

## Supplementary Materials: Assumptions and sources

This material shows the data sources used and assumptions proposed for the estimation of natural capital in Uruguay from 1870 to 2014.

### *Crops*

Item	Period	Assumptions and Sources	
Corn	1870 - 1873	[1]	The original data is measured in bushels. It is assumed that each bushel of corn weighs 65 kilograms.
	1874 - 1880	Interpolation	
	1881	[2]	
	1882 - 1891	Interpolation	
	1892 - 1893	Statistical Yearbooks of Uruguay	
	1894 - 1899	Interpolation	
	1900 - 1903	Agricultural Statistics 1916	
	1904	Interpolation	
	1905 - 1916	Agricultural Statistics 1916	
	1917 - 1932	Statistical Yearbooks of Uruguay	
	1933 - 1960	Statistical Supplement BROU 1960	
	1961 - 2014	FAOSTAT	
Green Corn	1870 - 1960	It is assumed zero.	
	1961 - 2014	FAOSTAT	
Rice	1870 - 1935	It is assumed zero. See [3].	
	1936 - 1960	Statistical Supplement BROU 1960	
	1961 - 2014	FAOSTAT	
Wheat	1870 - 1891	[4]	
	1892 - 1893	Statistical yearbooks of Uruguay	The original data is measured in hectolitres. It is assumed that one hectolitre equals 78 kilograms of wheat. See [5] ( p. 951)
	1894 - 1903	Statistical Yearbooks of Uruguay	
	1904	Interpolation	
	1905 - 1909	Statistical Yearbooks of Uruguay	

	1910	Interpolation	
	1911 - 1935	Statistical Yearbooks of Uruguay	
	1936 - 1960	Statistical Supplement BROU 1960	
	1961 - 2014	FAOSTAT	
Barley	1870 - 1891	Production in this period was estimated assuming that its evolution over time is equal to that of wheat.	
	1892 - 1893	Statistical Yearbooks of Uruguay	The original data is measured in hectolitres. It is assumed that one hectolitre equals 64 kilograms of barley. See [5] ( p 951)
	1894 - 1898	[6]	
	1899 - 1933	Statistical Yearbooks of Uruguay	
	1934 - 1960	Statistical Supplement BROU 1960	
	1961 - 2014	FAOSTAT	
Soy	1870 - 1960	It is assumed zero.	
	1961 - 2014	FAOSTAT	
Rape	1870 - 1960	It is assumed zero.	
	1961 - 2014	FAOSTAT	
Grapes	1870 - 1903	[6]	
	1904 - 1960	Statistical Yearbooks of Uruguay	
	1961 - 2014	FAOSTAT	
Apple and Olives	1870 - 1907	The production in this period was estimated assuming that its evolution over time is equal to that of the population.	
	1908	Statistical yearbooks of Uruguay	
	1909 - 1915	Interpolation	
	1916	Statistical Yearbooks of Uruguay	The original data is in drawers. It is assumed that each box of apples weighs 21 kilograms and that of olive 28.
	1917 - 1945	Interpolation	
	1946	Statistical Yearbooks of Uruguay	
	1947 - 1950	Interpolation	
	1951	Statistical Yearbooks of Uruguay	
	1952 - 1955	Interpolation	

	1956	Statistical Yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Quince	1870 - 1945	The production in this period was estimated assuming that its evolution over time is equal to that of the peach.
	1946	Statistical Yearbooks of Uruguay
	1947 - 1950	Interpolation
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical Yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Pear	1870 - 1907	The production in this period was estimated assuming that its evolution over time is equal to that of the apple.
	1908	Statistical Yearbooks of Uruguay
	1909 - 1915	Interpolation
	1916	Statistical Yearbooks of Uruguay
	1917 - 1945	Interpolation
	1946	Statistical Yearbooks of Uruguay
	1947 - 1950	Interpolation
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Orange, Plum and Vegetables	1870 - 1907	The production in this period was estimated assuming that its evolution over time is equal to that of the population.
	1908	Statistical Yearbooks of Uruguay
	1909 - 1915	Interpolation
	1916	Statistical Yearbooks of Uruguay
	1917 - 1926	Interpolation
	1927	Statistical Yearbooks of Uruguay
	1928 - 1929	Interpolation
	1930	Statistical Yearbooks of Uruguay
	1931 - 1932	Interpolation
	1933	Statistical Yearbooks of Uruguay
	1934 - 1936	Interpolation
	1937	Statistical Yearbooks of Uruguay
	1938 - 1945	Interpolation
	1946	Statistical Yearbooks of Uruguay
	1947 - 1950	Interpolation
	1951	Statistical Yearbooks of Uruguay

	1952 - 1955	Interpolation	
	1956	Statistical Yearbooks of Uruguay	
	1957 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Lemon, Lime and Peach	1870 - 1907	Production in this period was estimated assuming that its evolution over time is equal to that of orange.	
	1908	Statistical Yearbooks of Uruguay	
	1909 - 1915	Interpolation	
	1916	Statistical Yearbooks of Uruguay	The original data is in drawers. It is assumed that each box of lemon and limes weighs 23 kilograms and that of peach 25.
	1917 - 1945	Interpolation	
	1946	Statistical Yearbooks of Uruguay	
	1947 - 1950	Interpolation	
	1951	Statistical Yearbooks of Uruguay	
	1952 - 1955	Interpolation	
	1956	Statistical Yearbooks of Uruguay	
	1957 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Tangerine	1870 - 1945	Production in this period was estimated assuming that its evolution over time is equal to that of orange.	
	1946	Statistical Yearbooks of Uruguay	
	1947 - 1950	Interpolation	
	1951	Statistical Yearbooks of Uruguay	
	1952 - 1955	Interpolation	
	1956	Statistical Yearbooks of Uruguay	
	1957 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Grapefruit	1870 - 1955	Production in this period was estimated assuming that its evolution over time is equal to that of orange.	
	1956	Statistical Yearbooks of Uruguay	
	1957 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Garlic and Onion	1870 – 1941	The production in this period was estimated assuming that its evolution over time is equal to that of the population.	
	1942 - 1949	Statistical Yearbooks of Uruguay	
	1950	Interpolation	
	1951	Statistical Yearbooks of Uruguay	

	1952 - 1955	Interpolation	
	1956	Statistical Yearbooks of Uruguay	
	1957 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Cotton	1870 - 1950	It is assumed zero. See [7] (p. 5).	
	1951	Statistical yearbooks of Uruguay	
	1952 - 1955	Interpolation	
	1956	Statistical Yearbooks of Uruguay	
	1957 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Birdseed, Oats and Flax	1870 - 1891	It is assumed zero.	
	1892 - 1893	Statistical Yearbooks of Uruguay	The original data is measured in hectolitres. It is assumed that one hectolitre equals 78 kilograms of birdseed, oats and flax.
	1894 - 1898	[6]	
	1899 - 1933	Statistical Yearbooks of Uruguay	
	1934 - 1960	Statistical Supplement BROU 1960	
	1961 - 2014	FAOSTAT	
Sweet Potato, Potato and Beans	1870 - 1891	The production in this period was estimated assuming that its evolution over time is equal to that of the population.	
	1892 - 1893	Statistical Yearbooks of Uruguay	The original data is measured in hectolitres. It is assumed that one hectolitre equals 78 kilograms of sweet potato, potato and beans.
	1894 - 1915	Interpolation	
	1916 - 1954	Statistical Yearbooks of Uruguay	
	1955	Interpolation	
	1956	Statistical Yearbooks of Uruguay	
	1957	Interpolation	
	1958	Statistical Yearbooks of Uruguay	
	1959 - 1960	Interpolation	
	1961 - 2014	FAOSTAT	
Pumpkin and Bell Pepper	1870 - 1945	The production in this period was estimated assuming that its evolution over time is equal to that of the population.	
	1946	Statistical Yearbooks of Uruguay	

	1947 - 1950	Interpolation
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical Yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Sugar Cane	1870 - 1943	It is assumed zero.
	1944 - 1949	Statistical Yearbooks of Uruguay
	1950	Interpolation
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical Yearbooks of Uruguay
	1957	Interpolation
	1958	Statistical Yearbooks of Uruguay
	1959 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Peas	1870 - 1941	The production in this period was estimated assuming that its evolution over time is equal to that of the population.
	1942 - 1949	Statistical Yearbooks of Uruguay
	1950	Interpolation
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical Yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Beans and Vegetables	1870 - 1945	The production in this period was estimated assuming that its evolution over time is equal to that of the population.
	1946 - 1950	Interpolation
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical Yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
String beans	1870 - 1950	The production in this period was estimated assuming that its evolution over time is equal to that of the population.
	1951	Statistical Yearbooks of Uruguay
	1952 - 1955	Interpolation
	1956	Statistical Yearbooks of Uruguay
	1957 - 1960	Interpolation
	1961 - 2014	FAOSTAT
Peanut	1870 - 1915	It is assumed zero.

	<b>1916</b>	Statistical Yearbooks of Uruguay
	<b>1917</b>	Interpolation
	<b>1918 - 1936</b>	Statistical Yearbooks of Uruguay
	<b>1937 - 1960</b>	Statistical Supplement BROU 1960
	<b>1961 - 2014</b>	FAOSTAT
<b>Sunflower Seeds</b>	<b>1870 - 1935</b>	It is assumed zero. See [8] (p. 25).
	<b>1936 - 1960</b>	Statistical Yearbooks of Uruguay
	<b>1961 - 2014</b>	FAOSTAT
<b>Sorghum</b>	<b>1870 - 1919</b>	It is assumed zero.
	<b>1920 - 1954</b>	Statistical yearbooks of Uruguay
	<b>1955 - 1960</b>	Interpolation
	<b>1961 - 2014</b>	FAOSTAT
<b>Tobacco</b>	<b>1870 - 1904</b>	It is assumed zero. See [9] (p. 207) and [2] (pp. 301-302).
	<b>1905 - 1949</b>	Statistical Yearbooks of Uruguay
	<b>1950</b>	Interpolation
	<b>1951</b>	Statistical Yearbooks of Uruguay
	<b>1952 - 1954</b>	Interpolation
	<b>1955 - 1960</b>	Statistical Yearbooks of Uruguay
	<b>1961 - 2014</b>	FAOSTAT
<b>Tomatoes, Carrots and Turnips</b>	<b>1870 - 1945</b>	The production in this period was estimated assuming that its evolution over time is equal to that of the population.
	<b>1946</b>	Statistical Yearbooks of Uruguay
	<b>1947 - 1950</b>	Interpolation
	<b>1951</b>	Statistical Yearbooks of Uruguay
	<b>1952 - 1955</b>	Interpolation
	<b>1956</b>	Statistical Yearbooks of Uruguay
	<b>1957 - 1960</b>	Interpolation
	<b>1961 - 2014</b>	FAOSTAT
<b>Melon and Watermelon</b>	<b>1870 - 1907</b>	The production in this period was estimated assuming that its evolution over time is equal to that of the population.
	<b>1908</b>	Statistical Yearbooks of Uruguay
	<b>1909 - 1945</b>	Interpolation
	<b>1946</b>	Statistical Yearbooks of Uruguay
	<b>1947 - 1950</b>	Interpolation
	<b>1951</b>	Statistical Yearbooks of Uruguay
	<b>1952 - 1955</b>	Interpolation
	<b>1956</b>	Statistical Yearbooks of Uruguay
	<b>1957 - 1960</b>	Interpolation
	<b>1961 - 2014</b>	FAOSTAT

## Pastureland

In this series, the production of meat includes the number of cattle slaughtered (Montevideo and the countryside considering factories, slaughterhouses and *saladeros*) and the export of live cattle. We try to add these components for all the years, however, not all of them were possible, especially after 1948, when statistical data tend to lose coherence. Once the quantity of animals slaughtered is calculated, the meat production is obtained from a percentage of meat extraction per animal.

The weight of the animals is calculated assuming 161 kilograms of meat per bovine and 23 kilograms per sheep. These extraction percentages are found in the statistical yearbooks surveyed.

Item	Period		Assumptions and Sources
Beef	1870 - 1873 (number of animals)		See [10] (p 113). In this period the disaggregated data of the slaughter of <i>saladeros</i> (factories for salted meat) was not found.
	1874 - 1948	Supply of Montevideo (number of animals)	1874 - 1900: Statistical Yearbooks of Uruguay
			1901 - 1933: [11]
			1934 - 1948: Statistical Yearbooks of Uruguay
		Supply of provinces excepting Montevideo (number of animals)	1874 - 1905: It was assumed that the variation of the meat consumption of the provinces excepting Montevideo (capital of the country) is equal to the variation of the population.
			1906 - 1933: [11]
			1934 - 1948: Statistical Yearbooks of Uruguay
		Slaughterhouse (number of animals)	1874 - 1904: Data not available.
			1905 - 1910: [12]
			1911 - 1935: [11]



			1936 - 1948: Statistical Yearbooks of Uruguay
		Slaughter in <i>saladeros</i> (number of animals)	1874 - 1899: Statistical Yearbooks of Uruguay
			1900 - 1910: [12]
			1911 - 1935: [11]
			1936 - 1948: Statistical Yearbooks of Uruguay
			Slaughter in meat processing plants (number of animals)
		1912 - 1935: [11]	
		1936 - 1938: Statistical Yearbooks of Uruguay	
		1939 - 1948: Data not available	
		Live cattle exports (number of animals)	1874 - 1875: Statistical Notebook No.8 (1877)
1876 - 1948: Statistical Yearbooks of Uruguay			
	1949 - 1960	In this period the statistics becomes cumbersome. The data of slaughtered animals is formed adding the activities reported in [13] and the consumption of meat in the countryside from the Statistical Yearbooks of Uruguay.	
		1961 – 2014	FAOSTAT
Sheep meat	1870 - 1934	Supply of Montevideo (number of animals)	1870 - 1872: [1]
			1873: Statistical Notebook No.8 (1877)
			1874 - 1905: Statistical Yearbooks of Uruguay
			1906 - 1930: [11]
			1931 - 1934: Statistical Yearbooks of Uruguay
		Supply of provinces excepting Montevideo (number of animals)	1870 - 1905: [6]
			1906 - 1933: [11]
			1934: Statistical Yearbooks of Uruguay
		Slaughterhouse (number of animals)	1870 - 1903: Data not available
			1904 - 1910: [12]

			1911 - 1934: [11]
		<i>Saladeros and factories slaughter (number of animals)</i>	1870 - 1911: Data not available
			1912 - 1934: [11]
		Live sheep exports (number of animals)	1870 - 1875: Statistical Notebook No.8 (1877)
			1876: Interpolation
			1877 - 1878: [2]
			1879 - 1881: Interpolation
			1882 - 1934: Statistical Yearbooks of Uruguay
		1935 – 1960	Information provided by Prof. L. Bértola
		1961 – 2014	FAOSTAT
Pig meat	1870 - 1960	Supply of Montevideo (number of animals)	1870: [2]
			1871 - 1873: Interpolation
			1874 - 1876: Statistical Yearbooks of Uruguay
			1877: Interpolation
			1878 - 1879: Statistical Yearbooks of Uruguay
			1880 - 1881: [2]
			1882 - 1886: Statistical Yearbooks of Uruguay
			1887 - 1889: [2]
			1890 - 1923: Statistical Yearbooks of Uruguay
			1924 - 1935: Statistical Synthesis of the Republic 1929 – 1936
			1936 - 1941: Statistical Yearbooks of Uruguay
		Supply of provinces excepting Montevideo (number of animals)	1870 - 1905: It was assumed that the variation of the meat consumption of the countryside is equal to the variation of the population of the non-capital provinces.
			1906 - 1960: Statistical Yearbooks of Uruguay
		Slaughterhouse (number of animals)	1870 - 1916: Data not available
			1917 - 1960: Statistical Yearbooks of Uruguay
		Factories slaughter (number of animals)	1870 - 1918: Data not available
			1919 - 1960: Statistical Yearbooks of Uruguay
		Live pig exports (number of animals)	1870 - 1881: It is assumed zero
			1882 - 1960: Statistical Yearbooks of Uruguay
		1961 - 2014	FAOSTAT
Milk	1870 - 1929		

		Milk tons are obtained from the bovine stock, estimating the percentage of dairy cattle as 7.10% of the total stock (Statistical Yearbooks of Uruguay), milking cows as 20% of the total dairy cattle and assuming that the total of litres per cow obtained annually is 1,278 (3.5 litres per day). See [14].
	1930 - 1950	[15]
	1951 - 1960	Statistical Yearbooks of Uruguay
	1961 - 2014	FAOSTAT
<b>Wool</b>	1870 - 1880	The tons of wool are obtained from the sheep stock, estimating the production of wool at 1.6 kg per animal, according to [16].
	1881 - 1899	The tons of wool are obtained from the sheep stock, estimating the production of wool at 1.8 kg per animal, according to [16].
	1900 - 1960	Uruguayan Wool Secretariat
	1960 - 2014	FAOSTAT
<b>Leathers</b>	1870 - 1960	The tons of hides are obtained from the stock of cattle and the relationship between extraction of meat and hides between 1961 – 2014 (average).
	1961 - 2014	FAOSTAT
<b>Eggs</b>	1870 - 1960	The tons of eggs are obtained from the stock of hens and the relationship between the poultry and eggs between 1961 and 2014 (average).
	1961 - 2014	FAOSTAT

### *Timber and non-timber forest resources*

In some cases, we assume that the production of certain components is zero prior to a given year. It is an assumption that aims to show that if there was production in those years, it was marginal. In the absence of data from statistical sources, a probably "downward" estimate is better than its opposite (we offer “conservative estimates”).

Item	Period	Assumptions and Sources
	1870 - 1935	It is assumed at zero
	1936 - 1954	

<b>Conifer industrial round wood (m³)</b>		The first accurate production data is 100,000 m³ for 1955. There is no information about wood industry before 1936. See Industrial Census of Uruguay 1936.
	<b>1955 - 1956</b>	World Forest Inventory 1958
	<b>1957</b>	Interpolation
	<b>1958</b>	World Forest Inventory 1958
	<b>1959 -1960</b>	Interpolation
	<b>1961 - 2014</b>	FORESTAT
<b>Non-coniferous industrial roundwood (m³)</b>	<b>1870 - 1935</b>	It is assumed at zero
	<b>1936 - 1960</b>	The first accurate data of the production is 85,000 m³ for 1961. There is no information about wood industry before 1936. See Industrial Census of Uruguay 1936.
	<b>1960 - 2014</b>	FORESTAT
<b>Fuelwood (m³)</b>	<b>1870 - 1882</b>	The available series of wood for fuel begins in the year 1882. It is reasonable that in the previous twelve years it has remained similar to the value of that year. It is assumed constant at the level of 1882.
	<b>1882 - 1960</b>	It is assumed that the evolution of wood production for fuel is equal to the evolution of wood consumption. Data from [17]
	<b>1961 - 1989</b>	FORESTAT
	<b>1990 - 2014</b>	Data provided by the General Forest Directorate.
<b>Increase (m³)</b>	<b>1870 - 2014</b>	It is assumed that forests grow by more than the production of each year. This assumption is based on the information provided by specialists from the Forest Directorate who consider that Uruguayan fuelwood did not experience problems of sustainability.
<b>Forest Area Stock (ha)</b>	<b>1870 - 1907</b>	The first accurate data of the forest area corresponds to 1908. No evidence has been found to confirm the occurrence of changes during the previous decades, which is why it is assumed that this value remained constant during the previous years.
	<b>1908</b>	Agricultural Statistics 1916
	<b>1909 - 1936</b>	Interpolation

	1937	Agricultural Census 1937
	1938 - 1942	Interpolation
	1943	Agricultural Census 1943
	1944	Compilation of Agricultural Statistics 1948 - 1950
	1945	Interpolation
	1946	Compilation of Agricultural Statistics 1948 - 1950
	1947 - 1948	Interpolation
	1949	Statistical synthesis until 1949
	1950	Interpolation
	1951	World Forestry Resources 1953
	1952 - 1955	Interpolation
	1956	World Forest Inventory 1958
	1957 - 1960	Interpolation
	1961	World Forest Inventory 1963
	1962 - 1964	Interpolation
	1965	World Forest Inventory 1970
	1966 - 1979	Interpolation
	1980	World Forest Inventory 1988
	1981 - 1984	Interpolation
	1985 - 1987	World Forest Inventory 1988
	1988 - 1989	Interpolation
	1990 - 2011	FORESTAT
	2012	General Forestry Office - Evaluation and Information. 2013
	2012 - 2014	It is assumed equal to data corresponding of 2012

### Minerals

Item	Period	Assumptions and Sources
Everyone	1870 - 1960	In the absence of data for the years prior to 1960, it is assumed that the value of total mining production moves in the same way as the output of the Mining sector (at constant 2005 prices). See [18].
	1961 - 1976	[19]
	1977 - 2014	DINAMIGE

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