

**Table 2R.** Coefficients and confidence intervals (95%) of model variable for each submodel of CarboSOIL. QT: quantitative, QL: qualitative

Variable	Type	CarboSOIL 25			Carbosoil50			Carbosoil75			Carbosoil TOTAL		
		Coef	BCainf	BCasup	Coef	BCainf	BCasup	Coef	BCainf	BCasup	Coef	BCainf	BCasup
Intercept		<b>774.692</b>	745.17	802.13	<b>1085.652</b>	1059.45	1111.74	<b>1150.922</b>	1120.70	1172.05	<b>546.536</b>	482.75	608.97
<b>Climate</b>													
PRPT	QT	<b>0.003</b>	-0.01	0.00	<b>0.000</b>	-0.01	0.01	<b>0.000</b>	-0.01	0.00	<b>0.018</b>	0.00	0.03
TDJF	QT	<b>1.430</b>	0.38	2.56	<b>0.615</b>	-0.29	1.53	<b>0.637</b>	-0.11	1.40	<b>3.524</b>	1.36	5.73
TJJA	QT	<b>-0.930</b>	-1.74	-0.09	<b>-0.687</b>	-1.39	0.09	<b>0.067</b>	-0.49	0.77	<b>-1.914</b>	-3.59	-0.31
<b>Site</b>													
ELEV	QT	<b>0.000</b>	-0.01	0.01	<b>0.003</b>	-0.01	0.00	<b>0.001</b>	0.00	0.01	<b>0.001</b>	-0.02	0.01
SLOP	QT	<b>0.004</b>	-0.03	0.02	<b>0.005</b>	-0.01	0.01	<b>0.001</b>	-0.01	0.01	<b>0.006</b>	-0.03	0.04
DRAI	QL												
<i>Adequate</i>		-	-	-	-	-	-	-	-	-	-	-	-
<i>Deficient</i>		<b>-2.078</b>	-3.65	-0.34	<b>-1.502</b>	-2.90	-0.21	<b>-0.210</b>	-1.34	0.87	<b>-4.498</b>	-8.25	-1.13
<i>Excessive</i>		<b>1.887</b>	-1.05	4.04	<b>-2.391</b>	-6.00	-0.56	<b>-4.076</b>	-8.24	-2.34	<b>-10.484</b>	-15.36	-5.16
SERO	QL												
<i>No-erosion</i>		-	-	-	-	-	-	-	-	-	-	-	-
<i>Sheet erosion</i>		<b>-0.997</b>	-3.02	0.95	<b>-0.883</b>	-2.50	0.69	<b>-0.403</b>	-1.83	0.84	<b>-0.442</b>	-4.91	3.74
<i>Rill erosion</i>		<b>-0.159</b>	-2.22	2.01	<b>0.449</b>	-1.32	2.32	<b>-0.466</b>	-1.82	0.85	<b>-2.046</b>	-6.85	2.33
<i>Gully erosion</i>		<b>-0.333</b>	-2.85	2.25	<b>1.216</b>	-1.77	3.27	<b>-0.879</b>	-3.62	0.75	<b>-8.448</b>	-14.03	-3.07
<b>Soil</b>													
NITRO	QT	<b>1.934</b>	-9.64	10.39	<b>26.309</b>	15.04	34.54	<b>6.063</b>	-0.56	12.20	<b>-4.570</b>	-28.71	21.65
PHWA	QT	<b>0.837</b>	0.05	1.63	<b>0.072</b>	-0.48	0.72	<b>1.039</b>	0.55	1.61	<b>2.296</b>	0.74	3.99
CEXC	QT	<b>-0.009</b>	-0.05	0.02	<b>0.000</b>	-0.04	0.03	<b>0.029</b>	-0.02	0.07	<b>0.057</b>	-0.03	0.15
SAND	QT	<b>0.803</b>	0.76	0.85	<b>1.056</b>	1.02	1.10	<b>1.161</b>	1.13	1.20	<b>0.492</b>	0.39	0.58
CLAY	QT	<b>-1.192</b>	-1.26	-1.13	<b>-1.597</b>	-1.65	-1.54	<b>-1.687</b>	-1.73	-1.64	<b>-0.539</b>	-0.67	-0.41
BULK	QT	<b>-493.990</b>	-501.1	-486.0	<b>-686.455</b>	-693.8	-676.6	<b>-746.993</b>	-755.15	-734.38	<b>-348.850</b>	-368.9	-330.7
FCAP	QT	<b>0.018</b>	-0.11	0.15	<b>-0.068</b>	-0.16	0.04	<b>0.002</b>	-0.09	0.09	<b>0.031</b>	-0.24	0.30
<b>Land use</b>													
LULC	QL												
<i>Other</i>		-	-	-	-	-	-	-	-	-	-	-	-
<i>Non irrigated areas</i>		<b>1.169</b>	-2.19	8.46	<b>-0.527</b>	-3.42	5.59	<b>-0.469</b>	-2.65	4.75	<b>1.410</b>	-8.03	11.38
<i>Irrigated areas</i>		<b>-1.483</b>	-5.46	5.26	<b>0.858</b>	-2.27	7.28	<b>-0.580</b>	-2.98	4.42	<b>8.476</b>	-1.80	18.74
<i>Vineyards</i>		<b>-0.210</b>	-10.16	6.99	<b>-3.229</b>	-9.86	2.22	<b>-1.816</b>	-6.55	2.58	<b>7.607</b>	-8.40	24.86
<i>Fruit trees and berries</i>		<b>-1.009</b>	-8.66	5.87	<b>-0.525</b>	-6.96	4.55	<b>1.068</b>	-2.82	6.35	<b>-5.728</b>	-20.34	7.88
<i>Olive groves</i>		<b>1.481</b>	-2.08	8.41	<b>-0.232</b>	-3.45	5.99	<b>-0.313</b>	-2.58	4.67	<b>3.557</b>	-6.29	13.60
<i>Complex cultivation patterns</i>		<b>-0.371</b>	-5.09	6.50	<b>-1.068</b>	-5.61	4.26	<b>-2.222</b>	-5.39	2.65	<b>0.678</b>	-10.53	11.95
<i>Agro-forestry areas</i>		<b>-0.051</b>	-3.96	7.00	<b>-1.627</b>	-4.86	4.83	<b>-0.063</b>	-2.42	5.37	<b>-2.498</b>	-13.07	7.87
<i>Broad leaved forest</i>		<b>-0.335</b>	-4.17	6.88	<b>-2.405</b>	-5.57	3.77	<b>0.029</b>	-2.36	5.55	<b>-5.237</b>	-15.17	5.53
<i>Coniferous forest</i>		<b>0.284</b>	-3.96	7.50	<b>-1.367</b>	-5.50	4.39	<b>0.697</b>	-2.37	6.07	<b>0.050</b>	-11.16	11.09
<i>Mixed forest</i>		<b>6.329</b>	-2.57	13.22	<b>-1.377</b>	-8.98	4.38	<b>0.982</b>	-2.65	6.40	<b>-2.397</b>	-17.71	14.02
<i>Natural grasslands</i>		<b>1.511</b>	-2.85	8.27	<b>0.409</b>	-3.93	5.90	<b>-0.526</b>	-3.84	5.09	<b>-0.935</b>	-11.81	10.34
<i>Sclerophyllous vegetation</i>		<b>1.358</b>	-2.83	8.22	<b>-0.635</b>	-4.56	5.23	<b>-2.021</b>	-5.10	3.00	<b>-1.974</b>	-12.59	9.02
<i>Woodland scrubs</i>		<b>1.396</b>	-2.63	8.54	<b>-3.398</b>	-7.22	2.41	<b>1.334</b>	-1.54	6.85	<b>-2.078</b>	-12.88	8.65
<i>Salt marshes</i>		<b>-2.465</b>	-14.11	4.62	<b>-3.064</b>	-10.86	3.74	<b>-3.576</b>	-7.25	2.13	<b>-26.038</b>	-43.47	-8.01





Figure 1R. Study area.

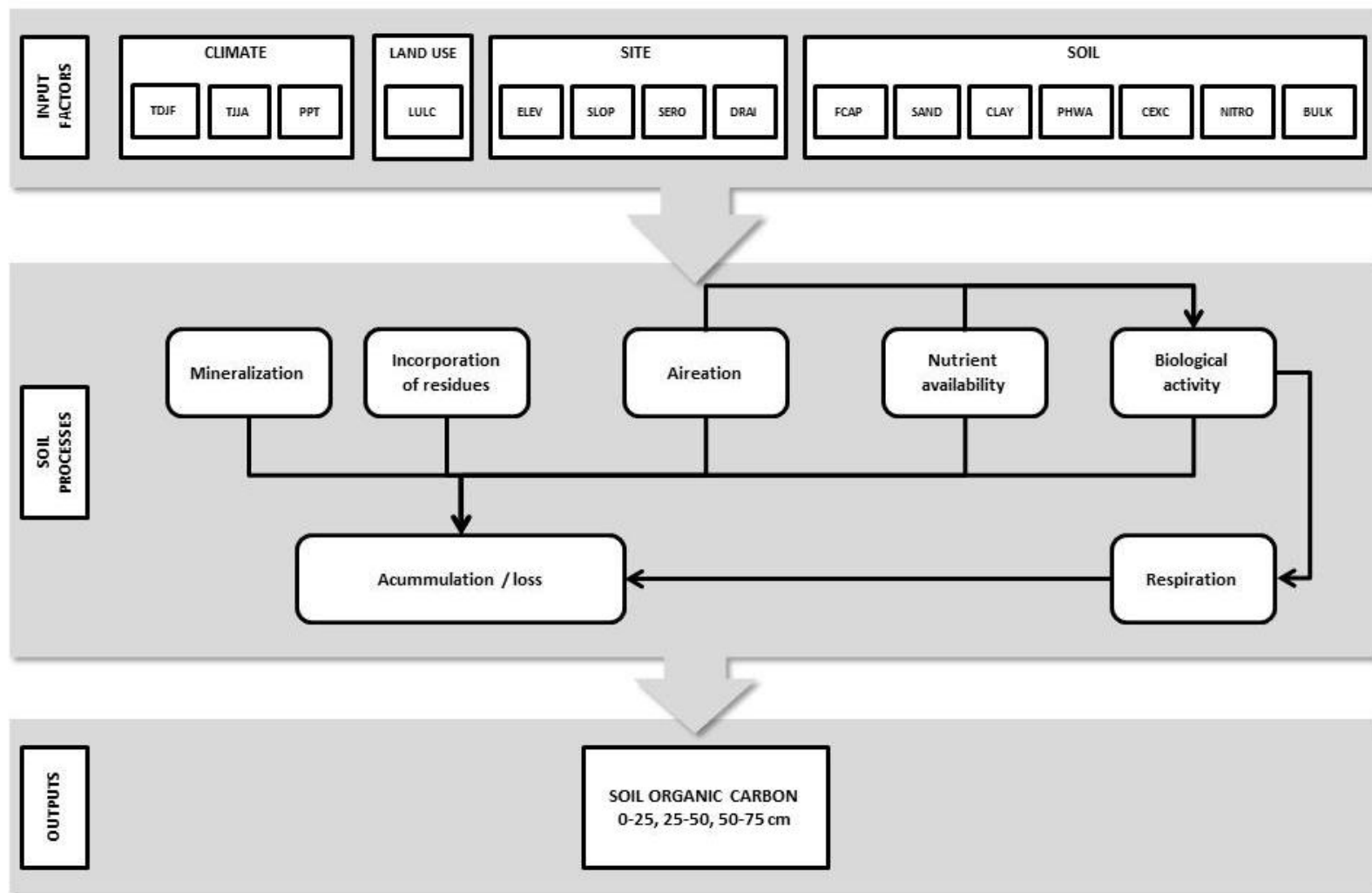


Figure 2R. General diagram of CarboSOIL model: input factors, simulated soil processes and outputs. Input factors abbreviations are described in Table 1.

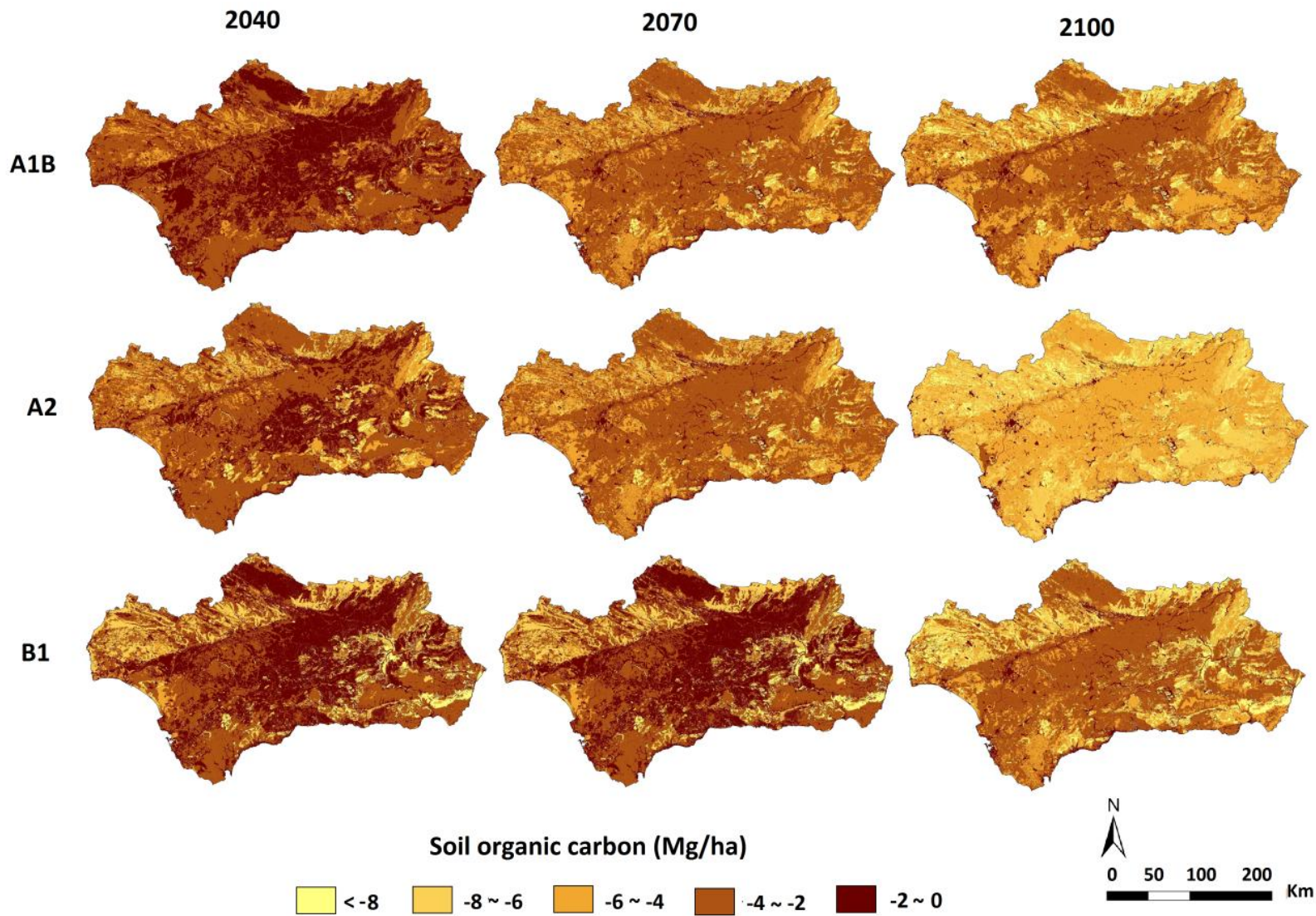


Figure 5R. Spatial distribution of changes in soil organic carbon content (Mg/ha) in Andalusia (Southern Spain) for different SRES scenarios and different periods (2040, 2070, 2100).