Review of current EU Member States legislation and policies addressing food waste

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Germany

A) National strategy on food waste prevention

Germany has no National Plan on food waste prevention in place. Food waste is addressed in the **Waste Prevention Programme of the Federal Government** with the participation of the Federal States (Abfallvermeidungsprogramm des Bundes unter Beteiligung der Länder). Issued in 2013 and launched by the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, it is developed because of the Waste Framework (ARRL) which obligates Member States to develop waste prevention programmes before the end of 2013. It includes measures and instruments for the prevention of waste in Germany including food waste. The programme includes the suggestion for a voluntary agreement on food waste reduction by the industry.

*Types of implications*: food waste reduction.
*Food supply segments involved/addressed*: all.
*Subsectors and types of activities involved*: agricultural production, processing and packaging, waste in distribution, wholesale and retail, the hospitality sector, private households.

B) Market-based instruments

Germany has one market-based instrument. It is the Renewable Energy Sources Act, first issued in 2000 (latest changes from 2014) and promoted by the German Federal Ministry for Environment. This act implies the payment of a fixed subsidy for every unit of renewable energy produced thereby expanding its AD network.

Table 1. Germany’s market-based instruments and related implications on food waste along the food chain

<table>
<thead>
<tr>
<th>Law</th>
<th>Description</th>
<th>Types of implications</th>
<th>Main FSCS involved</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Renewable Energy Sources Act</strong></td>
<td>The Renewable Energy Sources Act aims to advance the production of electricity from renewable sources of energy. This act implies the payment of a fixed subsidy for every unit of renewable energy produced thereby expanding its AD network.</td>
<td>FWM</td>
<td>A1</td>
</tr>
<tr>
<td>Erneuerbare Energien Gesetz – EEG</td>
<td></td>
<td></td>
<td>A2</td>
</tr>
<tr>
<td></td>
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<td>A3</td>
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<td></td>
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<td>A5</td>
</tr>
</tbody>
</table>

C) Regulations and regulatory instruments

The German regulatory instruments date from 1909 to 2013. They have different implications on food waste with regards to management, reduction, generation and food use optimization. The main law associated with waste is the "Kreislaufwirtschaftsgesetz" (Law on Life-Cycle Management) from 2012 that includes regulations on the prevention, recycling and disposal of waste as well as other waste management measures. The laws implying or potentially implying food waste generation are the following: the „Verpflegungsordnung für die Justizvollzugsanstalten des Landes Baden-Württemberg“ (Catering rules for the correctional facilities of the federal state of Baden-Württemberg, 2004) that regulates food services in prison and the „Verpflegungsordnung für die
Justizvollzugsanstalten des Landes Brandenburg Rundverfügung der Ministerin der Justiz” (Catering rules for the correctional facilities of the federal state of Brandenburg) on the same topic.

The law addressing food waste reduction and food waste management is the “Bundes-Immissionsschutzgesetz-Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge” (Federal Pollution Controll Act - Act on the prevention of harmful effects on the environment caused by air pollution, noise, vibration and similar phenomena) (§ 5 Abs. 1 Nr. 3 BImSchG).

Legislations and policies actively addressed to optimization of food use are missing. The laws cited do not make any references to fishing policies and exclude the first segments of the food supply chain as well as the new policy initiatives on food waste.

Implications for food waste from this bulk of laws mainly refer to: the separate collection of biowaste that should be enforced and the way in which the recommendations for the provision of food are interpreted and managed by the prisons can influence food waste quantities.

Table 2. Germany’s regulations and related implications on food waste along the food chain

<table>
<thead>
<tr>
<th>Law</th>
<th>Description</th>
<th>Types of implications</th>
<th>Main FSCS involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>Catering rules for the correctional facilities of the federal state of Brandenburg, administrative circular from 16 April 2007 amended by the administrative circular from 11 March 2011</td>
<td>It regulates the provision of inmates in prisons with food. It includes recommendations for the average daily energy consumption, and defines recommended or maximum quantities of different foods per prisoner and day. It includes regulations on the prevention, recycling and disposal of waste as well as other waste management measures, with the objective to promote closed substance cycle waste management.</td>
<td>FWG</td>
<td></td>
</tr>
<tr>
<td>Catering rules for the correctional facilities of the federal state of Baden Württemberg from 16 December 2004</td>
<td>It regulates the provision of inmates in prisons with food. It includes recommendations for the average daily energy consumption, and defines recommended or maximum quantities of different foods per prisoner and day.</td>
<td>FWG</td>
<td></td>
</tr>
<tr>
<td>Law on Life-Cycle Management from 24 February 2012 amended by § 44 Absatz 4 of the law from 22 May 2013 (BGBl. I p. 1324)</td>
<td>This law includes regulations on the prevention, recycling and disposal of waste as well as other waste management measures, with the objective to promote closed substance cycle waste management. It also regulates the responsibility of the producers that their packaging is recycled.</td>
<td>FWM</td>
<td></td>
</tr>
<tr>
<td>Federal Pollution Controll Act - Act on the prevention of harmful effects on the environment caused by air pollution, noise, vibration and similar phenomena (§ 5 Abs. 1 Nr. 3 BImSchG)</td>
<td>It regulates environmental issues in Germany. § 5 Abs. 1 Nr. 3 BImSchG obliges all companies to prevent waste, recycle unpreventable waste and dispose the not recyclable waste in a way that</td>
<td>FWR FWM</td>
<td></td>
</tr>
<tr>
<td>Law</td>
<td>Description</td>
<td>Types of implications</td>
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</tr>
<tr>
<td>1 Nr. 3 BImSchG</td>
<td>Bundes-Immissionsschutzgesetz - Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge</td>
<td>doesn't harm public welfare.</td>
<td></td>
</tr>
</tbody>
</table>

D) Voluntary agreements

Voluntary agreements between the retail sector and the gastronomy sector for prevention and reduction of food waste are proposed by the German Government (e.g. in the Kreislaufwirtschaftsgesetz KrWG (Closed Substance Cycle Waste Management Act) stated above) but haven't been implemented yet. There are also voluntary agreements on donating foodstuffs close to the best-before date between the German Food Bank (Deutsche Tafel) and the wholesale and retail sector.

E) Technical reports and main scientific articles

Kranert M., et al (2012), Determination of the amount of food thrown away and recommendations on reducing food waste in Germany (Ermittlung der weggeworfenen Lebensmittelmenge und Vorschläge zur Verminderung der Wegwerffrätze bei Lebensmitteln in Deutschland), Bonn [Published in German]
Promoted and funded by the German Federal Ministry of Food and Agriculture and written by the Institute for Sanitary Engineering, Water Quality and Solid Waste Management, University of Stuttgart and BOKU Vienna.
This study determines the amounts of food waste caused in processing, wholesale, retail, catering/food services, and households and gives recommendations how to reduce these amounts.

Types of implications: food waste reduction and food waste management.

Food supply segments involved/addressed: processing, wholesale, logistic, retail and marketing, food preparation and consumption.

In this article a method for quantification and accounting of food, food losses and food waste along the food chain developed at the University of Stuttgart is presented. This first part of the series describes core terms for analysis of food systems – crucial terms are defined in the context of the above mentioned method. The terms "Food Loss" and "Food Waste" are assigned to individual sectors of the food chain including a description of the method.

Types of implications: food waste reduction and food waste management.

Food supply segments involved/addressed: all.

Priefer, C.; Jörissen, J. (2012), Thrown away fresh. Reduction of food losses as an approach to improve the world food supply (Frisch auf den Müll. Verringerung der Lebensmittelverluste als Ansatz zur Verbesserung der Welternährungssituation) Karlsruhe: ITAS Pre-Print: 22.11.2012 [Published in German]
This study deals with the development of ideas and concepts to ensure and improve the availability of food. It persues the idea that a reduction in food losses along the food supply...
chain is an important approach to improve the efficiency of food use and thereby reduce the negative economical and ecological effects linked to it.

*Types of implications:* food waste reduction.
*Food supply segments involved/addressed:* all.

**F) Communication and campaigns**

**Too good for the dustbin (Zu gut für die Tonne)**
Running since 2012 and promoted by BMELV - German Federal Ministry of Food and Agriculture. The campaign aims at informing citizens about food waste and possibilities of food waste reduction (e.g. how to store different types of food, recipes for left-over foods, change in buying habits...).

*Types of implications:* optimization of food use, food waste reduction, and food waste management.
*Food supply segments involved/addressed:* all.
*Subsectors and types of activities involved:* food preparation and consumption.

**EssensWert**
Launched in 2014 by the Ernährungsinstitut „KinderLeicht“ (Nutrition Institute „KinderLeicht“). The campaign aims at informing Bavarian consumers about food waste and possibilities of food waste reduction (e.g. how to store different types of food, recipes for left-over foods, change in buying habit etc.)

*Types of implications:* optimization of food use, food waste reduction, and food waste management.
*Food supply segments involved/addressed:* food preparation and consumption.
*Subsectors and types of activities involved:* food preparation and consumption.

**Plate instead of dustbin (Teller statt Tonne)**
It is a campaign launched in 2011 by Slow Food Germany. Activities regard the organization of days of action against food waste, including “waste” cooking demonstrations and general information for consumers about food waste and about reduction of food waste in households.

*Types of implications:* optimization of food use, food waste reduction.
*Food supply segments involved/addressed:* food preparation and consumption.
G) Projects and other measures

Checklist on food waste reduction (Checkliste zur Vermeidung von Lebensmittelabfällen)
Issued in 2012 by DEHOGA Bundesverband: Deutscher Hotel- und Gaststättenverband (German Hotel and Catering Association).
It is a checklist for hotels and restaurants that raises awareness on food waste and gives recommendations on food waste reduction.

Types of implications: optimization of food use, food waste reduction and food waste management.
Food supply segments involved/addressed: food preparation and consumption (indirectly: wholesale, logistic, retail and marketing).

German speaking network on food waste prevention (essens-wert.net)
Launched in 2012 by the Life Science Center, the University of Hohenheim, the Institute of Sustainable Nutrition and Food Production, the University of Applied Science Münster, the Institute of Waste Management, BOKU Vienna and others.
The aim of the German-speaking network on food waste prevention is to bring together various stakeholders from the fields of research and consumer protection to conduct and inform about research on topics related to food waste.

Types of implications: optimization of food use, food waste reduction and food waste management.
Food supply segments involved/addressed: all.

German food bank (Deutsche Tafeln)
The „Tafel“ was launched in 1993 in Berlin by the Initiativgruppe Berliner Frauen e.V. Today branches of the “Tafel” can be found all over Germany.
The “Deutsche Tafel” is the umbrella organization of the food banks in Germany.
It’s a non-profit, charitable organization that distributes food leftovers (mainly from supermarkets and bakeries) to those who have difficulty purchasing enough food to avoid hunger. Important duties are the acquisition of sponsors, lobbying, members' support, logistics, public relations.

Types of implications: optimization of food use, food waste reduction
Food supply segments involved/addressed: food preparation and consumption (indirectly:all)

Foodsharing
Foodsharing e.V. was launched in December 2012 by Valentin Thurn, a journalist and documentary film maker (“Taste the Waste”).
The Internet platform helps to share food rather than wasting it, in an attempt to limit the environmental damage of wasted food - and put bread on the table of those who need it.
Shared food includes surplus foods in households as well as food recovered from supermarkets or directly from farmers.

Types of implications: optimization of food use, food waste reduction
Food supply segments involved/addressed: all.

Module appraisal and wasting of food (Modul Wertschätzung und Verschwendung von Lebensmitteln)
This module, issued by the University of Paderborn and the Verbraucherzentrale Nordrhein-Westfalen (Consumer Advice Center North-Rhine/Westphalia) on behalf of the Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia, proposes 26 components on how to incorporate food waste into school. The components can be combined at will and include topics like “meat consumption in the past and present”, “what happens with the food that we do not eat?” “what
is the value of our schnitzel? About mass production of meat.” Some German States are planning to include education on food waste prevention into their curricula.

*Types of implications: food waste reduction.*

*Food supply segments involved/addressed:* food preparation and consumption

**H) Food waste policy mix: highlights**

Food waste policies in Germany may differ from region to region. Reported laws do not refer to fishing policies and exclude the first segments of the food supply chain. Moreover Germany promotes the separate collection of biowaste although it should be further enforced.

Germany has no specific national plan on food waste. The currently policy document on force is the Abfallvermeidungsprogramm des Bundes unter Beteiligung der Länder (Waste prevention programme of the Federal Government with the participation of the Federal States). It includes measures and instruments for the prevention of waste in Germany including food waste. The programme includes the suggestion for a voluntary agreement on food waste reduction by the industry. Germany has a number of regulations for the prevention, recycling and disposal of waste in general, partly addressing the food waste issue.

Figure 1. Germany’s policy mix at December 2014

Voluntary agreements exist between the retail sector and the gastronomy sector for prevention and reduction of food waste but haven’t been implemented yet. There are also voluntary agreements on donating foodstuffs close to the best-before date between the German Food Bank (Deutsche Tafel) and the wholesale and retail sector.
The communication campaigns are many, divided in governmental and private campaigns (launched by universities, NGOs, activists). A German speaking network on food waste prevention has been established whose aim is to bring together various stakeholders from the fields of research and consumer protection to conduct and inform about research on topics related to food waste.

Foodsharing is an internet platform that helps to share food rather than wasting it. Shared food includes surplus foods in households as well as food recovered from supermarkets or directly from farmers. The German Hotel and Catering Association has launched a Checklist on food waste reduction that raises awareness on food waste and gives recommendations on food waste reduction.

As for education programmes, the University of Paderborn and the Consumer Advice Center North-Rhine/Westphalia on behalf of the Ministry for Climate Protection, Environment, Agriculture, Nature Conservation and Consumer Protection of the German State of North Rhine-Westphalia have launched a Module appraisal and wasting of food suggesting how to incorporate food waste into school.
REFERENCES

A) GERMANY’S NATIONAL PLAN/STRATEGY ON FOOD WASTE REDUCTION
Abfallvermeidungsprogramm des Bundes unter Beteiligung der Länder (Waste prevention programme of the Federal Government with the participation of the Federal States) 2013 (in German)

B) MARKET-BASED INSTRUMENTS
Renewable Energy Sources Act (in German)

C) REGULATORY INSTRUMENTS/REGULATIONS TRADING SCHEMES

Available from: http://www.gesetzesguide.de/verpflo.html

Kreislaufwirtschaftsgesetz (KrWG) (Closed Substance Cycle Waste Management Act)

Bundes-Immissionsschutzgesetz - Gesetz zum Schutz vor schädlichen Umwelteinwirkungen durch Luftverunreinigungen, Geräusche, Erschütterungen und ähnliche Vorgänge (Federal Pollution Controll Act - Act on the prevention of harmful effects on the environment caused by air pollution, noise, vibration and similar phenomena) (§ 5 Abs. 1 Nr. 3 BImSchG)
Available from: http://www.gesetze-im-internet.de/bimschg

D) VOLUNTARY AGREEMENTS
None

E) RESEARCH AND TECHNICAL REPORTS
Kranert M., Hafner G., Barabosz J., Schneider F., Scherhauser S., Schuller H., Leverenz D. (2012), Ermittlung der weggeworfenen Lebensmittelmengen und Vorschläge zur Verminderung der Wegwerfrate bei Lebensmitteln in Deutschland (Determination of the amount of food thrown away and recommendations on reducing food waste in Germany) (in German).
Available from: http://www.bmelv.de/SharedDocs/Downloads/Ernaehrung/WvL/Studie_Lebensmittelabfaelle_Langfassung.pdf?


Available from: http://www.itas.kit.edu/pub/v/2012/epp/prjo12-pre01.pdf

F) COMMUNICATION AND CAMPAIGNS
Zu gut für die Tonne (Too good for the dustbin) (in German)
Available from: http://www.zugutfuerdietenne.de
EssensWert (German speaking network on food waste prevention) (in German)
Available from: http://www.essens-wert.net

Teller statt Tonne (Plate instead of dustbin) (in German)
Available from: https://www.slowfood.de/projekte_und_aktionen/teller_statt_tonne

Deutsche Tafeln (German food bank)
Available from: http://www.tafel.de

Foodsharing
Available from: http://www.foodsharing.de

G) PROJECTS AND OTHER MEASURES
Checkliste zur Vermeidung von Lebensmittelabfällen (Checklist on food waste reduction) (in German)
Available from:
http://www.bmelv.de/SharedDocs/Downloads/Ernaehrung/WvL/Checkliste_DEHOGA_Lebensmittelabfaelle.pdf?__blob=publicationFile

Modul Wertschätzung und Verschwendung von Lebensmitteln (Module appraisal and wasting of food) (in German)
Available from:
http://www.ernaehrung-und-verbraucherbildung.de/schule_materialien_wertschaetzung_uebersicht.php

All links cited in the references have been accessed for the last time on October 27, 2015.