

# Red Meat Consumption and Social Marketing Interventions Promoting Appetite for Change

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**Abstract**—Increasing red meat consumption is fast emerging as a problem requiring immediate attention because of its detrimental impacts on human health, climate change and environmental sustainability. Researchers around the globe are adamant that reducing red meat consumption, especially in the Western world, and relying on more sustainable ways for protein intake, namely through plant-based products, are a better alternative. The paper presents the results from an exploratory study conducted in Sydney, Australia in 2016 which investigates consumers' reasons for meat consumption. Social marketing through a sustainability social marketing model is proposed as an effective way to tackle excessive meat consumption and encourage voluntary behavioural changes towards limiting the intake of animal foods. Parallels are drawn with other successful social marketing interventions, such as in the case of tobacco, alcohol, drug use, obesity and sun protection. The proposed model similarly aims at promoting behavioural change recognising the complexity and urgency of the problem.

**Index Terms**—red meat consumption, social marketing, environmental sustainability, human health, behavioural change, Sydney

## I. INTRODUCTION

Global meat consumption nowadays is recognized as unsustainable, both in terms of the inevitable environmental costs (greenhouse gas emissions, deforestation, land use change, fresh water shortage and biodiversity loss) we generate to get what we want on our plates [1]–[4] and also in respect to socio-economic dimensions, such as global hunger and rising number of environmental refugees [5], [6]. Over the upcoming years humanity is likely to face significant pressure because income growth, urbanization and globalization across the developing world lead to shifts towards Western dietary patterns high in meat intake. These dietary shifts are already witnessed in China which is undergoing a rapid change in meat consumption. They are likely to be followed by other developing countries, including India and Vietnam unless measures are taken to increase the global awareness about the problem.

The love for eating meat is not only traditionally, but also socio-economically conditioned, with some exceptions still existing in the third world countries. Nowadays most people, especially in wealthy societies, such as in Australia, America and Europe, have access to

and can afford diverse range of foods from both plant and animal origin. Recently however there is a growing acknowledgement worldwide that a shift towards more sustainable diets is an important approach to meet the needs of the constantly growing world population and its demand. Studies assessing the environmental impacts of diets find the lower the meat intake, the lower the negative health and environmental impact [7]–[12].

Sustainability transitioning towards reduction in meat consumption could be achieved through social marketing centred on voluntary behavioural changes – an approach which had been successful in other health and social related issues, including tobacco, alcohol, drug use, obesity and sun protection [13]–[19]. Other examples of voluntary behavioural changes encouraged by social marketing are campaigns related to cycling to work or using public transport, waste management, composting, recycling, reusing, use of solar panels, water saving etc. If people are aware of the issue a great majority of them are willing to adopt more sustainable practices.

Effective social marketing can help foster a shift towards diets which are healthier and respectful of the planet's environmental limits. When engaging social marketing models to promote a sustainability agenda, it is essential to take into account the specific characteristics of the issue and understand the drivers behind a particular behaviour.

The remainder of the paper is organized as follows. The Sydney exploratory survey is first presented, including its methodology and results. This is followed by a description of a new sustainability social marketing model which responds to the urgency, complexity and pervasiveness of the problems related to excessive meat consumption.

## II. SYDNEY EXPLORATORY SURVEY

Comprehending the compounded topic of meat consumption requires an exploratory approach which helps in gaining familiarity with the issue [20] and focuses on discovering insights for developing marketing strategies [21]. Social exploratory research hunts for people's reactions to certain things, issues, the meaning of their actions and the concerns they have [22]. Although statistically not representative, a quantitative exploratory survey allows for capturing the novelty of issues and sheds light on problems which are often not clearly defined.

### A. Research Methodology

An anonymous exploratory random sample survey was conducted in Sydney, Australia in 2016 with the aim to understand the reasons behind meat consumption prior to any further research on the problem or interventions. The ethics permit for the study was obtained from Curtin University in Perth, Western Australia.

Overall 132 participants (with almost equal gender representation) replied to the survey. The response rate of 66% to the originally 200 randomly approached Sydney residents demonstrates the interest in the topic. A condition for inclusion in the sample was for participants to be adults in employment or in full-time study, so that their food choices are not restricted because of economic considerations.

The questionnaire covered five areas: participants' associations with the word "meat"; dietary preferences and adherence to a particular diet; meat consumption patterns, including frequency and size of portions; reasons for following a particular diet; and level of concern for common issues, such as the cost of living, climate change/global warming, red meat's cost on the environment and actions to fight climate change.

### B. Findings

In total 86% (or 114 people) reported red meat consumption of different frequency – from every day to less than twice per week. The remaining participants – 14% (or 18 people), abstained from red meat intake. The Sydney sample indicates red meat has a high popularity amongst Australians which is confirmed by data from the Organization for Economic Cooperation and Development (OECD) [23] (see Table I.) according to which Australia is one of the top red meat consuming nations. Among the stated reasons for abstaining from meat consumption were animal welfare and personal health; two participants referred to religious reasons and one stated economic unaffordability. None of the participants justified not consuming meat because of environmental concerns. This is surprising given the existence of convincing and conclusive evidence about meat's large negative environmental impacts [10].

For those Sydney respondents who consume red meat, it conveys different messages. Close to half of the survey respondents (47%) perceive meat as important for human health, weight loss and a dietary source of nutrients including iron, vitamin B12, zinc and others (see Table II.). Such a message is often supported by recommendations from doctors, GPs and nutritionists – a confusing and unjustified advice given the World Health Organization's 2015 categorization of processed red meat as carcinogenic and red meat as probably carcinogenic [24]. Another 30% of the sample, perceived red meat as an important source of protein which they also related to social status, prosperity, prestige, masculinity and strength. The respondents who consume red meat overwhelmingly do not see its impact on destroying the natural environment. Only four people (3% of the sample and 4% of the meat-eating participants) consider the

negative health impacts of excessive meat consumption in their dietary preferences and only one person (0.76% of the sample and 0.9% of the meat-eating participants) stated that their food choices were influenced by environmental concerns.

TABLE I. ANNUAL MEAT CONSUMPTION PER CAPITA IN 2015. SELECTED COUNTRIES [KG]

Country/region	beef and veal	pork	sheep and lamb	red meat	poultry	total meat
Uruguay	46.4	14.3	5.7	<b>66.4</b>	13.6	80.0
Australia	22.8	20.3	7.4	<b>50.5</b>	42	92.5
Argentina	40.4	8.2	1.2	<b>49.8</b>	36.5	86.3
United States	24.7	22.7	0.4	<b>47.8</b>	47.6	95.4
European Union	10.8	33	1.8	<b>45.6</b>	22.7	68.3
China	3.8	31.6	3	<b>38.4</b>	11.6	50.0
South Korea	9.6	28.4	0.2	<b>38.2</b>	14.2	52.4
Viet Nam	8.7	29.1	0.1	<b>37.9</b>	14.0	51.9
New Zealand	14.5	18.1	4.4	<b>37.0</b>	37.8	74.8
Brazil	24.2	11.2	0.4	<b>35.8</b>	39.4	75.2
Russia	12.1	18.3	1.1	<b>31.5</b>	26.4	57.9
Kazakhstan	16.9	5	8.1	<b>30.0</b>	16.5	46.5
Japan	6.7	15	0.2	<b>21.9</b>	13.6	35.5
Philippines	3	14.2	0.5	<b>17.7</b>	11	28.7
Colombia	12.1	5.1	0.2	<b>17.4</b>	26.4	43.8
South Africa	10.7	3.4	3.1	<b>17.2</b>	30.6	47.8
Malaysia	5.7	6.2	0.8	<b>12.7</b>	41.4	54.1
Thailand	1.8	10.9	0	<b>12.7</b>	9.7	22.4
Turkey	8.3	0	4.1	<b>12.4</b>	16.5	28.9
Peru	4.7	3.3	1.2	<b>9.2</b>	36.8	46
Pakistan	6.3	0	2.1	<b>8.4</b>	4.4	12.8
Iran	2.9	0	3.2	<b>6.1</b>	23.1	29.2
Tanzania	4.1	0.2	1.1	<b>5.4</b>	1.5	6.9
Nigeria	1.7	1.1	2.4	<b>5.2</b>	0.9	6.1
Indonesia	1.9	2.3	0.4	<b>4.6</b>	6.6	11.2
Ethiopia	2.5	0	1.3	<b>3.8</b>	0.6	4.4
Bangladesh	0.9	0	1.2	<b>2.1</b>	1.2	3.3
India	0.5	0.2	0.5	<b>1.2</b>	1.7	2.9
World	6.4	12.5	1.7	<b>20.6</b>	13.5	34.1

Source: [23]

The Sydney survey participants reported red meat consumption from 150 g to more than 300 g per day. Although the latest research evidence suggests that processed and unprocessed red meat potentially increases the risk of heart disease, colorectal cancer and is associated with premature mortality [25], [26], consumers are either ignorant, mislead or not willing to give up their meat-based food choices. Given the scientific findings about the negative health impacts of red meat and processed meat, the World Cancer Research Fund advises that processed meat should be avoided and the public health goal for unprocessed red meat should be restricted to a maximum of 300 g per person per week [26]. Similar limits to red meat intake are suggested by Food Industry Asia – between 280 and 525 g of meat and poultry [27], the Australian dietary guidelines – 455 g per week per person [28] and the UK Standing Advisory Committee on Nutrition – 70 g cooked meat per day [29].

TABLE II. REASONS FOR CONSUMING RED MEAT IN SYDNEY, AUSTRALIA IN 2016

Reason	Total	% of meat consumers
Meat is good for human health, including weight loss	54	47%
Eating meat is a symbol of: strength, masculinity, status, prosperity and prestige	35	30%
Religion, family and other	10	9%
Animal welfare considerations	3	3%
Economic affordability	7	6%
Excessive consumption of red meat causes disease	4	4%
Red meat consumption negatively affects the environment	1	1%
Total	114	100%
Sample %	86%	—

Officially the meat industry in Australia appears to be also supporting limiting meat consumption and adhering to the dietary guidelines by suggesting an intake of up to “650 g/week, raw weight” [30]. However, in reality its representative body Meat and Livestock Australia (MLA) constantly bombards the public space with advertisements promoting meat and aimed at increasing the intake of animal-based products. This advertising helps shape and sustain a positive red meat attitude in consumers through aggressive and highly pervasive marketing campaigns and meat promotion [31]. Messages endorsing unsubstantiated health benefits and questionable national identification calls, e.g. lamb advertising with Lambassadors, are spread across the media and also through politics, government, educational and health institutions. The results from the Sydney exploratory survey confirm the lack of proper social advice – only 4% of the participants claimed to be aware that excessive meat consumption has negative impacts on human health and 15% indicated that they have even received medical guidance to increase their red meat intake. These results represent a picture which clearly shows widespread unawareness about the health, environmental and social price associated with excessive red meat consumption. The aggressive pro-meat marketing is contributing towards misleading the consumers towards the desired by the meat industry direction.

Several questions in the Sydney exploratory survey related to popular concerns debated in the media, including the cost of living, climate change/global warming, actions to fight climate change and red meat’s impact on the natural environment. The results show 90% of all respondents were worried the most about the cost of living. Climate change and actions to combat climate change attracted respectively 56% and 81% of worried people. Although awareness about the environmental consequences from red meat consumption did not influence people’s dietary choices as discussed above (with only 1% of the Sydney respondents concerned about the climate change–meat link), the share of people worried about its impact on the natural environment was similarly high at 69%. This indicates a gap between participants’ concerns in theory and their actual real meat

consumption behaviour. Social marketing interventions could be used to close this gap and create an appetite for change towards more environmentally friendly and more sustainable dietary choices.

### III. SOCIAL MARKETING INTERVENTIONS PROMOTING APETITE FOR CHANGE

A sustainability social marketing model (SSMM) to encourage transitioning to sustainable development was put forward by Bogueva *et al.* [32]. The model (see Fig. 1) can be applied to help promote a change in consumer behaviour towards more sustainable dietary options.

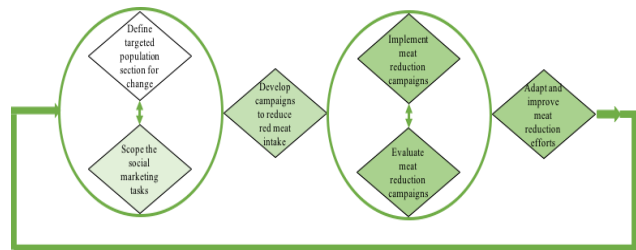


Figure 1. Sustainability social marketing model (SSMM) for reduction in meat consumption.

The sustainability social marketing model in the case of meat reduction incorporates a 4Ss marketing mix based around: sustainability – high red meat consumption destroys climate stability, damages human health and threatens present and future generations, strength – humans have the power and opportunity to reverse climate change caused by livestock and improve their health and ecological impact on the planet, self-confidence – the actions of each individual embracing reduction in personal meat consumption matter; and sharing –the planet and its resources are there to be shared and sustained for the present and future generations and no one has the right to compromise them.

### IV. CONCLUSION

The SSMM is a necessary and vital intervention methodology that can contribute a lot to the pursuit of sustainable dietary choices. Global meat consumption requires urgent and immediate behavioural and attitudinal change for humanity to meet the climate change agenda by reducing greenhouse gases and cancer. Social marketing can be used to sow in the minds and hearts of people the message that returning to the predominantly plant-based dietary practices of their predecessors is easy, healthier and will make a difference to the environment for the benefits of the future generations to come.

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**Prof. Dora Marinova** – originally from Bulgaria, Dora has been living and working in Perth, Western Australia since 1991. After being Head of School at the Institute for Sustainability and Technology Policy (ISTP) at Murdoch University, she is now Director of the Curtin University Sustainability Policy (CUSP) Institute. Dora has over 400 referred publications and has supervised 50 PhD students to successful completion. She served as a member of the Australian National Health and Medical Research Council's Panel on Centres of Research Excellence in Population Health. Her research interests cover innovation models, including the evolving global green system of innovation and the emerging area of sustainometrics. Dora recently edited the book *Impact of Meat Consumption on health and Environmental Sustainability* (with Dr.

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