

Promoting Seasonal Food in Germany

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FOOD IMPACT:

Promoting **seasonal** and **local** food can help decreasing the **ecological impact** of our current food industry. Means of transport increase CO2 emission of fruits and vegetables significantly (Fig. 3).



Fig. 1: Energy costs for importing 1kg bananas from oversea using different means of transport

What are locally produced seasonal fruits and vegetables?

How can they be promoted in Germany?

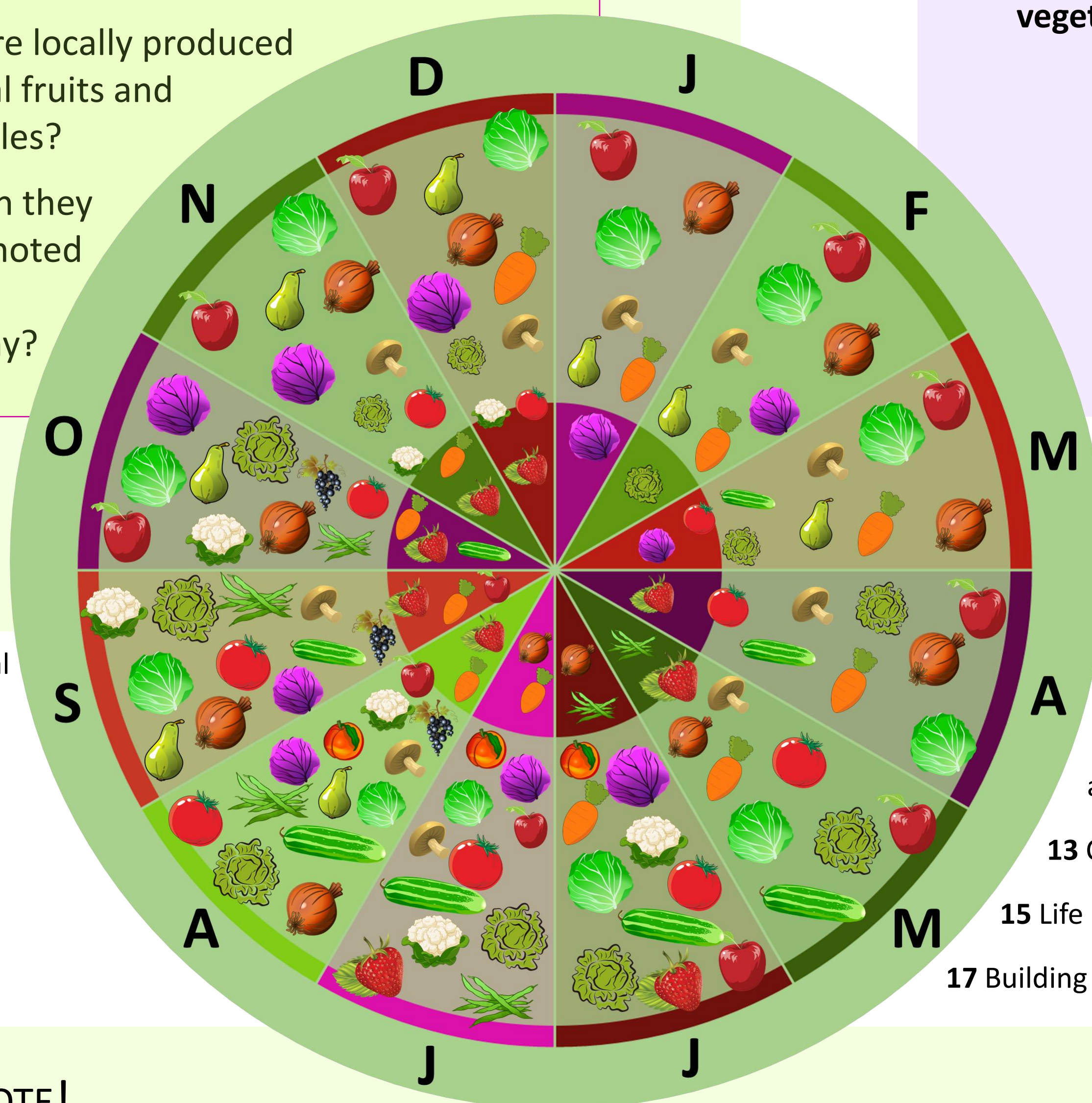


Fig. 3: Seasonal Food Calendar

CURRENT SITUATION:

13 000 000 tons of fruits and vegetables consumed eachs year

Only 1% of all arable land is **used for fruits and vegetables** (including potatoes: 2.7%), more than **50% used for animal food**

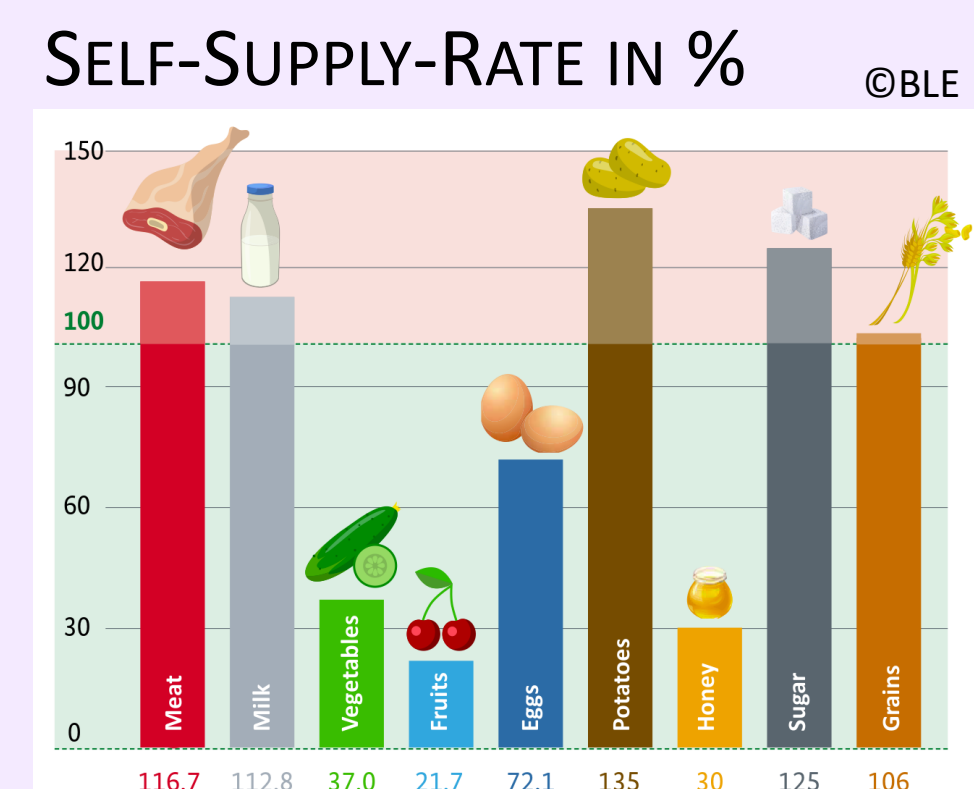


Fig. 2: Germany produces less fruits and vegetables then they consume

SEASONAL FOOD CALENDAR:

Harvesting times for **most popular fruits and vegetables** grown in Germany

CHECK THE CALENDAR TO...



know whether it is **season or not** for your favourite fruit

Get inspiration for a **diversified diet**



...AND REDUCE YOUR ECOLOGICAL IMPACT!



PROMOTE!

PLATFORMS

Use Social Media and Public News creatively to **spread information**

TEACHING

Distribution of a food calendar in schools accompanied by recipe suggestions
School Excursions to local farms

GET PARTNERS ON BOARD:

Ministry of Food and Agriculture: **subsidize** marketing

Supermarkets: **distribute** food calendar, fridge magnets and recipes with local seasonal food

Farmers: **adapt production** to the local demand of food



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Promoting Seasonal Food in Germany

Introduction

There is a lot of discussion about how we can feed all humans in a sustainable way. Our current food system has a huge impact on the environment (Donkers, 2015). Many fruits and vegetables are grown overseas and shipped or flown to Europe (Huang, 2004). This increases the greenhouse gas emission of the food significantly (Michalský and Hooda, 2015; Parajuli et al., 2019). It is necessary to mitigate these gases so later generations can live with the same living standards as we do. A strategy to decrease the ecological impact of fruits and vegetables which is becoming more popular is to eat locally produced seasonal fruits and vegetables (Michalský and Hooda, 2015; Parajuli et al., 2019). The problem is that most people do not know what is produced in what area of the world and when it is harvested, since most fruits and vegetables are available in the supermarket the whole year.

In this paper we will examine the following questions: what are locally produced seasonal fruits and vegetables and how can eating them be promoted in Germany? We used this data to visualize a seasonal food calendar. We chose Germany because this country can have a significant impact on the world wide food market, because of its big population, its dominant position in the international trade system and its influences on the European Union. In addition to this, there is a wide variety of crops that can be grown. To conclude, we will also discuss drawbacks of local food and our approach.

Why local seasonal food is better for the world: the connection to the SDGs

Consuming locally produced food has several significant advantages for consumers and producers. The advantages can be connected to some of the Sustainable Development Goals of the United Nations. These goals are designed to ensure a sustainable future for all (United Nations n.d.).

First, local food means that the food is produced close to the consumer (there is no official definition of what is close) and thus does not need to be transported far. The food has so called less 'food miles' than non-local food. This decreases the carbon dioxide footprint of these crops significantly (Michalský and Hooda, 2015). Local food fits therefore within SDG 13: Climate Action. Also Sustainable Development Goal 15: life on land is connected to local food because local agriculture can contribute to sustainable use of land. In addition, when a German eats more local food, less fruits and vegetables have to be imported from other countries which need it more than they do. Thus, local seasonal crops also help achieving SDG 2: Zero Hunger. Another SDG can be met even closer to home for Germans: when the demand for local food is higher more farmers are needed, which means more work opportunities. This connects to SDG 8: Decent work and economic growth. Furthermore, eating more locally produced seasonal food leads to a more responsible consumption and production, which is SDG 12. Production will be adapted to local demand. Last but not least, for the promotion of local food, financial and marketing partnerships have to be built so all the other SDGs can be met. This is SDG 17: partnerships for the goals.

Current Situation

In Germany, People eat 13 mio. tons of fruits and vegetables (potatoes excluded) per year. Of all arable land (which makes half of the area of Germany), only 1% is used for growing fruits and vegetables (potatoes again excluded, with potatoes it's 2.7%), which is a remarkably low percentage compared to the relative amount of arable land that is used for growing livestock food: over 50% (data: BMEL, BLE).

The produced food is less than the population consumes, so Germany needs to import fruits and vegetables, but still there is some export of crops from Germany to other countries. Therefore the “self-supply-rate”, the percentage of how much of the consumed goods are grown domestically, is an interesting number to look at (figure 2 on the poster). We can see that about one third of the demand for fruit and vegetables is covered by Germany’s own production. To produce the currently demanded amount of meat, more than 50 times more land is used for that compared to fruit and vegetable growing. Measured by weight, people eat in average roughly as much meat as fruits or vegetables. So with using only 2% of the animal stock feeding fields for fruits and vegetables, Germany could be self-sufficient in fruits and vegetables. This of course only works in theory, as many of the fruits and vegetables demanded by the population (e.g. Bananas) cannot be grown in Germany at all. (data: BMEL and BVDF)

Seasonal Food Calendar

A lot of governmental and non-governmental organisations provide seasonal calendars on their webpages and for sale (e.g. the BZfE, federal centre for nutrition).

We visualized a shortened version of a season calendar for Germany for this presentation to give a general impression about the harvesting seasons of fruits and vegetables (figure 3 on the poster). Therefore we picked the most popular 10 vegetables and 5 fruits grown in Germany (data: BMEL, averaged over the last 7 years). Seasonal calendars not only help to decide whether it’s the right season to eat your favourite fruit, but also can give information for an diversified diet as they might encourage creativity in food consumption.

How to promote eating local and seasonal

With the many benefits of locally grown food, distributing the information in a positive and encouraging way is an important factor. With the help of social media and public news, many can get the information they need and can share it even further.

Social media has become a necessary investment for any business or idea, now that everyone is online either through computers, tablets or mobiles. Social platforms such as Facebook are a great way to share advertisements. Facebook is one of the biggest social websites that has millions of daily users, and is already filled with commercials and sponsored businesses and could then be used as one of the strategies to get people to click on links leading to more informative sites about seasonal, sustainable food.

Another desirable partnership is with schools. By distributing the food calendar in schools accompanied with recipe suggestions, students would learn the benefits of locally bought fruits and vegetables. Since most children go to school, the scope of this approach is enormous. Another way to create awareness for local food in a fun and interactive way is to organize school excursions to local farms.

To guarantee that as many people as possible get the Seasonal Food Calendar, a collaboration with supermarkets is a good choice as well. They can distribute information about the origin of the food they sell and make local food more attractive using, for example, discounts or extra advertisement. Seasonal food calendar fridge magnets accompanied with local food recipes can be handed out at the entrance of the stores. The calendar fridge magnet is product that reminds people of eating seasonal food every time they open their fridge. It gives the consumer immediate access to more information on what vegetables are being produced through the year and what they can make with it.

Another important partnership is with the German Ministry of Food and Agriculture (BMEL, Bundesministerium für Ernährung und Landwirtschaft). The marketing of the Seasonal Food Calendar will cost a lot of money, therefore BMEL could help subsidizing. The ministry can also help letting farmers adapt their products to the local demands of food.

The Drawbacks of local seasonal food

Although locally produced seasonal crops require less transportation and have in that way a lower Greenhouse gas emission, it is not the one and only solution to mitigate the ecological impact of our food system. This is because transport is not the only part of the overall food system that influences climate impact, also production, packaging and storage have influence (Edwards-Jones, 2010). Most fruits and vegetables cannot be grown the whole year in Germany. Therefore they have to be stored so people can also eat them when it is not the harvesting season. Storage and packaging requires energy and has thus influence on the greenhouse gas emissions of the food. Sometimes it is more environmental friendly to import fruits and vegetables from an area when it is harvest time then to store the same food for several months (Edwards-Jones, 2010).

A major drawback of locally produced seasonal fruits and vegetables is that this does not necessarily mean that these crops are better for the environment. Another factor we did not take into account is greenhouse growing. Many crops cannot be grown in Germany without the use of a greenhouse. For example a tomato grown in Germany might require a greenhouse and uses therefore more resources and energy than a tomato grown in Spain and transported to Germany.

Summary and Conclusion

In this paper we examined the question what locally produced seasonal fruits and vegetables are in Germany. We combined our findings in a Season Food Calendar (see figure 3 on the poster). In addition we came up with a marketing plan to promote eating seasonal locally grown crops. Partnerships with schools and supermarkets can be built to distribute the calendar (in the form of fridge magnets and flyers), and the ministry of food and agriculture should be asked to subsidize the marketing. Although locally grown fruits and vegetables have a lower impact on the environment when it comes to transport, the overall impact of the crops is also dependant on production way, packaging and storage. This leads us to the final conclusion that it is best to promote eating locally grown seasonal food in Germany when production does not require greenhouses and long storage.

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