

STORM FORECASTS: 2016-25

The only independent source of animal health and animal agriculture historical market data and forecasts

June 2016

34
10.87
7.89
34.5
65.89
32.54 34.43
567.98 57.66
45.89
90.34
234.43
567.66



What is STORM FORECASTS?

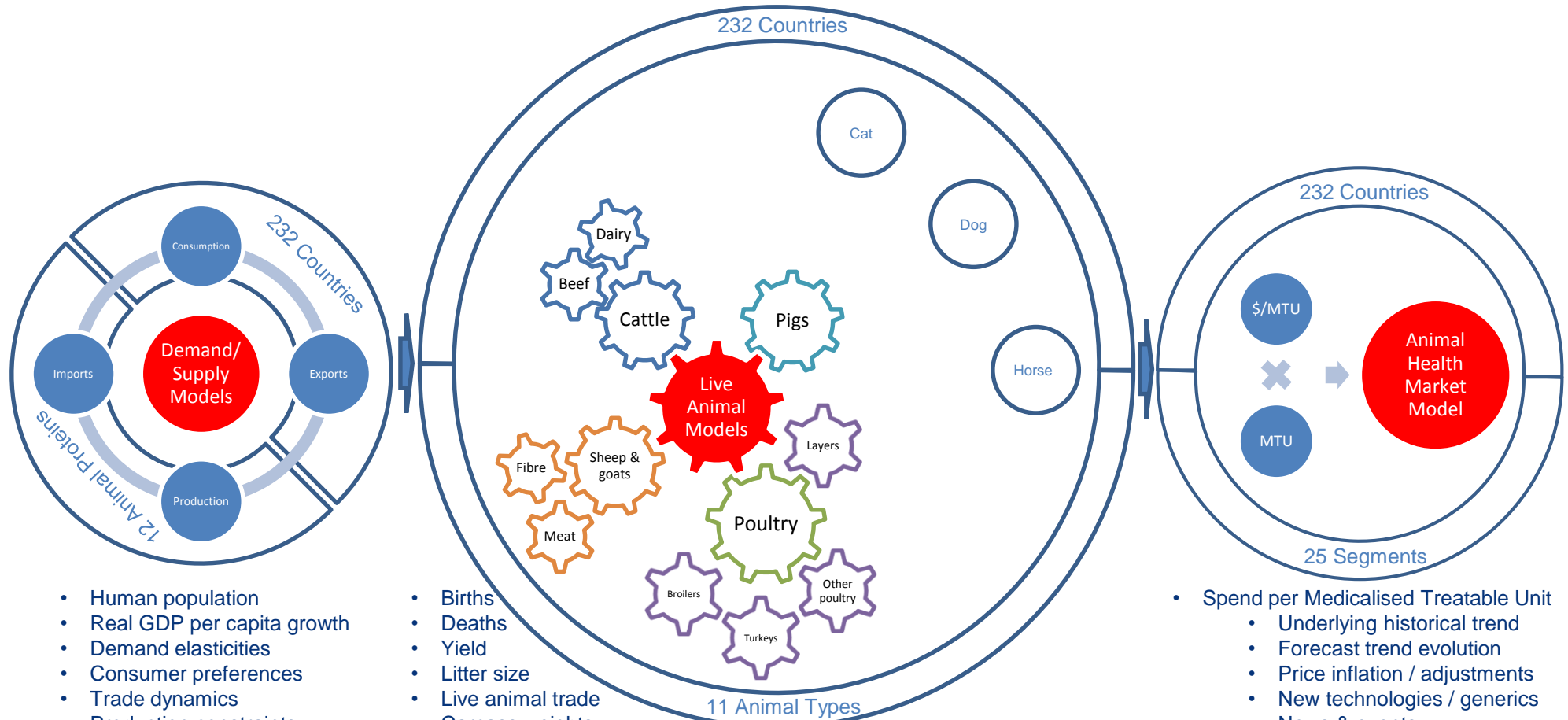
- STORM FORECASTS is the only independent source of **animal health** and **animal agriculture HISTORICAL data** and **FORECASTS** covering **20 years**
- STORM FORECASTS includes **2.7 million** data points of pivotal **animal health market data** and **animal agriculture metrics**, including consumption, production and trade of 12 animal proteins and population metrics for 11 animal types, including cats, dogs and horses
- STORM FORECASTS covers the world market, six regions and the **largest 25 countries** and emerging markets
- STORM FORECASTS covers **all** Species sectors
 - Cattle [beef & dairy], Sheep & goats, Pigs, Poultry [layer chickens, broiler chickens, turkeys, other poultry] and Companion Animals [dogs, cats, horses]
- STORM FORECASTS covers **all** Product Groups
 - Medicinal Feed Additives, Biologicals, Anti-infectives, Parasiticides and Other Pharmaceuticals
- STORM FORECASTS includes **HISTORICAL animal health market data and FORECASTS**
 - in Local currency and US dollar terms by Product Group-Species sector e.g. France-Cattle-Biologicals
 - in Nominal, FX Neutral* and Real* terms

Why use STORM FORECASTS?

- STORM FORECASTS delivers objective and independent data that can support better strategic decisions and operational planning
- STORM FORECASTS allows clients to focus resources on strategic analysis and decision making and not data collection and can challenge “*groupthink*”
- STORM FORECASTS contains proprietary animal health and animal agriculture FORECASTS
- STORM FORECASTS contains HISTORICAL (10 years) animal agriculture and macro-economic data in an “off-the-shelf”, easy to use product delivering significant increases in operational efficiency and effectiveness during strategic and operational planning processes
- STORM FORECASTS contains HISTORICAL animal health market data (10 years) and proprietary animal health market FORECASTS (10 years) in Nominal, FX Neutral and Real terms

STORM FORECASTS Methodology: Proprietary Market Models

inter-connected, bottom-up “Demand/Supply” models drive the “Live Animal” models and “Animal Health Market” model



- Human population
- Real GDP per capita growth
- Demand elasticities
- Consumer preferences
- Trade dynamics
- Production constraints

- Births
- Deaths
- Yield
- Litter size
- Live animal trade
- Carcass weights
- Breeding females / males
- Replacement rates
- Age to productivity / productive life

- Spend per Medicalised Treatable Unit
 - Underlying historical trend
 - Forecast trend evolution
 - Price inflation / adjustments
 - New technologies / generics
 - News & events
 - Regulation & policy
 - Macro-economics
- Medicalised Treatable Units
 - Medicalisation rates

Data Sources

Vetnosis uses best-in-class 3rd party historical data for macro-economics/FX rates, animal agriculture and animal health. Vetnosis creates proprietary forecasts for animal agriculture metrics and animal health market data

	Historical		Forecasts	
	3 rd Party	Vetnosis	3 rd Party	Vetnosis
Macro-economics/Fx Rates	✓ (IMF, EIU)	✗	✓	✗
Animal Agriculture	✓ (USDA, Eurostat, FAO)	✓ (where unavailable)	✗	✓
Animal Health	✓ (Trade Associations)	✓ (where unavailable)	✗	✓

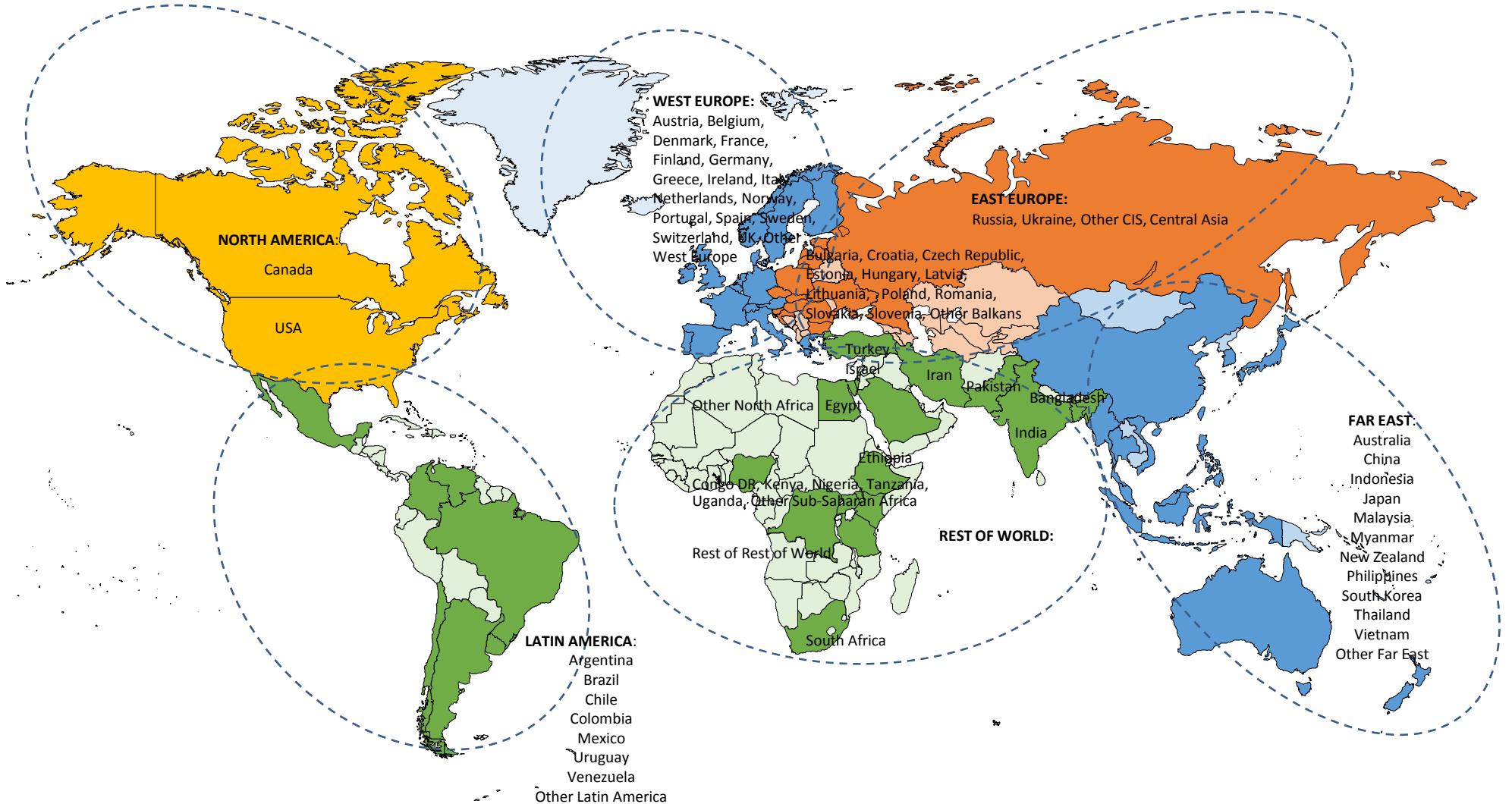
✓ = Vetnosis proprietary data

Scope of Animal Proteins and Animal Types and Animal Health Market Segmentation

Animal Proteins and Animal Types		Animal Health Market Segmentation e.g. Cattle-Biologicals	
Animal Proteins (12)	Animal Types (11)	Species (5)	Product Groups (5)
Bovine meat	Cattle & buffalo	Cattle	Medicinal Feed Additives
Sheep & goat meat	Sheep & goats	Sheep & Goats	Biologicals
Pig meat	Pigs	Pigs	Anti-infectives
Eggs	Layer chickens	Poultry	Parasiticides
Broiler meat	Broiler chickens	Companion Animal/Other	Other Pharmaceuticals
Turkey meat	Turkeys		
Other poultry meat	Other poultry e.g. ducks		
Fluid milk	Dairy cattle & buffalo		
Butter	n/a		
Cheese	n/a		
Other dairy	n/a		
Other meat	n/a e.g. camels, game		
n/a	Cats		
n/a	Dogs		
n/a	Horses		

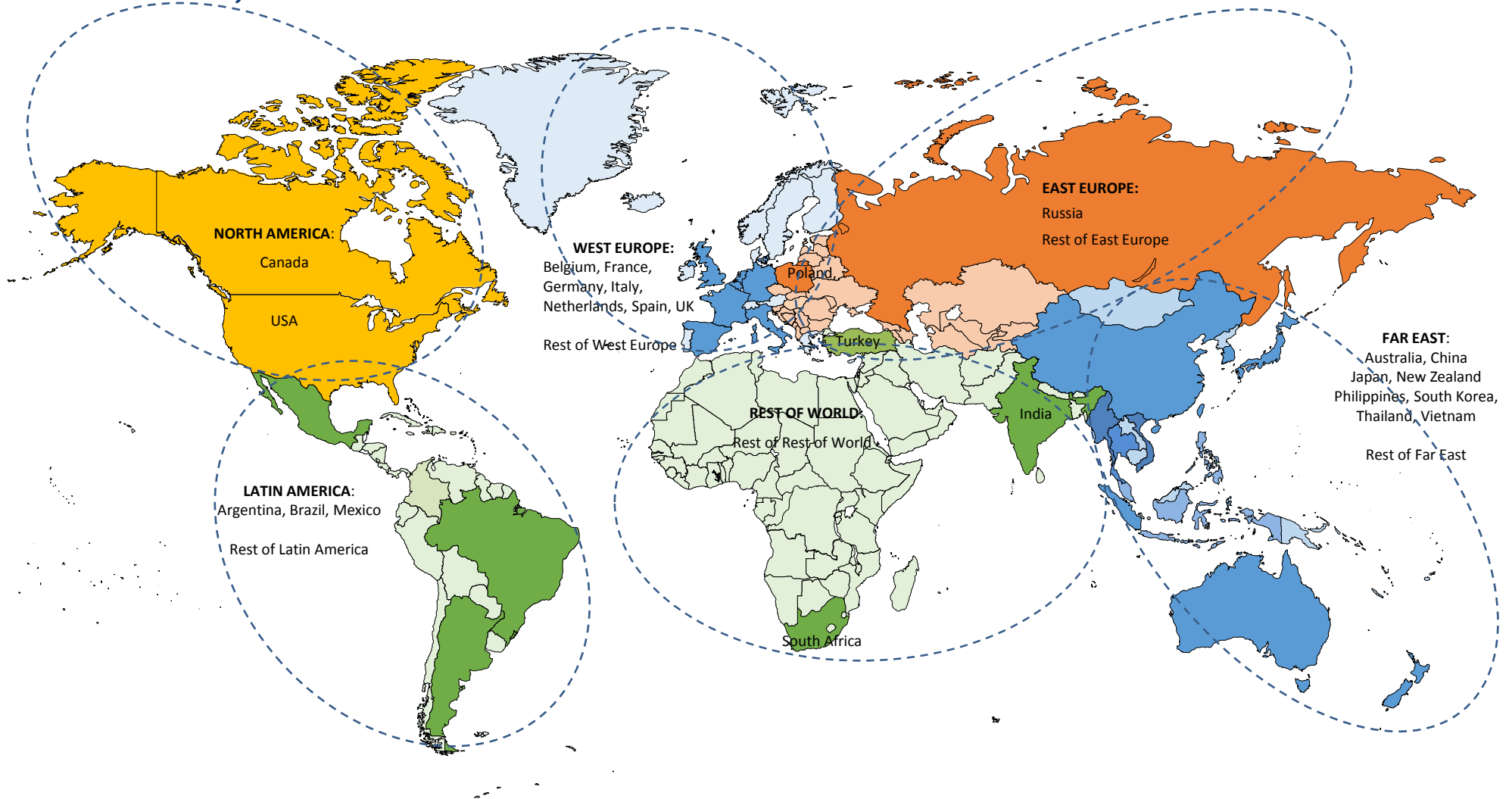
Global Scope: Animal Agriculture Historical Data & Forecasts

64 named country markets, 10 sub-regions, 6 regions and world



Global Scope: Animal Health Historical Data & Forecasts

25 largest country markets, 5 sub-regions, 6 regions and world in local currency and US dollars; and in Nominal, FX Neutral* and Real* terms



STORM FORECASTS: 2016-25

Contents

- Macro-economics
- Consumption
- Production
- Commodity Balance Sheet
- Animal Balance Sheet
- Inventory Structure
- Treatable Units
- Animal Health Market

Macro-economics

Key macro-economics data and charts (2005-25) for 81 countries/regions



Release Date: 24th June 2016

Macro-economics Data



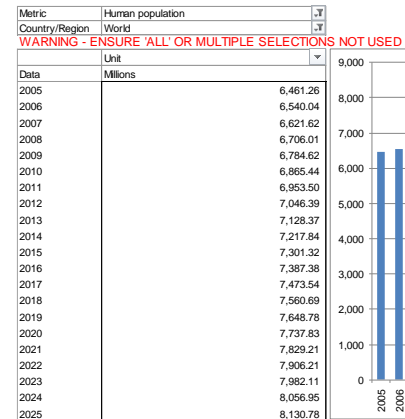
33,048 data points

Region	Country/Region	Metric	Unit	Source(s)	Last Actual	Forecast Data										
						2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Human population	Millions	IMF	2021	88.434	90.203	92.007	93.847	95.724	97.638	100.567	102.241	103.895	105.530	107.152
		Nominal GDP	Billions USD	IMF	2021	330.765	n/a	n/a	n/a	n/a	n/a	n/a	0.000	0.000	0.000	0.000
		Real GDP Growth (Local Currency)	%	IMF	2021	4.2	3.3	4.3	4.5	4.8	4.9	5.0	5.0	5.0	5.0	5.0
		Real GDP per head Growth (Local Currency)	%	IMF	2021	2.2	1.2	2.2	2.5	2.8	2.9	2.0	2.0	2.0	2.0	2.0
		GDP (based on PPP) per head	'000 USD per head	IMF	2021	11.850	12.113	12.552	13.126	13.781	14.473	15.063	...	...	...	...
		Inflation	%	IMF	2021	11.0	9.6	9.5	9.0	7.5	7.0	7.2	7.2	7.2	7.2	7.2
		USD exchange rate	Local currency per USD	Pac. Exch/EIU	2025	7.705	9.980	10.870	11.560	12.220	12.540	14.040	15.670	17.410	19.270	21.170
		Unemployment	%	IMF	2021	12.9	13.0	12.4	11.7	10.7	9.7	8.7	...	...	...	...

- Human population
- Nominal GDP (US\$ bn)
- Real GDP Growth (Local Currency)
- Real GDP per head Growth (Local Currency)
- GDP (based on PPP) per head
- Inflation
- USD exchange rate
- Unemployment



Macro-economics Charts



Consumption

Consumption metrics (2005-25) for 12 animal proteins in 81 countries/regions modelled for fundamental demand drivers



Release Date: 24th June 2016

Consumption Data



231,336 data points

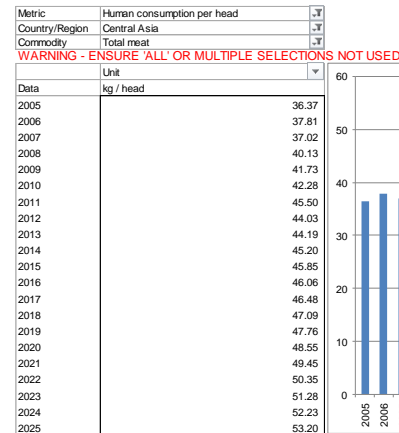
Region	Country/Region	Commodity	Metric	Unit	Source(s)	Last Actual	Forecast Data										
							2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Pig meat	Total consumption	'000s MT	Eurostat	2015	389	393	396	398	400	401	402	402	402	401	401
		Pig meat	Human consumption	'000s MT	Eurostat	2015	389	393	396	398	400	401	402	402	402	401	401
		Pig meat	Human consumption per head	kg / head	Eurostat	2015	39.499	39.964	40.324	40.643	40.913	41.137	41.321	41.465	41.609	41.753	41.898
		Pig meat	Self-sufficiency	%	...	...	105.1	103.6	103.8	103.9	104.0	104.3	104.6	104.9	105.2	105.5	105.9

- Total consumption
 - Human consumption + Other uses
- Human consumption
 - Human consumption per head
 - Human population
- Human consumption per head
 - Real GDP per head
 - Demand elasticities
 - Consumer preference trends
- Self-sufficiency



Release Date: 24th June 2016

Consumption Charts



Production

Production metrics (2005-25) for 12 animal proteins in 81 countries/regions modelled for fundamental supply drivers and trade



Production Data



206,550 data points

Region	Country/Region	Commodity	Metric	Unit	Source(s)	Last Actual	Forecast Data										
							2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Broiler meat	Production	'000s MT	Eurostat	2015	1,635	1,666	1,699	1,740	1,780	1,820	1,866	1,911	1,957	1,999	2,041
		Broiler meat	Total slaughtered	'000s head	Eurostat	2015	932,999	941,310	950,059	963,370	975,834	988,105	1,002,818	1,016,744	1,030,970	1,042,765	1,054,094
		Broiler meat	Carcass w eight	kg / head	Eurostat	2015	1,753	1,770	1,788	1,806	1,824	1,842	1,861	1,880	1,898	1,917	1,937
		Broiler meat	Production % for export	%	Eurostat	2015	48.9	48.8	48.7	48.9	49.0	49.1	49.3	49.6	49.9	50.1	50.2

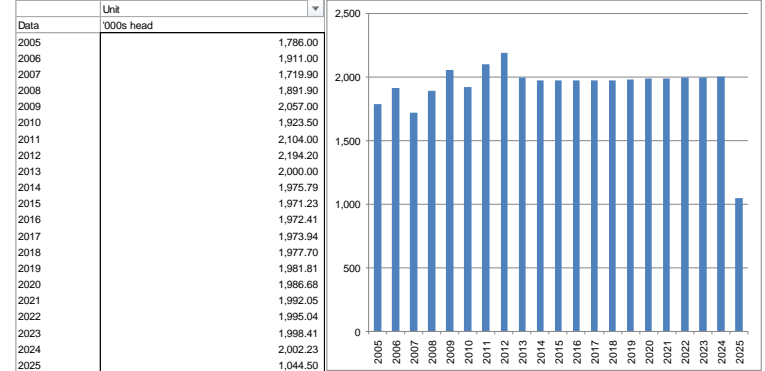
- Production
- Total slaughtered
- Carcass weight
- Production % for export



Production Charts



Metric: Total slaughtered
 Country/Region: Kenya
 Commodity: Bovine meat
WARNING - ENSURE 'ALL' OR MULTIPLE SELECTIONS NOT USED



Commodity Balance Sheet

Consumption, Production, Imports and Exports balance sheets for 12 animal proteins in 81 countries/regions

STORM FORECASTS: 2016-25



Release Date: 24th June 2016

Commodity Balance Sheet Data



694,008 data points

Region	Country/Region	Commodity	Metric	Unit	Source(s)	Last Actual	Forecast Data										
							2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Cheese	Production	'000s MT	Eurostat	2015	90	90	91	92	93	94	95	96	97	98	99
		Cheese	Total consumption	'000s MT	Eurostat	2015	101	102	103	105	106	107	108	109	110	112	113
		Cheese	Human consumption	'000s MT	Eurostat	2015	101	102	103	105	106	107	108	109	110	112	113
		Cheese	Other uses and processing	'000s MT	Eurostat	2015	0	0	0	0	0	0	0	0	0	0	0
		Cheese	Initial stocks	'000s MT	Eurostat	2015	9	0	0	0	0	0	0	0	0	0	0
		Cheese	End stocks	'000s MT	Eurostat	2015	9	0	0	0	0	0	0	0	0	0	0
		Cheese	Exports	'000s MT	Eurostat	2015	20	19	19	20	20	20	20	20	21	21	21
		Cheese	Imports	'000s MT	Eurostat	2015	31	31	32	32	33	33	33	34	34	34	35
		Cheese	Total demand	'000s MT	Eurostat	2015	121	121	123	124	126	127	129	130	131	132	133
		Cheese	Total supply	'000s MT	Eurostat	2015	121	121	123	124	126	127	129	130	131	132	133
		Cheese	Change in Stocks	'000s MT	Eurostat	2015	0	0	0	0	0	0	0	0	0	0	0
		Cheese	Balance	'000s MT	Eurostat	2015	0	0	0	0	0	0	0	0	0	0	0

- Production
- Total consumption
 - Human consumption
 - Other uses and processing
- Initial stocks
- End stocks
- Exports
- Imports

Animal Balance Sheet

Animal balance sheets for 9 animal types in 81 countries/regions

STORM FORECASTS: 2016-25



Release Date: 24th June 2016

Animal Balance Sheet Data



495,720 data points

Region	Country/Region	Animal	Metric	Unit	Source(s)	Last Actual	Forecast Data										
							2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Cattle	Inventory	'000s head	Eurostat	2015	542	539	535	530	524	518	512	507	501	495	490
		Cattle	Deaths	'000s head	Eurostat	2015	228	227	225	223	221	218	216	213	211	208	206
		Cattle	Total slaughtered	'000s head	Eurostat	2015	220	219	217	215	213	211	208	206	204	201	199
		Cattle	Non-breeding animals slaughtered	'000s head	Eurostat	2015	202	201	199	197	195	193	191	189	186	184	182
		Cattle	Total mortality	'000s head	Eurostat	2015	8	8	8	8	7	7	7	7	7	7	7
		Cattle	Births	'000s head	Eurostat	2015	68	68	67	67	66	65	64	64	63	62	62
		Cattle	Exports - live animals	'000s head	Eurostat	2015	220	219	217	215	213	211	208	206	203	201	199
		Cattle	Imports - live animals	'000s head	Eurostat	2015	48	48	47	47	46	46	45	45	44	44	43

- Inventory
- Deaths
 - Total slaughtered
 - Total mortality
- Births
- Exports – live animals
- Imports – live animals

Inventory Structure

Herd/flock structure segmented into Breeding animals and Other inventory for 8 production animal types and also dog, cat and horse populations in 81 countries/regions



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Inventory Structure



289,170 data points

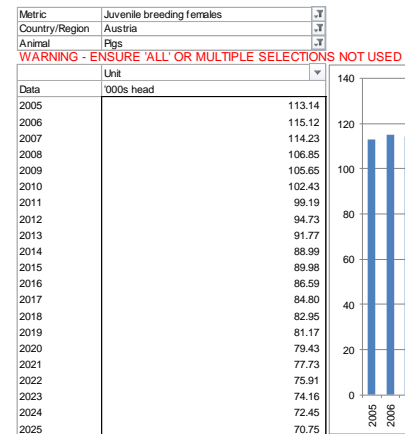
Region	Country/Region	Animal	Metric	Unit	Source(s)	Last Actual	Forecast Data										
							2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Pigs	Inventory	'000s head	Eurostat	2015	2,845	2,798	2,801	2,800	2,801	2,802	2,803	2,798	2,795	2,792	2,788
		Pigs	Total breeding animals	'000s head	...	...	341	328	321	314	307	301	294	287	280	274	267
		Pigs	Adult breeding females	'000s head	Eurostat	2015	245	236	231	226	221	216	212	207	202	197	193
		Pigs	Juvenile breeding females	'000s head	Vetnosis	...	90	87	85	83	81	79	78	76	74	72	71
		Pigs	Adult breeding males	'000s head	Vetnosis	...	5	4	4	4	4	4	4	3	3	3	3
		Pigs	Juvenile breeding males	'000s head	Vetnosis	...	2	2	1	1	1	1	1	1	1	1	1
		Pigs	Other inventory	'000s head	Vetnosis	...	2,504	2,470	2,479	2,486	2,493	2,501	2,509	2,511	2,515	2,518	2,521

- Inventory
- Total breeding animals
 - Adult breeding females
 - Juvenile breeding females
 - Adult breeding males
 - Juvenile breeding males
- Other inventory



Release Date: 24th June 2016

Inventory Structure Charts



Treatable Units



Treatable Units Data



367,659 data points

Region	Country/Region	Animal	Metric	Unit	Source(s)	Last Actual	Forecast Data										
							2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Cattle	Total breeding animals [avg.]	'000s head	Vetnosis	...	18,143	18,213	18,349	18,595	18,892	19,216	19,539	19,812	20,041	20,267	20,489
		Cattle	Breeding females [avg.]	'000s head	Vetnosis	...	17,839	17,908	18,042	18,283	18,575	18,894	19,212	19,480	19,705	19,927	20,145
		Cattle	Breeding males [avg.]	'000s head	Vetnosis	...	304	305	308	312	317	322	327	332	336	340	343
		Cattle	Total slaughtered	'000s head	Vetnosis	...	4,100	4,100	4,151	4,215	4,288	4,365	4,438	4,492	4,545	4,597	4,649
		Cattle	Non-breeding animals [avg.]	'000s head	Vetnosis	...	57	-213	-244	-248	-252	-257	-262	-266	-269	-272	-276
		Cattle	Treatable units	'000s head	Vetnosis	...	18,200	18,000	18,105	18,347	18,640	18,959	19,278	19,547	19,772	19,994	20,213
		Cattle	Medicalisation rate	%	Vetnosis	...	97.1	98.1	99.2	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
		Cattle	Medicalised treatable units	'000s head	Vetnosis	...	17,664	17,662	17,961	18,347	18,640	18,959	19,278	19,547	19,772	19,994	20,213

- Total breeding animals
 - Breeding females
 - Breeding males
- Total slaughtered
- Non-breeding animals
- Treatable units
- Medicalisation rate
- Medicalised treatable units



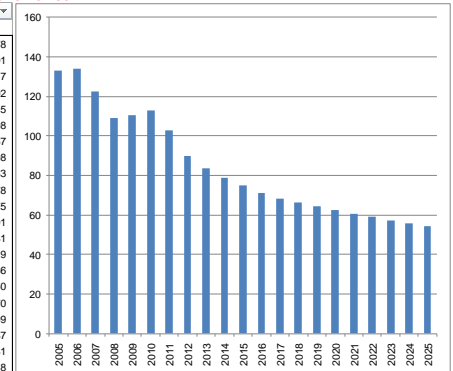
Treatable Units Charts



Metric: Breeding females [avg.]
 Country/Region: Lithuania
 Animal: Pigs
 Unit: '000s head

WARNING - ENSURE 'ALL' OR MULTIPLE SELECTIONS NOT USED

Data	'000s head
2005	132.78
2006	134.01
2007	122.27
2008	109.02
2009	110.25
2010	112.98
2011	102.67
2012	89.98
2013	83.63
2014	78.78
2015	74.75
2016	70.91
2017	68.31
2018	66.29
2019	64.36
2020	62.50
2021	60.70
2022	58.99
2023	57.37
2024	55.81
2025	54.28



Animal Health Market: Nominal, FX Neutral and Real terms

STORM FORECASTS: 2016-25



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**Animal Health Market -
Nominal Terms**


344,160 data points

Region	Country/Region	Species	Product Group	Metric	Unit	Forecast Data										
						2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
		Cattle	Medicinal Feed Additives	Sales per MTU Local Currency - NOMINAL	GBP	0.54	0.54	0.55	0.56	0.58	0.59	0.60	0.60	0.61	0.62	0.63
		Cattle	Biologicals	Sales per MTU Local Currency - NOMINAL	GBP	2.77	2.78	2.89	3.00	3.12	3.25	3.38	3.52	3.66	3.81	3.96
		Cattle	Anti-infectives	Sales per MTU Local Currency - NOMINAL	GBP	4.27	4.24	4.32	4.40	4.49	4.58	4.67	4.76	4.86	4.96	5.05
		Cattle	Parasiticides	Sales per MTU Local Currency - NOMINAL	GBP	4.21	4.22	4.35	4.50	4.65	4.80	4.95	5.10	5.25	5.41	5.57
		Cattle	Other Pharmaceuticals	Sales per MTU Local Currency - NOMINAL	GBP	1.69	1.70	1.77	1.84	1.92	1.99	2.07	2.16	2.24	2.33	2.43
		Cattle	ALL PRODUCT GROUPS	Sales per MTU Local Currency - NOMINAL	GBP	13.49	13.48	13.88	14.31	14.76	15.21	15.67	16.14	16.63	17.13	17.65

- Animal Health market (ex-manufacturer net sales) for the Top 25 country markets, 5 sub-regions, 6 regions and world from 2005-2025 by 25 Species-Product Group market segments e.g. Cattle-Biologicals
- 10-year HISTORICAL market data in Nominal Local currency and US Dollars
- 10-year FORECASTS in Nominal, FX Neutral and Real terms in Local Currency and US Dollars

Deliverable

access through an easy to use Excel format containing 2.7 million data points



Release Date: 24th June 2016

Control Panel

Macro-economics	Macro-economics	DATA	CHART
Animal Agriculture	Consumption	DATA	CHART
	Production	DATA	CHART
	Commodity Balance Sheet	DATA	TABLE
	Animal Balance Sheet	DATA	TABLE
	Inventory Structure	DATA	CHART
	Treatable Units	DATA	CHART
Animal Health	Nominal	DATA	CHART
	Fx Neutral	DATA	CHART
	Real	DATA	CHART

Country Key

Glossary

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