Appendix 1. Supplementary information

Table A1.1: Environmental and socio-economic variables used in statistical models

Table A1.2: Best models and selection criteria.

Table A1.3: Relative R^2 of variables.

Table A1.1. **Environmental and socio-economic variables** used in statistical models.

Response Variables	Units	Source	Resolution	Year	Reference
Forest change	%	Forest cartography 2011 Forest cartography 1966-67	30-250 m	1966-2011	(MGAP 2012) (MGAP 1979)
Independent Variables					
Mean annual precipitation	mm/year	WorldClim	1 km	Average 1950-2000	(Hijmans et al. 2005)
Mean annual temperature	°C				
Coefficient of variation of precipitation	-				
Precipitation driest quarter	mm/year				
Temperature hottest quarter	°C				
Soil productivity index – CONEAT	-	MGAP	~20 m	1976	(Duran 1987)
Soil water holding capacity index	mm	MGAP	~500 m	1976	(Molfino and Califra 2001)
Altitude	m	MGAP	90 m		http://www.snia.gub.uy
Slope	-	MGAP	90 m		http://www.snia.gub.uy
River density	m/km^2	HYDROSHED	15 arc-minutes	2000	(Lehner et al. 2006)
Road Density	m/km^2	MTOP	~20 m	2000	www.snia.gub.uy
Agricultural cover	%	MVOTMA	30 m	2008	(MVOTMA-MGAP-FAO 2008)
Livestock density	LU/km^2	MGAP	Census unit	2010	http://www2.mgap.gub.uy/portal/page.aspx?2,diea,diea-principal,O,es,0
Livestock density change	LU/km^2	MGAP	Department	1960-2010	National Agricultural Census
Fire frequency	#	MODIS MCD445A1 Burned Areas Monthly product	30 m	2000	(Roy et al. 2008).

Table A1.2, **Best models and selection criteria.** Best models obtained with the function Bestglm in R (McLeod and Xu 2011). Model selection was done by AIC and tested by Cross Validation. Best alternative models (not retained by the selection criteria) are shown. Moran's I values were calculated to assess spatial autocorrelation.

Best models and selection criteria. **Response variable: Forest Change 1966 – 2011 (%)** **Predictor variables: See Table A1.1**	**AIC**	**CV**	**Moran's.I (residuals)**
Uruguay			
ƒ **(Agricultural cover, Road Dens., Precip. driest quarter, Slope)**	**847.8**	**6.5**	**0.08**
ƒ (Agricultural cover, Precip. driest quarter, Slope, Altitude)	849.2	6.6	
ƒ (Agricultural cover, Precip. driest quarter, Slope, Cattle/sheep ratio)	849.2	6.7	
ƒ (Agricultural cover, Precip. driest quarter, Slope)	851.1	6.6	
ƒ (Agricultural cover, Road Dens., Precip. driest quarter)	852.9	6.5	
Above median agricultural cover			
ƒ **(Agricultural cover, Precip. driest quarter)**	**406.1**	**4.8**	**0.1**
ƒ (Agricultural cover, Precip. driest quarter, Cattle/sheep ratio)	406.8	5.0	
ƒ (Agricultural cover, Precip. driest quarter, Livestock change)	407.2	4.9	
ƒ (Agricultural cover, Precip. driest quarter, River Density)	407.5	5.3	
ƒ (Agricultural cover, Precip. driest quarter, Road Dens.)	417.33	5.0	
Below median agricultural cover			
ƒ **(Mean annual prec., Slope, Livestock change)**	**419.6**	**7.3**	**0.05**
ƒ (MAP, Slope, Soil water hold. capacity, Livestock change)	418.5	8.2	
ƒ (Agricultural cover, Mean annual prec., Slope, Livestock change)	418.9	7.9	
ƒ (MAP, Slope, Soil water hold. capacity)	420.5	7.6	
ƒ (Mean annual prec., Slope)	422.3	7.3	

Table A1.3. Relative R^2 of variables in the best models.

Relative R^2 of variables in best models	
Uruguay	
Precipitation driest quarter	0.09
Agricultural cover %	0.06
Slope	0.04
Road Density	0.03
Above median agricultural cover	
Precipitation driest quarter	0.16
Agricultural cover %	0.11
Below median agricultural cover	
Slope	0.17
Mean annual precipitation	0.13
Livestock density	0.05

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