

Apples – as a Food System

Continuing ideas for exploring the environment in
the 2021 International Year of Fruit and Vegetables by Jeanie Clark

Where does the fruit you eat come from? How does it get to you and what processing, transport and distribution does it go through, before you can eat and/or cook it? What happens to any waste? These questions form the basis of a 'food system'.

In this 2021 International Year of Fruit and Vegetables (IYFV), two of the aims are about food systems: to reduce waste in them; and share best practice to improve them [1]. This second IYFV article will focus on apples to explore the food system, and suggest ideas and freely accessible web resources for learning about it. The principles of an apple food system can be applied to any food.

Food systems

What is a food system? Choose a food (F or V!) your children like and see what they know about how it gets to them. If your children have been involved in growing F/V foods, choose one and see what stages they would list. How would they depict this as a diagram? Do this before looking at anyone else's definitions and/or diagrams.

These apples come from our garden. This is their food system: The tree is watered by rain all year,



and by hose during spring and summer. The ripe apples were picked off the tree recently and wiped as needed. They were brought into our house. Some were eaten fresh, others cooked. Some cooked apple was frozen. Peel and core waste went into compost.

What words might your children use to describe these stages? These are mine: grow, pick, transport, clean/cook, eat/freeze, compost.

How would this food system differ if the apples came from a shop? This is the type of food system that most definitions and diagrams cover, e.g. The Greater Kansas City Food Policy Coalition's [2]:

Production: growing; harvesting
Processing: transforming; packaging
Distribution: warehousing; transporting; retailing
Consumption: cooking; eating
Reusing/Disposal: food and food packages"

Their diagram seems to be the simplest [2]. Some other clear and simple diagrams, with slightly different split ups are given by the Centre for Environmental Farming Systems [3] and Nourishlife [4], which has links to learning activities [5].

For more complex descriptions, Cornell University's Garden-based learning curriculum booklet has an introductory chapter Food Systems 101 [6] which explains how diagrams develop more complexity from a simple list into larger-scaled food systems: local, community, regional, and global. This chapter could help interpretation of some more complex food system diagrams, like Nourish's 'Food system Map' [5], Pennsylvania State University's one in 'Food Systems as Human-Natural Systems' [7] or Paschal's one in 'KPU researcher studying the future of food security in Metro Vancouver' [8].

Food miles

'Food miles' is a concept about how far food comes. It involves distance, transport types, pathways, handling, protection, and storage, i.e. geography, maths, economics and science. All contribute to energy and dollar costs. Reducing distances, both directly and indirectly, reduces these costs.

Where do your fruits come from? Draw a diagram

to show what comes from your garden and what is from other places? Do you know where they are sourced? Can labels help? Once you find out, add these to the diagram to get a more extensive concept of how far and by what chain the fruit travels. (Are there more local fruit choices?)

Growing regions

Where do the apples come from in Australia? The 'Apple Isle' nickname suggests one place. Aussie Apples has a map showing the main apple growing regions for each state [9]. How important is Victoria? Pick the World's Apple Picking in Australia webpage [10] says Victoria was the biggest in 2014, producing half the Australian crop. The fifth graph on the APAL (apple industry) webpage [11] can be used to see if this is unusual. This coloured cumulative graph shows apple production by states yearly from 2008 to 2018. (What does this suggest about where apple food jobs will be?)

Apart from home and community gardens, are fruits grown nearby? Were they there in the past? (Do local street names hint about them?) In the early 1960s, Melbourne was still a place fringed by orchards. Box Hill North, for example, only lost its apple orchards to become a suburb then.

Aussie production

What does harvest involve? What is the job? answers this on the above Pick the World page [10].

How big is the Australian apple industry? At the top of APAL's page of graphs [11], there are dot points reporting its dollar value, number of commercial orchards, how much Australians eat on average from commercial orchards (i.e. not counting home production), and how much is exported. As far as low food miles goes, what does the amount exported suggest about whether we keep apple supplies as close as possible to local markets?

What varieties of apples are grown? There is a chart under the map on the above Aussie Apples webpage [9] showing all current varieties and when they are picked. There is a page on these.



These apples were on sale in March 2020 at Petty's Orchard. Is this Bramley apple new to you? It wasn't listed by Aussie Apples [9]. They are now considered a 'heritage' variety, especially as a cooking apple - the backbone of British apples!

You may have heard of the history of how the Granny Smith became a variety from Sydney. Well,



this Bramley has a similar story from Southwell, England. (Yes, you can do history with learning about fruit!) These three websites tell it well: a Bit about Britain [12]; Grow Great Fruit [13]; and Heritage Fruit Trees [14]. As the third one tells the story as a timeline, it can be used to introduce the concept of how timelines work. If a fruit tree's variety is known, why not research its history and make a timeline for it?

These webpages don't mention when the Bramley's came to Melbourne. But, timeline information can be used to more easily guess/hypothesise about other things. So imagine being a British settler in the latter 19th century, when the timelines show that Bramley's are being awarded top honours at Apple Shows - what variety would you want to plant into a new orchard in Melbourne?

Storage

How are apples stored? YouTube has plenty of advice for home gardeners. Two short ones that I like are Grow Veg's [15] and Crocus' [16]. For bought apples, the Aussie Apples webpage has Cold Storage and Wax videos [9] which explain how apples are stored for our use all year.

What happens in a packing shed? 9-Mile Orchard provides information on its three stages in the apple packing shed, involving jobs for ten people [17]. It also has some interviews with workers which could be used to make a diagram to show how these jobs link together.

Processing

Apples may also be processed. Why not brainstorm what can be done? I stew mine before freezing them. I also make muffins, cakes and deserts!

On a state-wide scale, the Goulburn Valley is well known for its fruit growing and canning, i.e. processing. Icons on the page 3 map in "Goulburn for rewarding investments" show clearly where the growing and canning are located [18].

Do your children know of this historic Aussie fruit brand - SPC [19]? Or what Ardmona and Goulburn Valley produce [20]? Where is SPC based and what does it do? (The clues are in its three-letter name [21].) Being in the midst of the Goulburn Valley fruit growing region is the reason for its existence, but more than fruit is needed for processing. SPC's website [22] reports on sources of its fruit ingredients and why some imports are needed.

Visits

What about a field trip to an apple orchard?

Petty's Orchard [23] is in Templestowe, adjacent to the Yarra River. Tucked away down a 'country lane' it boasts some 450 varieties of fruit, with eight plus in season daily - and on sale! It has organic produce for sale too, historic items and a timeline display, a coffee shop and playground. Check opening times! Other orchards welcome and cater for visitors, e.g. at Montague [24] near Bacchus Marsh, in the Yarra Valley [25], and at Wandiligong [26].

Waste

Innovations in products from apple waste mean it can be used as more than compost, e.g. a 'thicker' drink [27], a bone/cartilage biomaterial [28], a bio-fuel [29], and many other products ideas [30].

Food systems may be complex and have lots of parts, but understanding them will prove a foundation for reducing waste, improving best practice and innovation to do this now and in the future. Hence it's worth studying in this IYFV.

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Direct links to webpages in this article

- [1] <http://www.fao.org/fruits-vegetables-2021/en/>
- [2] <https://image.slidesharecdn.com/elisepals20170725-170727090344/95/pals-placesteachers-professional-development-series-3-638.jpg?cb=1501146592>
- [3] <https://www.ces.ncsu.edu/wp-content/uploads/2013/06/Local-Foods-System-Diagram-no-title-1024x768.jpg>
- [4] <https://www.nourishlife.org/teach/food-system-tools/> and
- [5] https://www.nourishlife.org/pdf/Food_Systems_Diagrams.pdf
- [6] <https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/f/575/files/2016/03/newlogoDiscovering-Our-Food-System-2lyk76c.pdf>
- [7] <https://www.e-education.psu.edu/geog3/node/1081>
- [8] <https://sfb.nathanpachal.com/2015/08/kpu-researcher-studying-future-of-food.html>
- [9] <https://www.aussieapples.com.au/about/>
- [10] <https://www.picktheworld.org/apple-picking-australia/>
- [11] <https://apal.org.au/programs/industry-data/industry-stats/>
- [12] <https://bitaboutbritain.com/story-bramley-apple/> ;
- [13] <https://growgreatfruit.com/bramley-apples-australia/>;
- [14] <https://www.heritagefruittrees.com.au/the-bramley-story/>
- [15] <https://www.youtube.com/watch?v=5A9p26ITUeM>
- [16] <https://www.youtube.com/watch?v=F5VN0Q9JEzQ>
- [17] <http://9mile.com.au/about-us/>
- [18] https://agriculture.vic.gov.au/data/assets/pdf_file/0004/554161/goulburn-report.pdf
- [19] <https://spchistory.wordpress.com/the-history-of-spc/>
- [20] <https://spc.com.au/brands/>
- [21] <https://spchistory.wordpress.com/>
- [22] <https://spc.com.au/our-story/>
- [23] <https://tomelbourne.com.au/pettys-orchard/>
- [24] <https://montague.com.au/>
- [25] <https://www.weekendnotes.com/pick-your-own-apples-victoria/>
- [26] <https://www.nightingalebros.com.au/> .
- [27] <https://www.lifehacker.com.au/2020/11/aussie-family-creates-waste-free-apple-juice/>
- [28] <https://all3dp.com/biomaterial-apple-waste/>
- [29] <https://pubmed.ncbi.nlm.nih.gov/33472503/>
- [30] <https://theconversation.com/waste-to-wealth-the-hidden-potential-of-waste-from-fruit-43126>

Note – All the above are freely available. As subscription is required for the resources to the Stephanie Alexander Kitchen Garden Foundation, it was not included.