

How much beef do we eat in Italy ?

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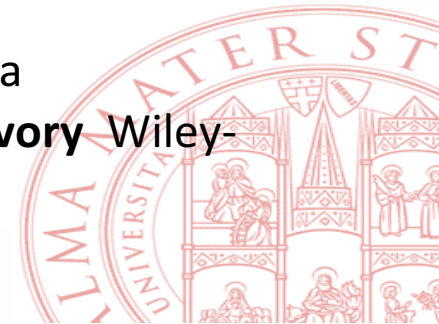
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Why is important a contribution to the estimation methods of meat consumption ?

- “..... The section would be superfluous if individual countries and international organizations expressed meat output and consumption in standard and readily comparable ways.....rather than leaving us with undefined, or improperly defined, categories. As results, the world of meat statistics abounds with assumed, undefined, poorly defined, misunderstood, and misinterpreted categories that make both secular and international comparisons inaccurate and misleading.....”
- Vaclav Smil - Distinguished Professor Emeritus at the University of Manitoba
- **Should We Eat Meat? Evolution and Consequences of Modern Carnivory** Wiley-Blackwell, 2013,pag. 107



How meat consumption per capita is estimated

- Estimate methods currently used:
 - Food Balance Sheet (FBS)
 - Household Budget Survey (HBS)
 - Individual Dietary Survey (IDS)



Example of the use Food Balance Sheet (FBS)

Corriere della Sera (26/10/2015)

DATI ASSOCARNI

Il consumo di carne in Italia: 78 chili a testa (contro i 27 di quarant'anni fa) – *78 kg pro capita with respect to 27 kg of 40 years ago*

Produzione bovina in crescita nel Dopoguerra, poi superata da quella suina (compresi gli insaccati). Il pollame dal 2008 in aumento: è la carne «anticrisi»



Example of the use (HBS)

L'HUFFINGTON POST

IN COLLABORAZIONE CON IL Gruppo Espresso

**Famiglie italiane stringono la
cinghia, cala ancora nel 2013 la
spesa mensile e si risparmia anche
sul cibo**

L'Huffington Post

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DIFFERENT METHODS LEAD TO DIFFERENT RESULTS

Annual consumption pro capita of meat (kg) in Italy estimated using Food Balance Sheet (FBS) by FAO (apparent consumption) and using Individual Dietary Surveys (IDS) by National Institute on Nutrition and Food Research (INN – INRAN - CREA)

1980-84		1994-96		2005-06	
FAO (FBS)	INN (IDS)	FAO (FBS)	INN (IDS)	FAO (FBS)	CRA- INRAN (IDS)
76.7	55.9	86.3	49.5	85.6	40.1



AIM

Develop an economic, fast and reliable estimative method to assess the real consumption per capita of beef and meat in Italy

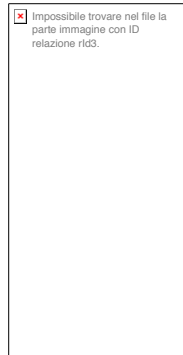


METHOD PROPOSED

- Food Balance Sheet based on “fresh meat” instead of “Carcass Weight Equivalent (CWE)”
- It is obtained by subtraction of all losses and no-edible parts during each steps of process from carcass to meat



Losses that occur in the reduction of carcass to meat

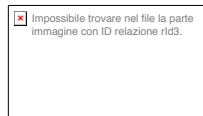


Cold carcass

- ✓ **Processing losses**
- ✓ **Removing bones, cartilages, ligaments, tendons and aponeuroses**
- ✓ **Separable fat removal**



Consumable meat



- ✓ **Retail wastes**
- ✓ **Scrap material at consumption in the kitchen and on the plate**
- ✓ **Consumption wastes**

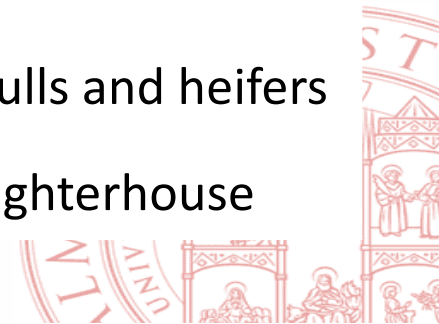


Real meat consumed



Conversion coefficients from “Carcass Weight Equivalent ” to fresh meat for different cattle categories

Cattles Category	Conversion coefficient (K)	Method
Calves	0.524	Dissection at slaughterhouse
Young bulls and steers	0.593	Dissection at slaughterhouse
Heifers	0.575	Dissection at slaughterhouse
Oxen	0.584	Averages between bulls and heifers
Bulls	0.584	Averages between bulls and heifers
Cows	0.507	Dissection at slaughterhouse



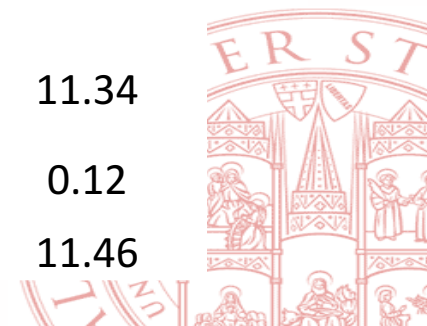
Example of conversion coefficients of NC8 categories to fresh meat for import– export

<u>Meat of bovine animals, frozen</u>	NC8 Code	Coefficient	Method
Carcases and half-carcases	0202 10 00	0.584	Average values of national young bulls and heifers
Other Cuts With Bone In 'Compensated' quarters	0202 20 10	0.584	Average values of national young bulls and heifers
Unseparated or separated forequarters	0202 20 30	0.477	Dissection at sauhgter
Unseparated or separated hindquarters	0202 20 50	0.573	Dissection at slaughter
Forequarters, whole or cut into a maximum of five pieces, each quarter being in a single block; 'compensated' quarters in two blocks, one of which contains the forequarter, whole or cut into a maximum of five pieces, and the other, the hindquarter, excluding the tenderloin, in one piece	0202 30 10	0.584	Average values of national young bulls and heifers
Crop, chuck-and-blade and brisket cuts	0202 30 50	0.950	Expert opinion



Availability of consumable beef and buffalo meat in Italy (2010-2015)

Sources	Year			
	2010	2013	2015	Average 2010-15
National slaughter of cattle (000 ton/year)	609.0	477.5	434.3	504.5
National slaughter of buffalo (000 ton/year)	3.2	5.9	8.3	7.0
Import-Export balance (000 ton/year)	+ 195.6	+ 173.9	+ 174.8	+ 179.2
Total (000 ton/year)	807.8	657.3	617.3	690.7
Average of inhabitants (000)/year	60,483.3	60,233.9	60,730.6	60,297.8
Beef pro capita (kg)	13.30	10.81	10.03	11.34
Buffalo meat pro capita (kg)	0.05	0.10	0.14	0.12
Total Pro-capita (Kg)	13.36	10.91	10.16	11.46



From consumable meat to meat really consumed (kg/year)

	2010	2013	2015	Average 2010-15
Consumable pro-capita:				
Beef + Buffalo meat	13.36	10.91	10.16	11.45
Consumable pro-capita removing wastes at retail (2%):				
Beef + Buffalo meat	13.09	10.69	9.96	11.23
Consumable pro-capita removing household wastes (10%) i.e. really consumed				
Beef + Buffalo meat	11.78	9.62	8.96	10.10



Real and apparent annual consumption per capita (Kg) of beef and buffalo meat in Italy

Year	Annual pro capita		Daily pro capita		Ratio real/apparent (%)
	Apparent (ISMEA)	Real	Apparent (ISMEA)	Real	
2010	23.80	11.78	65.20	32,28	49.50
2011	22,10	11.03	60,60	30.21	49.86
2012	21.30	10.76	58.20	29.47	50.64
2013	20.20	9.62	55,30	26.37	*
2014	19.60	8.49	53.70	23.27	*
2015	17.60	8.97	48.22	24.56	*

* No calculated. From 2013 the apparent consumption estimated by ISMEA based on the apparent availability of national data does not coincide with those reported by ISTAT, from which, however, the real meat consumption was estimated.

Real meat consumption per capita in Italy in the period 2010-2012

MEAT	2010	2011	2012
Per year (kg)	41.41	40.52	40.13
Per day (g)	113.4	111.0	109.9



Conclusions (1)

- In the 2010-2015 period, the real beef consumption “per capita” in Italy was on average equal to kg 10.1 per year and g 27.7 per day. The real consumption of beef is much lower than the apparent consumption. This result underlying the need to consider the real consumption of beef in order to correctly inform doctors, nutritionists and consumers.
- The proposed method allows to estimate *per capita* the real consumption on annual basis with the same precision of the Individual Dietary Survey but avoiding complexity and high costs related of IDS.



Conclusions (2)

- Moreover, the proposed method could provide an estimate very close to the amount of ingested beef (and other food) and therefore may be a more suitable index for the study of the relationship between meat (food) consumption and human health.
- Due to the relationship between analysis of losses and conversion coefficient of carcass in consumable meat, further researches on the amount of wastes occurring during all steps of meat chain will be necessary in order to improve the estimation of consumable meat.

