



## HENVI Policy Brief 3

# Circular economy and food

Our current food production and consumption habits are unsustainable. In North America and Europe approximately 30–50 % of food is wasted. World's hungry people would be fed three times over with the amount of food that the Western countries waste. Current inefficient food economy means we lose productivity, energy, and natural resources, and pay a price for throwing away food. Also, more pollution and greenhouse gases are created in the process. According to the UN's Food and Agriculture Organization (FAO), the inefficiencies of the food economy cost globally as much as a trillion dollars a year, or even 2 trillion dollars if adding also the social and environmental costs. Circular economy is a solution to tackle these problems (see box 1.).

In the transition towards circular food economy, an important objective is to change consumers' attitudes and habits. Particularly, this concerns the issue of the globally growing meat consumption. Aiming towards circular economy in food production means e.g. waste prevention, better recycling and sustainable management of nutrients, shifting from high input to more agro-ecological principles in agriculture production systems, and using more locally and seasonally produced food.

More specifically, consumer attitudes and habits of high meat consumption may be addressed by stimulating more vegetarian foods and changing the social norm of a meat-centered diet. For example, veggie days or campaigns promoting "less meat but better quality" are potential pathways. Facilitating transitions however, must be a concerted effort of policy makers, industry, food service institutions and civil society. Circular food economy aims at efficient use of resources as well as creativity in inventing uses for food waste and food surplus (see box 2.).

The EU has put transition towards circular economy high on its agenda through the Resource-efficient Europe Flagship initiative of the Europe 2020 Strategy and in the EU's 7th Environmental Action Program. The latter's goals include reducing the amount of waste generated, minimizing food waste, increasing

### Box 1.

#### WHAT CIRCULAR ECONOMY?

Circular economy is an industrial economy that is restorative by design and mirrors nature in actively enhancing and optimizing the systems.

Circular economy applies several principles from nature: design out of waste, resilience through diversity, the use of renewable energy sources, systems thinking, and cascading flows of materials and energy.

Circular economy means reuse, repair, refurbishing and recycling of the existing materials and products. What was earlier considered as waste becomes a resource.

Our current economic system uses linear growth model "take-produce-consume and discard". It predicts that the resources in our use are abundant, easily accessible, and cheap to discard. For this reason the amount of waste has continued to increase.

recycling and reuse, limiting energy recovery to the non-recyclable waste, phasing out landfilling, and focusing on implementing market-based instruments. The EU Commission is also expected to resubmit a new Circular Economy package of waste management laws in the end of 2015.

## SUGGESTIONS FOR POLICIES

### In food production

- Support local farming through different policy instruments, such as
  - investment support,
  - tax incentives to encourage efficient local nutrient recovery
  - improve the opportunities to sell local products locally

- Support reducing the use of fertilizers and recycling nutrients better
- Use holistic approach when regulating nutrient flows:
  - policy packages regulating nutrient flows should be coordinated and comprehensive: the flows of nutrients are identified in different food production and consumption systems and the aim is a closed loop.
  - creation of “origin passports” for nutrients (e.g. phosphorous) to ensure their sustainable source and to encourage better recycling of nutrients

### In food consumption

- Regulate packaging in a way that balances the rules of food packaging, product shelf-life and health issues – right kind of packaging reduces food waste
- Firmer control over labelling (certification, permits)
  - demand more transparency, more information and proper labelling about the product and the sustainability of its raw materials (such as CO<sub>2</sub> footprint)
- Educate consumers on food, food chains, and effects on environment, sustainability, waste management and packaging

### In resource and waste management

- Support local energy production, e.g. using manure from the farms as local energy source, through economic instruments, such as taxation benefits.
- Support businesses which apply industrial symbiosis or work in cascades through tax incentives or other economic instruments
- Promote design that has option of re-use of the product or material
- Encourage recycling with different policy instruments, such as deposit and refund, and increased education

### In all levels

- Support the development of local experiments (see box 3.) into mainstream activities in all levels of food economy

### Box 2.

#### FOOD WASTE vs. FOOD SURPLUS

Food waste = futile waste, which could have been avoided if the food was prepared or preserved otherwise. Households are the biggest contributors of food waste. In Finland the households produce food waste 120 to 160 million kilos every year.

Food surplus = edible, but not salable food in a grocery store or food that was left over when preparing meals at home or in a restaurant. In order not to turn food surplus into a food waste, grocery stores and restaurants could share the surplus food for those in need, taking into account the rules and regulations. Households could be educated better to reuse their food surplus as new meals.

### Box 3.

#### FROM EXPERIMENTS TO SOLUTIONS

New systems like the circular economy are rarely viable as such when they are invented. Local experiments can serve as protective spaces for new solutions to evolve: for the developers to find sensible and user-friendly ways of providing services, for users to learn to use them and adapt them to their everyday life, and for regulators to learn about how to govern them. These socio-technical transitions are processes in which infrastructures and technologies, but also citizens' competencies, practices and world-views change.

HENVI Science Day was organised 12th time on 21.4.2015 about the theme Towards Circular Economy – Designing a sustainable food cycle. The event was organized by the Helsinki University Center for Environment (HENVI) in collaboration with the Forum for Environmental Information. This policy brief is based on the presentations and group discussions held in the event. Speakers of the event were Prof. Dr. Per Mickwitz, Dr. Francesco Nicolli, Prof. Dr. Eva Heiskanen, Dr. Hanna Schösler, and Effie Papargyropoulou. The group discussions were recorded by Jaana Korhonen, Miia Kuisma, Anna Kuokkanen, Noora Manninen, Jaakko Mäkelä, Minna Mäkelä, Hanna Mäkinen, Mirko Pavicic, Inka Reijonen, and Aleksei Shcherbinin. Read more about HENVI at [www.helsinki.fi/henvi](http://www.helsinki.fi/henvi). This policy brief was produced by Johanna Kentala-Lehtonen, Kaisa Korhonen-Kurki and Alexandra Jurgilevich.