



Ministry of Environment
and Food of Denmark



The Value of Food

*- Global Challenges & Local
Solutions to Food Waste*



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The Value of Food

- Global Challenges & Local Solutions to Food Waste

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Global Challenges & Local Solutions

A third of all food produced globally is either lost or wasted along the food chain from production to consumption. Roughly, this translates into agricultural crops from an area the size of China.

Global goals

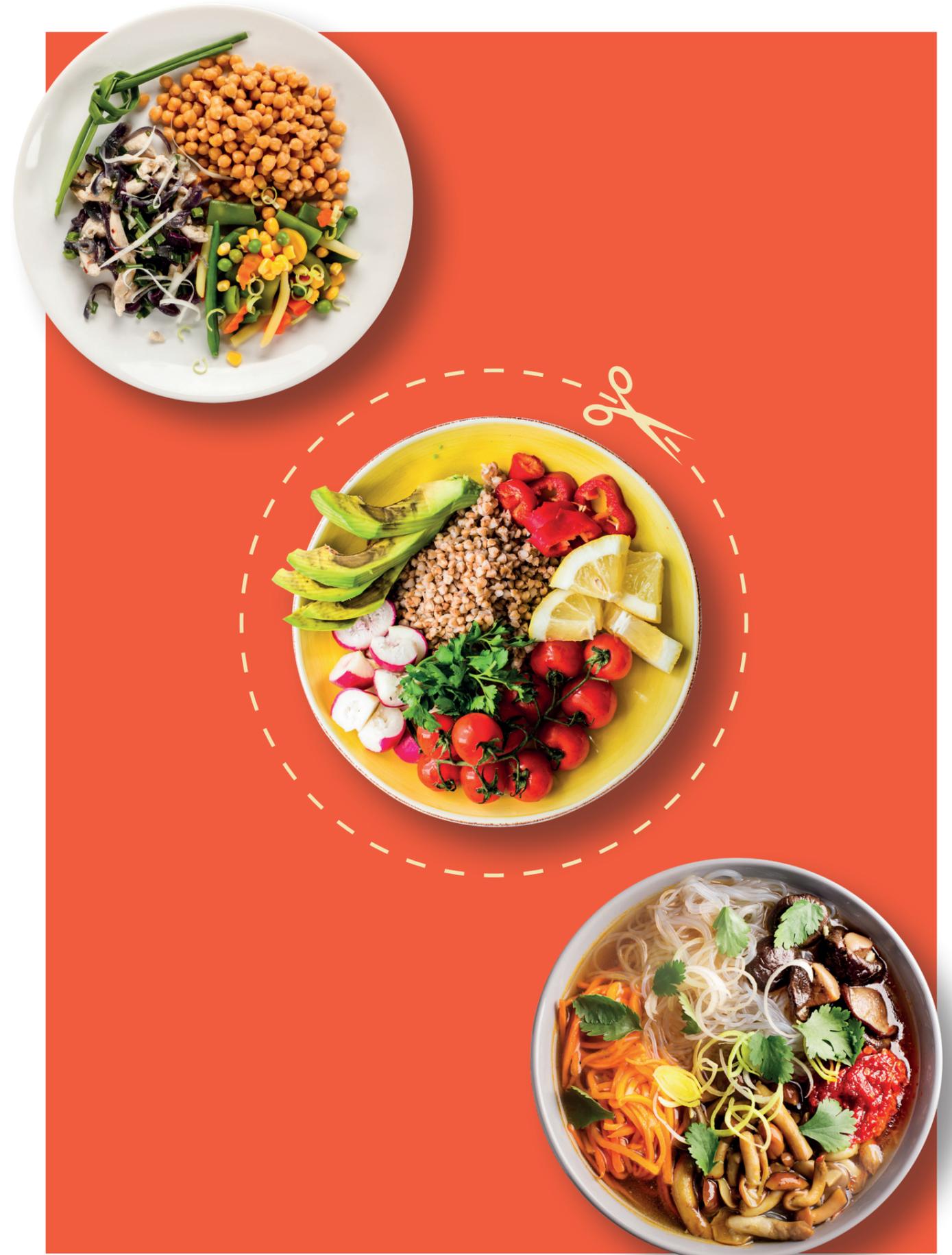
While wasting food is bad enough in itself, we're also wasting a quarter of all water used by agriculture. Additionally, if food waste were a country it would be the world's third largest emitter of greenhouse gases, responsible for 8% of total emissions. And it's not cheap either. The direct cost of wasted agricultural products alone amounts to a whopping \$940 billion - more than triple the GDP of Denmark.

In 2015 The United Nations General Assembly adopted The Sustainable Development Goals including a goal for responsible consumption and production, target 12.3: "By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses."

A holistic view of food

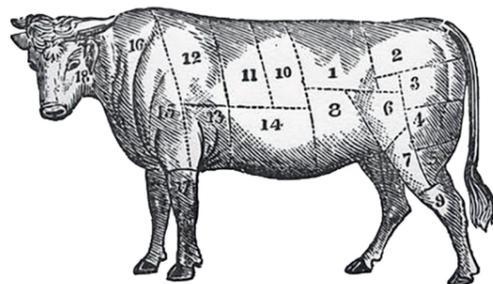
In Denmark, we've embarked on a journey with prevention of food waste as a national priority that involves all of society. We're promoting efforts to enable citizens to re-connect with the complex systems behind what they eat and we're providing information to enhance knowledge about where our food comes from, all the way from farm to fork. This involves a holistic view of the role of food in society, culture, politics, environment, economics and art.

There's always room for one more at the table. Join us!



The Danish Story

In Denmark, we've managed to solve many of the basic problems related to production, distribution, storage, cooling and industrial food waste. But along the way, we've encountered a number of other challenges, mainly related to consumer expectations, lack of knowledge and general consumption.



19th century

Life & death

But let's start some 200 years ago. In the 19th century, we had almost no food waste since everything was produced and consumed locally and everything was used; meats were cured and fish salted for winter, even stale bread and bad milk were eaten. Back then, food truly was a valuable resource and preserving and using everything was a matter of life and death. In the late 19th century the growth of the Danish Co-operative Movement resulted in a large increase in productivity in Danish agriculture.

1940ies

War & recession

In the interwar period, Denmark was hit hard by the global economic recession and wasting food was not an option for most families. There are several examples of cookbooks from the 40ies focusing on how to use all parts of plants and animal as ingredients to avoid wasting valuable calories and teaching households to "choose the cheapest source of nutrition and make food last as long as possible."

1950ies

Welfare & innovation

From the 1950ies and onwards, living standards increased markedly. Many women started working and didn't have time to prepare meals. This coincided with innovations in agriculture making us one of the most efficient agricultural clusters in the world, which in turn led to an increased industrialisation of the food sector, more efficient distribution, better storage and industrial processing. The 1960ies saw a boost in exports and a domestic abundance of food, which led to a dramatic increase in food waste.

21st century

New Nordic Wave

In recent years, a wave of New Nordic Food has led Danish chefs and restaurants to celebrate international successes based on sustainable production processes and self-sufficiency using seasonal ingredients and produce particular for our region. Global megatrends, a renewed focus on gastronomy and our transition to a green, circular economy has made it clear that food is a valuable resource that shouldn't go to waste.

The Danish Way

In Denmark, we're approaching food waste challenges by getting all stakeholders involved and committed to making real changes. We believe that public-private partnerships and cross-sectoral collaboration is the way forward.

Public-private partnerships

We began our journey at the beginning of this decade with the formulation of a Charter for the Reduction of Food Waste, which was signed by NGOs, industries and public institutions. Since then, awareness has continued to grow and the fight against food waste is spreading to all actors in the chain, from agricultural production and industry to retail and consumers.

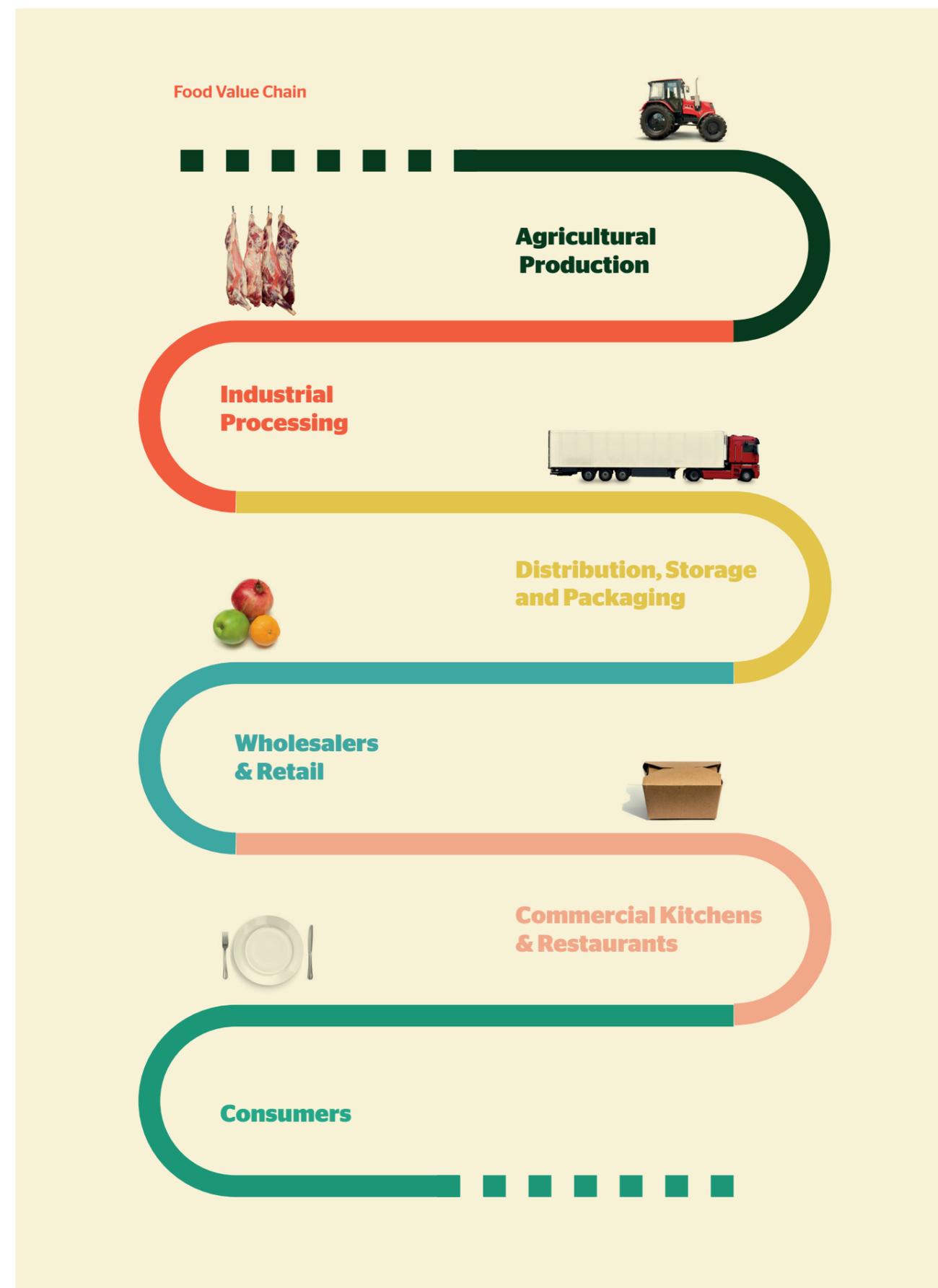
We create lasting public-private partnerships within research, production and behavioural change to promote the circular agenda. Several NGOs and cross-sectoral partnerships are receiving public funding and we're supporting both national and international initiatives. In 2014 we started the Partnership for Less Food Waste aimed at reducing food waste in all parts of the chain in close collaboration with NGOs, commercial partners and research institutions.

Better Food for More People

We have supported actors from the entire food value chain through the 'Subsidy scheme for less food waste 2016-17'. Since 2016, 22 projects have been initiated including donation of surplus food, workshops at high schools, new business models for marketing of odd shaped vegetables and raising awareness at the consumer level.

Recently, we've launched the Better Food for More People-initiative, which aims to unleash the full potential of gastronomy in order to create worldwide solutions that ensure better food for more people. We want to enable citizens to better understand where our food comes from and how it is produced, all the way from farm to fork. And we aim to empower citizens to transform their consumption habits and value food in order to reduce food waste.

Part of the initiative is the annual World Food Summit - Better Food for More People that gathers international political decision makers, industry leaders, experts and gastronomy frontrunners to share knowledge and solutions that can be turned into local actions.



Agricultural Production

Historically, Denmark is a food and farming country. Today, Denmark has one of the most efficient and knowledge based agricultural clusters in the world.

Co-operatives & knowledge sharing

Denmark has a population of 5.7 million inhabitants. However, the food production is large enough to feed 15 million people. The high productivity can be ascribed to a high level of education and organisation, embodied in the Danish co-operative movement. Knowledge transfer within the value chain is highly efficient and farmers find it natural to share their experiences, regarding other farmers as colleagues rather than competitors.

In Denmark, the major food enterprises are farmer owned co-operatives. The first co-operatives, founded in late 19th century, revolutionised the Danish agricultural sector. By uniting it was possible to invest in modern equipment, hire educated staff and adapt quickly to changing market conditions.

Promoting locally produced food

More than a decade ago, producers and consumers created Organic Food Communities to

organise distribution and sales of locally produced, organic food at fair prices and with minimal waste. Now, a rising number of consumers are organising themselves in similar communities buying locally produced food, meeting the farmers and exchanging experiences and recipes promoting seasonal and local food.

One of the largest sources of food waste in medium and high-income countries are exacting food standards, which means that a lot of food is wasted even before it leaves the farm. In many cases perfectly good food is not harvested simply because it doesn't fit in the box used to transport roots and tubers or because consumers are used to unblemished fruit and vegetables at their local supermarket. But that doesn't make the odd shaped cucumber any less edible. That's why the Partnership for Less Food Waste funded research into how commercial kitchens can reduce food waste by buying products directly from farmers.



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Industrial Processing

The Danish processing industry is highly efficient when it comes to combating food waste and using all available resources.

Optimising our use of resources

Since the early days of industrialisation within the food sector, food waste has been an area of focus by all means and at every level, simply because it's a waste of money and resources.

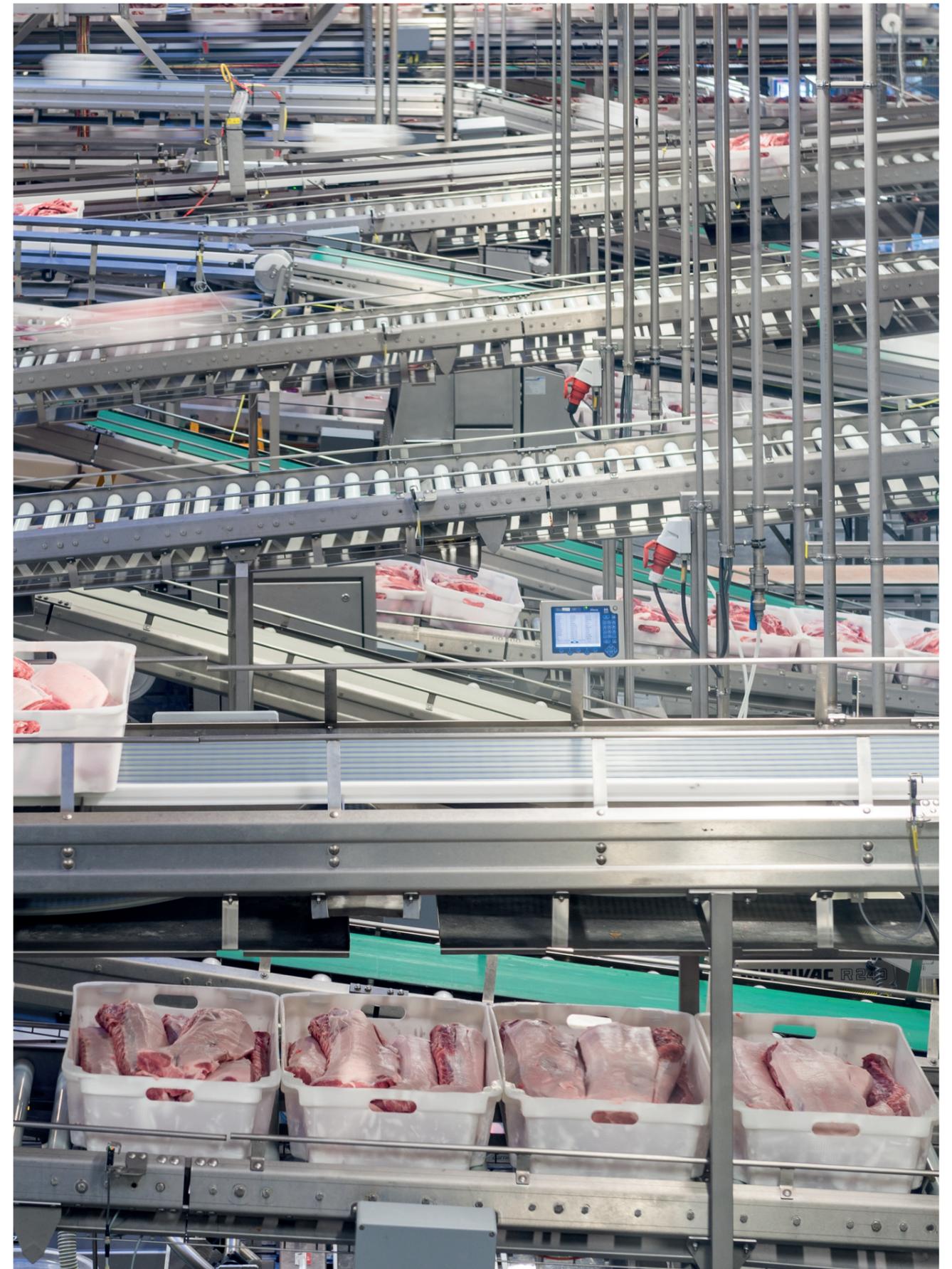
Danish meat and dairy industries have invested massively in innovation to use all raw materials optimally, e.g. using whey to create infant formulas or even beer. Tailoring products to specific tastes around the world, e.g. exporting chicken feet to China not only helps reduce food waste but opens up new export markets for Danish companies. The occasional surplus production is donated to central charities - or food banks - redistributing it to

where it's most needed, e.g. homeless shelters or asylum centres. In 2016, more than 1,9 million meals were redistributed in this way.

Global frontrunners

Danish companies are among the best in the world when it comes to both using and producing food processing machines, conveyors, packaging, labelling, cold storage and distribution, temperature controls and more recently, robotics, controlling software and advanced sensor technologies to optimise production, minimise food waste and ensure occupational health and safety.

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Distribution, Storage & Packaging

Transporting and storing food is an essential part of the chain – we need to move everything we produce further up the chain without losing anything.

Innovation & understanding

In Denmark, very little food is wasted during distribution or while it's in storage, cold or otherwise. This is due to years of technological innovations and investments in know-how related to logistics, general supply-chain and space management as well as unbroken cooling chains. Danish companies are pioneering innovative temperature control systems, hygienic materials and energy efficient cold storage systems.

We're constantly working to get a better understanding of where and how we're wasting food through public-private partnerships and research projects. And Denmark is leading the way with projects aimed at creating new and better solutions for distribution, storage and packaging.

Packaging is key

In many countries, packaging is being vilified and regarded as an environmental problem. But in fact packaging helps prevent food loss, which is a much bigger environmental problem than the packaging itself.

In Denmark, this is an area receiving widespread attention at the moment, since the right packaging, e.g. having separate spaces for two salad heads, means that products last longer and less food is wasted. Better-designed packaging can help reduce food waste significantly, e.g. by making it easier to completely empty cans, tubes and packages.



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Wholesalers & Retail

Wholesalers and retail are extremely important links in the chain since their demands are driving innovation down the chain and their supply is affecting the behaviour further along the chain.

Emerging food trends

Supermarkets are experimenting with the size of packages to accommodate the rising number of single households and smaller families. Others are offering weekly meal boxes with portion-sized food for each weekday leaving almost no food waste.

Some retailers are selling food entirely without packaging, while wholesalers are selling previously discarded fruit and vegetables to commercial kitchens at a profit to not only the wholesalers but to producers and buyers.

Changing behaviour

Supermarkets are combating food waste by reducing the price of products close to expiration dates. Others are changing the way they sell e.g. vegetables, from individual packaging favouring large, unblemished products towards selling products by weight.

Some retailers are giving up on special offers such as 'buy two and get one for free', seeing that these kinds of offers often promote overconsumption, which leads to food waste. Others are setting targets for reducing food waste and starting to collect and publish data about their food waste while inviting their customers to come up with new ideas for minimising food waste.

Both wholesalers and retailers are supporting charities by redistributing surplus food to Food Banks, homeless shelters or to shops selling surplus food at a discount and donating the profit to e.g. global emergency aid.

Some retailers are collecting and publishing data about their food waste while inviting their customers to come up with new ideas for minimising food waste.



Commercial Kitchens & Restaurants

In Denmark, commercial kitchens are changing their attitude towards food waste and starting to see food as a valuable resource.

New initiatives

Commercial kitchens are moving away from large buffets towards smaller, individual servings. Catering companies are measuring their clients' food waste and adjusting serving sizes accordingly while more restaurants are implementing and rebranding doggy bags as an integral part of your meal.

Privately funded initiatives using apps are emerging, facilitating the sale of surplus meals from restaurants and commercial kitchens directly to consumers at reduced prices.

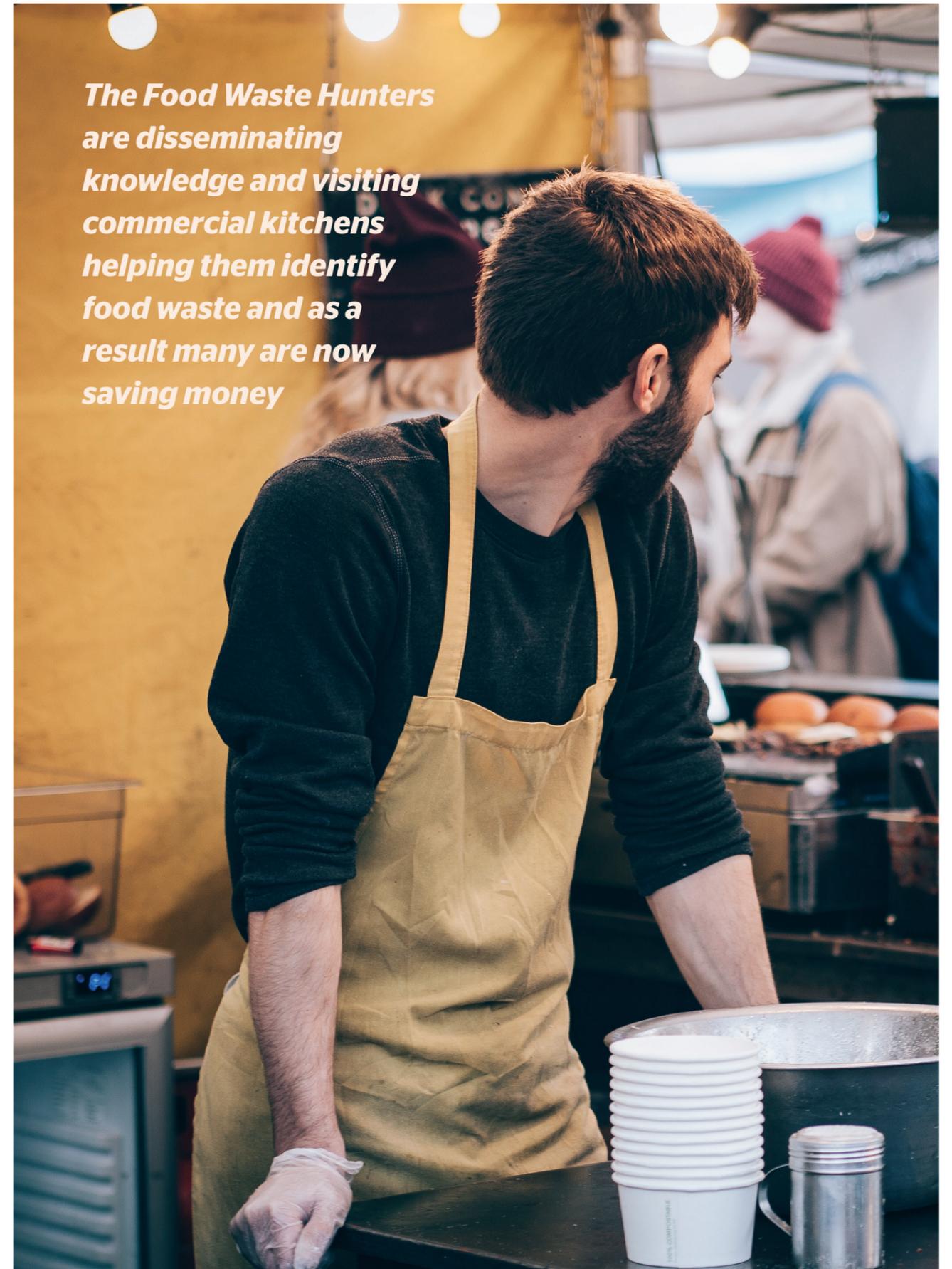
Training and awareness

Combating food waste is an integrated part of the education at vocational colleges and an important part of the professional training for staff in most companies providing food services.

The Public-private partnership The Food Waste Hunters are disseminating knowledge and visiting commercial kitchens helping them identify food waste and as a result many are now saving money and reducing waste by using previously discarded products.

Publicly owned kitchens are a part of this trend and are combining their efforts to lower food waste with a transition towards organic resources. One example is Copenhagen House of Food, which was established as an independent, non-commercial foundation by the City of Copenhagen in 2007. The aim is to provide better food for e.g. elderly citizens, schools and kindergartens. By building capacity in municipal kitchens they promote a transition to organic resources and help save resources by minimising food waste.

The Food Waste Hunters are disseminating knowledge and visiting commercial kitchens helping them identify food waste and as a result many are now saving money



Consumers

In Denmark, as well as many other countries, most food is wasted at home. To affect real change, we need to become aware of our food waste and change our behaviour as consumers.

Taking food seriously

In Denmark, consumers are taking food waste seriously and rewarding businesses doing things differently. Consumers are working hard to optimise their use of resources at home by introducing food planning, weekly meal boxes and by using apps and digital tools to learn about proper storage, use and reuse of various kinds of food.

A recent study focusing on understanding the consumers' perceptions and behaviors related to food waste shows that respondents were highly motivated to reduce food waste. An app aimed at reducing food waste has been downloaded 1,2 million times since launching in 2015. At the same time we're trying to simplify rules and regulations and helping consumers better understand various date labels.

Celebrating food

In Denmark, we're trying to change behaviour at an early age with learning materials and courses aimed at school children, teaching them how to prepare food, cook and use resources responsibly. Among other initiatives we've launched the online platform; Mind the Trash, teaching kids of all ages about the circular economy and helping them understand how everyone can help affect change and combat food waste.

Private companies are offering summer schools and camps teaching kids about the basics of gastronomy, the value of food and how to help combat food waste at home and in schools. Additionally, Danes of all ages are attending food festivals as never before. Nationwide, there are annual events celebrating food, highlighting local culinary traditions and prime regional produce combined with family activities and entertainment.

At the very end of the chain, we're collecting food waste and using it to recover energy in biogas plants with residual products being used as fertiliser, completing the circle.

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Our Common Future

We're seeing two major trends going forward. First of all, we need to know more about the scale and structure of the challenge ahead. Secondly, we need to address the issue in a way that makes it obvious that we're all part of the solution.

Food is valuable

To make sure that we're moving in the right direction and target food waste efficiently, we all need a better understanding of food and the complex systems behind - where it comes from and how it is produced all the way from farm to fork. Empowering citizens to transform consumption habits and value food is essential in order to reduce food waste.

A story that needs to be told

Using resources, including food, responsibly is an integral part of our green transition and this is

a story that needs to be told if we want to reach our common goal. Experience tells us that talking about food waste and looming disaster has the opposite effect. If the challenge is too great, we tend to perceive our own contribution as pointless.

We need to change this perception by talking about global food waste as something, which can be solved locally by individuals acting in their own best interest. We need to join forces to create a truly circular economy with minimal waste. And we need to stop talking about food as waste and start talking about food as a valuable resource.



Join the Movement to improve
our connection with food
www.bfmp.dk

