on the public health system, did government support rescind (Ballard, 2004). By the 1990s, all tobacco farming in Australia was assisted by the Federal government to cease (Griggs, 2002).

Bridging the border between interests and institutions, Australia's anti-tobacco lobby was a key driver for the success of the regime. The anti-tobacco lobby was a coordinated and strategic coalition which collaborated for over 50 years and fostered some of Australia's most prestigious public health organisations (Walker, 1984). These groups were originally concerned members of civil society and non-government organisations which ran awareness raising campaigns and lobbied governments (Studlar, 2005):

> *'But with the legislation it became a matter of well, okay if you want legislation passed how do you do it? And you have to build up public demand for it. But also convince a small handful of people, they are known as politicians, that they have to, they should do this, and it would be a good thing to do rather than politically risky.' (Tobacco-3).*

Alongside the professional anti-tobacco partners were also more radical, but extremely popular, protest groups such as MOP UP (Movement Opposed to the Promotion of Unhealthy Products), and BUGA UP (Billboard Utilising Graffitists Against Unhealthy Promotions) (Ballard, 2004). Together, this coalition managed to drive the ideational shift against smoking described above, partly by utilising institutions to their advantage.

3.1.3 Institutions

Anti-tobacco networks developed links with public servants and health ministers to advance tobacco control. They put tobacco policy on ministerial meeting agendas, interpreted and reframed anti-tobacco messaging for political eyes, and worked closely through the formation of tobacco control legislation (Chapman and Wakefield, 2001):

> *'[…] we have also had – and this is really important – a small group of dedicated advocates who have stayed the course. So, one of the things that you notice about a lot of public policy issues is that people drift in an out, they do not stay the course' (Tobacco-2).*

One institutional element which was capitalised on by the anti-tobacco coalition, was Australia's federalised system. Australian states and territories have authority over policy areas including public health and agriculture, while the Federal government maintains jurisdiction over advertising restrictions and taxation. This led to a distinct pattern of tobacco control policy, with action emerging at the state level, often in more politically progressive states which were targeted by anti-tobacco advocates (Ballard, 2004). Policy diffusion would then lead other states to follow suit, increasing the de-normalisation of smoking and the normalisation of tobacco control. Even if Federal policy mechanisms such as taxation had the biggest impact on consumption, this came from the momentum of state action (Chapman, 2007):

> *'It's arguable whether we would have got as far if we had a single political system. Because, as you have already mentioned, one state will, you know, get a step forward and then everyone else will want to. Then the other people can say, "We cannot let New South Wales have that. We need that too."' (Tobacco-1).*

A final institutional factor which supported the success of Australia's tobacco regime was policy precedent. This allowed for the gradual scaling up of government intervention and the comprehensiveness of the regime. For instance, once governments

banned smoking in workplaces such as public service officers, it was difficult to justify why others, such as restaurants, still allowed smoking (Cancer Council Victoria, 2017):

> *'I'd say "Right, anyone been half pregnant?." And it's like, "What? You cannot be half pregnant." And I'd say, "Yeah well, this is an important political principle, and what it means is that when government acts incrementally so, for example, when they first banned tobacco advertising on television and radio; but not in print, cinema, billboards, sporting sponsorship, all of that; it allowed us to go 'well, you banned smoking on television because children saw the ads? Guess what, they also see them everywhere else."' […] And so that 'you cannot be half pregnant' principle allowed us to push the inconsistency of policy through.' (Tobacco-3).*

Other policies, such as drink driving, also provided the precedent for the prioritisation of the public good over individual liberty which was essential for the intervention into tobacco consumption (South, 1990).

3.2 Red meat and the barriers of ideas, interests, and institutions

Australia's tobacco control regime therefore succeeded through awareness raising of the impacts of smoking on smokers and those around them. This led to an ideational shift against smoking that provided the support for concerted lobbying by a coordinated and consolidated anti-tobacco policy coalition which drove policy change by capitalising on policy windows, diffusion, and precedent. In doing so, they overcame substantial ideational and material interest barriers which had embedded smoking into Australian culture.

So, what lessons can be gleaned from the tobacco case study for the case of red meat consumption? In terms of barriers to addressing the over-consumption of red meat, the stakeholders interviewed identified ideas, followed by interests, and institutions as the biggest constraint (see Table 1).

3.2.1 Ideas

One of the biggest ideational barriers to reducing red meat consumption, according to participants ($n = 12$) is that awareness is low among Australians of the health and environmental co-benefits of reduced red meat consumption. Despite highly publicised reports including the Food and Agriculture Organisation (2006)'s *Livestock's Long Shadow*, Australian consumers have been shown to still not understand the link between red meat consumption and climate change (Bogueva et al., 2017):

> *'People think climate change is about energy use, electricity, driving, and flights. And they do not realise that it's about food as well, and within that there's a big slice that's just beef on its own' (Climate-2).*

This is little surprise considering that the impacts of food systems are featured in less than 5 % of all media articles about climate change (Atkinson et al., 2023). Likewise, even considering the International Agency for Research on Cancer (2015)'s identification of red and processed meat as carcinogenic, consumers feel uninformed and unsupported in how to have a balanced diet whilst minimising meat intake, concerned about the loss of 'key nutrients' (Lea and Worsley, 2001).

This is likely influenced by the use of "nutritionism" (Scrinis, 2016, p. 17) by red meat advertising campaigns, which emphasise particular nutrients available in red meat to overemphasise its health benefits and convince consumers that it is the only source of these essential nutrients (The Campaign Palace and Meat and Livestock Australia, 2007):

> *'I think a lot of people just think "protein, protein's good." All Australians get enough protein. No Australians need more protein. And there's heaps of good sources of vegetable protein.' (Health-1).*

While red meat consumption can have health benefits, the campaigns do not specify how much red meat is recommended per the Australian Dietary Guidelines limit of 65 g of lean meat per day (National Health and Medical Research Council, 2013). Instead, they promote recipes and images of meals with red meat portions well over the recommended amount (Meat and Livestock Australia, 2015).

Industry funded research also became the basis for the Commonwealth Scientific and Industrial Research Organisation's Total Wellbeing Diet, a cookbook that emphasised a high protein (and red meat) diet. The book was purchased by one in ten Australian households (Meat and Livestock Australia, 2009) and nutritionists criticised the research for not testing the benefits of a more plant-based diet (Stanton et al., 2005).

In the case of tobacco, awareness raising on the individual impacts of smoking only supported reduced consumption to a degree. The key driver for the breadth of Australia's tobacco control regime was the impacts of second-hand smoking. For red meat, the argument for policy action for the sake of the public good is not so simple. A key difference between these two case studies is that from a health perspective, aside from costs to the health system from consumption-related disease, it does not harm those sitting next to you to eat a steak. The benefits for the public good are stronger in terms of the environmental impacts of red meat. However, red meat production is not the sole cause of climate change or biodiversity loss.

There is also the argument, raised by all farmers interviewed, that livestock farming can have positive environmental benefits through supporting soil carbon sequestration, and making use of otherwise unviable agricultural land ($n = 5$).

> *'I think that livestock management is a part of the solution to climate change in that, I think, essentially that farmers or people that are managing the land are in the perfect position to draw some of the carbon out of the atmosphere and store it in the soil where it originally came from and in trees and plants.' (Farmer-1).*

Likewise, even if all Australians reduced their red meat consumption to recommended levels, there may be no or minimal environmental benefit, as the majority of Australian beef and lamb is exported (Meat and Livestock Australia, 2020). Climate change policy is divisive enough in Australia for other emissions sectors (Macneil, 2016) without involving food consumption.

However, the lack of appetite for reduced red meat consumption is not simply due to lack of awareness about red meat's impacts. The

TABLE 1 Barriers to addressing the impacts of red meat consumption as identified by stakeholders.

		G1	G2	H1	N1	N2	C1	C2	C3	C4	C5	C6	A1	I1	F1	F3	F2	F4
Ideas	Eating habits/ culture ("It's unAustralian not to eat meat")	•	•	•	•	•	•	•	•	•	•	•	•	•				
	Knowledge and skills (cooking plant-based food, balanced diet)			•	•	•		•										
	Awareness (impacts on health, impacts on the environment)	•		•		•	•	•	•	•		•	•	•	•		•	•
	Meat is good for you									•				•	•			
	Gender ("real men eat meat")			•	•	•		•	•									
	Australian agrarianism (pastoral history, drover identity, farmers as land stewards)			•			•							•		•		
	Farmers are land stewards/ livestock as a climate solution									•	•		•		•	•		
Interests	Political impacts (rural seat, government overreach, unpopular policy)	•	•	•	•			•	•	•	•	•	•	•				•
	Economic impacts (cost to farmers, cost to rural economy, cost to low SES consumers, export oriented)		•	•						•			•	•	•	•	•	•
	Lobbies (MLA, NFF, meat processors)	•		•	•	•		•	•	•	•	•	•					•
	Social impact (impact on communities, need to retrain)									•			•	•				
Institutions	Policy precedent (pre-existing support for farmers)								•	•			•				•	•
	Lack of policy coalition		•					•		•	•	•						
	Inconsistent drivers (health, environment, animal welfare)		•							•	•		•	•				
	Institutionalised relationships	•		•	•													
	Carbon tax	•	•											•	•	•		

other most identified barrier by stakeholders was that it is 'unAustralian' to not eat red meat ($n = 13$):

> *'[…] you could see the front page of the Telegraph go "Ah! These crazy people, they want to destroy the lifestyle of Australians and stop us eating meat pies!"' (Greens-1).*

The Australian diet throughout its colonial history has centred on the British 'meat and three veg' (Lupton, 2000, p. 94). Pastoralism is embedded in the Australian colonial and cultural narrative ($n = 4$), and advertisements for early immigration to Australia boasted access to 'meat three times a day' (Baghurst et al., 2000, p. 3):

> *'I think that a lot of the barriers at the moment are cultural. So, this idea people have that meat is not, that a meal is not complete without meat in it; and that's going to sort of take a bit of unlearning to overcome that I think.' (Climate-1).*

Emblemising the Australian attitude to red meat consumption are the annual advertising campaigns by MLA, the peak red meat industry research and advertising body, released in the lead up to Australia Day. Beginning in the late 1990s, MLA launched a semi-ironic campaign starring ex-footballer turned comedian Sam Keckovich. Brimming with patriotic paraphernalia, the commercials degraded food from non-Anglo cultures, or anything plant-based, and emphasised that if you were 'Australian', you would be eating lamb on Australia Day (Ankeny, 2008). The campaign helped reverse a severe decline in lamb consumption, increasing it to its highest since 1985 (The Campaign Palace and Meat and Livestock Australia, 2007).

The cultural significance of red meat is also supported by the affiliation between red meat and masculinity in Australia ($n = 5$). Australian men are less likely to eat plant-based diets (Lea and Worsley, 2001) and more likely to associate them with weakness and femininity (Bogueva and Phau, 2016). The notion of 'man was made to eat meat' is a discursive tool used in advertising campaigns, suggesting that meat made 'man' strong, and enabled humans to evolve (Ankeny, 2008):

> *'If we look at what children, the sort of attitudes toward products, we find that little boys are given more meat than their sisters. So it's almost as if 'feed the man meat', 'meat is a man food' starts at an early age. So that is a problem, and one that we need to address.' (Nutrition-1).*

The ingrained role of meat in Australian food culture is exacerbated by a lack of knowledge and confidence of skills in cooking plant-based meals. This is a key barrier identified by health and nutrition stakeholders interviewed ($n = 4$) and demonstrated in research which shows that Australian consumers feel uninformed and unsupported in how to have a balanced diet whilst minimising meat intake (Lea and Worsley, 2001).

> *'[…] like the practical knowledge of knowing how to cook well with vegetarian or vegan meals. And, you know, being brought up often with meat as a staple part of the meal. And we know how to cook meals with meat, and most cookbooks are packed with meat diets, most celebrity chefs are doing mostly meat. So, you know, you go searching for recipes, you can find meat recipes, unless you go really looking for vegetarian meals.' (Climate-2).*

Unlike tobacco, we can live without smoking, but we cannot live healthily without a balanced diet. For consumers to reduce their red meat consumption they need to have knowledge and confidence in cooking meat-reduced or plant-based meals.

3.2.2 Interests

The combination of these ideational barriers presents a formidable task to shift norms, values, and discourse around red meat in Australia. Also standing in the way of this ideational shift is a significant pro-red meat coalition of actors with interests in high levels of red meat consumption.

The Australian red meat industry is smaller in terms of market value than tobacco was at its peak, but it nonetheless contributes AU$17.6 billion to Australian gross domestic product annually and either directly or indirectly employs 434,000 people (Meat and Livestock Australia, 2020). At its height, the tobacco industry only employed 6,000 people in comparison (World Health Organisation, 2002). These economic barriers were identified as key considerations by participants interviews ($n = 9$):

> *'It's not likely to be well supported in rural areas, for example, where people are involved in production of meat. They see that as their livelihood, and it is their livelihood.' (Greens-2).*

The red meat industry is also more diverse than tobacco, with over 75,000 businesses (Australian Taxation Office, 2016) versus tobacco's small number of foreign corporations, and as participants highlighted ($n = 11$), is represented by a set of powerful lobby groups. The official advocacy group is the Red Meat Advisory Council which works with other agriculture lobby groups, such as the National Farmers Federation (Meat and Livestock Australia, 2016). Also supporting the red meat industry is MLA as the marketing, research, and development corporation for the red meat industry. MLA's funding is supported on a dollar-for-dollar basis by the Federal government and farming levies, with an annual budget of AU$269.9 million (Meat and Livestock Australia, 2019). While MLA is prohibited from taking official positions on government policy, it plays an active role advising policy decisions and promoting the red meat industry:

> *'Meat & Livestock Australia are very powerful, and they are very powerful particularly when the Coalition is in government, because they are very good influencers on the National Party.' (Nutrition-1).*

Also involved in Australia's red meat industry are foreign companies such as Cargill and JBS, who each control 20 per cent of the meat processing sector (Ernst and Young, 2017). Cargill is one of the largest agribusinesses in the world and JBS is the world's largest meat processing company (Sojamo and Archer Larson, 2012). Policy action aimed at reducing red meat consumption in Australia therefore faces opposition from 75,000 red meat businesses, and these powerful multi-national corporations.

The red meat industry is also important politically ($n = 12$). For many rural communities, meat production and processing are an important source of income. In Dubbo, a regional centre in western New South Wales, the local abattoir is the town's biggest employer

(Australian Electoral Commission, 2010). This is not to mention the cultural significance red meat holds in Australia:

> *'I think people have, they feel they have an entitlement to eat red meat, Australian society in general. And if you remove that entitlement, then there'll be a whole heap, I do not think anybody would touch it politically because it would just be, you know, the uproar would be massive and they would just get booted.' (Agriculture-1).*

As such, none of the major parties at Federal or state levels have an official policy position aimed at reducing the over-consumption of red meat. Even the Greens avoid the subject (Greens-2), and all National Party representatives who were invited to participate in this research declined to be interviewed, further indicating political aversion to the topic. In 2008, the Federal government's Garnaut Review of Australia's GHG emissions recommended tackling livestock's contribution through an emissions trading scheme which would have had an impact on red meat prices (Garnaut, 2008). However, when the time came for the scheme to be implemented, agriculture was exempt (Department of Environment, 2014).

3.2.3 Institutions

Tobacco control faced a similar, though less formidable, coalition of pro-consumption interests. However, it overcame them partly through its consolidated and coordinated anti-tobacco network. Red meat, on the other hand, does not have a consolidated coalition of advocates for reduced consumption with a singular, consistent message ($n = 5$):

> *'I think any campaigns that go up against red meat will be driven by interest groups like animal rights group, perhaps AMA and similar medical groups, perhaps some environment groups who sort of see the net impact of this as sort of problematic in terms of their broader goals.' (Climate-4).*

Nutritionists interviewed, and public health groups in general, only advocate for reduced meat consumption in line with health recommendations. Environmental advocacy groups are mixed in their messaging, with some advocating for no meat, others a reduction, and some for 'better' meat such as grass-fed. There are also animal rights groups, who often use red meat's health and environmental impacts to encourage the complete removal of not only red meat, but all animal-based products from the diet (Laestadius et al., 2016). The lack of consistency in messaging and consensus among these groups makes for a mess rather than a coalition. These divisions are also reflected in consumers' differing motivations for reducing meat consumption (Cheah et al., 2020), making it difficult to garner united public support ($n = 5$):

> *'[…] there are two mindsets, and one mindset is that we need to do whatever we can to mitigate climate change and so that we are flexible. The other mindset is the mindset of a fundamentalist animal ethics person, and that is that we cannot kill animals.' (Agriculture-1).*

From an institutional perspective, this reduce-red-meat coalition also lacks networks with policy entrepreneurs which were so key for tobacco ($n = 3$). Instead, there is an institutionalised relationship between government and industry, as MLA is a government funded body whose role is to advocate for the red meat industry:

> *'[…] so many of them, you know, they receive money from the government and they really are lobby groups […] and they are lobby groups for just one section of farmers too. It makes it very hard.' (Greens-1).*

There is also a policy precedent of existing support for the red meat industry through subsidies and government grant programs, raised by several interviewees as potentially contradictory in the face of attempts to reduce red meat consumption ($n = 5$):

> *'I mean, it's sort of a tough call for a government to go up against, and essentially be seen as going up against an industry that, in other ways, it supports. So if you have got research and development money and various other things which you are going – drought subsidies, etcetera, billions of dollars there – which is going to support an industry, and then you take on that industry through a health campaign which says, "Do not eat red meat," sort of thing – it's actually pretty hard to reconcile in a political sense as well as a policy sense.' (Climate-4).*

The lack of success of previous carbon pricing mechanisms ($n = 5$), in addition to the existing controversies and tensions surrounding climate change policy in Australia (Macneil, 2016) are further policy precedents that could potentially impede efforts to reduce red meat consumption.

3.3 Opportunities for reducing red meat consumption

While there are formidable socio-political barriers to policies aimed addressing over-consumption of red meat in Australia, there nonetheless remain opportunities for policy action as shown by the stakeholder analysis (see Table 2) and demonstrated in the lessons from tobacco control.

3.3.1 Ideas

There are lessons in how tobacco control overcame barriers to policy change that are especially relevant for the case of red meat. While the majority of stakeholders identified Australia's meat-loving culture as a barrier, they also noted the changes to how Australians are eating as an opportunity for intervention ($n = 12$):

> *'I think the barrier of people sneering at people who did not eat red meat is really changing, it's changing really fast […] So I think that a lot of those, the social barriers are decreasing, the political barriers are not.' (Nutrition-1).*

For instance, as with tobacco, concerns around health have changed the consumption habits of Australian men. In the 1990s, the health impacts of saturated fat caused consumers, particularly men, to move away from red meat toward chicken which was perceived as healthier (Ankeny, 2008). While red meat consumption did eventually recover somewhat, it has never again reached the same consumption rates. More recent trends such as the popularity of the pro-veganism documentary Game Changers also mark a shift in the perception that red meat is central to the macho masculine image

TABLE 2 Opportunities for addressing the impacts of red meat consumption as identified by stakeholder.

		G1	G2	H1	N1	N2	C1	C2	C3	C4	C5	C6	A1	I1	F1	F3	F2	F4
Ideas	Eating habits/ culture (shift away from 'meat and three veg')	•	•		•	•		•	•	•	•	•		•	•		•	
	Knowledge and skills (cooking plant-based food, balanced diet)				•	•		•					•					
	Awareness (impacts on health, impacts on the environment)	•	•		•	•		•	•	•	•	•	•	•		•	•	•
	Reducing red meat for a balanced diet					•								•		•	•	
	Farmers as land stewards									•				•	•		•	
Interests	Subsidies and grants							•			•		•	•		•		
	Cooperative lobbies									•				•			•	
	Just transition	•	•					•										
Institutions	Policy precedent (dietary guidelines, ERF, sugar tax)				•	•		•	•			•	•	•			•	
	Research and development				•					•				•			•	
	Policy window										•	•						
	Availability of alternatives	•			•		•	•	•	•								
	Gradual increase in intervention	•	•		•			•	•	•	•			•			•	
	Carbon tax		•	•		•	•	•	•	•	•	•	•			•		•

(Morissy-Swan, 2019). As with tobacco, gender norms and associated consumption behaviours can be shifted with the right messaging ($n = 4$):

> *'[…] there is this link between meat and masculinity which needs to be broken. Because again, there is evidence that shows even the performance of men, that you perform better if you reduce the meat intake in your body.' (Climate-3).*

Likewise, the association between Australianism and red meat is also shifting. Australians increasingly enjoy meals with different kinds of meat, less meat, or sometimes no meat at all. Plant-based diets are more normal and accommodated for, with 12.1 per cent of Australians now eating plant-based most of the time (Roy Morgan Research, 2019). Even in MLA's advertisements, the messaging has shifted from xenophobia to inclusivity, with lamb just one part of a more varied spread of foods and cuisines (Hogan,

2018). This shift in Australian food culture was noted by several stakeholders as an opportunity to reduce over-consumption of red meat:

> *'[…] a lot of that is changing, it's much more acceptable to bring vegetarian products to a barbecue and to cook those as well. So it's I do feel like that culture is gradually shifting' (Climate-2).*

As with tobacco, awareness raising on the co-benefits of reduced red meat consumption is also a potentially significant opportunity for change. Almost all stakeholders ($n = 14$) supported increasing consumer awareness of the recommended amount of red meat per the Australian Dietary Guidelines and the use of consumer information tools such as a 'green star' rating or an ecological footprint as a signal for consumers:

> *'If we look at food, we can get cafes and restaurants, recipe books, top chefs, various people all sort of promoting plant-based food things. So, I think that promotion of this very happy, healthy, and delicious alternative is a real plus for doing this campaign. Compared with smoking which basically the message was 'do not', and here the message can go from 'less' to 'something more delicious, and healthier, and better for the environment'." (Nutrition-1).*

Farmers interviewed generally supported a 'less but better' approach, where livestock could be raised in a more sustainable and higher welfare manner, with farmers compensated through higher prices and society benefiting from the co-benefits achieved through lower consumption. This supported the desire from farmers interviewed to be compensated as environmental land stewards, rather than for maximising beef production:

> *'I mean, I think they'd happily do that. Because, the less stock you run, if you get a higher price per head, you know, you can do a better job anyways on your, you know, your ground cover and your native vegetation and even in a farm system, you could do a better job on those things.' (Farmer-2).*

Participants interviewed also advocated for more capacity building and awareness raising for plant-based cooking ($n = 4$). Interviewees cited initiatives such as the Stephanie Alexander Kitchen Garden National Program. Running in 10 per cent of schools, the program supports students to grow, prepare, cook, and eat plant-based foods. It has been demonstrated to encourage children to eat more vegetables and reconsider the need for meat to complete a meal (Yeatman et al., 2012).

Also noted by stakeholders was the increase in availability of alternative options to red meat through plant-based proteins. These reduce the learning curve for consumers and offer simple substitutions for red meat in familiar recipes:

> *'[…] for those that aren't ready to do that yet, then communicating to them that just cutting back on their red meat consumption can also have a really big impact, much better than doing nothing. And then yeah, again, just making sure the alternative products are up to scratch, and that there's enough on the market, and easy access, and at an achievable price point.' (Climate-1).*

Increasing awareness and availability of these options was cited as a valuable opportunity, however the potential health impacts due to the highly processed nature and nutrient profiles of some of these alternative proteins remains a concern (Sexton et al., 2019). As with tobacco and e-cigarettes, it is not preferable to shift to an alternative with unknown consequences (Jongenelis et al., 2018).

3.3.2 Interests

Regarding interests, a key difference between red meat advocates and the tobacco lobby is that organisations such as MLA are not wasting time on a denialist campaign ($n = 3$). The red meat industry representative interviewed emphasised the industry's support of limiting red meat consumption within recommended levels and acknowledged the environmental impact of red meat production (Industry-1).

In 2017, MLA announced its aim to make Australia's red meat industry carbon neutral by 2030. While this is not likely to reduce consumption, to achieve its goal there may be a need to reduce livestock numbers (Mayberry et al., 2018). The move also indicates that the industry could be open to other policies to address the impacts of red meat consumption ($n = 5$), and for government to capitalise on their institutionalised relationship with industry to support a just transition to a more diversified agricultural sector ($n = 3$).

3.3.3 Institutions

Building on policy precedent is also an institutional opportunity highlighted by some interviewees ($n = 8$). There was consensus on raising awareness of the *Australian Dietary Guidelines*, which for the first time in 2013 was successful in singling out red meat as a potentially harmful food (National Health and Medical Research Council, 2013), although this was included due to health rather than environmental concerns (Jones et al., 2019).

Health and nutrition stakeholders also pointed to the potential for a sugar tax in Australia as providing a precedent for similar Pigouvian tax mechanisms on other products harmful to health or the environment. Although, as demonstrated in the case of tobacco and noted by stakeholders, a pricing mechanism should not be the first port of call for policy intervention. Likewise, any carbon tax on red meat should be part of a broader carbon pricing strategy across all consumer goods.

Stakeholders agreed that a more gradual increase in intervention, similar to tobacco control, was a more suitable strategy ($n = 9$). Beginning with awareness raising, limitations on advertising, the use of consumer information tools, and a supported transition for industry.

4 Discussion

The results of this analysis demonstrate that ideas, interests, and institutions form an imposing set of barriers to policy change for addressing red meat over-consumption in Australia. Red meat differs from tobacco in terms of the scale of the norms, beliefs, values, and discourse which are embedded in Australian food culture. The fact that some meat consumption is still recommended for a balanced diet adds a layer of nuance that smoking never had. Likewise, the significance of red meat both for Australia's regional economies and

communities, and for its exports, poses a significant opposition force, without the consolidated coalition that tobacco had to confront it. Finally, the institutionalised relationship of red meat with Australian policymakers and the lack of policy precedent limits the policy windows for red meat compared to what was available for tobacco.

However, using the three I's framework to highlight the similarities and differences between the case studies of tobacco and red meat also indicates the opportunities for policy change to address red meat over-consumption, with lessons applicable to both Australian and international contexts (see Table 3). The stakeholder analysis (Reed et al., 2009) likewise identified areas of alignment and disagreement in terms of the perspectives and values of the stakeholder groups interviewed, as well as their relative interest and influence on the issue of red meat over-consumption (see Table 4). I will explore these findings further below.

Tobacco was ingrained in Australian culture, and particularly among Australian men. This was overcome through awareness raising and discursive tools such as evoking the good of the many over the individual to create an ideational shift against smoking. Red meat has also been a key component of Australia's food culture, especially for men, and this has been reinforced through advertising campaigns by the industry. Awareness remains low on the co-benefits of reducing red meat consumption, and consumers are also unsure of how to make the shift to a more plant-based diet. Nonetheless, Australian food culture is shifting away from high red meat consumption. This shift can be capitalised upon by emphasising the benefits a more plant-based diet can have for both health and the environment, as highlighted by Stoll-Kleemann and Schmidt (2017). As more plant-based protein alternatives come to the market, this transition should only become easier (Pointke et al., 2022).

Standing in the way of this shift, as was the case for tobacco, is a formidable group of vested interests who have much to lose if red meat consumption and production were to drop significantly, as highlighted also by Sievert et al. (2021). However, unlike for tobacco the red meat industry is more open to trying to address its impacts and there is an opportunity for a 'less but better' mentality to drive policy change (Resare Sahlin and Trewern, 2022). If this messaging were to be adopted consistently by the policy coalition of health, environment, and animal advocates campaigning for reduced meat consumption, then there may be even more of a chance of change.

The case of tobacco control also demonstrated how coordinated policy networks, taking advantage of institutional opportunities such as policy diffusion and policy precedent, can enable substantial policy change, as has been posited by Fesenfeld (2023). Through

TABLE 3 Summary of barriers and opportunities for policy action in tobacco versus red meat consumption within the three I's.

		Tobacco	Red meat
Ideas	*Barriers*	• Gender* • Australian identity*	• Gender* • Australian identity* • Concerns around health • Farmers as land stewards • Knowledge and skills
	Opportunities	• Concerns around health* • Impact on others	• Cultural influences on diet • Concerns around health* • Farmers as land stewards • Knowledge and skills
Interests	*Barriers*	• Political impacts* • Economic impacts* • Industry lobbies*	• Political impacts* • Economic impacts* • Social impacts for rural communities • Industry lobbies*
	Opportunities	• Anti-tobacco advocates* • Public support	• Financial support for industry to transition • Cooperative action by industry • Reduced red meat consumption advocates*
Institutions	*Barriers*	• Institutionalised support for industry*	• Institutionalised support for industry* • Lack of policy coalition • Inconsistent drivers (animal welfare, environment, health) • Climate policy legacy
	Opportunities	• Policy precedent • Policy coalition • Policy diffusion* • Policy windows* • Gradual increase in intervention*	• Research and development to support industry • Policy windows* • Policy diffusion* • Availability of alternatives • Gradual increase in intervention*

*Similarity between case studies.

TABLE 4 Stakeholder analysis of participant groups.

Stakeholder group	Interest	Influence	Perspective	Values
Farmers (F)	*High* – Concerns regarding implications for business cost and product demand, impact of climate change on production	*Low to moderate* – Farming sector in Australia is diverse and disparate, relies on industry representative groups to influence policy outcomes	• See a role for farmers as environmental stewards • Sceptical that consumers will be willing to reduce red meat consumption • Resistant to policy intervention but open to a 'less but better' approach	• Environmental resilience • Consumer preference • Quality produce
Red meat industry (I)	*High* – Concerns regarding implications for industry longevity and reputation, impact of climate change on production	*High* – Institutionalised relationship with government agencies, strong influence on policy formulation and outcomes	• See a role for farmers as environmental stewards and economic opportunities in better sustainability credentials for the industry • Open to policy support to reduce emissions • Comfortable with recommendations for red meat consumption within dietary guidelines	• Industry growth and resilience • Responsiveness to markets • Cooperative relationship with government agencies
Agriculture policy (A)	*High* – Desire a successful and resilient industry	*High* – Role in formulating policy and informing Ministerial decision making	• See a role for farmers as environmental stewards and economic opportunities in better sustainability credentials for the industry • Concerns around impact of climate change on productivity and communities • Sceptical of political support for policy intervention	• Industry growth and resilience • Cooperative relationship with industry • Minimising environmental impacts
Climate policy (C)	*Moderate to high* – Desire a resilient industry with a lower environmental impact, but less of a priority than other emissions sectors	*Moderate to high* – Role in formulating policy and informing Ministerial decision making but must be aligned with agriculture policy	• See a role for farmers as environmental stewards and economic opportunities in better sustainability credentials for the industry • Concerns around mitigation and adaptation in industry • Hesitant about direct policy intervention	• Minimising environmental impacts • Industry resilience • Minimising socio-economic impacts
Health policy (H) and Nutrition (N)	*Moderate* – Concerns around impacts of over-consumption of red meat, not main focus or priority over other foods such as sugar	*Moderate* – Role in formulating policy and informing Ministerial decision making, but limited opportunity for direct interventions	• Promote a 'less but better' approach and reduction of red meat consumption to within recommended levels • Open to alternative protein sources	• Enhancing health of population by ensuring a balanced diet
Greens Party (G)	*Moderate to high* – Desire a resilient industry with a lower environmental impact, but less of a priority than other emissions sectors	*Moderate to high* – Ability to influence policy decisions and outcomes, but only moderate influence on Government as a minority party	• No public party policy • Conscious of controversy and potential for backlash • Generally supportive of a resilient industry with reduced environmental impacts	• Improving environmental outcomes • Enhancing resilience of industry

designing and supporting a gradual increase in government intervention, consumption policy regimes can ultimately have an impact. Public health campaigns, labelling standards, environmental management, and agricultural policy all fall under the jurisdiction of states and territories. If red-meat-reduction advocates work toward consolidating their resources and their messaging, they could connect with policy entrepreneurs in more progressive states to push for policy change. This strategy was key to the success of the tobacco control regime and may lead to broader policy change in Australia if implemented.

Should such a policy coalition develop, there are a range of policy options available which could help to address the impacts of red meat consumption (see Figure 1). This policy regime should be implemented gradually over time, with a steady increase in the scale of intervention to ensure the greatest chance of success. On both the demand and supply sides of red meat consumption, there will be a need for:

1. Awareness raising: Enhancing understanding among producers and consumers of the environmental and health impacts of red meat over-consumption;
2. Building on precedent: Utilising policies and programs already in place, such as research and development on improving the environmental impacts of red meat production, and developing cooking skills among the Australian public to reduce meat consumption;
3. Enhancing consumer choice: Through labelling and certification mechanisms to direct consumers toward products with higher sustainability credentials and to further increase awareness;
4. Transitioning supply and demand: Supporting industry to transition into less emissions-intensive products and restricting advertising of red meat to limit over-consumption; and

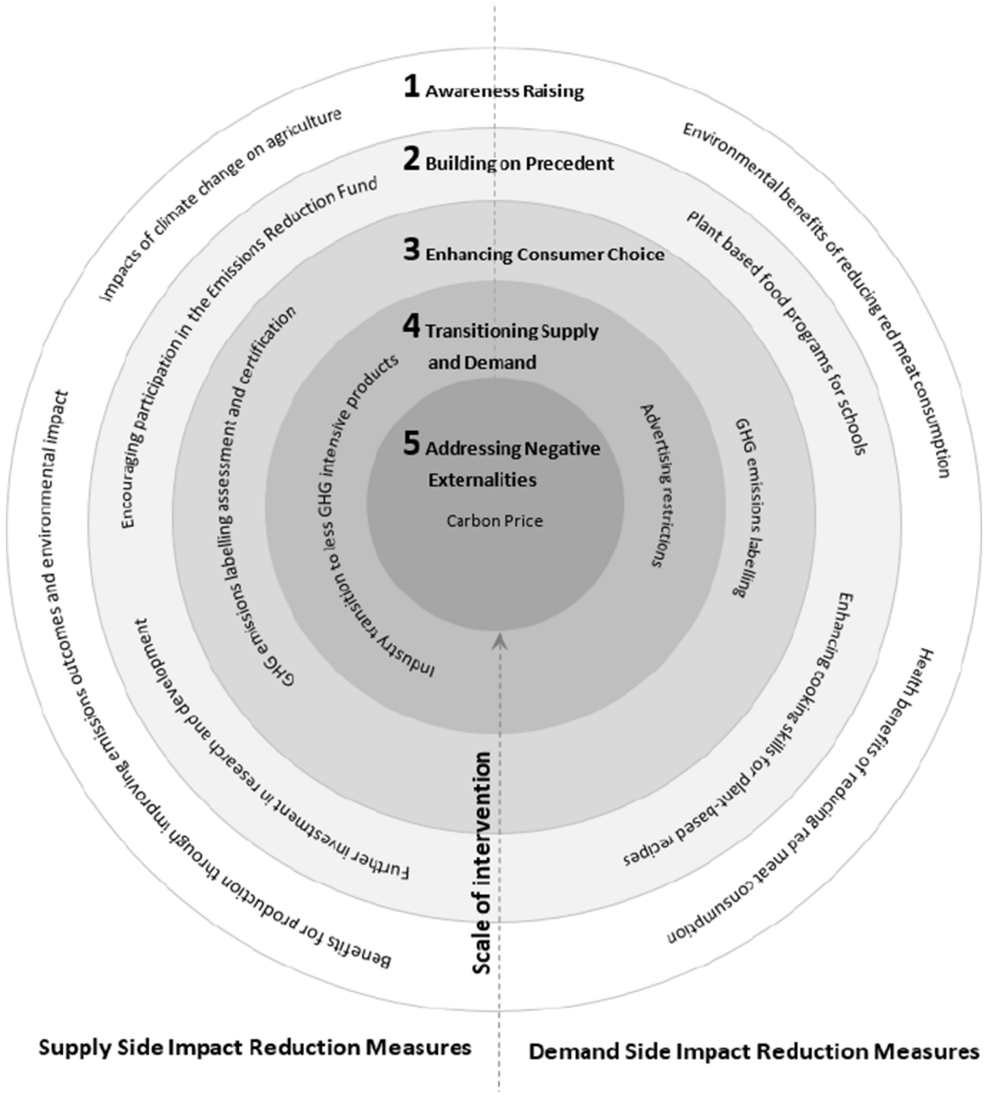

FIGURE 1
Policy matrix for addressing the impacts of red meat over-consumption.

5. Addressing negative externalities: Through pricing in the environmental costs of red meat over-consumption via mechanisms such as a carbon price.

This policy matrix echoes the progression of Australia's tobacco control regime, giving time to build public and stakeholder support for increased policy intervention, and with it greater policy impact.

Nonetheless, tobacco and red meat remain somewhat of an apples and oranges comparison. The health benefits of totally removing red meat from the diet are not as clear cut as ceasing tobacco consumption. The analysis is also limited by its scope in using a state-level case study. There are shifting demands for meat occurring around the world. Notably, there has been an increase in consumption of poultry and pork, which have lower associated emissions although pork carries similar health risks to other red meats such as beef and lamb (Whitton et al., 2021). Nevertheless, demand for red meat in developing economies continues to climb, while red meat consumption in developed economies such as in Europe remains relatively stable (Ritchie et al., 2020) and typically above sustainable levels (EAT-Lancet Commission, 2020). The environmental impacts of red meat consumption are therefore not just linked to Australian eating habits, but also to broader dietary shifts occurring in some of the world's biggest meat importers such as China. Even if all Australians were vegetarian, the environmental degradation caused by red meat production would likely continue due to exports. The rise of alternative proteins further complicates matters, with ongoing debates on their health, environmental, and ethical credence (Sexton et al., 2019).

Meanwhile, alternative proteins, both plant-based and lab grown, are disrupting the red meat market (Sexton et al., 2019; Béné and Lundy, 2023). Red meat farmers are also pushing back against the perceived vilification of their industry, and utilising labels such as 'regenerative agriculture' to describe how red meat production can have a net environmental benefit (Bless et al., 2023). Some meat industry actors are also playing down the potential health risks of red meat consumption (Clare et al., 2022) and a lack of participation from Nationals Party politicians limits the ability of this study to explore appetite for addressing the impacts of red meat over-consumption across the political spectrum.

In terms of theoretical contribution, what this analysis has also demonstrated is that taking a more pluralistic approach to policy and political analysis is useful in understanding the interactions between material, cultural, discursive, and institutional dynamics in policy change. For both case studies, it was ideas, rather than interests or institutions, which was identified by interviewees as both the most significant barrier to policy change and promising opportunity for policy action. Interests were overall the main area of resistance, whereas institutions were the main grounds for achieving tangible change. This reflects the findings of those such as Hope and Raudla (2012) and Kern (2011) on the prominent role ideas play in policy change.

5 Conclusion

This study in its consideration Australian tobacco control helps address gaps that exist in the current literature regarding both the barriers and opportunities for policy aimed at red meat over-consumption. The stakeholder analysis provided important insights for where there is common ground among vested interests, such as in raising awareness of the benefits of keeping red meat consumption at a healthy level; as well as where contention lies, such as in the case of a carbon tax on red meat.

Furthermore, through the utilisation of the three I's framework, this study has uncovered a number of valuable policy insights regarding red meat over-consumption. This includes the necessity of a cohesive and strategic policy advocacy coalition, the value of awareness raising for enabling policy progression, and the importance of giving time to allowing the gradual build-up of interventionist policy mechanisms in order to avoid policy failure. These results also demonstrate the analytical and explanatory capabilities of the three I's framework.

However, given the evolving nature of discussions around red meat consumption, alternative proteins, and sustainable agriculture, there remains a need for ongoing research to keep pace with the ideas, interests, and institutions at play, and how best to achieve a planetary health diet.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by University of Sydney Human Research Ethics Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

AB: Writing – original draft, Writing – review & editing.

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Conflict of interest

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/frsus.2023.1304179/full#supplementary-material

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