

FOOD WASTE REDUCTION

Economy versus the environment –
competitiveness or complementarity

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Introduction

- global issue – sufficient food for inhabitants
- food supply gain through food waste reduction
- food waste occurs during distribution, sale and final consumption
- around 30 % of edible and healthy food are wasted in EU
- over 89 million tonnes of food annually
- 179 kg of food per capita per annum
- food wastage is causing economic, ethical/social and environmental problems

- based on European Commission survey:
40 % of food is discarded by households
14 % by food service industry / catering
5 % by retail sector / wholesale
- distinguish food waste:
Possibly avoidable – some people consume and some do not (bread crusts, baked potato skins,)
Unavoidable – deriving from food preparation that are not edible (meat bones, egg shells, nut shells, apple seeds, vegetable peels)

Causes of food waste in distribution and sale

- a) inappropriate ordering
- b) incorrect forecasting of demand
- c) bad management of reserves
- d) limits on the distribution system (aesthetic standards)
- e) unsuitable marketing and sales strategies (logistical aspects)
- f) deterioration of packaging

Causes of food waste in households and food service

- a) incorrect interpretation of labelling
- b) preparation of over-generous portions
- c) poor meal preparation
- d) mistaken planning of purchases (bad management)
- e) inappropriate storage
- f) faulty packaging

Methodology

- use of quantitative data of animal and vegetal food waste in EU-28 sourced from Eurostat
- statistical data are collected in 2 year intervals, latest the year 2012
- a) research waste in agriculture, forestry and fishery
- b) waste generated by manufacture of food, drinks and tobacco products
- c) waste generated in services (retail, food service)
- d) waste generated in households
- e) waste generated in all economic activities

Methodology

continuation 1

- some facts decrease plausibility of statistical data
- particular EU Member States use different procedures of waste data collection, data are estimated or not collected
- aggregated data for agriculture, forestry, fishery, e.g. including wood bark, wood pulp, leaves, roots, stalks, straw, fruit rinds, cores, skins
- tobacco is not considered as food but was included due to unavailability of purely separated data for food branches

Methodology

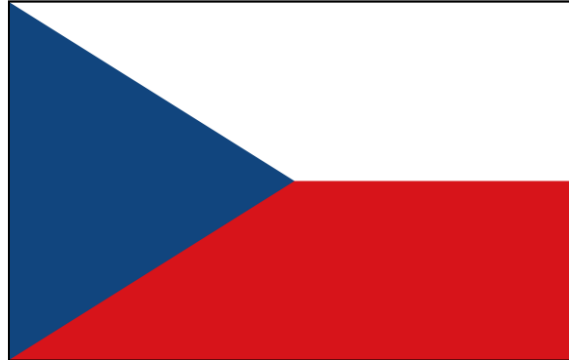
continuation 2

- 4th problem of methodology: broad notion of category services sector that includes wholesale, transport, retail, food services (restaurants, fast food restaurants /quick service restaurants/, cafeterias /canteens/, snack bars, pubs etc.)

Animal and vegetable waste per capita



Austria (225 kgs)



Czech Republic (42 kgs)



Hungary (80 kgs)



Poland (156 kgs)



Slovakia (156 kgs)

all economic activities (NACE) + households, year 2012

Largest food waste producers in the EU



Romania (906 kgs)



Netherlands (829 kgs)



Belgium (279 kgs)



Ireland (270 kgs)



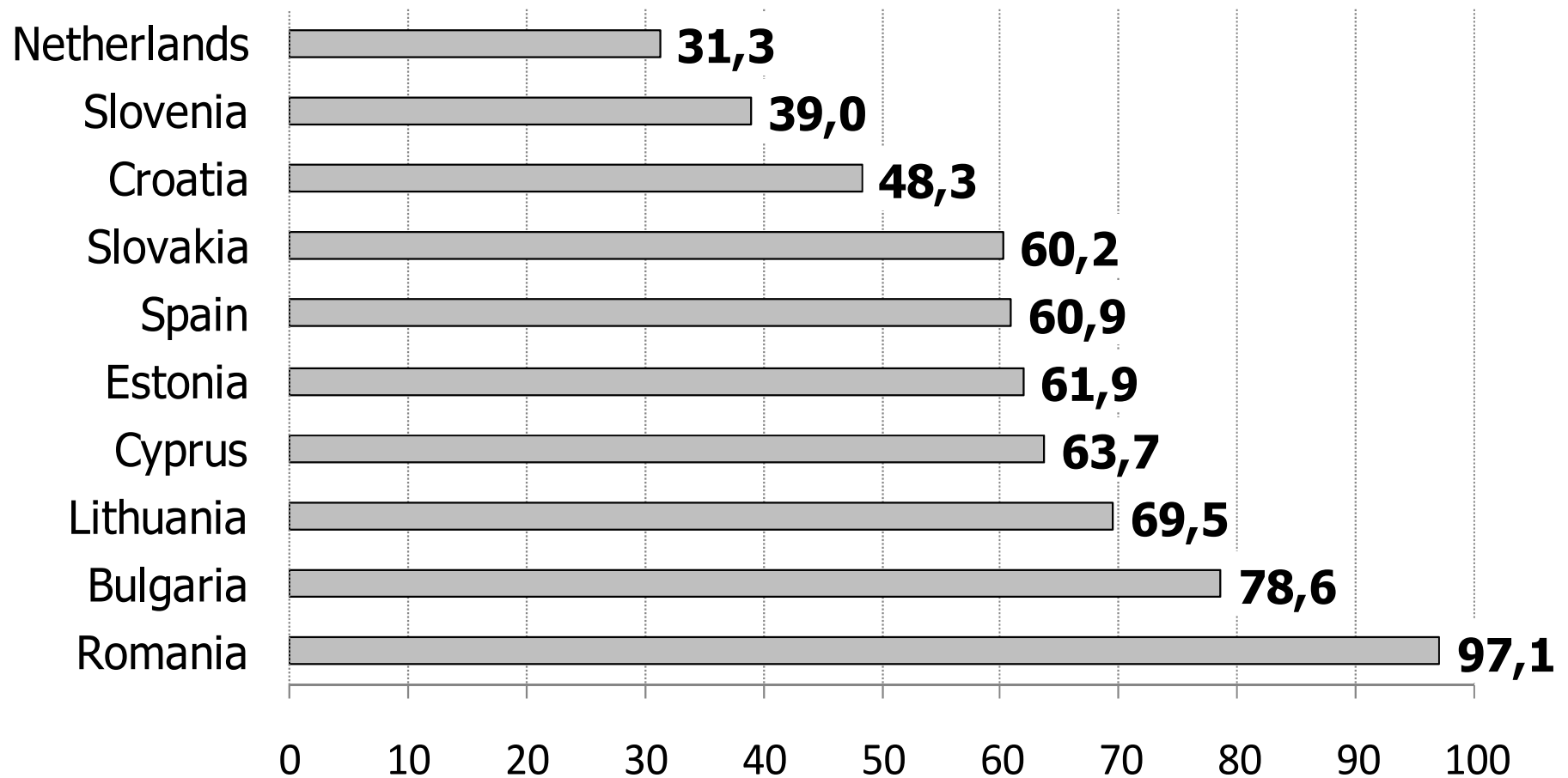
Cyprus (256 kgs)



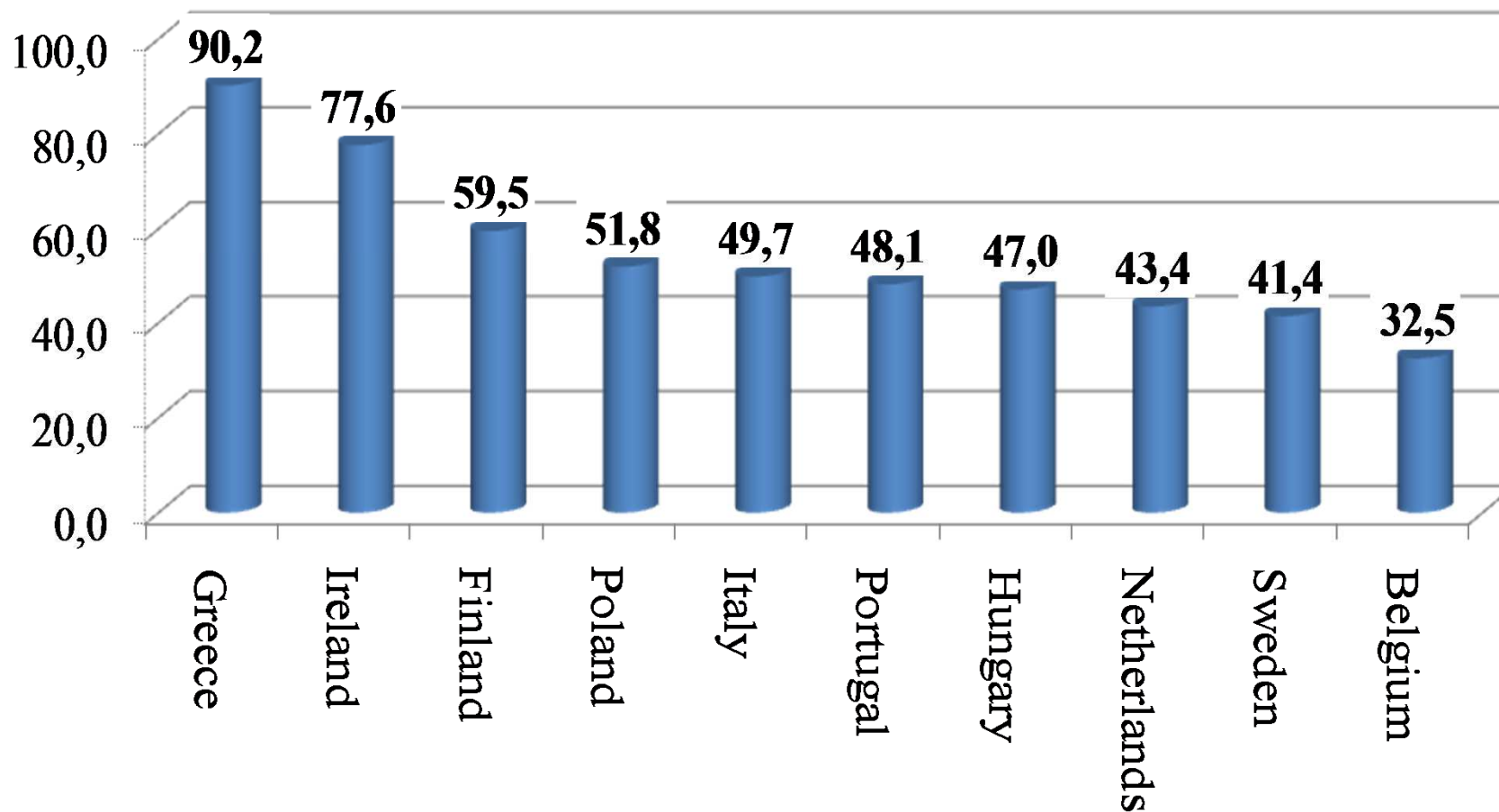
Austria (222 kgs)

Animal and vegetable waste (agriculture, forestry, fishery, food industry, tobacco industry, services and households) per capita (in kilograms), 2012

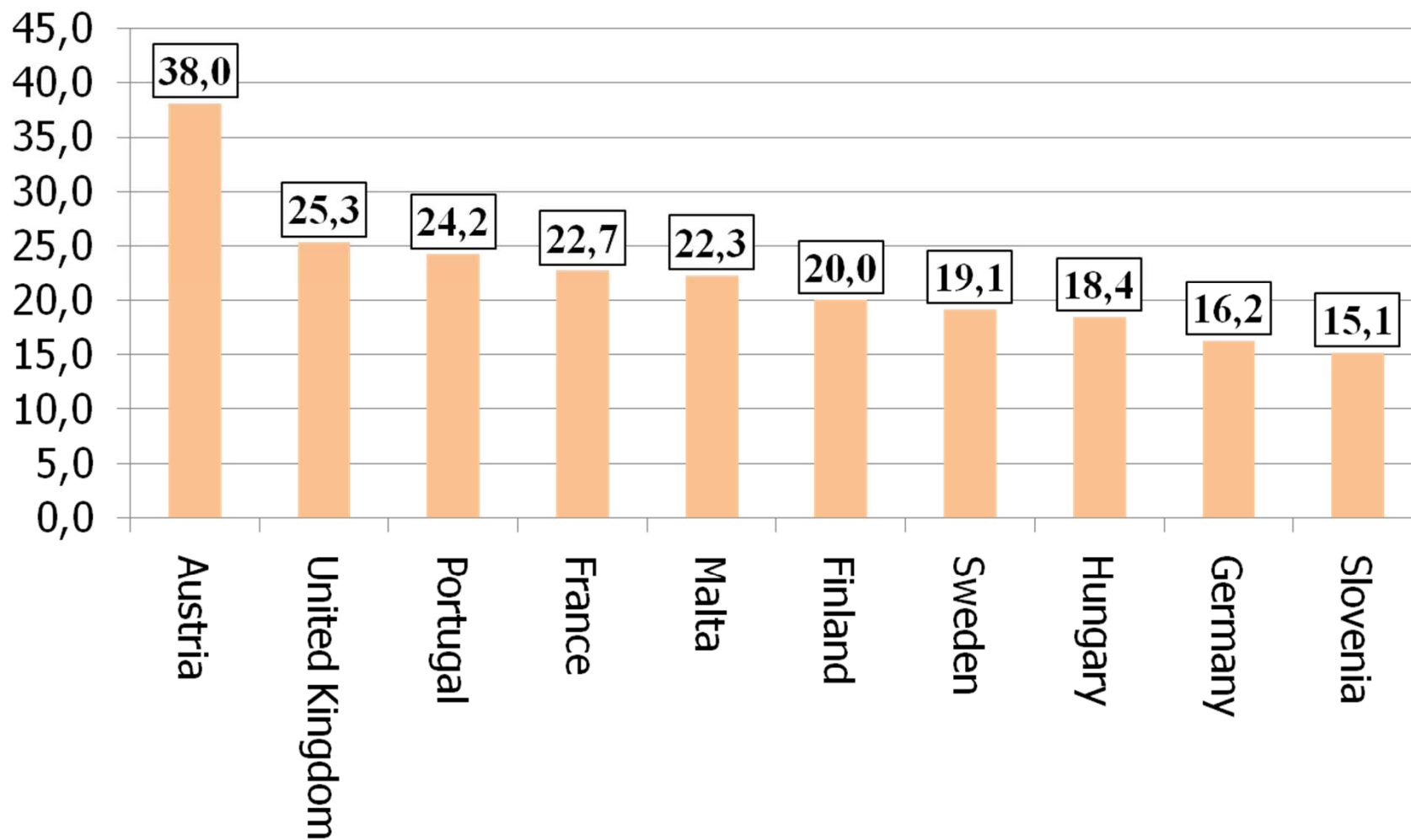
Share of animal and vegetable waste in agriculture, forestry and fishery on total waste of animal and vegetable origin of all economic activities in 2012



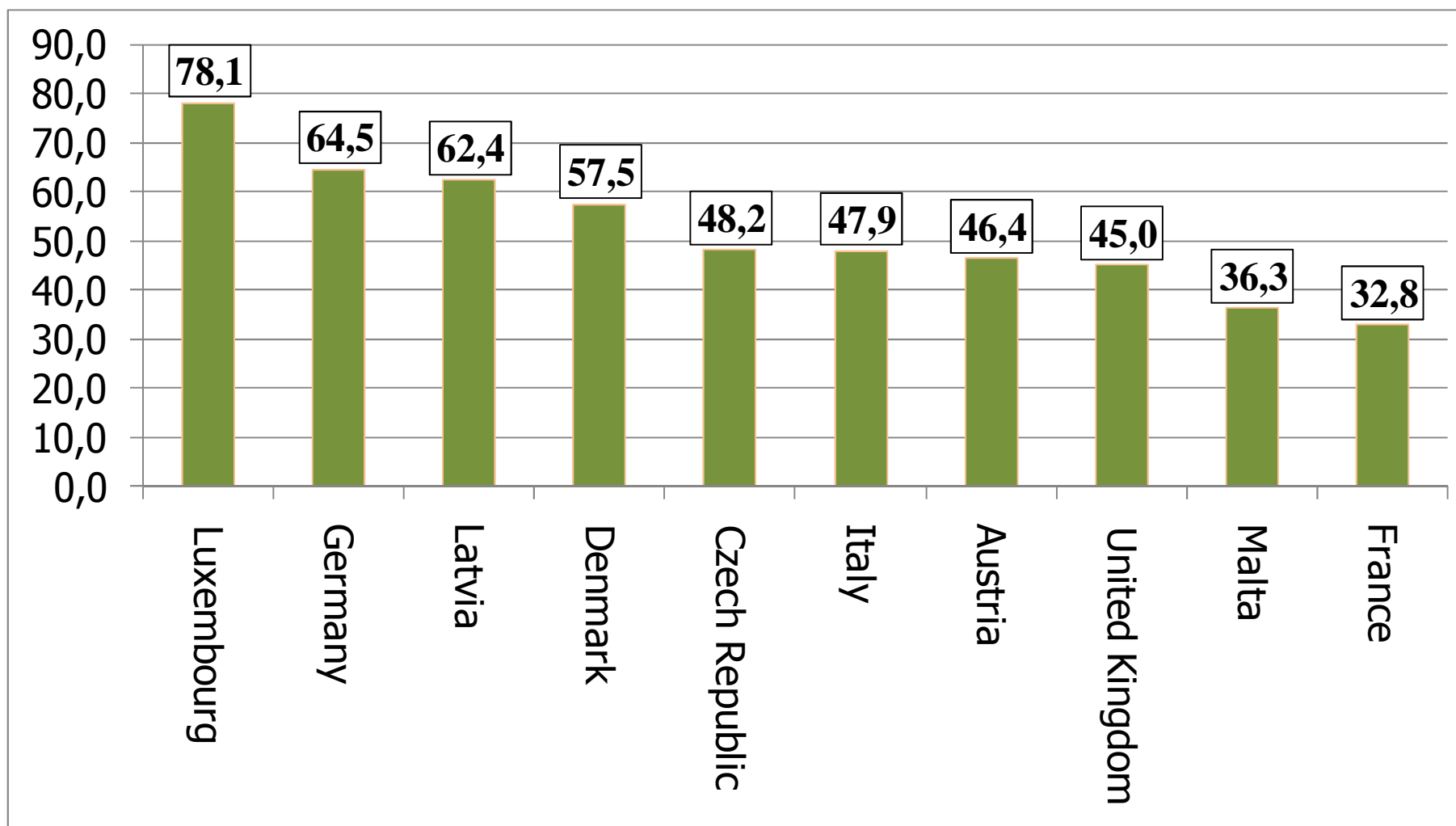
Share of animal and vegetable waste from food, drinks and tobacco production on total waste of animal and vegetable origin of all economic activities in 2012



Share of animal and vegetable waste of services sector on total waste of animal and vegetable origin of all economic activities in 2012



Share of animal and vegetable waste of households on total waste of animal and vegetable origin of all economic activities in 2012



Survey of Waste & Resources Action Programme

- non-profit company established in 2000, registered as charity in 2014
- 590 individuals were asked in staff restaurants (canteens) in Great Britain about type of food left on plates:

chips (French fries)	33 %
salads (coleslaw)	14 %
bread and bakery products	14 %
sauces (condiments)	13 %
meat and meat products	11 %
skin from vegetables	11 %
bones	10 %

Survey of Waste & Resources Action Programme

- reasons of leaving food:

portion sizes	28 %
poor quality / badly cooked	27 %
health reasons	21 %
selective / fussy eating	19 %
other social reasons	7 %

Possible solutions for food waste reduction

- implement trainings/informative campaigns to prevent food waste in the whole supply chain
- develop salvage networks of unsold food products
- arrange conventions of food processors, wholesalers, retailers, caterers to facilitate donations to charities and needy people
- adjust food products (package) size to consumer's needs
- raise consumer awareness on food waste
- create good food waste practices and legislative guidelines
- build closer links between producers and consumers through local production

Possible solutions for food waste reduction

- proper labelling
- concentration of the food supply
- application of scanners and sensors to detect spoilages during production, transport or retail phase
- recycling non-consumed food to fodder production or possibly heating energy or electricity production