

Sources of Greenhouse Gases By Different Ruminants (Lifecycle Analysis)

		Dairy Cows	Beef Cows	Sheep Goats	Sheep Goats
		Milk	Meat	Milk	Meat
Manure Appl. & Deposits	N2O	17.0%	18.1%	15.6%	17.6%
Manure " "	CH4	3.8%	1.4%	1.9%	2.0%
Manure Storage	N2O	5.4%	3.6%	3.8%	2.0%
Fertilizer	N2O	7.4%	7.4%	7.3%	8.8%
Feed Production	CO2	10.9%	10.0%	12.3%	11.1%
Land Use Change (Soy)	CO2	0.7%	0.7%		
Land Use Pasture Exp.	CO2		14.8%		
Enteric Fermentation	CH4	46.5%	42.6%	57.2%	54.9%
Direct Energy Use	CO2	2.2%	0.9%	1.6%	1.8%
Post Farm Processing	CO2	6.1%	0.5%	0.3%	1.7%

Question 1: How much CO₂ is generated by Meat Consumption (Ruminants only) per Person in your country

Question 2: How much water is Required to Produce the Meat Consumed in your country

Question 1:

FAO Stats - Data Base: Go To : Livestock Primary

Select: Cattle Meat, Goat Meat and Sheep Meat for your Country (2017)

Select: Cow Milk, Sheep Milk, Goat Milk in your Country (2017)

Go To: Population Data, Select Population in Your Country (2017)

Combine Goat and Sheep Meat and Goat and Sheep Milk

Use Conversion Table to convert kg of Product to kg of CO₂ Emission

Use Population Data to Arrive at kg CO₂ (equ) / Capital/ Year

Results: CO₂ Emission from Red Meat Consumption/c/y in you Country

Average Production of CO2 (equ)/ Kg of Product by Cattle in Different Regions

Kg CO2/Kg Meat	Meat Production			Kg CO2/Kg Milk	Milk Production		
	Arid	Temp.	Humid		Arid	Temp.	Humid
W-Europe	20	19	24	W-Europe	1.6	1.7	1.7
Asia	68	41	74	Asia	3.4	3.2	5.3
L America	44	49	50	L America	3.1	2.0	4.4
MENA	32	20	30	MENA	5.1	3.5	4.4
Africa	104	51	76	Africa	9.8	5.9	10.3

Average Production of CO2 (equ)/ Kg Product by Sheep & Goats in Different Regions

Kg CO2/Kg Meat	Meat Production			Kg CO2/Kg Milk	Milk Production		
	Arid	Temp.	Humid		Arid	Temp.	Humid
W-Europe	14	19	22	W-Europe	4.8	4.9	4.2
Asia	35	27	18	Asia	6.2	8.2	7.9
L America	28	30	24	L America	7.0	6.5	7.2
MENA	24	38	16	MENA	10.0	7.0	8.5
Africa	30	25	34	Africa	7.0	7.2	8.0

Question 2:

FAO Stats - Data Base: Go To : Livestock Primary

Select: Cattle Meat, Goat Meat and Sheep Meat for your Country (2017)

Select: Cow Milk, Sheep Milk, Goat Milk in your Country (2017)

Go To: Population Data, Select Population in Your Country (2017)

Use the conversion Table to determine Water Requirement/ kg of Meat for Cattle, Goats, Sheep and Cow Milk.

Use Population Data to arrive at Liters of Water/Capita/Year (for meat & Milk

Units m³/Ton or Liters/Kg

	China	India	Mexico	Italy	World Mean
Beef	12560	16480	37762	21167	15500
Goat	3994	5187	10252	4180	4000
Sheep	5202	6692	16878	7572	6100
Milk (Cow)	1000	1369	2382	861	1000

Results: Water for Red Meat Consumption in L/C/Y or Kg Water for Meat/C/ Y