



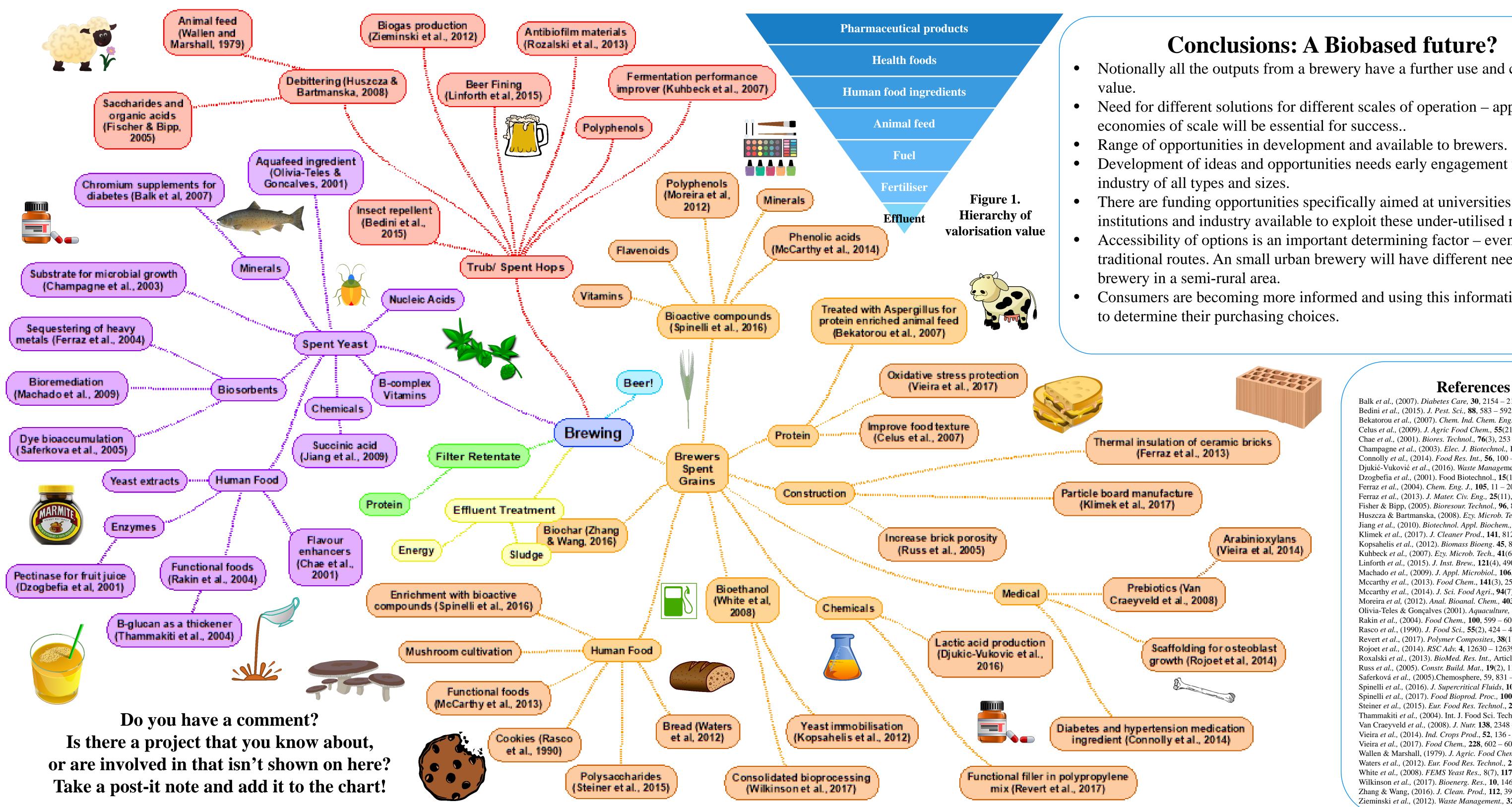


Introduction

- By 2050 the global population will reach over 9 billion people.
- The Food and Agriculture Organisation of the United Nations (FAO) have projected that this growth will require 70% more food to be produced than between 2005 - 2007.
- Demand for water is increasing. By 2025 around 2/3 of the global population could be living under water stressed conditions.
- The food market, including brewing will need to be economically and environmentally sustainable to survive.

There is an opportunity to reduce our demands on the planets resources.

- Brewing uses both renewable and finite resources, with increasing demands on renewable resources.
- Beer is 95 % water, with up to 70 % more used to make it than is in the product itself.
- Water management policies implemented by global brewers have seen changes to the water to beer ratio:
- Many brewing companies have sustainability policies and frameworks, with some receiving international recognition for this.
- Sustainability can be used to drive businesses forward.
- Using local materials expansion of sorghum brewing.
- Low economic value (Figure 1) for the traditional uses of animal feed, fertiliser or as a last resort sending to landfill
- A circular economy is one that minimises the inputs and outputs, with as much reuse as possible, conforming to the waste hierarchy of reduce, reuse, recycle, recover, dispose
- Valorisation adds value to outputs and can potentially represent an additional income stream.
- It is proposed that breweries have an opportunity to become an integral part of the local bioeconomy.



2017 ASBC Annual Meeting The Future of Brewing in a Biobased Economy

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Conclusions: A Biobased future?

• Notionally all the outputs from a brewery have a further use and can create

• Need for different solutions for different scales of operation – appropriate

• Development of ideas and opportunities needs early engagement from

• There are funding opportunities specifically aimed at universities, research institutions and industry available to exploit these under-utilised resources. • Accessibility of options is an important determining factor – even for traditional routes. An small urban brewery will have different needs to a large

Consumers are becoming more informed and using this information to help

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