

Food waste: Extent of the Issue and Current Interventions in  
ACT

A report drafted for  
Conservation Council

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## **EXECUTIVE SUMMARY**

Food waste is a significant global problem that is costing billions of dollars in wasted resources. Recently, the issue has gained significant attention from international and multilateral organisations such as Food and Agriculture Organisation of the United Nations which has contributed considerably to the fund of knowledge in terms of global scale and solutions to address it.

This study briefly reviews the global issue of food waste and draws on it to understand food waste in Australia, with particular focus on the Australian Capital Territory (ACT). The study reviews current actions to address the issue of food waste and uses governance framework to analyse the relationship between private and public actors working on the issue. The methodology used for the study is based partly on the methodology used in the National Food Waste Data Assessment 2011, which is mainly desktop research involving survey of literature using databases such as Web of Science and Scopus available through the Australian National University library and through Google Scholar.

The study finds that the efforts to address this global issue is dispersed primarily because of the significant variation in definition of food waste, which is generally shaped either through ‘food perspective’ with its potential to address food insecurity and global malnutrition or ‘waste perspective’ with its negative environmental impacts and sustainability. This distinction however is not clear in literature and often studies encompass both aspects, which makes the issue complex and too broad to address.

Review of literature shows that Australia is considered one of the most wasteful society with per capita food wasted being the highest among developed world. Concurrently, Australian Capital Territory is also among the top food wasters within Australia. The study finds that while ACT has been one of the forerunners debating about the issue since 2000, no remarkable progress has been made to address it. The government does not have a specific policy focusing on food waste issue and the current interventions are mostly from not-for-profit sector whose activities are not concerted and mostly dispersed. The actions to address the food waste appears to resonate mostly with private self governance.

This study concludes that while Australia being a neoliberal country promotes private governance, in order to address food waste issue more effectively and efficiently, a collaborative governance is needed, where all the stakeholders can work collaboratively with state facilitating through appropriate policies. The study recommends that not-for-profit sector should work together in harmony for a joint and concerted effort to make their voice strong. Similarly, it recommends that ACT Government should introduce a collaborative education and awareness campaign and promote community participation in addressing the issue through formulation of appropriate policies.

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## LIST OF SYMBOLS, ABBREVIATIONS AND NOMENCLATURE

Symbol	Definition
ACT	Australian Capital Territory
ANU	Australian National University
NSW	New South Wales
UC	University of Canberra



## CHAPTER 1: INTRODUCTION

### **Background**

Food waste is a global problem that has climbed high up in the international agenda over the last decade. The scale and magnitude of food waste generated is of global concern due to its potential to curb global malnutrition and global food insecurity as well as reduce environmental impacts. It is said that as much as 30-50 per cent of the food is wasted from production to consumption. There are however differences among countries as to where the food gets most wasted along the value chain. For developing countries, food is wasted more during production side due to lack of technology and storage capacity. But for the developed countries, it is more on the consumption side.

While most of the food losses and wastes occurring in developing countries could be reduced with technological support and economic development, the solutions to food waste problems in developed countries rests on appropriate policies and individual/societal action. There are numerous efforts globally that has taken place to address the issue locally. Best practices could be studied and knowledge could be exchanged so that individuals and societies in developed countries could work on the issue of food waste not just to address global concern but also on moral and ethical grounds.

Australia being one of the most wasteful society has witnessed rise of not-for-profit sector working to fill the gap and support in reducing food waste. Debates on the issue appear to be going on since 2000 with Australian Capital Territory trialing BioBins in the

year 2000 to reduce the food waste going to the landfill and address it at the source. Numerous policies related to food and waste have sprung up both nationally as well as state wise. Not-for-profit sector appears to be operating education and awareness campaigns, food diversion works and waste diversion efforts in order to address the issue. But, the issue of food waste still remains within the realms of debate only without much action to directly influence the issue.

### **Research aims**

This research aims to explore the understanding of food waste issue in Australia with particular focus on ACT and will assess current responses both from government and non-government sectors to address it. It also aims at analysing the relationship between different actors working on the issue and find pathways to address it in ACT. Specifically, the research aims to address following questions:

- a) How is food waste issue understood in Australia and the ACT?
- b) What key programs, policies or studies have been done to address the issue of food waste? What can we learn from them and how can we address it?

### **Significance of the study**

The global recognition of the issue of food waste in curbing global food insecurity and global malnutrition in addition to environmental concerns caused by it gives the issue a broader frame while making it an important issue for study. The issue fares more significance for developed countries because unlike many other issues, most part of it could be reduced through better alignment of policies and peoples. In Australia, even

though debates about the issue started more than a decade ago, there appears to be little direct action from government to reduce the food waste. Most actions appear to be to diverge the waste from landfill which is different in objective of preventing people and businesses from wasting the food during consumption stage. While the causes of food waste and its scale have been widely discussed in literature globally, there are not many studies focusing on Australia and even those studies do not discuss issues of relationship between stakeholders and different actors. For the ACT, there are even fewer such studies. There appears to be some good practices by not-for-profit sector to fill the void of government inaction but such efforts have not been documented enough by academia. There generally is a void in literature on food waste focusing on Australia and the ACT, especially discussing interrelationship between public and policy actors.

### **Methodology:**

For this research, a part of the methodology followed in National Food Waste Assessment 2011 was employed due to limited scope and resources. The data collection methodology consisted mainly desktop search, reviewing the literature available both at the public domain and in academic literature as well as organisational websites, using Google Scholar and academic databases such as Web of Science and Scopus. The data gathered in such manner was analysed using ‘governance framework’.

### **Limitations of the study**

This study does not analyse the causes of food waste, nor does it quantify the size of the food waste. The analysis is based on secondary data and uses available studies conducted

earlier. This study recognises that the available data needs to be interpreted with caution and as such no particular inference is being made pertaining mainly to the quantity of the food waste, even though it has been used to demonstrate extent of the issue. Due to time and resource constraints and because of the narrow focus of this study being analysis of government inaction towards the food waste issue, no primary data has been used.

### **Organisation of the report**

This report comprises six chapters including the Introduction. Chapter two briefly discusses the governance and government failure framework which has been used to analyse the policy situation of food waste in this study. Chapter three attempts to deepen the understanding of food waste issue in terms of its global nature and how it is being conceived and responded. Chapter four describes food waste issue in Australia and focuses in the ACT region and identifies responses from government as well as non-government sectors to address the issue. Chapter five analyses the findings acquired in terms of responses and government action and using governance framework identifies type of governance dominating the existing framework. Chapter six provides conclusion of the study and makes recommendations for policy intervention.

## CHAPTER 2: GOVERNANCE AS ANALYTICAL FRAMEWORK

Using governance as an analytical framework equips researcher with tools necessary to identify relationship between state, society and civil society actors. In analysing the issue of food waste, this helps understand the underlying operatives and dynamics essential to address the issue. Governance is a complex concept which has been defined in numerous ways, yet there are overlaps in all those definitions (Knill & Tosun 2012, p. 200). Definitions range from being too narrow to being too broad. Characterised by a non-hierarchical form of 'self-organising, inter-organisational networks', governance is considered a mode of political steering (Rhodes 1996, p. 53). Peters and Pierre (2006) defines governance by introducing, in the definition, the non-state actors in the public affairs arena pursuing collective interest in steering and coordinating the society (p.209). Due to multiplicity of meaning of the term 'governance', it is essential to make it distinct from another commonly used term 'government'. 'Governance' is different from 'government' in that governance refers to the different regimes governing the society, where self-organising non-state actors independently interact with each other (Rhodes 2007, p. 1246). In another definition, Knill and Tosun (2012) define governance as a political steering with an objective of accomplishing policy goals through explicit coordination of individual actions (p. 201).

For purpose of this study, adapting definition from Carlsson et al. (1995, p. 2), governance is referred to as people exercising power within a realm of institutions or organisations with power emanating from either the state, the market or the civil society.

Conceptualising governance in this way, Knill and Tosun (2012) categorised governance into four ideal types, which is based on the combination of ‘level of cooperation between public and private actors’ and ‘the degree of legal obligation’, namely, interventionist governance, regulated self-governance, cooperative governance and private self-governance (p.209). It should be understood however that in practical situation the type of governance may not always be clear and would often overlap with one or more types. Analysis of the issue of food waste in this study will be based on these four governance types which will be used as an analytical lens.

**Table 1. Four ideal types of governance**

		<b>Cooperation of public and private actors</b>	
		<b>High</b>	<b>Low</b>
<b>Degree of legal obligation</b>	<b>High</b>	Regulated self governance	Interventionist governance (government)
	<b>Low</b>	Cooperative governance	Private self governance

Source: Knill and Tosun (2012, p. 210)

### **CHAPTER 3: FOOD WASTE - A GLOBAL ISSUE**

Food losses and waste in general have been viewed either through ‘food perspective’ with potential for ensuring food security or through ‘waste perspective’ with deteriorating environmental concerns (HLPE 2014, p. 11). Literature on this issue appear to be divided between these two distinct perspectives though not often clear. This dual perspective is not easily discernible which has led to the confusions in definitions and blurriness in data on food waste (HLPE 2014, p. 11). There have been numerous attempts to quantify scale of food waste but most of such attempts appear to be based on limited data sets and on generalisation. One of the motivating factors, however, for numerous such attempts for past several decades has been to highlight scale of 'waste' in terms of global malnutrition (Parfitt et al. 2010, p. 3065), thus taking the ‘food perspective’. The link between food waste and global malnutrition however is not determinable in practice and therefore, is argued mostly on the conceptual grounds. This study takes on the food perspective to analyse the food waste issue due to its conceptual and moral grounding.

#### **Food Waste Definition**

In general, food waste is understood as occurring at the sales and consumer level but it happens at all the stages in the Food Supply Chain (FSC) (Parfitt et al. 2010, p. 3065). The broad notion of food waste may be referred to as discarding edible food away from human consumption at retail and consumption stages (FAO 2011, p. 2) but this definition has been expanded to indicate loss occurring at earlier stages as well. Some also consider loss of edible materials intentionally fed to animals or by-product of food processing as

food waste (Stuart 2009) which FAO (2011) distinctly classifies as 'food loss' (p.2). Others are more technical and point to the overconsumption of per capita food, referring to the gap between the required energy value of food per capita and energy value of consumed food per capita (Smil 2004, p. 23). Notwithstanding the importance of overconsumption, this study takes on the definition adopted by FAO and defines food waste as avoidable discarding of edible materials during consumption phases at individual or household level and at the retail level.

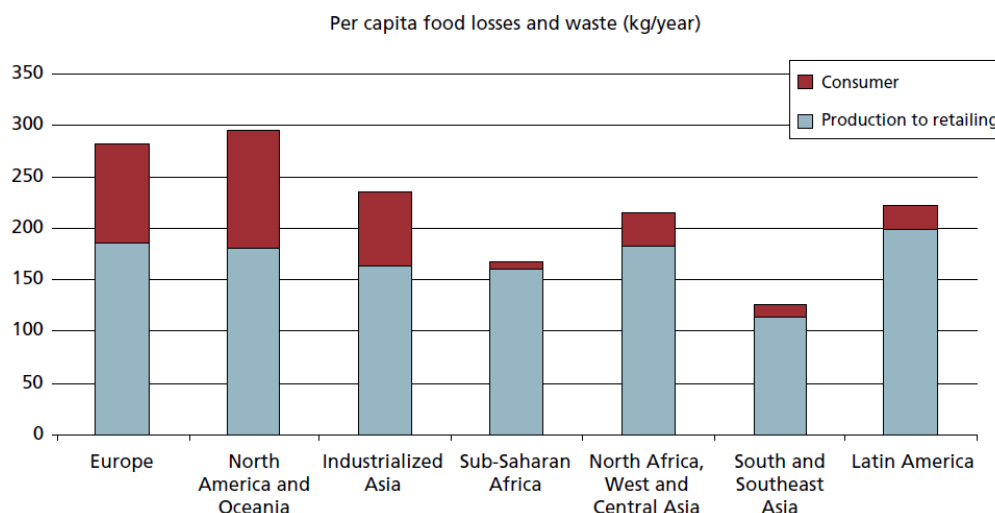
### **Global Issue of Food Waste**

Though food waste occurs at various stages from production until it is consumed, for developed countries, it is argued that the problem lies more at the consumer end rather than at the production or storage front. A general public discourse on food waste in developed countries therefore is focused on consumer behavior (Gille 2013, p. 41). A lot of food waste can be prevented and be put to better use with consumer awareness and change in consumer behaviour.

Looking at the broader picture, a generally agreed estimate is that almost half of the food produced is lost or wasted between producers and consumers (Lundqvist et al. 2008, p. 4). While these data are based on extrapolations and generalisations, the most widely accepted recent global data is from FAO (2011) which estimates that about one-third of all food produced gets wasted globally, which amounts to 1.3 billion tonnes (p.4). The global per capita food losses and waste at consumption and pre-consumption level as analysed by FAO is shown in Figure 1.



**Figure 1. Per capita food losses and waste in different regions**



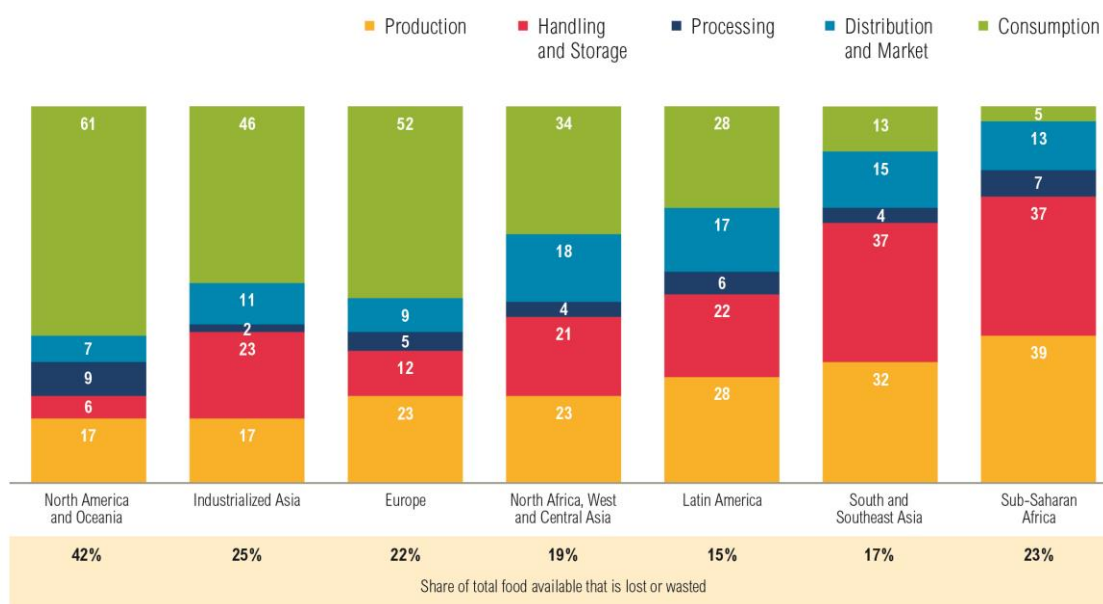
Source: (FAO 2011, p. 5)

Due to the potential of reduction in food waste resulting in improved food security, the issue of food waste has recently gained very high attention. The Thirty-ninth Session of the Committee on World Food Security had requested High Level Panel of Experts on Food Security and Nutrition (HLPE) to conduct a study on the issue (HLPE 2014, p. 11). The issue has risen high in the agenda of leading international and multilateral organisations such as International Food Policy Research Institute (IFPRI), Food and Agricultural Organisation of the United Nations (FAO) and World Resources Institute (WRI) among others (IFPRI 2014, FAO 2011, Lipinski et al. 2013).

Disaggregating food waste data into various stages of food value chains in individual regions (Figure 2), shows that North America and Oceania has food waste mostly occurring at the consumption level. This region consists of the US, Canada and Australia,

where 61 per cent of total food waste and loss occurs at the consumption level, which is the highest among all the regions.

**Figure 2. Food loss and waste in food value chain in different regions**



Source: Lipinski et al. (2013, p. 7)

### **Global Responses to address the issue**

As food waste started to reach high up in the global agenda, many approaches have been proposed as well as many local actions have been taking place, acted on by different organisations and/or the government. World Resources Institute recommends developing a ‘food loss and waste measurement protocol’ referring lack of data as a major cause of increased food wastage (Lipinski et al. 2013, p. 28). To complement this, FAO (2011) recommends having a common understanding on the definition of food waste and

participation by relevant stakeholders in determining the protocols and measurement approaches in addition to the State formulating appropriate policies and coordinating with relevant stakeholders (p.16).

Efforts to address food waste may be viewed through government action and/or the non-government action. Most of these actions could be classified into following, but not limited to, categories, namely, a) promotional and educational campaigns to raise awareness about the issue of food waste and its impacts on sustainability of environment and economy, b) redistribution of edible food collected from various retailers or businesses, thus reducing the total food waste and c) diverting the organic waste into making of more useful products such as organic fertilisers and hence reducing the overall quantity of waste going to landfill.

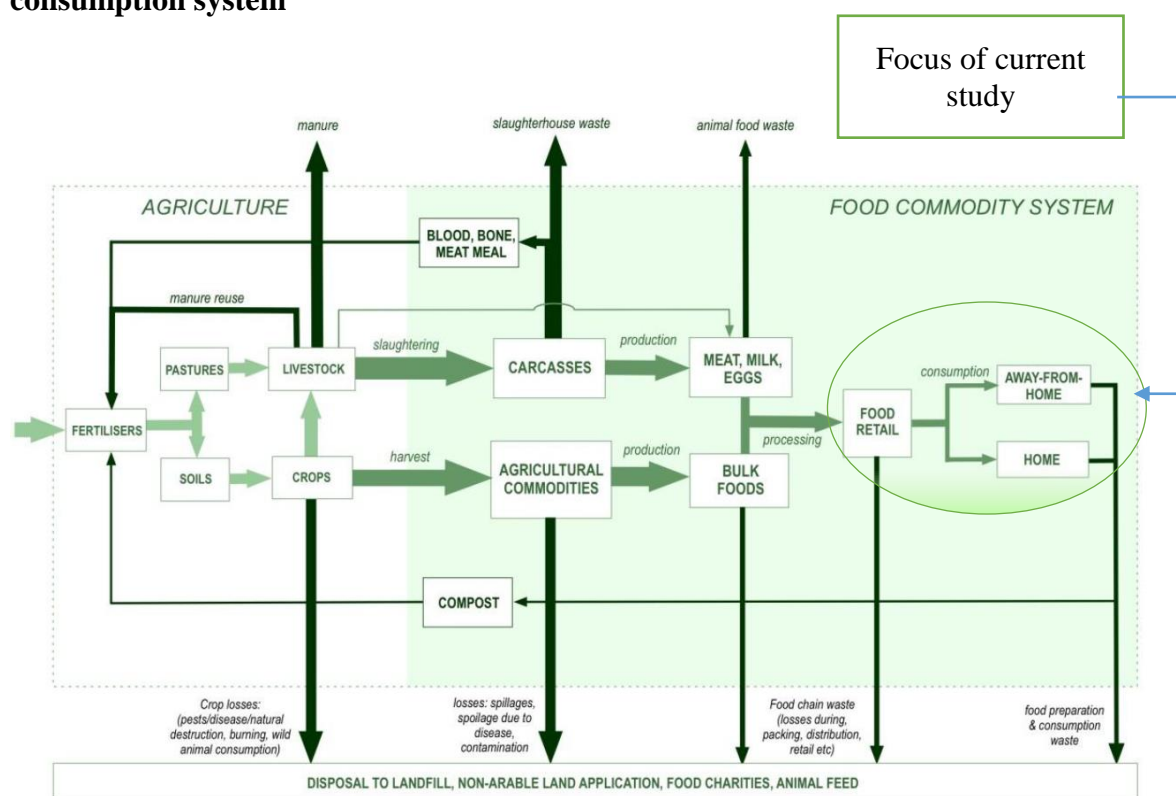
With the issue gaining more importance globally, many national/local efforts have been taking place globally, which includes redistribution of food referring to collecting food from retailers and giving away to the needy such as by organisations like SecondBite in Australia. Other responses include consumer awareness through campaigning, such as the case of Worcestershire County Council which managed to reduce food waste by 14.7 per cent in just three months of campaigning (Lipinski et al. 2013, p. 25).

## **CHAPTER 4: FOOD WASTE IN AUSTRALIA AND THE ACT**

### **Food Waste in Australia**

Quantification of food waste in Australia has been based on extrapolations and generalisations. Review of literature to identify data sources analysing food waste in Australia primarily leads to a policy brief produced by the Australia Institute in 2009, which analysed food waste data collected through online survey of 1603 grocery buyers across Australia (Baker et al. 2009). Another data source extensively used and cited is from DoSomething, an NGO which conducts a FoodWise campaign, which is based on extrapolation of data from a food waste avoidance study conducted by New South Wales government in 2009 (DoSomething 2009). Another report contributing significantly to the food waste assessment is prepared by Institute for Sustainable Futures, University of Technology, Sydney for Department of Sustainability, Environment, Water, Population and Communities, which assessed food waste data and reviewed studies conducted at national and local level (Mason et al. 2011). These multiple sources however result in different numbers, therefore it warrants caution in interpretation of all these data. However, one common fact in all the data is that the magnitude of food waste is high enough to acquire sufficient attention from the policymakers.

**Figure 3 Conceptualisation of food waste flow in Australian production and consumption system**



Source: Mason et al. (2011)

While high income countries are generally wasteful in terms of generating food waste, Australia is considered the most wasteful with food waste estimated at 361 kg per capita per year or 936 kg per household per year (PMSEIC 2010, p. 37). According to IBIS World stats, a total of \$158 billion was spent on food by Australians in 2012/13, of which, 20 per cent was wasted (Dee 2013). According to the National Waste Report 2010, Australians throw a total of 4.45 million tonnes of food annually (Australian Government 2010). DoSomething, an NGO, claims that Australians' waste \$8 billion worth of food each year (DoSomething 2009). This is however considered a conservative estimate and may not capture all food waste (ABCNews 2013). Based on the study done by Australia

Institute in 2009, Australian households waste food worth about \$5 billion per year, estimating at \$616 per households equating to \$239 per person (Baker et al. 2009, p. 5). The same study estimated that Victoria, New South Wales and the Australian Capital Territory were among the top three food wasters. The State wise disaggregation of food waste data is illustrated in Table 2.

**Table 2. Cost of food waste in Australia**

	<b>QLD</b>	<b>NSW</b>	<b>ACT</b>	<b>WA</b>	<b>VIC</b>	<b>TAS</b>	<b>SA</b>	<b>Aust</b>
<b>Waste per household</b>	\$678	\$643	\$641	\$619	\$560	\$545	\$517	\$616
<b>Waste per person</b>	\$262	\$250	\$249	\$238	\$214	\$226	\$213	\$239

Source: Baker et al. (2009)

While the amount of food wasted is enormous, it is argued that in terms of access to nutritious food, approximately 1.2 million Australians suffer from food insecurity (Niklaus 2012, p. 6). Increasing concern in Australia that food waste needs to be adequately addressed (Edwards & Mercer 2013, p. 176) may as well be driven by the scale of the waste and the state of food insecurity in the country.

The reduction of food waste can contribute to sustainable exploitation of natural resources as well as help people and businesses save cost (DAFF 2013, p. 23). Due to water scarcity and lack of fertile land, the sustainability approach is particularly important for Australia because with food waste, all those resources get wasted too. In

terms of addressing hunger, the private governance of the food chain is firmly established in 'neoliberal Australia' such that the state, retail chains and peak interest group agencies (such as the Australian Food and Grocery Council) have only marginally been involved in hunger relief programs (Busch 2011 cited in Edwards & Mercer 2013, p.179). This void however has been filled by food rescue charities and not-for-profit organisations such as OzHarvest and Foodbank who operate nationally and FareShare and Secondbite who works in Victoria (ibid). Some states such as NSW have been running successful campaigns such as Love Food Hate Waste which is a collaborative campaign operated in partnership with different non-state actors<sup>1</sup>.

### **Nature and Extent of the Issue in ACT**

According to the Australia Institute (Baker et al. 2009, p. 5), ACT stands third in terms of cost of food waste. Pointing to the limitations of the study in terms of sample size and methodology used, this result might not be accurate and needs scrutiny. Given that ACT has the highest average income, this figure appears to be conservative and could be much higher for ACT. Waste audit is a common way to find out the composition of waste in terms of how much food and garden organics it consists (Hyder 2012, p. 20). ACT government has conducted since six waste audits since 2001, the latest one being in 2009. This latest dataset was collected through a survey of 250 sample households using stratified sampling technique, by ACT NoWaste engaging APC Environmental Management, which revealed an overall drop of total waste generation for ACT

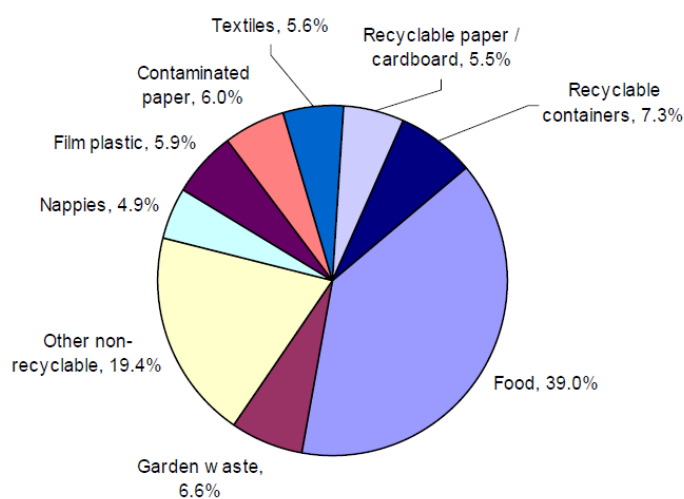
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<sup>1</sup> Love Food Hate Waste is an NSW program managed by the Environment Protection Authority (EPA) that aims to raise awareness about the impact of food waste in NSW and reduce how much 'good' food we waste. EPA partners with corporate, government and not-for-profit organisations committed to reducing food waste in NSW. <http://www.lovefoodhatewaste.nsw.gov.au/about/about-the-program.aspx>

households from 16.37 kg/household/week in 2007 to 14.52 kg in 2009 (APC 2009, p. 6). Though this study had limitations in terms of sample size and the timeframe in which the study was conducted, this is the only data source available to assess the composition of waste in the ACT. Another important limiting factor highlighted in the report was the seasonality of the data collection, which was November (Spring-Summer) in 2007 while May (Autumn-Winter) in 2009, which might have skewed the outcome (ibid. p.16). While the primary objective of the study was to reduce waste generation and improve recycling, this study also provided data for food waste as comprised in the overall waste collected through the garbage bins.

Of the total composition of garbage stream, food waste comprised the highest proportion at 39 per cent. This is illustrated in Figure 2 below.

**Figure 3. Composition of garbage stream**



Source: (APC 2009, p. 20)



The same report points out that the performance of waste management can be improved only through increased diversion by managing the organic waste stream mainly the food waste, which represents 51.6 per cent in total (ibid. p.46). Without such management, ACT could face a significant challenge with reduced landfill capacity in future (ibid. p.47).

It should be noted that ACT is one of the forerunners in addressing the food waste issue. Following a No Waste by 2010 strategy, ACT had launched a BioBin trial in 2000-01 (ACT Government 2002, p.5) which diverged the total waste going to the landfill and treated them at the source. This trial was however deemed inefficient because it was able to capture only 60% of the total food waste generated. However, it was a starting point for ACT and its residents to discuss about potential benefits of reducing food waste.

### **Interventions to Address Food Waste Issue in the ACT**

Though food waste is mentioned and discussed in most of the food or waste related reports produced by the government, there does not appear to be significant policy responses to directly address the issue, particularly in terms of prevention through direct policy actions, neither from national government nor from the state/territory government. However, numerous non-governmental organisations have realised the gravity of the issue and have been working in various capacities to address the issue.

Not-for-profit organisations such as SecondBite<sup>2</sup> and The Yellow Van<sup>3</sup> have been able to rescue fractions of edible food and redistributed and prevented them from turning into waste. There are some other organisations such as Able Organic Recycling and Wamboin Worms which collect organic waste and process them into organic fertilisers<sup>4</sup>. There also have been significant development in University of Canberra and the Australian National University through student led initiatives to address the food waste issue.

### **Food waste in government agenda (State and National government)**

Although no specific policy actions to prevent food waste appear to be visible nationally, food waste has often been mentioned or discussed in various reports produced by the ACT and the national government. The discussions of food waste in these reports and strategies appear to be focused on reduction of overall waste interred to the landfill and not in particular to address the issue of food waste. Some of the reports and the topic discussed are briefed in Table 3.

**Table 3. Government reports/studies mentioning food waste**

<b>Government reports/studies</b>	<b>Key discussion on food waste</b>
Australia's Food and Nutrition (2012)	Includes a chapter on food waste. Discusses sources of food waste, its handling, environmental impacts and strategies to reduce food waste as well as monitoring and evaluation (AIHW 2012)

<sup>2</sup> SecondBite is a not-for-profit organisation which redistributes surplus food donated by farmers, wholesalers, markets, supermarkets and caterers to community food programs around Australia. For more info, visit [www.secondbite.org](http://www.secondbite.org)

<sup>3</sup> Initially licensed under OzHarvest Sydney in 2008, The Yellow Van is a not-for-charity organisation that rescues excess food and delivers it to disadvantaged people. For more info, visit, <https://food-rescue.commsatwork.org/yellow-van-food-rescue>

<sup>4</sup> <http://www.see-change.org.au/node/51>

National Food Plan (2012)	Out of the 16 goals categorised under four broad pillars, reducing per capita food waste is one of the goals considered to address the sustainability. It envisages to reduce food waste through implementation of National Waste Policy that consists of food and garden collection manuals, food waste assessments and benchmarks. Under this policy, working with local and state government, businesses, community is promoted. (DAFF 2013, p. 86)
National Food Waste Assessment (2011)	Reviewed 1262 local or state wide studies on food waste (Mason et al. 2011)
National Waste Policy Implementation Report 2012 and 2013	Under the Pursuing Sustainability, the report discusses initiatives such as National Food Waste Assessment, NSW's Love Food Hate Waste Program and Melbourne Metropolitan Organic Plan which specifically targets food waste (Australian Government 2014, p. 14).
ACT State of Environment 2011	Does not distinguish food waste in particular from organic waste, points towards the need for strategies where community, businesses and government agencies could work collaboratively (Commissioner for Sustainability and the Environment 2011, p. 452)
ACT Waste Strategy Policy 2012	Discusses proposal of organic-waste third-bin collection and concludes that it has potential to recover 18-51 per cent of food waste going to landfill which is consistent with the international experience. However, based on a study conducted by Hyder Consulting <sup>5</sup> , the costs outweigh the benefits and hence deemed not feasible (ACT Government 2011, p. 20).

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<sup>5</sup> Hyder Consulting: Assessment of Waste Infrastructure and service option for the ACT, November 2011.

As one of the 16 goals in the National Food Plan is to reduce food waste, it has proposed some solutions (DAFF 2013, p. 86) to address the food waste issue. Proposed solutions in National Food Plan are as follows:

- a) Changing consumer behaviour
- b) Recovering and redistributing excess edible food to disadvantaged
- c) Redirecting food to reduce overall waste
- d) Reducing waste in production, storage and processing

## **CHAPTER 5: ANALYSIS OF CURRENT INTERVENTIONS USING GOVERNANCE FRAMEWORK**

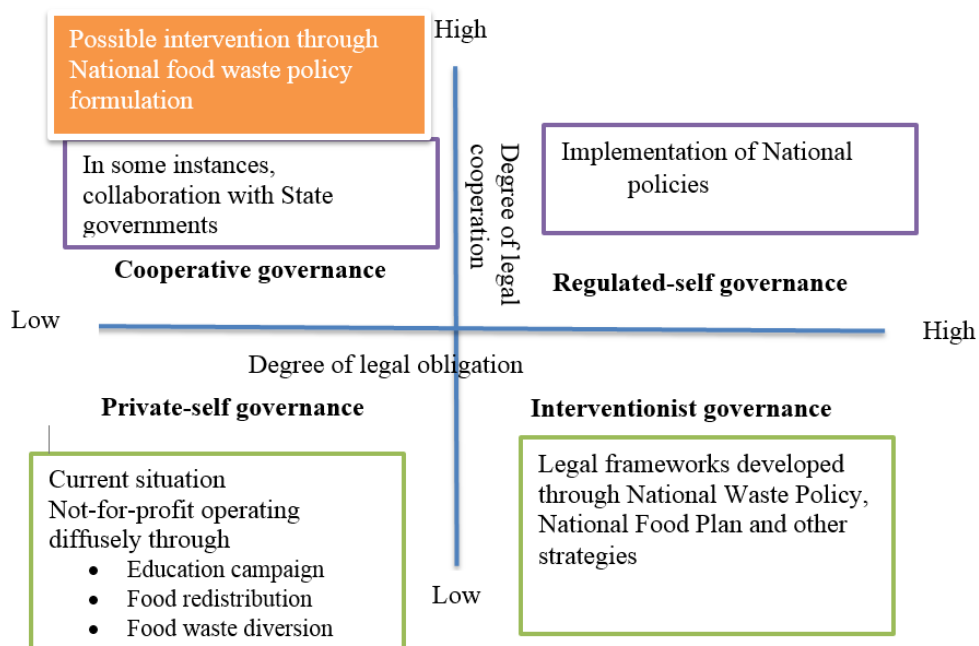
Using governance framework to analyse food waste issue shows that there is involvement of multitude of state and non-state actors. There does not appear to be alignment of people, place, infrastructure and services. Solutions to reduce or prevent food waste rests on large part the individual or consumer side. Similarly, to a great extent, retailers and businesses could be involved. As discussed in Chapter 4, the current responses involve efforts mostly from not-for-profit organisation who have either redistributed food or supported in converting the food waste into an organic fertiliser in combination with education campaigns. There appears to be a void in terms of government policy actions to address the issue of food waste.

The current governance arrangements to address the issue of food waste in ACT therefore appears to be dominated by private-self governance, where not-for-profit organisations have been operating on its own, without much cooperation or support from the State to generate a concerted effect. These not-for-profit organisations have formed a bridge between market and society, assuming the role of public actor and serving the goals of sustainability and food security for the state and the country. The degree of legal cooperation and the degree of legal obligation between state and non-state actors appear to be fairly low. The organisations are bound to some regulation under state law but only institutionally and not in particular to addressing the issue of food waste. At the same time, it is not imperative that different organisations cooperate with each other. This

diffusion of action has resulted in weaker voice from those concerned about the issue of food waste for policymakers to act on the issue and formulate a policy specifically to address food waste.

There also appears to be some form of cooperative governance as occasionally not-for-profit organisations operate collaboratively on education campaigns as well as successfully get support from government such as with Love Food Hate Waste campaign in the NSW. For ACT, this area needs more exploration. Though segregation into one particular governance type is not possible in practice, for simpler understanding, an attempt has been made to segregate. Figure 4 illustrates analysis of current actions to address food waste with particular reference to the ideal types of governance and points towards possible governance intervention needed.

**Figure 4 Analysis of food waste intervention using governance framework**





## CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

### Conclusion

Food waste is a global problem that warrants local solution. Increasingly, the issue has been recognised by international and multilateral organisations which have raised it high up into the global agenda. Its linkage with the global food insecurity and inefficient usage of resources have often been emphasised in literature. There are however multiple ways through which food waste can be viewed. Two distinct ways that are often found in literature are the ‘food perspective’ with its lost potential to feed millions and ‘waste perspective’ with its environmental concerns.

There is a general agreement in literature that at least one-third of all the food produced is wasted from production to consumption. While wastage occurs at different stages in the food value chain, food waste in developed countries occur commonly at the retail and consumer level which have high potential to be reduced and/or prevented.

Different metrics show different values for the amount and cost of food wasted in Australia, but under any measurement, Australia is still the most wasteful society. It is important to note, however, that even in Australia there are significant population who live without sufficient nutritious food. It is therefore imperative that something needs to be done about the issue of food waste not only to address local food insecurity but also global food insecurity and contribute to sustainability.



Debates on food waste in Australia started more than a decade ago, however, no specific policy to address the issue directly has been formulated. Dispersed policies and plans have been formed which mostly target waste management and not so much addresses the preventive measures. Non-state actors however have come forward to fill that gap, who have been conducting education campaigns, redistributing food and diverging food waste away from the landfill. Some state governments, such as NSW, have partnered with the not-for-profit sector and have successfully been operating campaigns such as Love Food Hate Waste to efficiently use the resources and prevent food waste from occurring. Unfortunately, for the ACT, even though the first BioBin trial started in 2000 and the issue had been discussed, not much significant interventions have been done. It is time now for the ACT government to act on it and become exemplary in Australia.

The analysis of the issue using governance framework shows that current governance arrangement resonates mostly with private-self governance type which could be expected due to Australia being a neoliberal country. But, the findings of the study suggests that issue of food waste may not be addressed under such private-self governance arrangement. What is needed to address the issue is a cooperative governance, where public and private actors could cooperate and collaborate with appropriate legislations facilitated by the state. There is a lot of areas where state or the national government could intervene and cooperate. The not-for-profit sectors could also improvise their operation and increase efficiency in the delivery through cooperation with each other and with government agencies. The cost of addressing food waste through policy action may

be high, but the cost of inaction would be much higher, which would threaten not only current generation but future generations as well.

### **Recommendations**

From the analysis using governance framework, it is noted that though non-state actors are effectively operating to address food waste issue through education campaign and food redistribution, the action is dispersed and thus inefficient. A more efficient governance type would be the cooperative governance where there could be joint and concerted effort, which would lead to much better outcome not only in terms of achieving overall objectives but also in setting the agenda right for policy formulation.

Even though ACT government started debating about food waste issue since 2000, the issue had not seen concrete policy action. Learning from neighbouring states and global best practices, ACT could introduce collaborative education and awareness campaign to educate and motivate consumers as well as retailers alike to act on the issue individually and institutionally. This also promotes cooperative governance.

Community participation plays a bigger role in addressing the food waste issue. As such, innovative ways to allow communities to participate voluntarily in the food waste prevention project should be developed. Public community trials of delivering the food waste reduction message in partnership with retailers and businesses should be encouraged and promoted.

The complexity and multiplicity of definitions of food waste results in differing perceptions which results in ambiguity of whether a particular behaviour is promoting or preventing food waste. Similarly, without specific policy on food waste, the issue will always be sidelined as other priorities take over. Therefore, a specific food waste policy that defines the concept and opens up collaborative partnership pathways to address the issue should be developed and implemented.

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