Districts, Lifestyles and Avoiding Waste

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The Metropolitan Local Government Waste and Resource Recovery Fund

The Metropolitan Local Government Waste and Resource Recovery Fund (Metro Fund) is designed to support local government in metropolitan Melbourne implement best practice waste collection and management systems in line with the Metropolitan Waste and Resource Recovery Strategic Plan (Strategic Plan).

The Metro Fund aims to reduce local government exposure to higher landfill levy rates through funding programs and innovations that reduce the amount of waste householders generate and through improvements to collection systems and resource recovery.

The Metro Fund also aims to support implementation of the Strategic Plan through funding projects aligned with identified key findings and future directions.

1 Executive Summary

Food waste occurs at all stages of the food supply chain and in developed countries around 40% of all food intended for human consumption is estimated to end up as waste. Food waste is a significant concern for councils, as it comprises up to 50% of municipal waste in bins. In Australia, it is estimated that households throw out 2.7 million tonnes of food into landfill.

Food waste occurs through everyday practices of buying, cooking and storing. To reduce food waste, it has been suggested that these everyday practices may need to be shifted. Therefore understanding food waste is less about what is being put in the bin, and more about the upstream practices that are being performed that generate the waste.

The study investigated practices relating to the purchase, storage, preparation and disposal of food, over one week, in 24 households within three key districts in Banyule City Council (Ivanhoe, West Heidelberg and Greensborough) in order to gain insights to develop targeted programs to strategically reduce food waste across municipalities. Households were recruited through Banyule City Council via a range of methods (i.e., newspaper, the waste education networks and social media) and participated through a mix of face to face interviews and completion of a household food and food waste diary and data collection kit over one week.

The distributed paper-based data collection kit (Attachment A) consisted of a household food and food waste diary with six key exercises including: how they shop for food; auditing of food in the kitchen, pantry and fridge; what is cooked and what is not eaten through day 2-6; follow up audit of uneaten food on day seven; reflection; and changes they will make.

The project’s success was measured by:

(a) the development of a food and food waste diary questionnaire and research kit;
(b) the engagement of 24 households;
(c) The RMIT University Centre for Design published Research Report
((d) Case Study Hints

Data was collected under fresh fruit and vegetables, processed fruit and vegetables, meat, fish, pre-prepared meals, takeaway meals and home grown food.

Similar insights and trends from this study have also been observed as per studies in other advanced economies regarding food categories wasted (fruit, prepared meals and breads and cereals); and reasons for food waste (forgot about item and it looks or smells spoiled; it’s now out of date, didn’t get around to eating and its spoiled, didn’t eat left overs).

The ‘hands-on’ approach (the actual observation of waste and recording) had a positive impact upon many of the households. Providing residents with the ability to observe, record and report their daily activities, practices and actions around food planning, procurement, storage, cooking and eating may be beneficial (e.g.in accessible ways such as online, web-application (app), or hard copy).

The biggest change for participants was the realisation that they must plan their food purchasing and not to buy on impulse thus avoiding unnecessary food items that may/or may not be used.

There appeared little to no difference between socioeconomic groups thus suggesting that there is little evidence for communicating in different ways to each group. Education programs should emphasize to plan weekly shopping and not fall into the trap of purchasing store specials or buying extra when it is not needed. There were some perceptions from participants that over packaging food increases waste.
2 Project Details

The project was designed to understand household practices relating to the purchase, storage, preparation and disposal of food within three key districts in Banyule’s municipality. Twenty-four households were recruited representing many different lifestyles (low, medium and high economic zones) and stages of life. The project was conducted from September 2012 to October 2013 including the development of a diary and data collection kit; engagement of the households; compilation of the kits for delivery to households; completion of the diaries by households (March – April 2013); monitoring of residents to secure completed information in the kits (including follow up face to face interviews with eight households); project meetings; preparation of final report; workshop presenting findings from the study to selected Councils; development of case studies and a communication plan.

The data collection kit consisted of:

- A paper-based collection kit which consisted of a household food and food waste diary with six key exercises for completion over a one week period.
- Printed maps of the local communities so households could draw on and explain how they shop for exercise (e.g. Shop A to purchase items B).
- Digital photographs of examples of “out of date” / “off foods”.
- A printed survey including a printed food and food waste diary for five days.

Household statistics included:

- Sixty-five percent of the households (15) had children below the age of 25. The remainder were two-person households, of which one is a one adult with child household.
- The average size of the households was 3.4 person. For each of the three areas represented the household size was 3.1 persons (high-Ivanhoe), 4.6 persons (medium-Greensborough) and 2.8 person (low-West Heidelberg). The average Australian household is 2.6 persons.
- All households in Greensborough had children, whereas the households in Ivanhoe and West Heidelberg each had four households with children and four households without children.

The project implementation plan included RMIT University’s Centre for Design as consultants to develop the research kit, to analyse the data, and prepare a final research report. Banyule Council lead the project as project managers responsible for ensuring the tasks meet the project guidelines and the delivery of the outcomes. The total budget was $54,490 of which $25,000 was funded by Metro Fund and included in-kind contributions from RMIT University Centre for Design and Banyule City Council.

The key messages were avoid food waste and save money!

The engagement of the target audience (Banyule residents) was conducted by:

- A recruitment company
- Banyule Outreach Waste networks
- A newspaper advertisement (Attachment B).

A food use-assessment kit has been developed out of the original research kit and handy hints and actions have been compiled to show good examples of Food Waste Avoidance behaviours.

The report is currently being converted into an academic journal article by the RMIT research team and will be submitted for peer review.
3 Project Outcomes & Findings

The positive participation response (especially the completion of the questionnaire) clearly indicates that making household’s practice some food waste measurement may be a useful approach to understanding their daily operations and procedures at home with respect to food planning, procurement, storage, cooking, and eating in order to reduce the incidence of food wastage. This hands-on-approach (the actual observation of waste and recording) had a positive impact upon many of the households in their reflections. This technique provided a first-hand insight and reflection which normally does not occur with hectic lifestyles. There was some differences between low, medium and high socioeconomic households and an example of this was price: (50%) higher, (38)% medium and (25%) low income with regard to going to a shop because of the price of food. Planning of food shopping through the practice of ‘scribbling a rough list’ (50%) high, 38% (medium) and 38% (low) of households performed this. High budget (63%), medium (0%) and lower (13%) were more likely to make a formal list for food shopping. For a fuller explanation please refer to FINAL Report: Districts, Lifestyles and Avoiding Food Waste, RMIT University Centre for Design, 11 July 2014 (Version 6), Dr Karli Verghese, Simon Lockrey and Dr Helen Williams.

The project did meet its objectives by developing a research education kit that can assist households with reflecting upon their food planning, purchasing, storage, cooking and eating practices by undertaking their self-reflection journals / kit to identify ways to improve their behaviours. By households reflecting on their shopping habits, planning of meals and storage of food there was evidence through their feedback that they were able to rethink their behaviours with their food activities at home and the planning of what food items they purchase.

At a food budget level the following observations can be made:

- Across all four meal types, households from the high food budget area prepared the most meals at home; indicating less take away and eating out for meals;
- Households in the medium food budget area ate more meals prepared outside the home, particularly those classified as “other” which included cakes, nuts, fruit, ice cream, chips and biscuits.
- Households in the low food budget area ate less breakfast and dinners prepared at home compared with households in the other two areas, indicating more take away and eating out for these meals in this area;
- Over 90% of lunches were made at home;
- Across all households, of the dinners eaten during the five day audit, only 81-84% of dinners were eaten from preparations undertaken in the household. This equated to a total of 21 dinners being eaten from preparation not made within the household (e.g., meals at a restaurant, take away meals).

The biggest change for participants was the realisation that they must plan their food purchasing and not to buy on impulse thus avoiding unnecessary food items that may/or may not be used.
4 Project Highlights

The project highlights:

- The evidence of the committed involvement from the participants and the level of detail that they entered into the research kit. (Photos of fridges and examples of food wastage).
- The research supports the fact that educational tools that challenge behaviours in the home made participants more aware of food wastage and also the need to better plan food activities.
- Handy hints and actions to role model to other residents in any municipality.
- Engagement of Banyule City Council with RMIT University’s Centre for Design with MWMW through their management of the project funding.
- The high attendance, interest and follow up by the local councils who participated in the October 2013 workshop to learn about the outcomes of the report.

The project has developed additional insights into the growing field of understanding and qualifying food waste at the household level. Combined with the available information on local and State government websites here in Australia and overseas, it provides the springboard to further develop tools and education strategies.

Participants gave insights into how to reduce waste in the home as follows:

“It has made me think about how much waste there is after meals. I should prepare a list of our meals for the week and try to only buy what we need.”

“I would be better off shopping once a week for a large shop and only get what I need on the occasional other day.”

“Will be more vigilant about pantry audits and watching ‘use by dates’.”

“Before this we did not even know what the purpose of the worm farm was.”

“If I get a compost bin and I am shown how to use it properly, I will begin using it.”
5 Conclusion & Recommendations

Further development of the Research Kit to include education tips on how to reduce food waste and a self-analysis of people’s behaviour. The identification of how to include a wider audience and monitoring of what works and what has little impact on behaviours. Community engagement is paramount and there needs to be more research on how to get people to undertake food use-assessment of their behaviours. As part of the project the incentive of receiving a compost bin made recruiting easier and participants could see an immediate gain from getting involved in the project. Also another motivator was the prospect of decreasing their food budget.

The result of this project produced a good understanding on how people shop, did they plan or not, and how they stored their food items. It also highlighted to the participant the food waste cost to the family. It assisted people to take the time to stop and assess their practices at home, shopping and storage of food.

Council could disseminate a food use-awareness kit that encourages residents to reduce their food waste and save money. Further strategies for getting commitment from communities to undertake food waste avoidance assessment at home would be to seek assistance from community groups, schools and other community networks. Incentives are a good way of securing participation from communities. An opportunity would be to ask people to keep their food purchasing receipts to better show the amount of waste or not, thus giving them a greater incentive to change their behaviour.

The October 2013 workshop with other councils identified several opportunities and recommendations for future strategies including:

1. Refine and further enhance the current “paper-based” diary and data collection sheet. This would include education tips on how to reduce food waste and a self-assessment of people’s behaviour
2. Converting the “paper-based” diary and data collection sheet into an “online” questionnaire
3. Making available the “paper-based” and “online” versions to more councils in addition to Banyule City Council
4. Further investigate how households can better monitor food purchase and budget
5. Explore interest and funding to develop the questionnaire into an “app” and an “online” game.
Photos

Council Workshop held on 30 October 2013 at RMIT University, Melbourne.

Participants photos demonstrating reasons why food was wasted.

Didn’t get around to eating this and now it is out of date

Left overs that didn’t get eaten
Collateral

1. FOOD WASTE DIARY 2013

This paper kit was included in a kit that was distributed to the 24 households.

2. COMMUNICATIONS PLAN

The following activities were conducted to communicate the project findings and recommendations:

1. Roundtable to selected Councils and State Government representatives:
   - Date: Wednesday 30 October 2013
   - Venue: RMIT University City
   - Representatives from the following:
     - Cardinia City Council
     - Frankston City Council
     - Whitehorse City Council
     - Manningham City Council
     - Yarra City Council
     - Bayside City Council
     - Moreland City Council
     - Darebin City Council
     - MWMG
     - Sustainability Victoria

   The roundtable was held to disseminate the project findings, to gain feedback and learnings from other Councils and agencies. There were valuable discussions on engagement of participants for similar projects mainly on what was an effective tool that would ensure community participation. A participant from the project attended the workshop and gave insights about how the Research Kit worked for them.

2. Media Article

   A media article has been prepared to disseminate the information to a wider audience through major newspapers and local newspapers. This article could also be placed on Council’s website, MWMG website and any other relevant media tool.

   Media article has been prepared and agreed on by communications team from the three different organisations:
   - MWMG
   - RMIT Centre for Design
   - Banyule City Council
3. Community Workshop  
Date: 12 February 2014  
Venue: Banyule Rethink Centre  

A workshop was held to disseminate information at the local level and to gain feedback from participants. During the workshop the participants undertook a shorter assessment to engage them in the process of thinking about their food waste at home and to inspire them to make any changes that may be necessary.

4. Educators meeting on 26 February 2014  

Councils that were interested in conducting further Food Avoidance projects were invited to discuss projects that have been undertaken on educating people about food avoidance.

A general discussion and brainstorming of ideas on past projects and how to move past projects and information on to the next stage. There was such participation in conversation and discussion that participants were able to document some suggested actions for the future.

(1) The development of The HUB, Central Information for Councils - to provide insights, links to resources.  
  • Consolidate available resources  
  • Share your projects  
  • Focussed / filter searches  
  • Question and Answer (Q/A) – what is each Council doing? (survey monkey)

(2) Day Session to brainstorm how this hub would look like, and how it works?

(3) Converting the unconverted:  
  Review of studies previously to identify what works and what is needed to improve each resource.

CASE STUDY - HINTS TO AVOID FOOD WASTE
SAVE MONEY BY CUTTING FOOD WASTE

*Did you know that each year Australian householders waste 2.7 million tonnes of food, that’s 64% of Australia’s food waste and costs close to $8 billion, according to the RMIT Centre for Design?*

A recent study on food waste in the *City of Banyule revealed major reasons why food was wasted.*  
They were: not getting around to eating it, forgetting about food items, leftovers, all resulting in spoiling or expired use-by dates. Most wasted were fruit and vegetables followed by bread, cereals, prepared meals and meat.
5 EASY STEPS TO CUT YOUR FOOD WASTE

1. Planning meals. A list helps avoid impulse buying on food you might not get around to eating and so will throw out.

2. Shopping. Buy only what you need. Shop following the meals plan, and not ad hoc for small amounts that can lead to buying more than you need.

   Avoid buying ‘specials’, which you mightn’t get around to eating, and so could end up as waste.

   Avoid packaged foods which can be packaged in larger amounts than needed, buy fresh, local and seasonal food so easier to buy amount needed.

3. Storage. Check refrigerator and pantry items regularly to eat before they spoil and use- by dates expire.


5. Disposal. Buy compost bin and follow directions to avoid vermin, or worm farms and create rich soil for your garden, and feed waste to pets.

The Banyule City Food Waste Study

Participant Reflections

- “It has made me think about how much waste there is after meals. I should prepare a list of our meals for the week and try to only buy what we need.” “I would be better off shopping once a week for a large shop and only get what I need on the occasional other day.”

- “Will be more vigilant about pantry audits and watching ‘use by dates’.”

- “Before this we did not even know what the purpose of the worm farm was.”

- “If I get a compost bin and I am shown how to use it properly, I will begin using it.”

Media release

POST STUDY MEDIA RELEASE

Joint study focuses on cutting household food waste

With about 2.7 million tonnes of food dumped into Australian household bins each year, a joint research study has found planning meals is crucial to cutting waste.

When it comes to food waste, the humble householder is surprisingly the biggest offender – throwing out an estimated 40 per cent of the food they buy, equivalent of two in five bags of groceries going straight into the bin.

But the recent research looking at how and why household food waste is generated could change the way we think about buying and binning food.

The study, which mapped the cycle of household food waste over a week last year, was conducted by RMIT’s Centre for Design and commissioned by Banyule City Council with funding from the Victorian Government’s Metropolitan Local Government Waste and Resource Recovery Fund.

It is estimated that about 50 per cent of household waste put in council provided garbage bins is food that has been thrown out. This is a common story in Victoria and the learning from this study can apply to Victorian households regardless of size or income.
By looking at how households buy, store, prepare and dispose of food, lead researcher Karli Verghese and her team traced the cycle of food waste in 24 households in Ivanhoe, Greensborough and Heidelberg West.

Of the initial food identified by households as wasted in their home, fresh fruit (19 per cent), vegetables (19 per cent), pre-prepared meals (15 per cent), bread and cereals (16 per cent) were among the most common items thrown out each week.

The study, titled Districts, Lifestyles and Avoiding Food Waste, found planning meals is crucial to reducing the amount of household food waste - regardless of socio economic status.

“Education programs should emphasise this, as well as not falling into the trap of purchasing store specials or buying extra when it is not needed,” Dr Verghese said.

Buying more food than needed, poor storage, spoiled food, expired use-by dates and forgotten leftovers were the main reasons why food ended up in the bin.

By understanding how households deal with food waste, the study - which complements research in Sweden and the UK - aims to inform Council programs on behaviour change.

To do this, Dr Verghese and her team looked at the economic, environmental and social factors, investigating lifestyle and consumption patterns - from planning and buying habits, to the way participants took stock of the fridge. A food audit showed what was wasted during the week.

“One understanding food waste is more about shifting the everyday practices of buying, cooking and storing food that generate waste and less about what is being put in the bin,” Dr Verghese said.

Dr Verghese said giving participants the opportunity to record their daily activities, practices and actions resulted in many households noting increased awareness of their actions.

Banyule Mayor Councillor Craig Langdon said the findings of the research would help Council tailor education programs to reduce food waste across Banyule’s 51,500 households.

“It is estimated that households waste approximately $1,200 of food each year. By implementing education programs that help households reduce food waste, it’s a win-win for residents and Council with not only financial savings but a better environmental outcome with less rubbish going to landfill,” Cr Langdon said.

“One of the surprising aspects of the study was that there was little difference between the three suburbs, which indicates food waste is a universal problem.” Banyule Council is now developing a food use-awareness kit for residents so they can understand and monitor their own food waste, and use a variety of tips and tricks to reduce waste into the future.

“Giving the study participants the opportunity to record their daily activities and practices resulted in many households better understanding what was leading to food waste and taking action to prevent it. Our food use-awareness kit is being designed along the same lines and should help residents save money,” Cr Langdon said.

Bibliography:
Districts, Lifestyles and Avoiding Food Waste, RMIT University Centre for Design, 11 July 2014 (Version 6), Dr Karli Verghese, Simon Lockrey and Dr Helen Williams.

For more information, Margaret Morgan, Waste Education Co-ordinator, Banyule City Council on 9490 4588.